

Nesting of colon and ovarian cancer cells in the endothelial niche is associated with alterations in glycan and lipid metabolism.

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†Contributed equally

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5. Institute of Bioinformatics and Systems Biology, Helmholtz Zentrum München, German Research Center for Environmental Health, Neuherberg, Germany.
6. Department of Genetic Medicine and Obstetrics and Gynecology, Weill Cornell Medical College, Stem Cell and Microenvironment Laboratory, Weill Cornell Medical College in Qatar, Qatar-Foundation, P.O. Box 24144, Doha, Qatar.

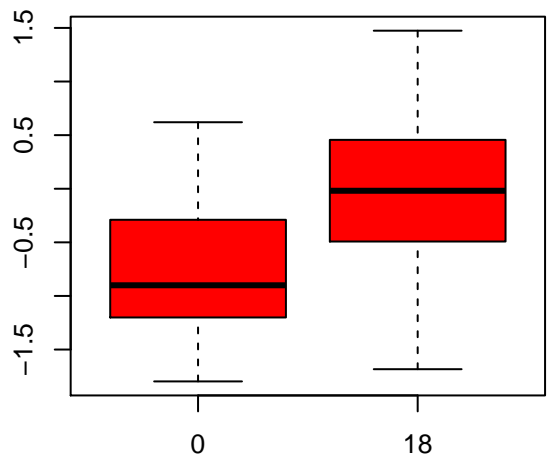
Corresponding authors:

Dr. Karsten Suhre: Department of Physiology and Biophysics, Weill Cornell Medicine-Qatar, Doha, Qatar Weill Cornell Medical College in Qatar, Qatar-Foundation, P.O Box: 24144, Doha, Qatar. Phone: +974 4492 8482. Fax: +974 4492 8422. Email: kas2049@qatar-med.cornell.edu

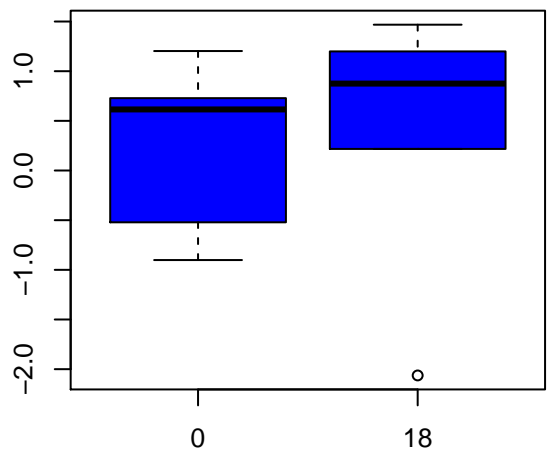
Dr. Arash Rafii: Department of Genetic Medicine and Obstetrics and Gynecology, Weill Cornell Medicine-Qatar, Stem cell and microenvironment laboratory Weill Cornell Medical College in Qatar, Qatar-Foundation, P.O Box: 24144, Doha, Qatar. Phone: +974 3313 5828. Fax: +974 4492 8422. Email: jat2021@qatar-med.cornell.edu

1-arachidonoylglycerophosphoethanolami

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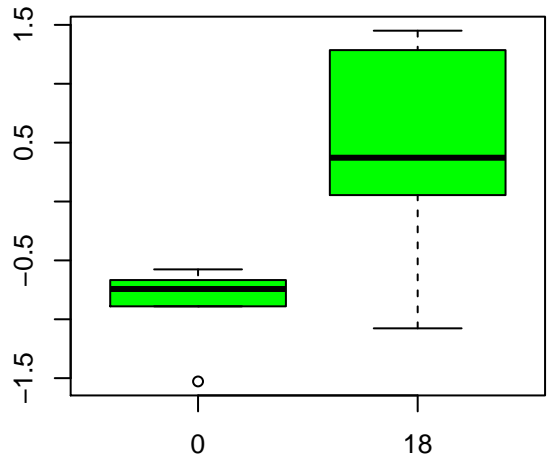
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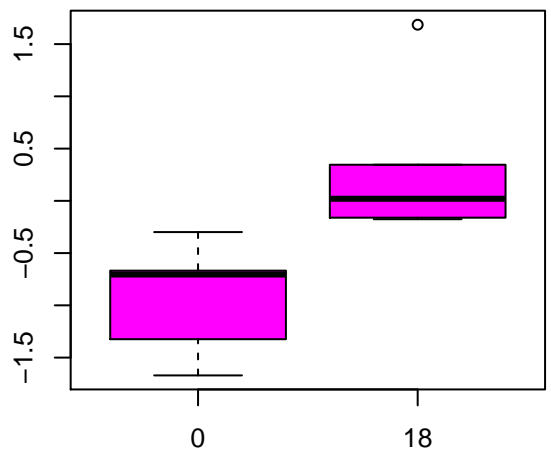
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1-arachidonoylglycerophosphoethanolami

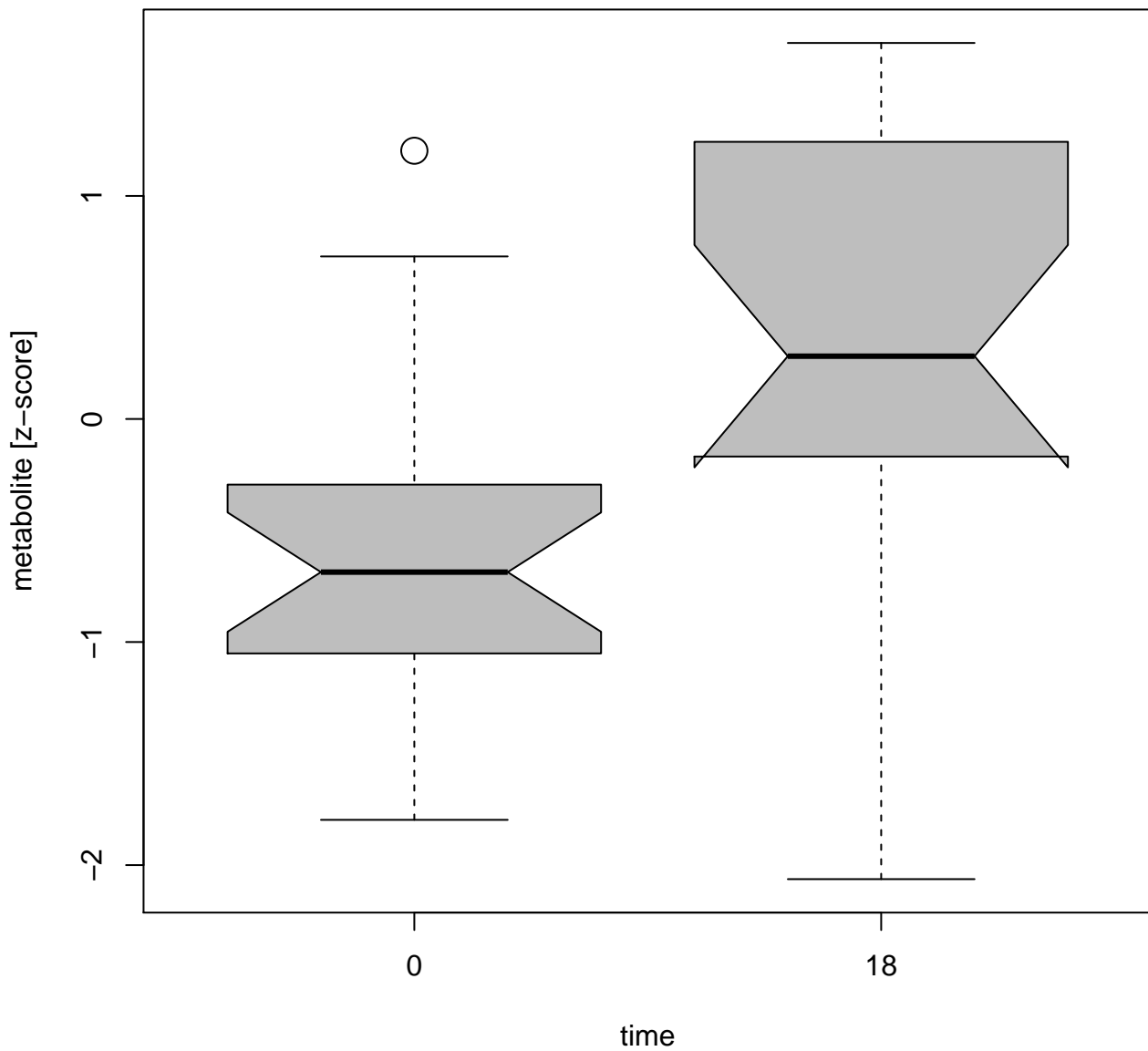


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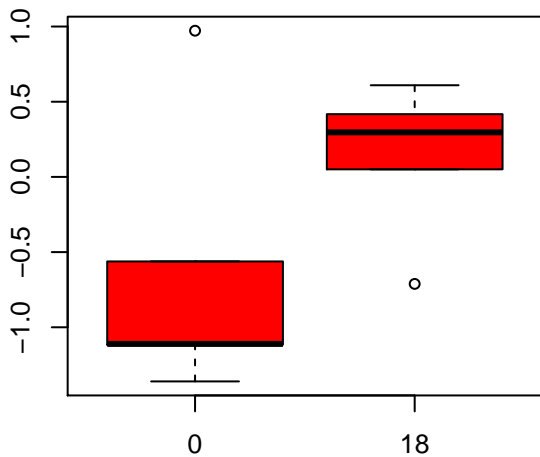


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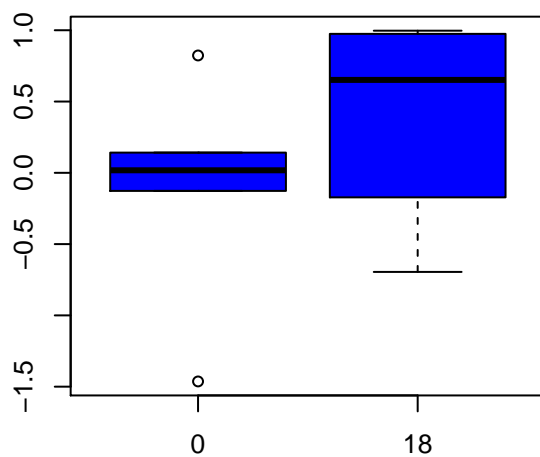
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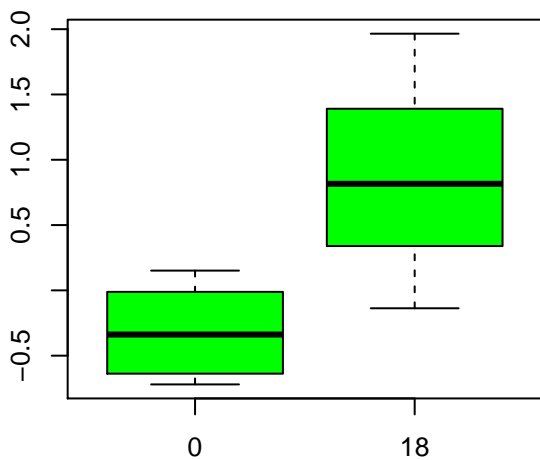


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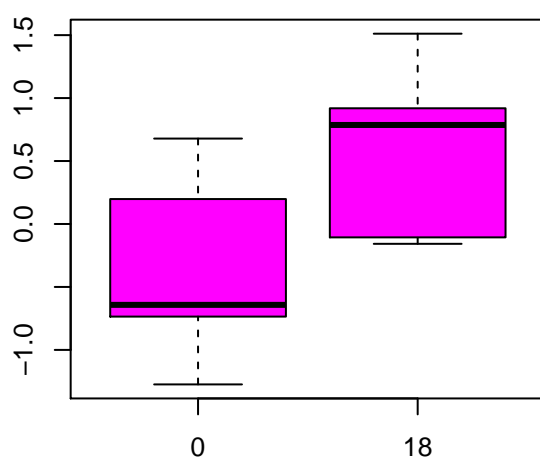


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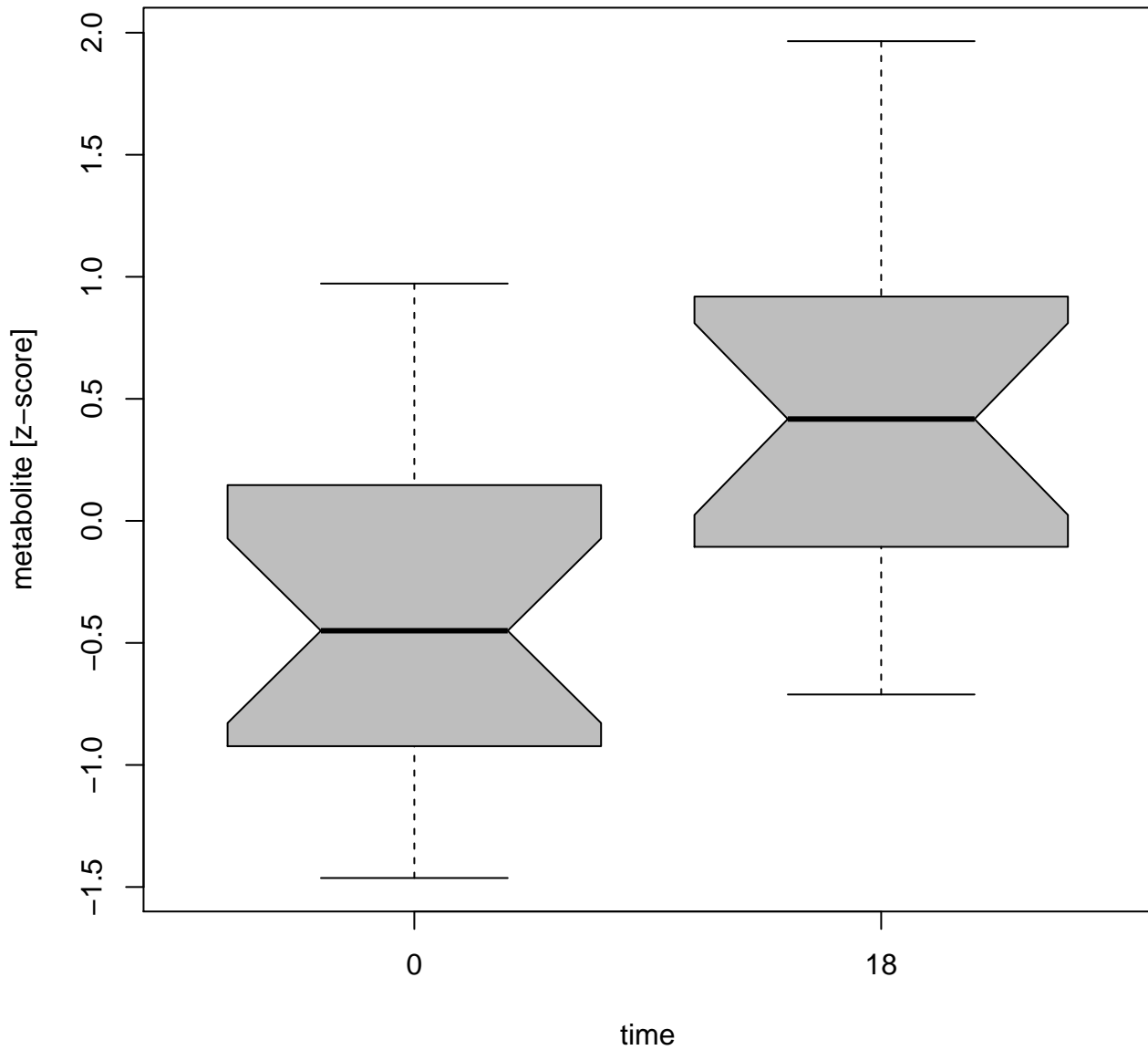


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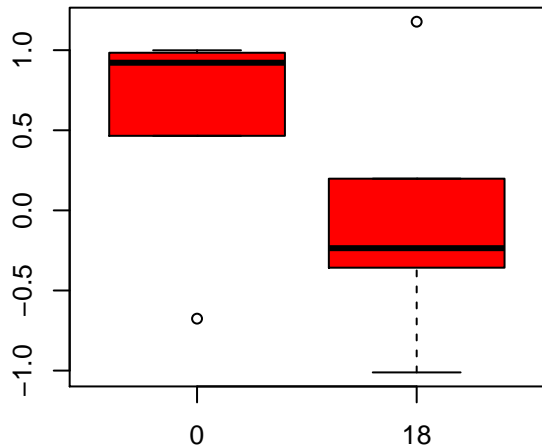


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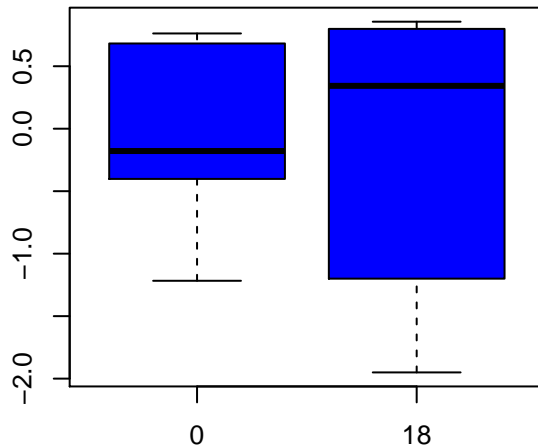


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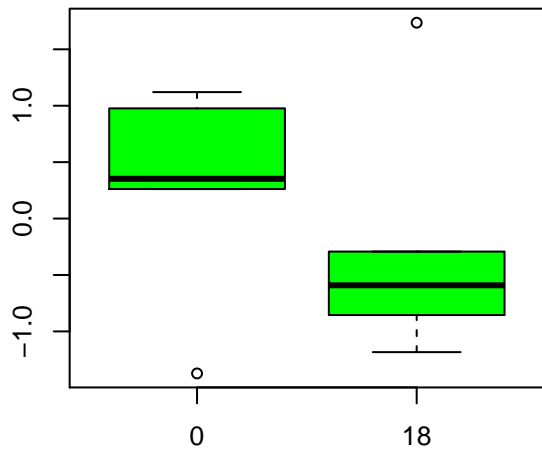
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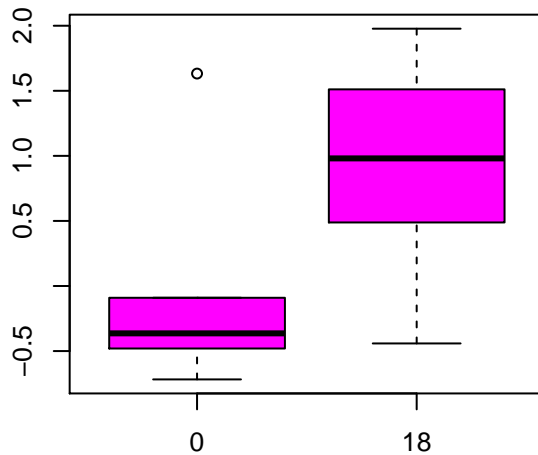
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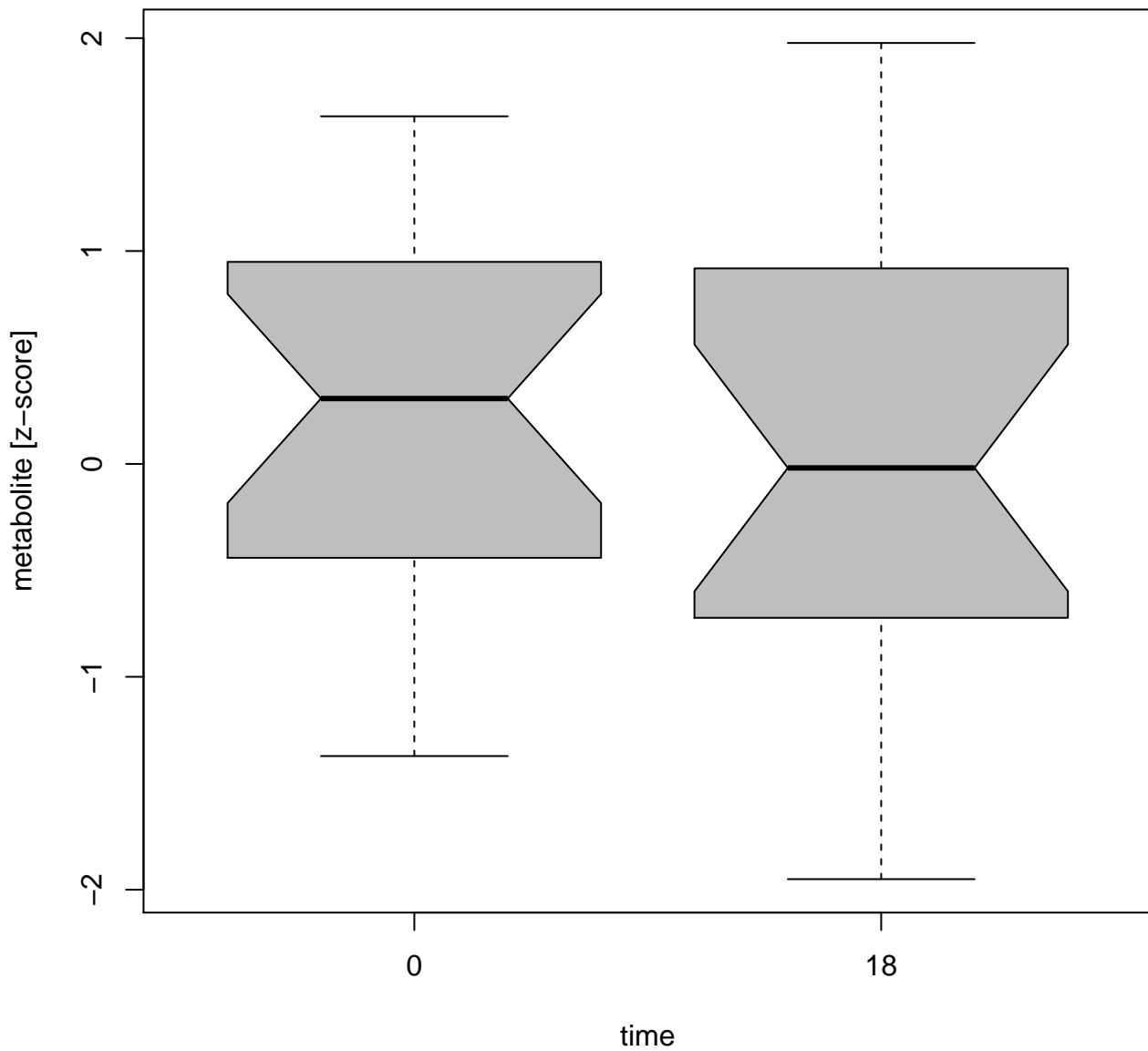
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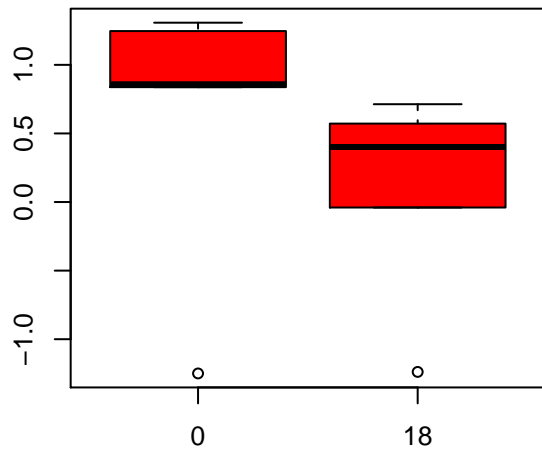


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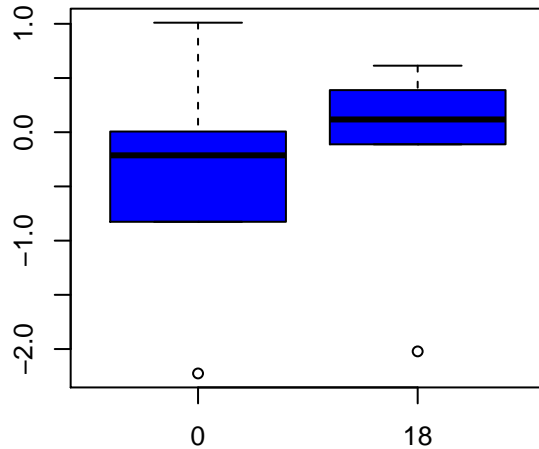


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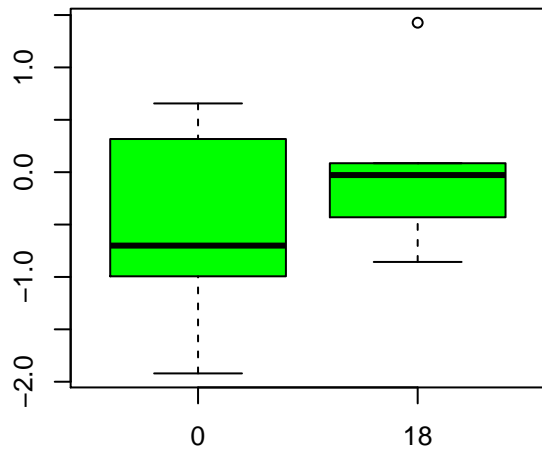
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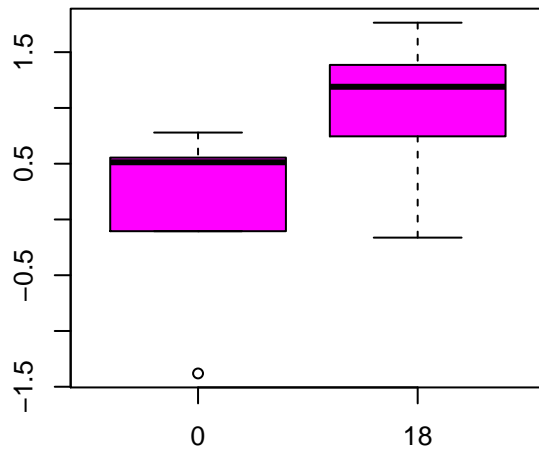
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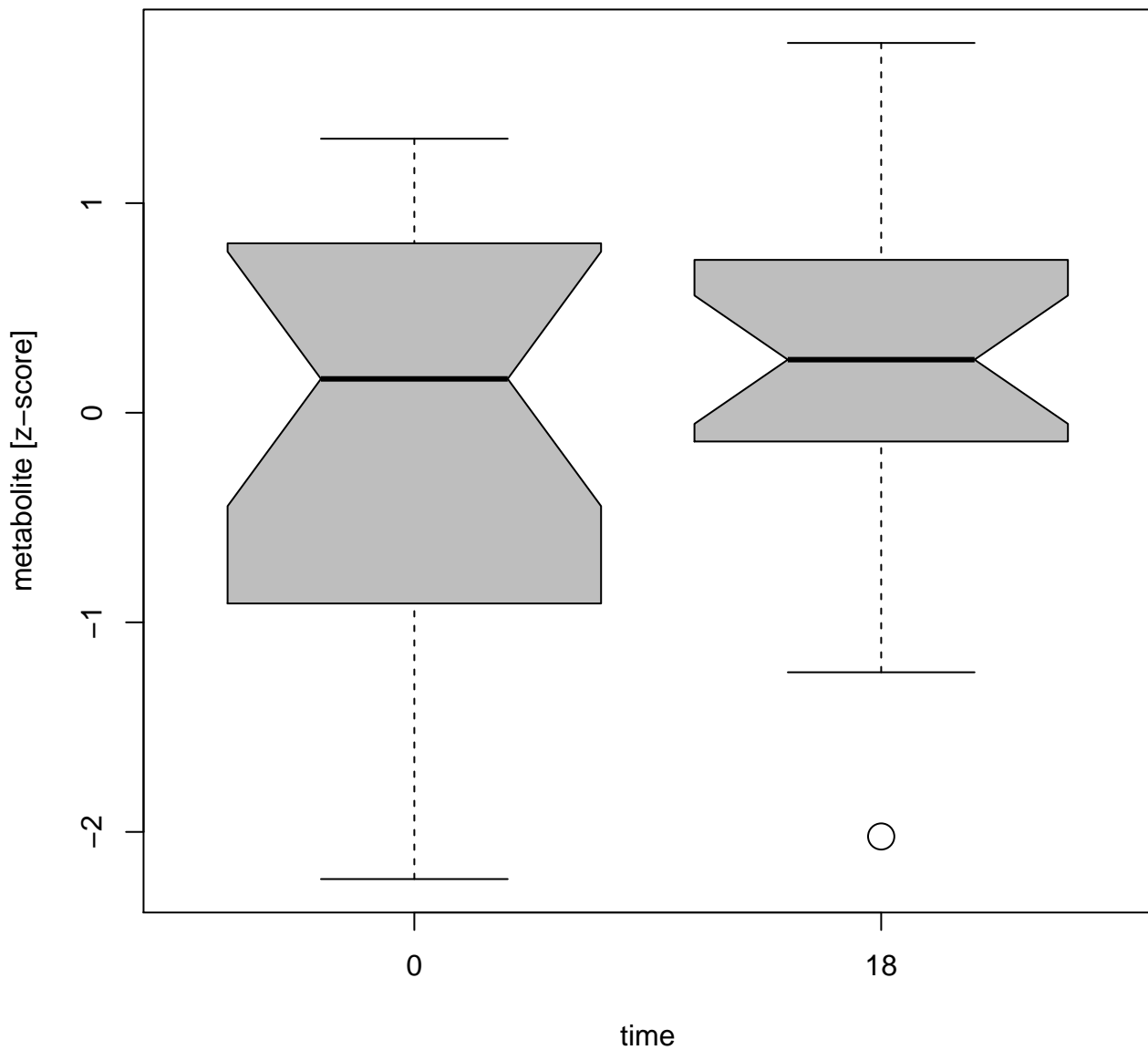
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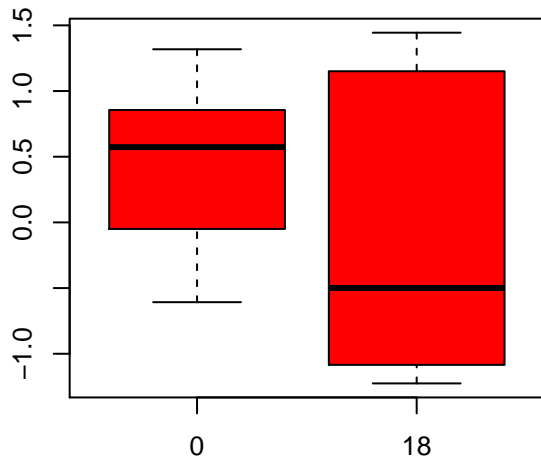


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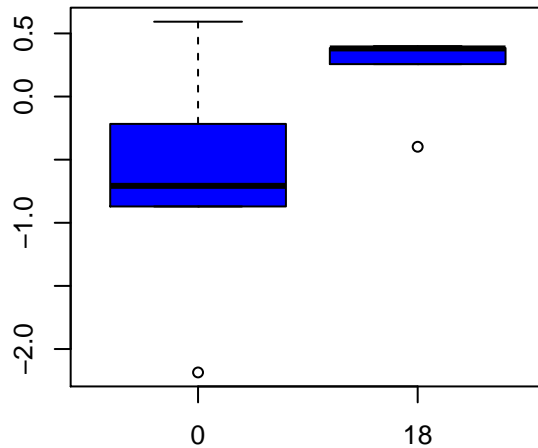


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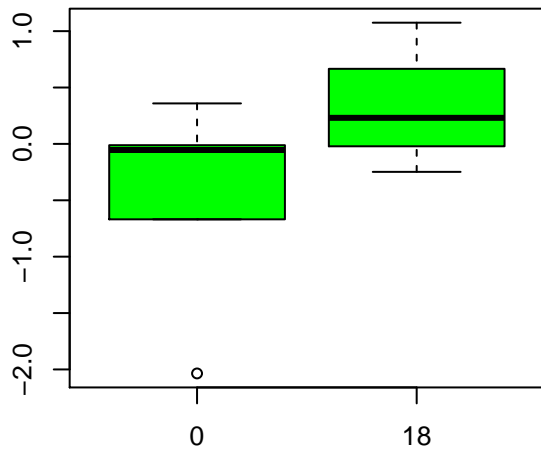
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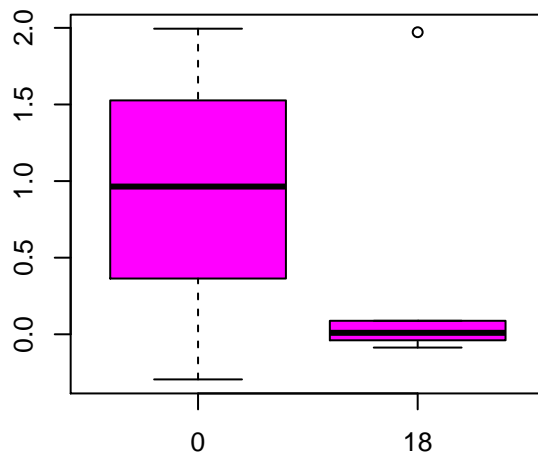
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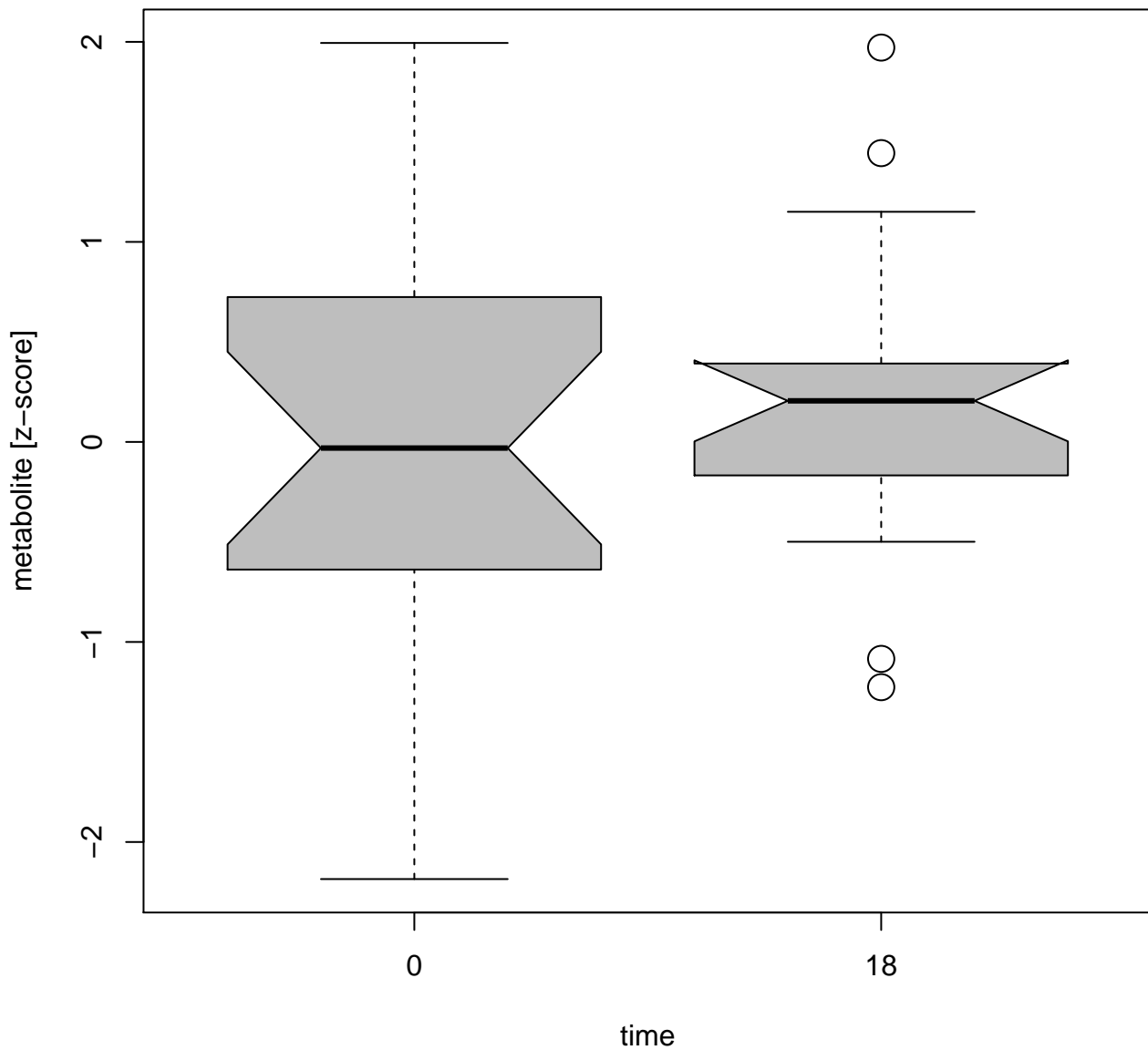
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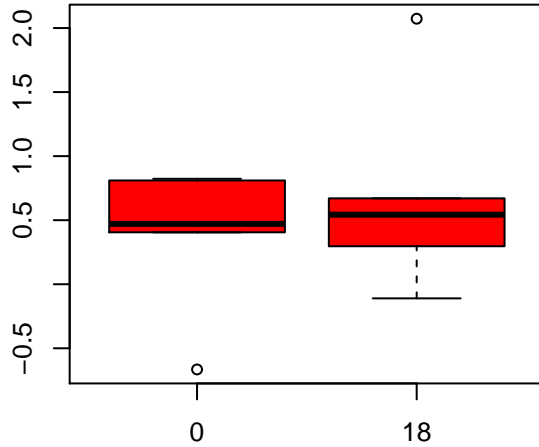


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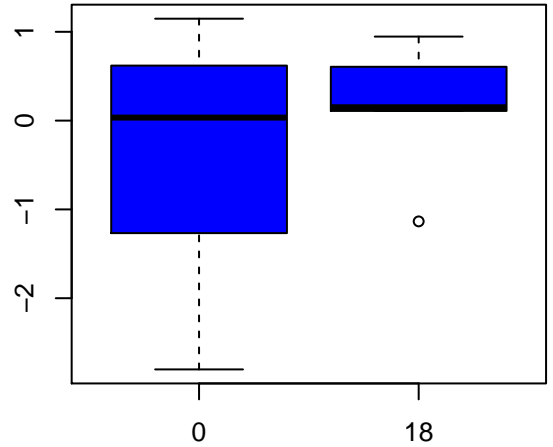


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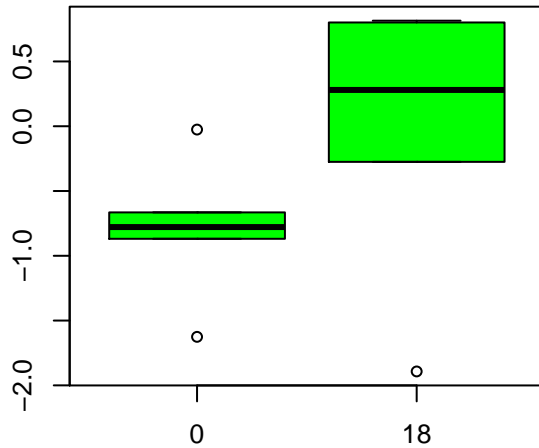
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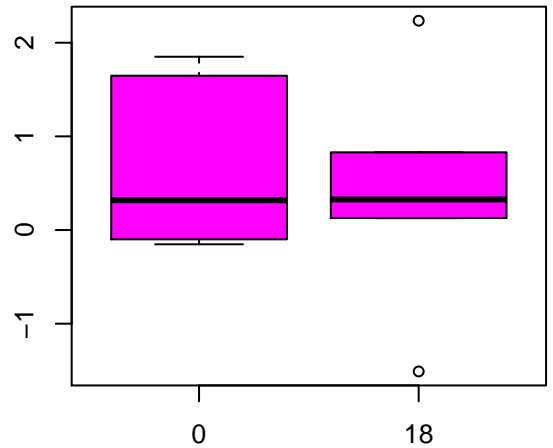
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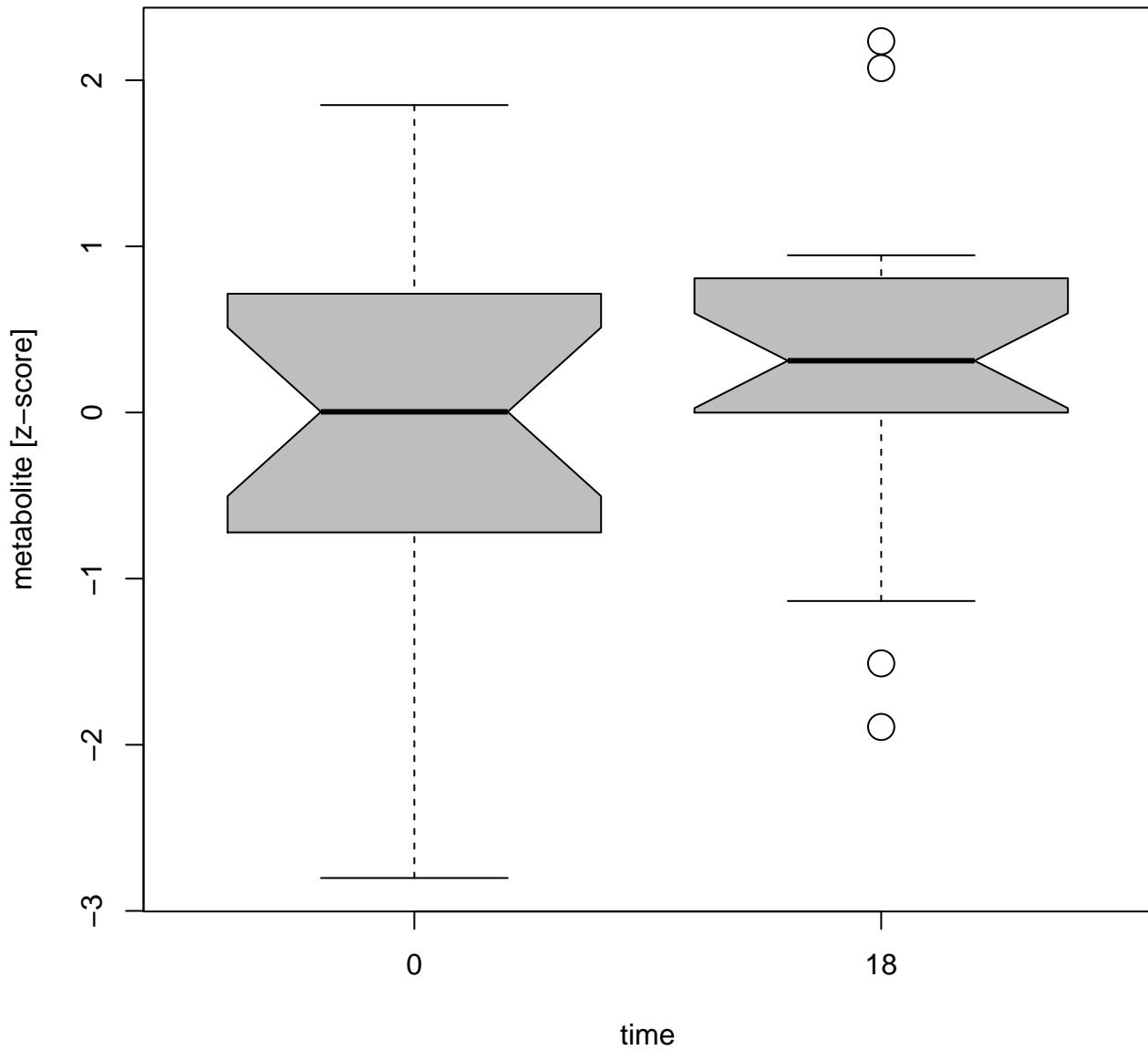
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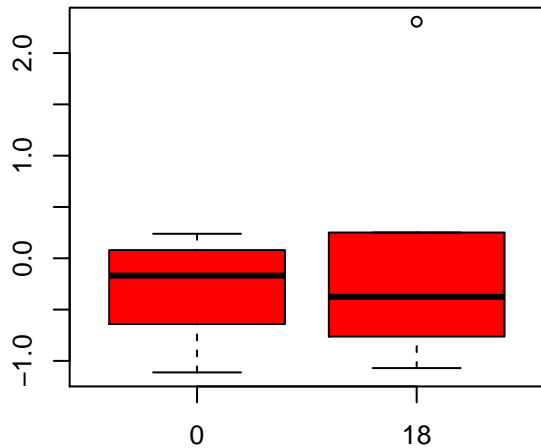


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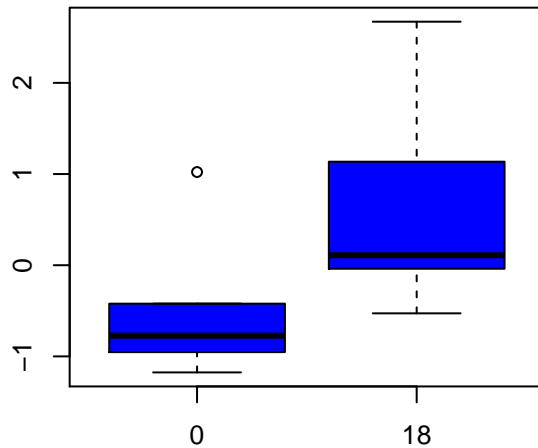


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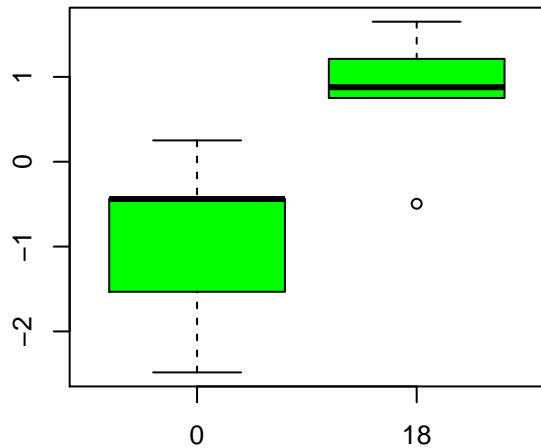
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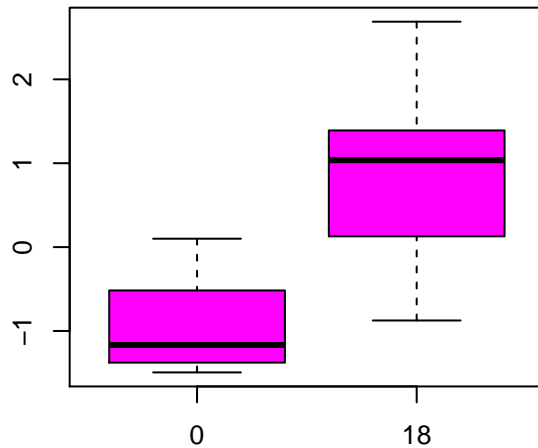
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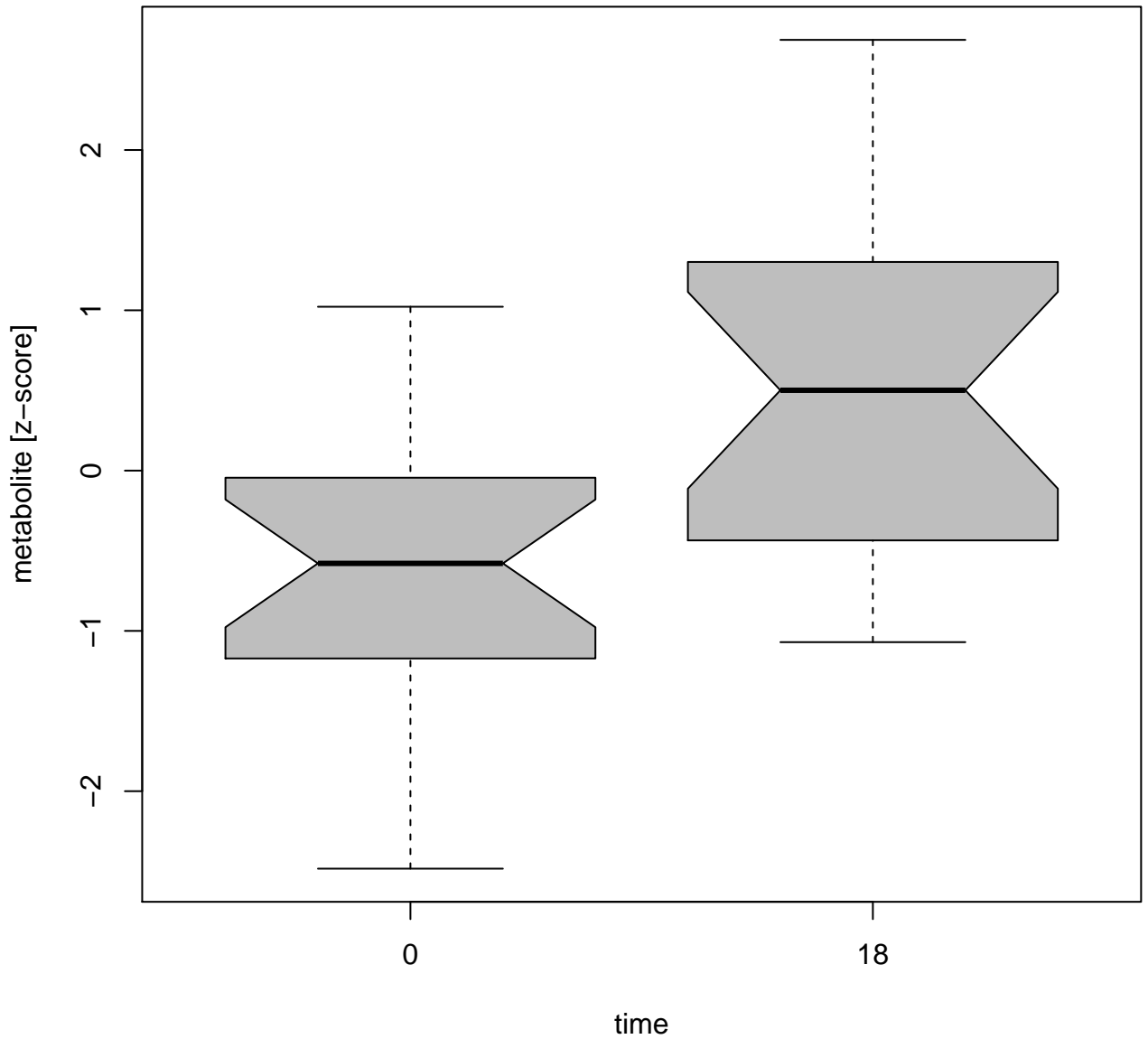
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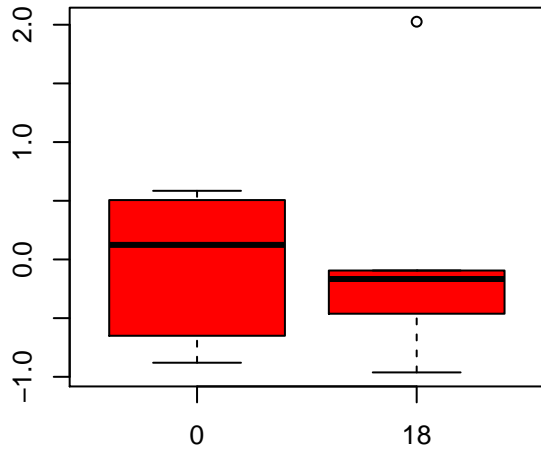


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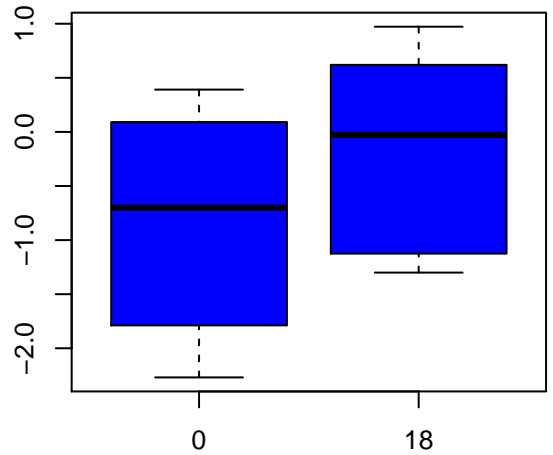


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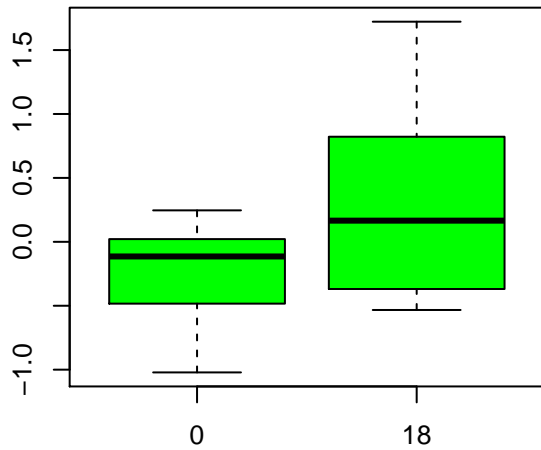
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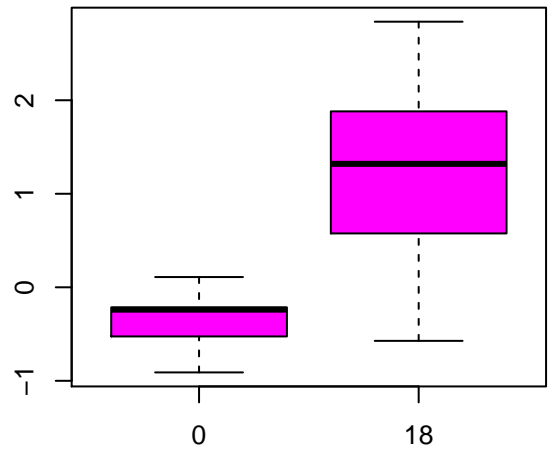
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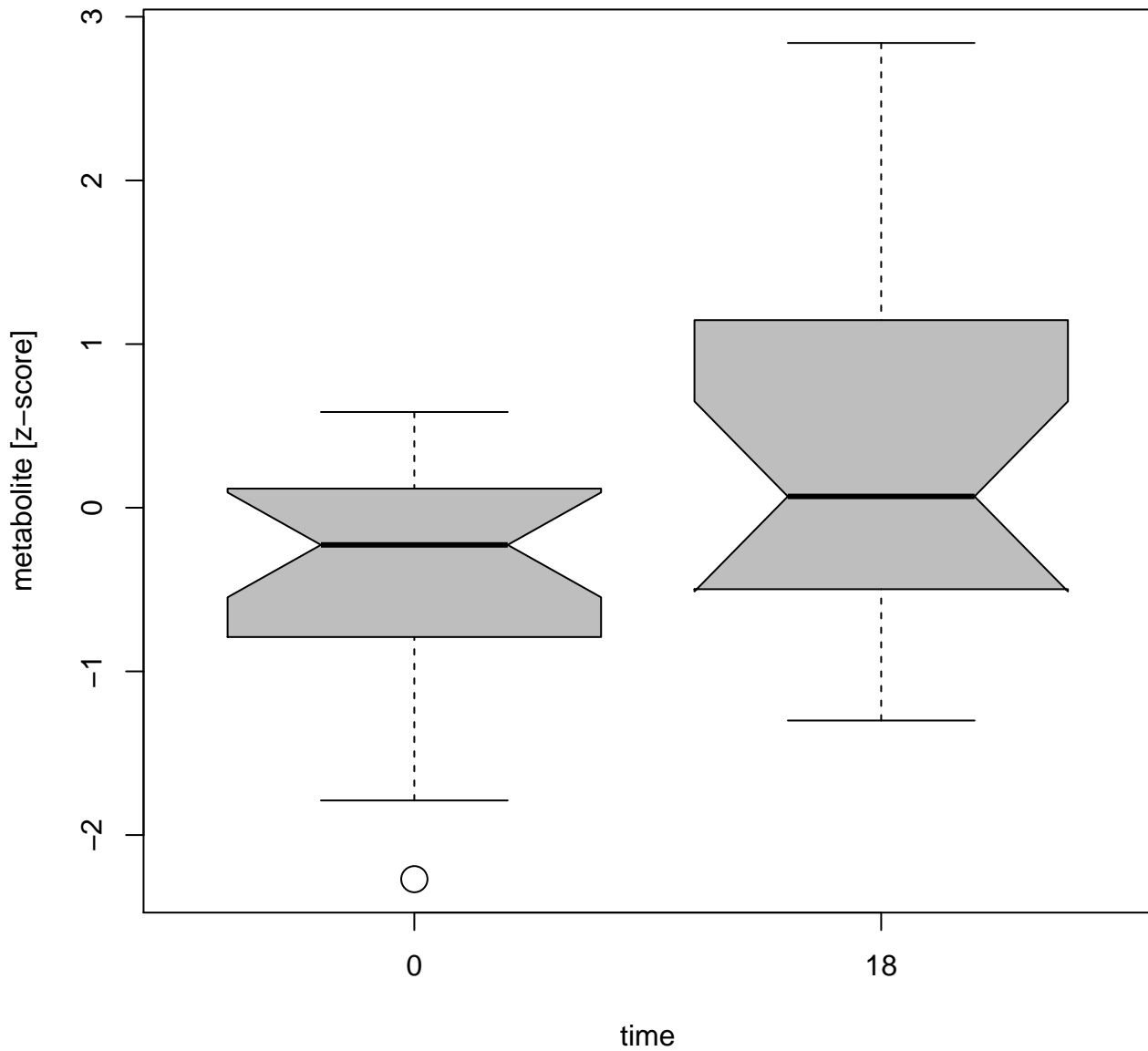
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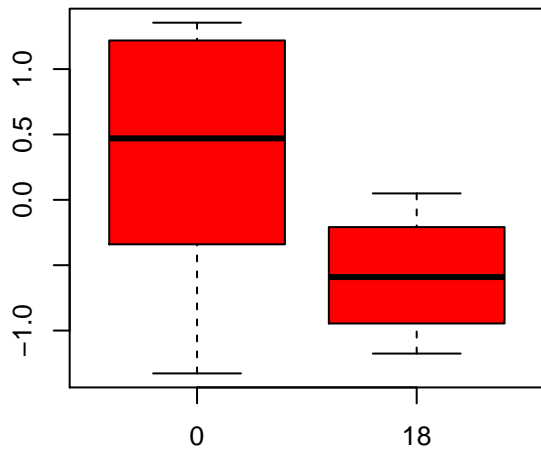


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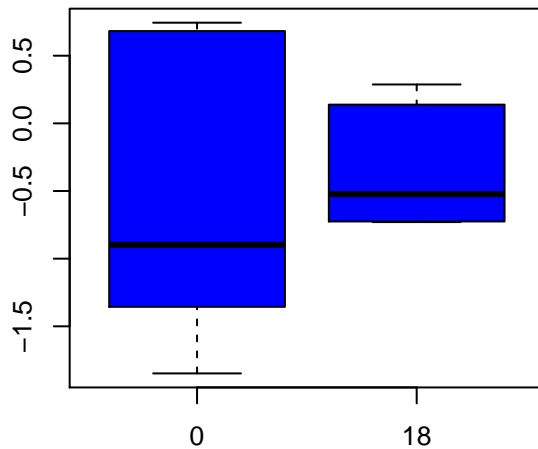


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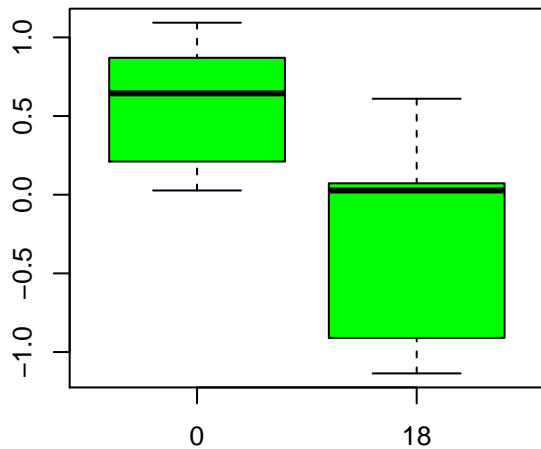
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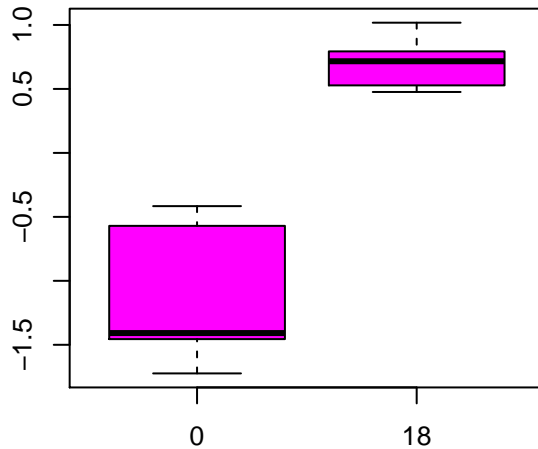
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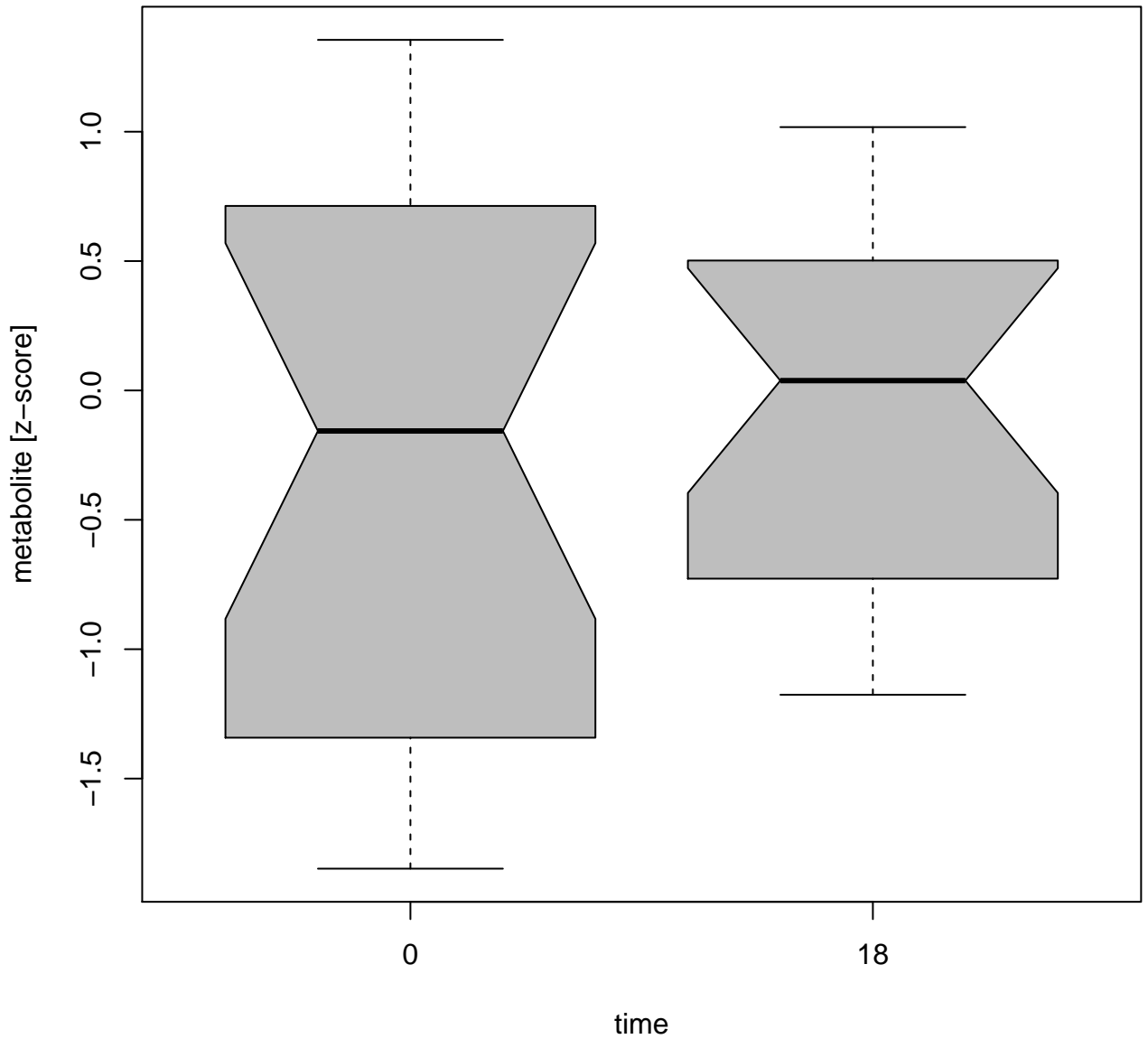
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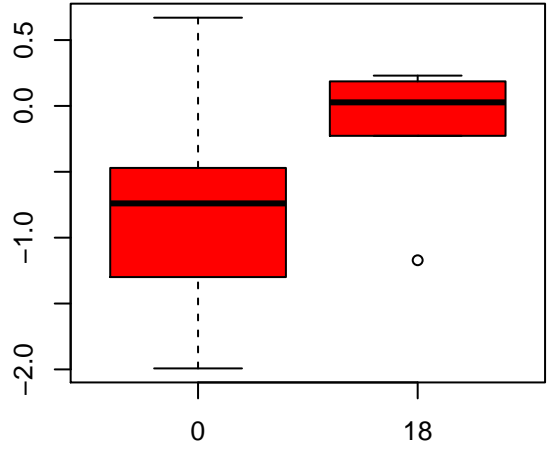


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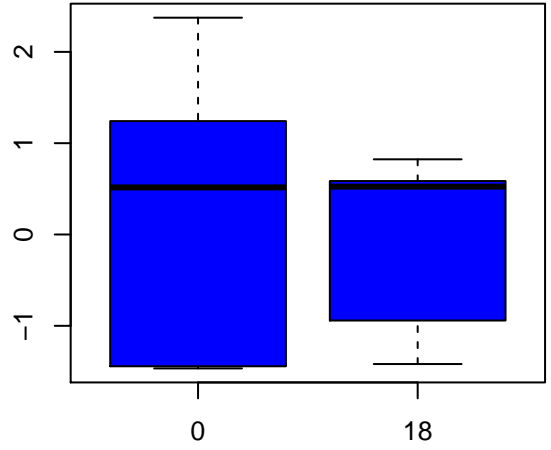
2-aminoadipate



2-arachidonoylglycerophosphoethanolami 2-arachidonoylglycerophosphoethanolami

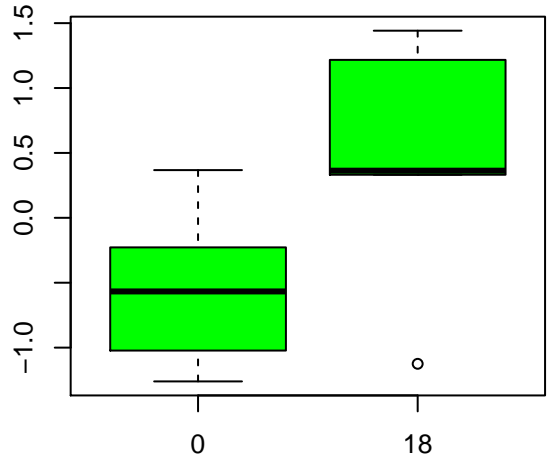


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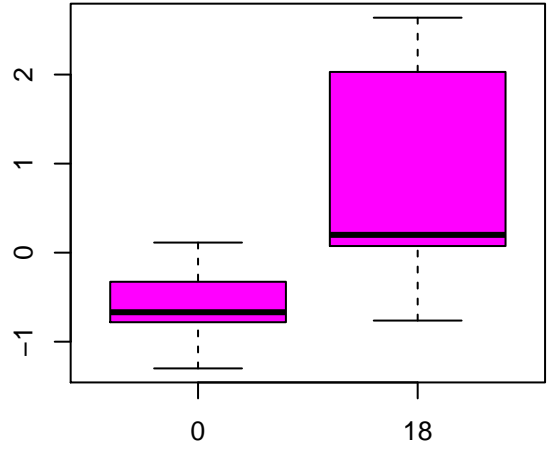


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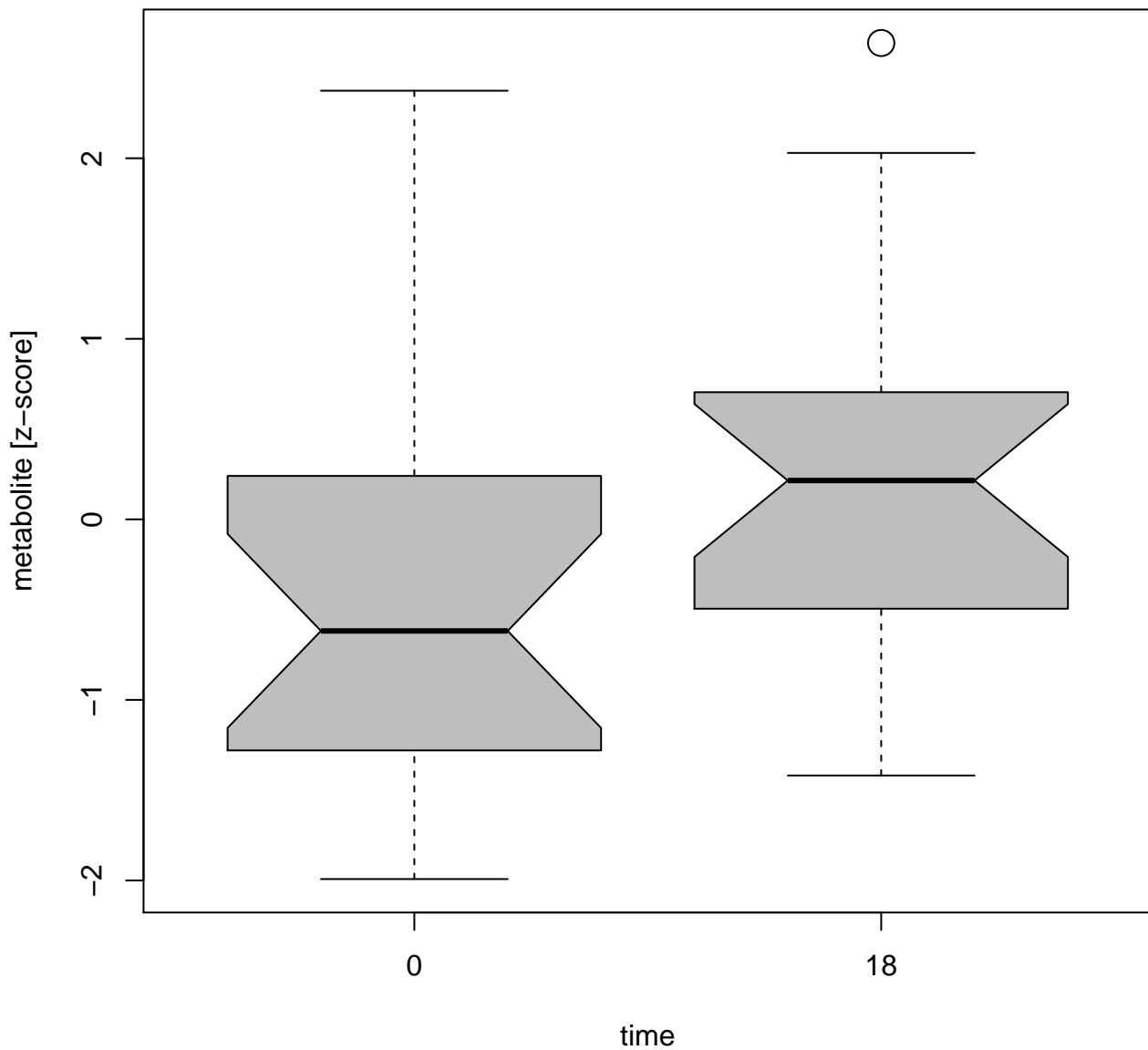


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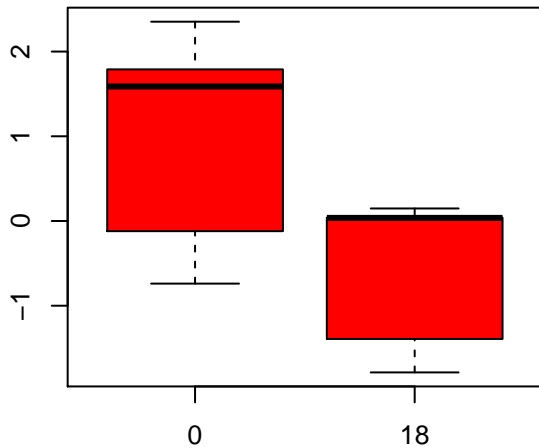


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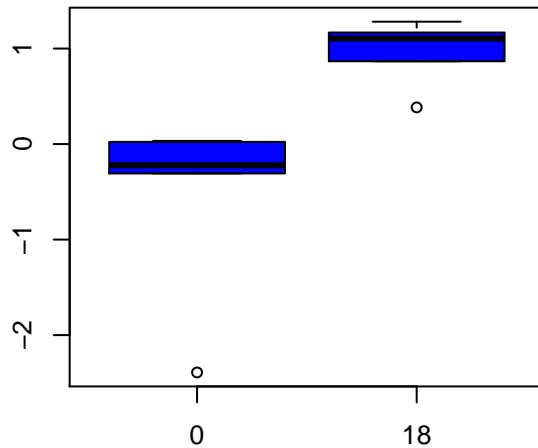


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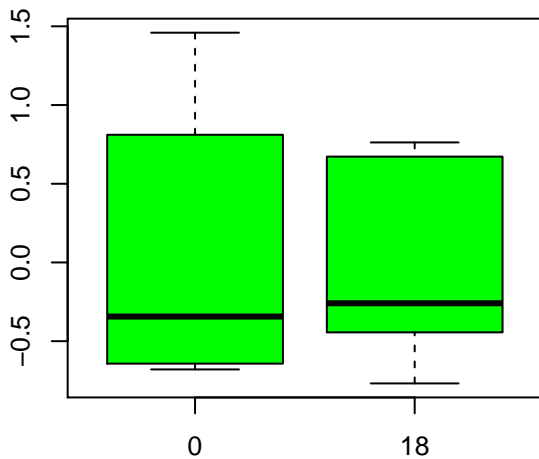
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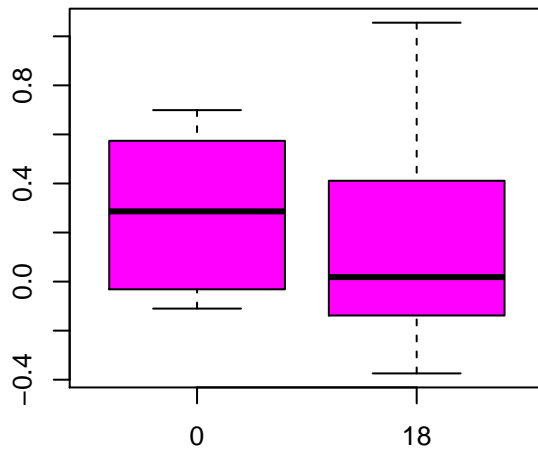
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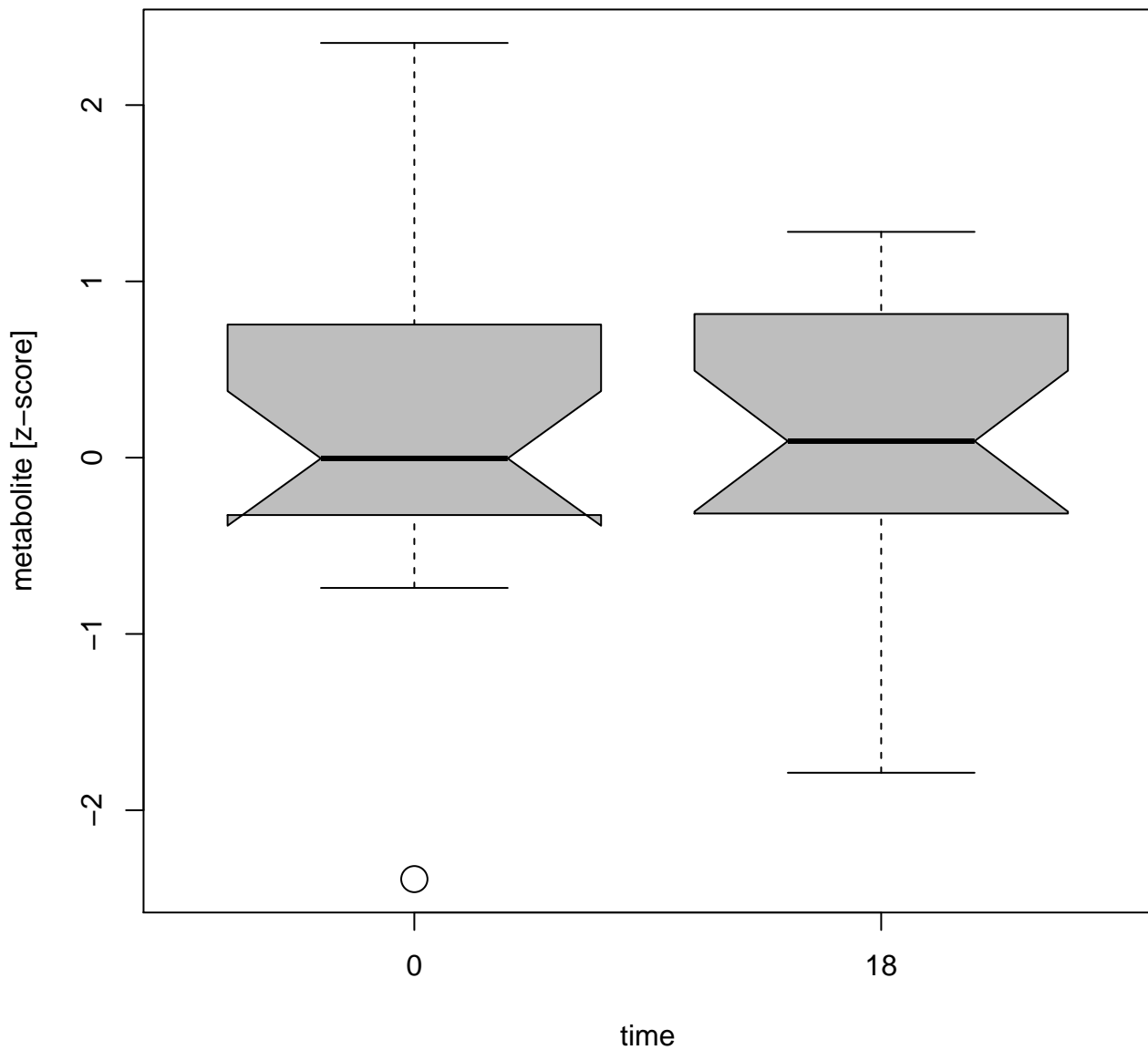
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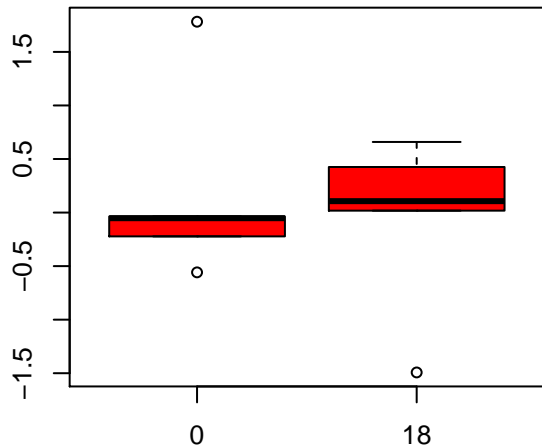


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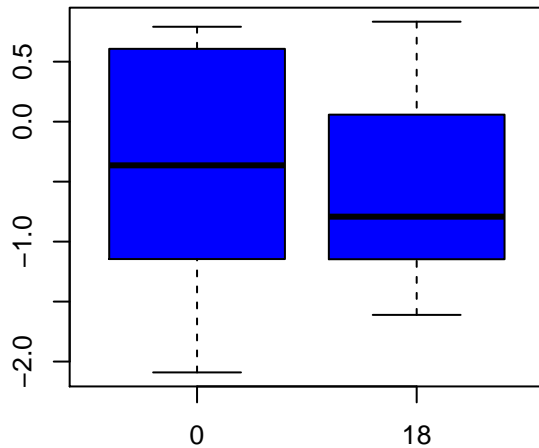


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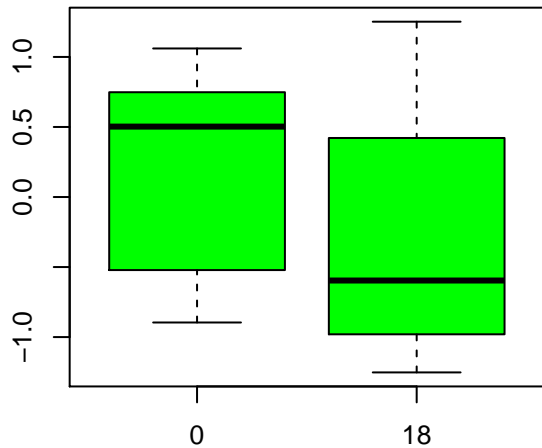
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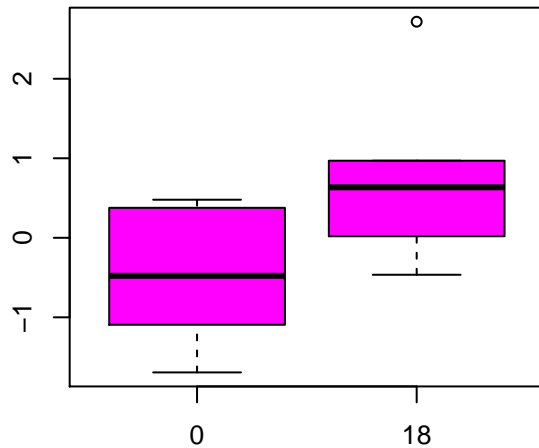
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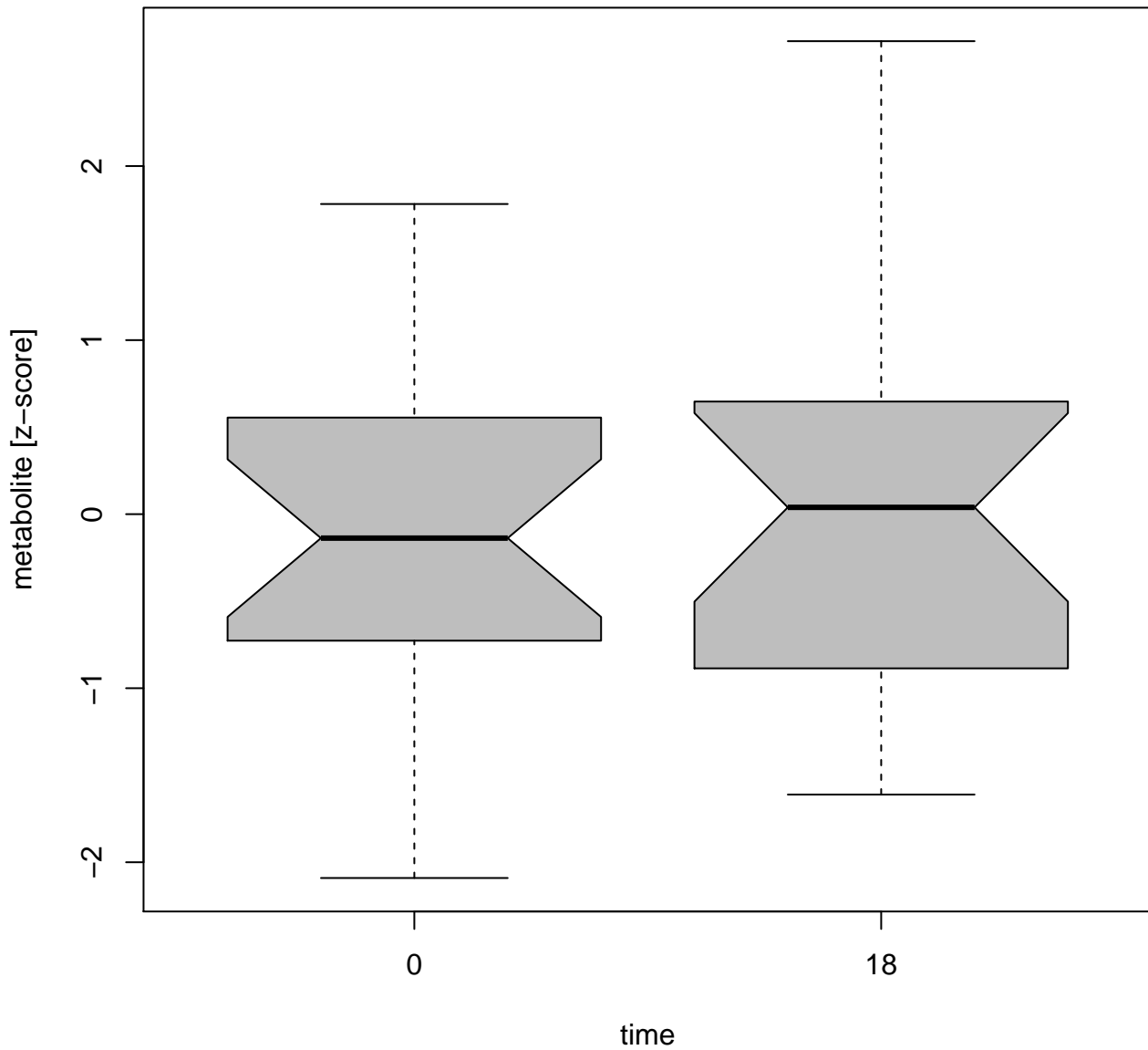
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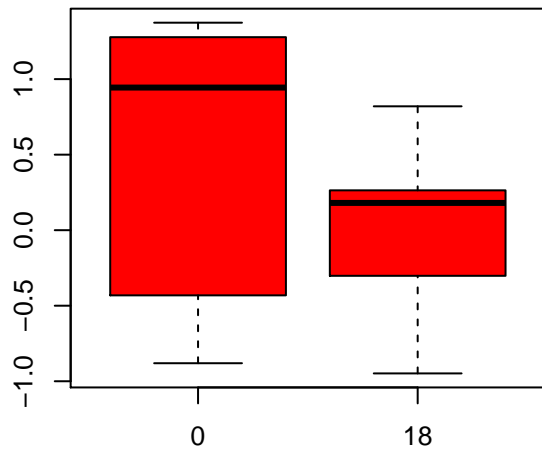


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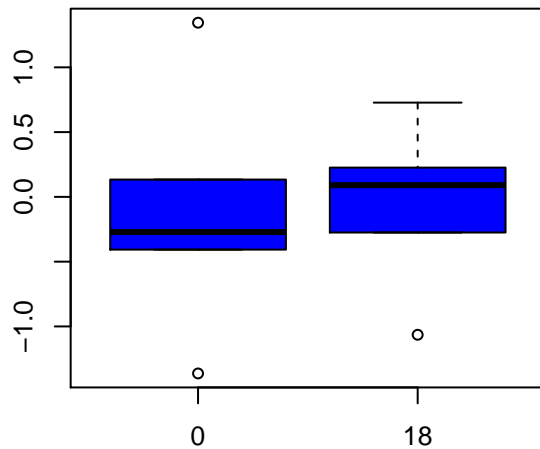


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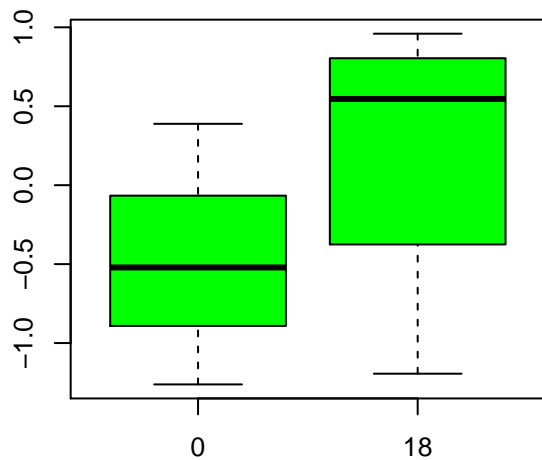
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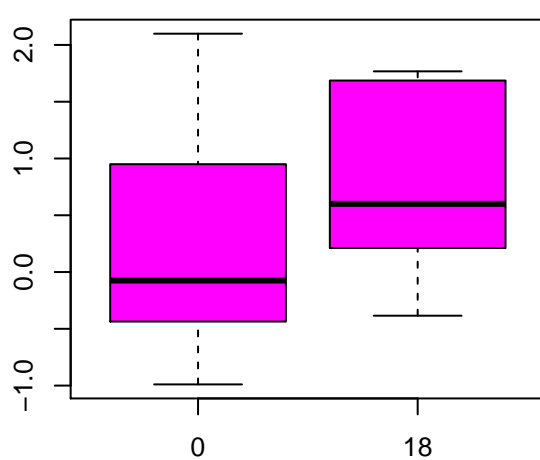
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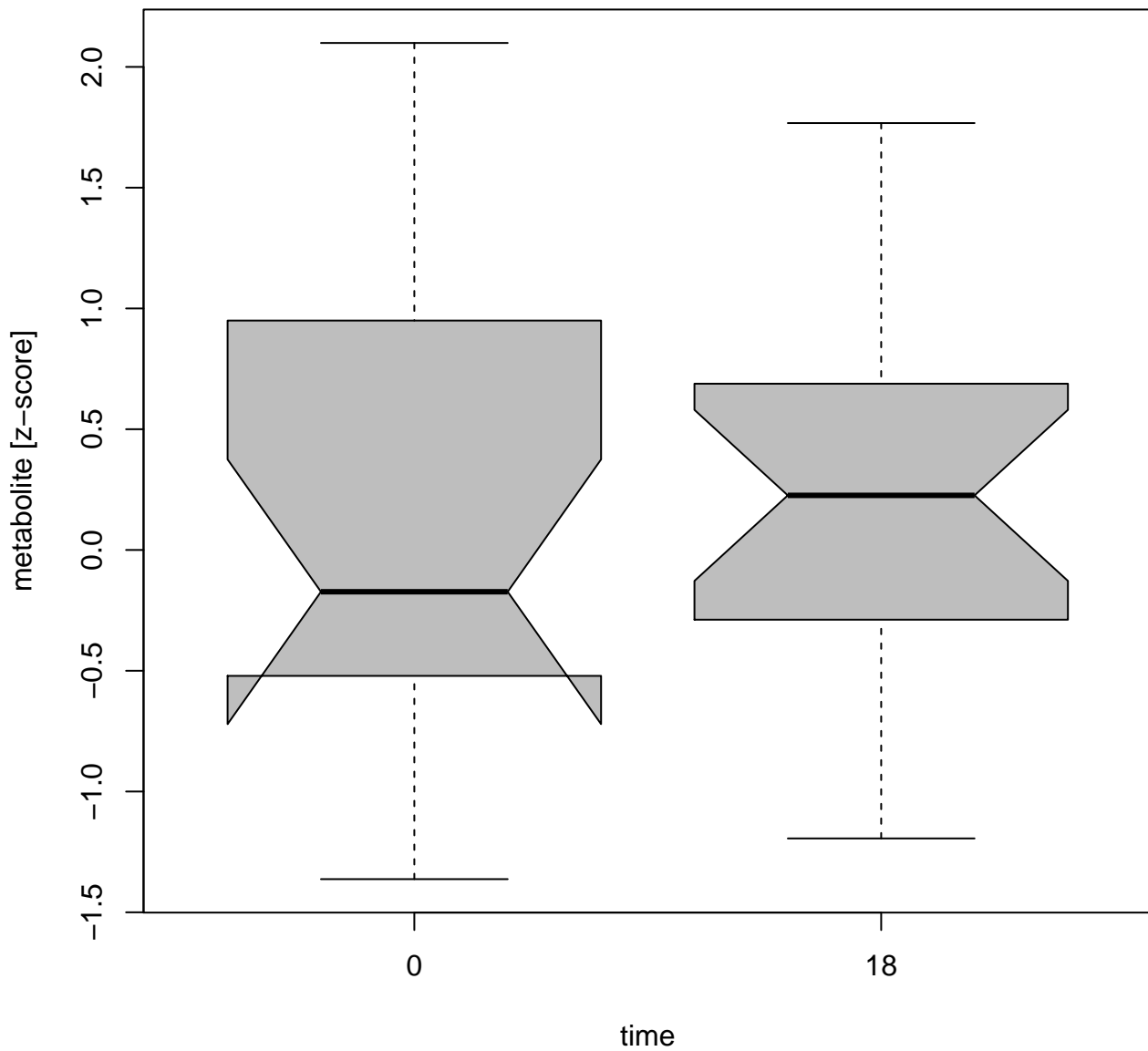
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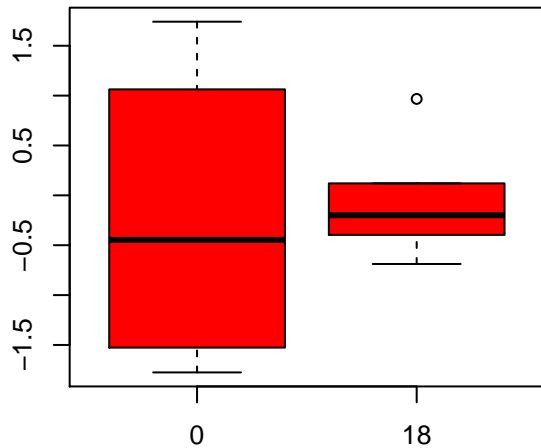


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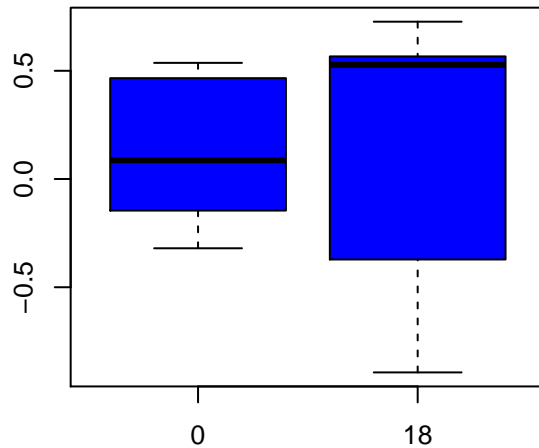


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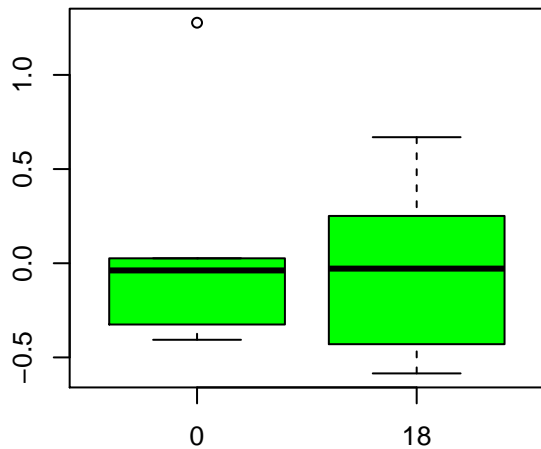
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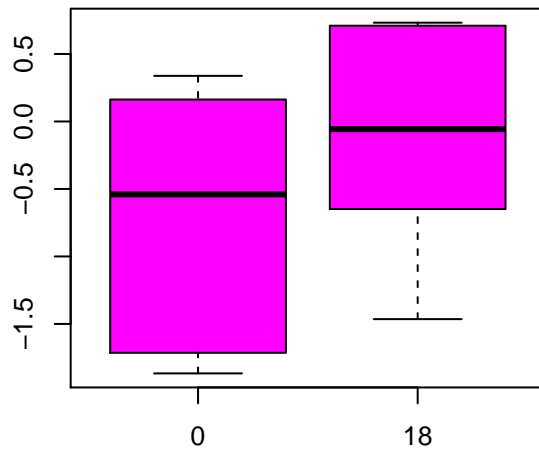
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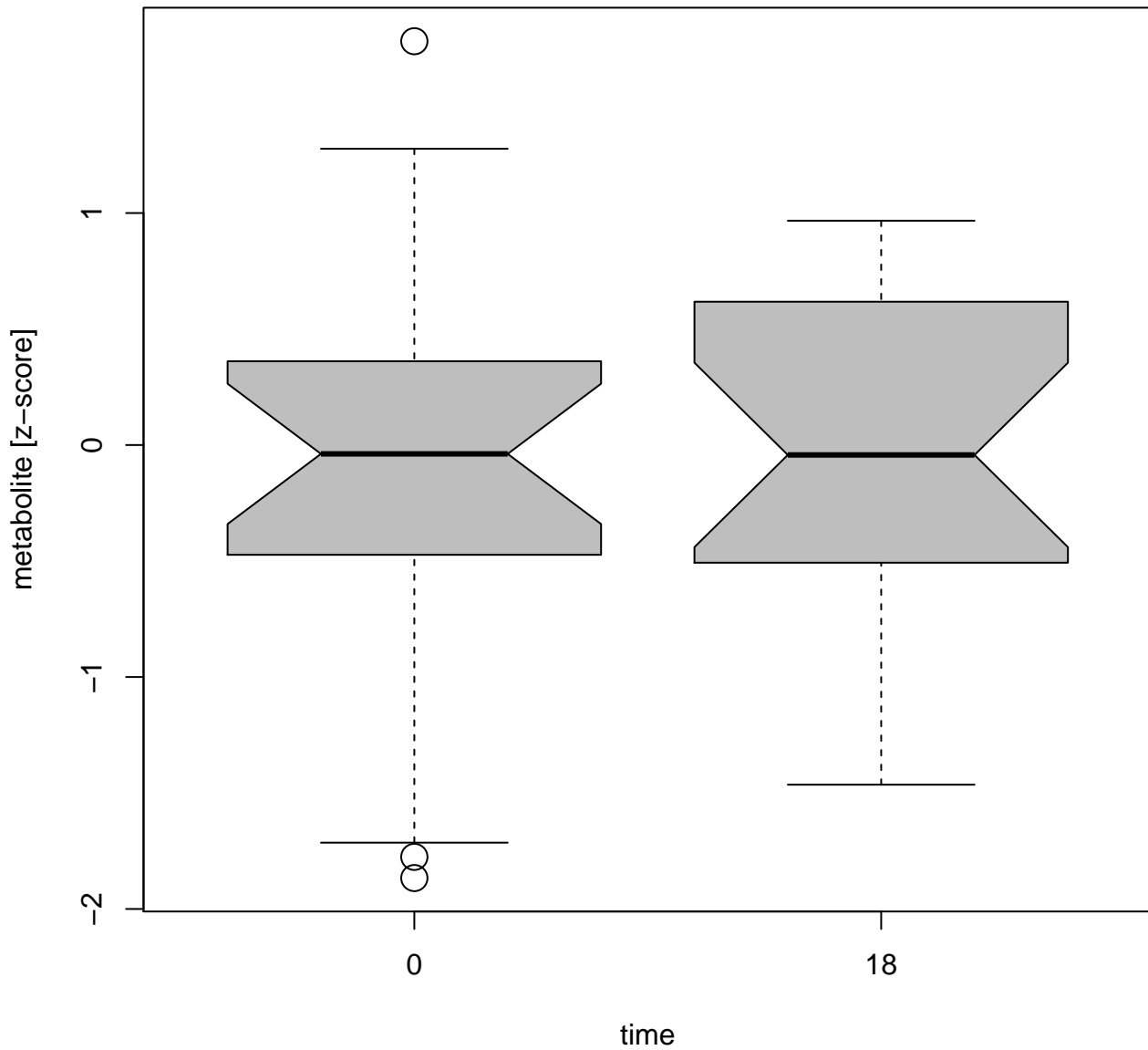
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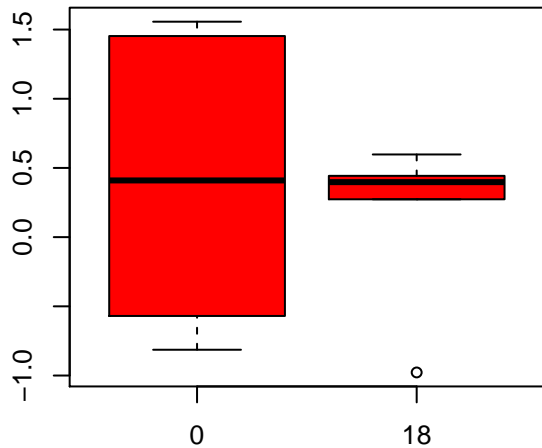


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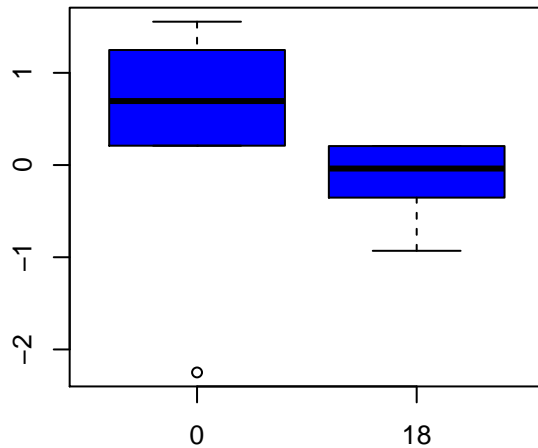


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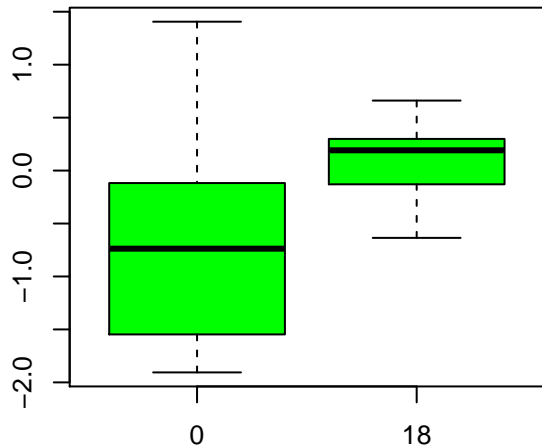
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3-phosphoglycerate



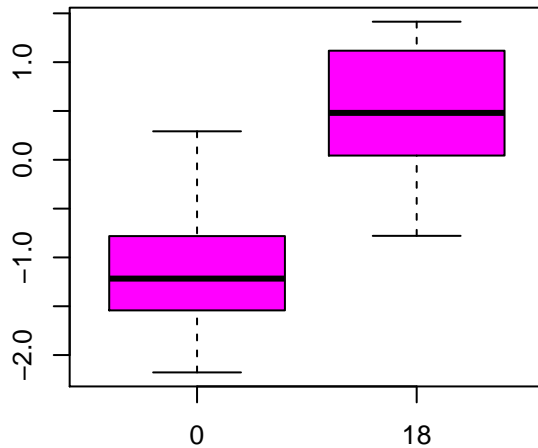
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3-phosphoglycerate



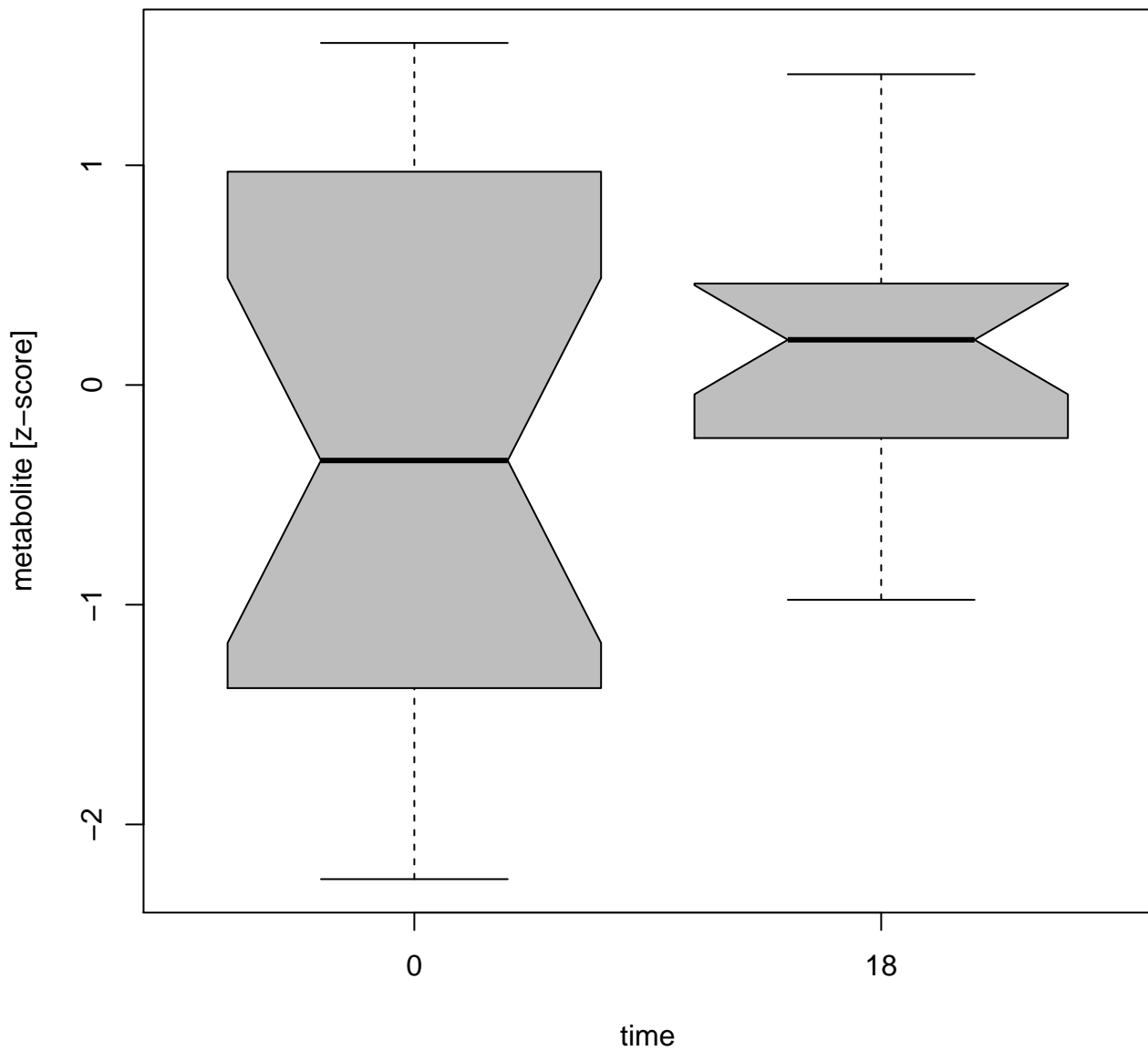
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3-phosphoglycerate

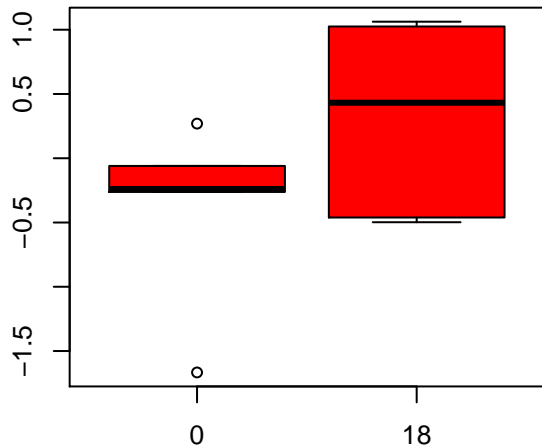


SKOV3

3-phosphoglycerate

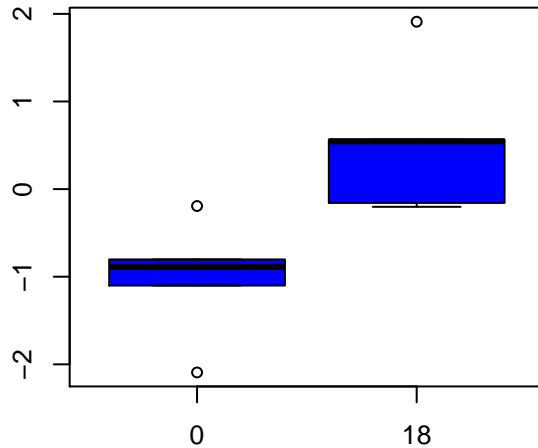


5-methylthioadenosine (MTA)



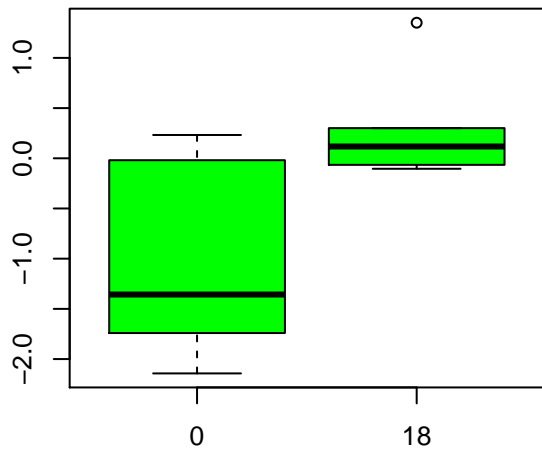
HCT116

5-methylthioadenosine (MTA)



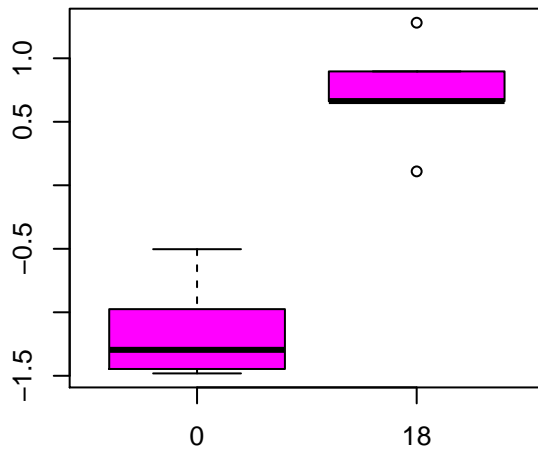
OVCAR

5-methylthioadenosine (MTA)



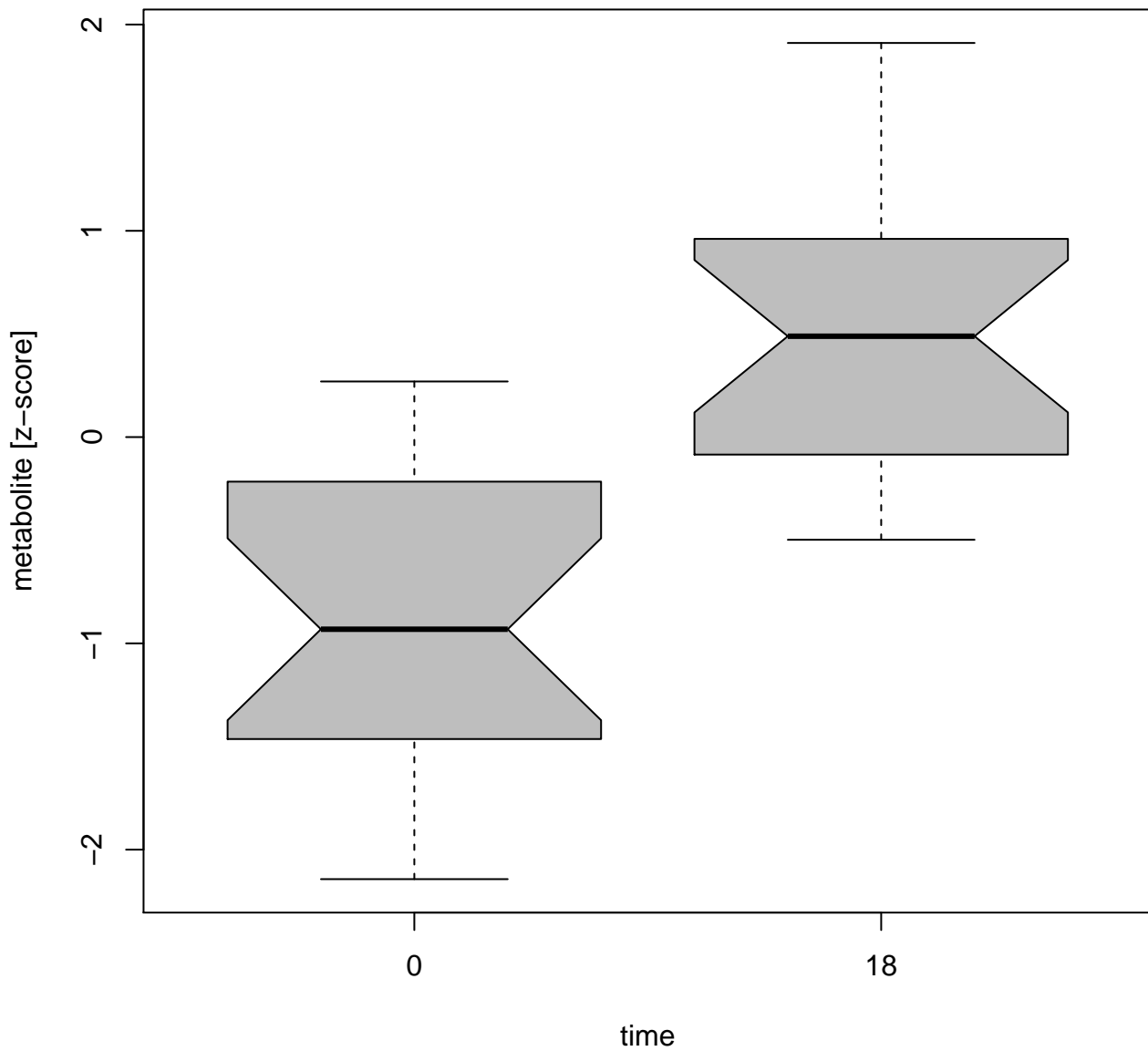
HCT15

5-methylthioadenosine (MTA)

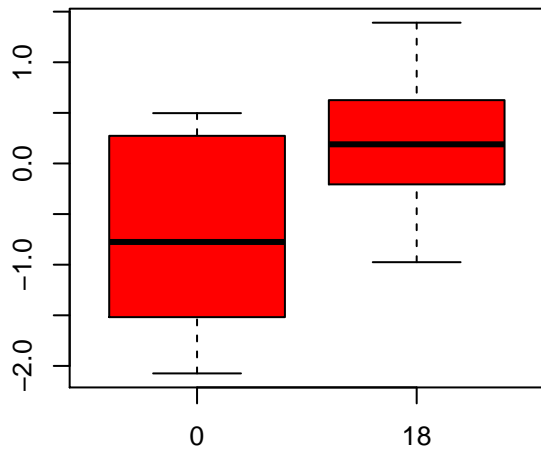


SKOV3

5-methylthioadenosine (MTA)

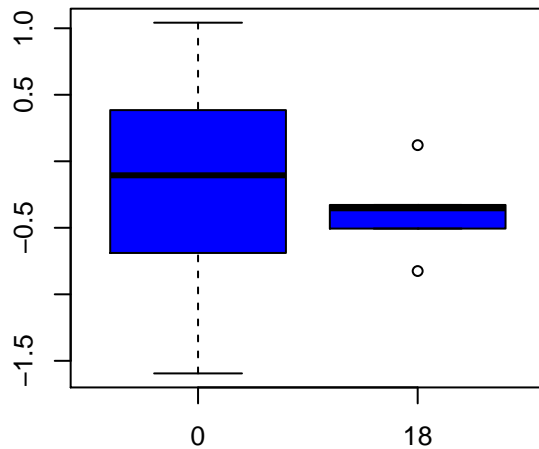


5-oxoproline



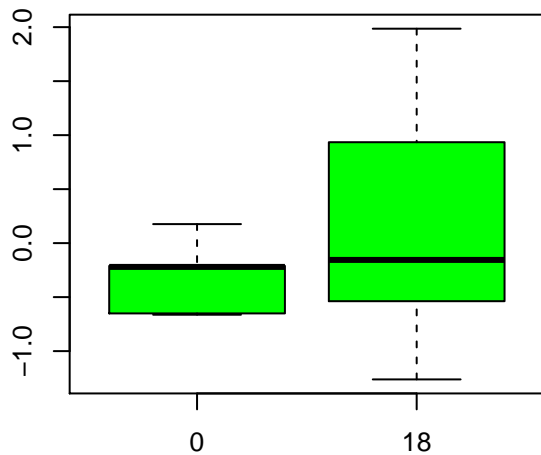
HCT116

5-oxoproline



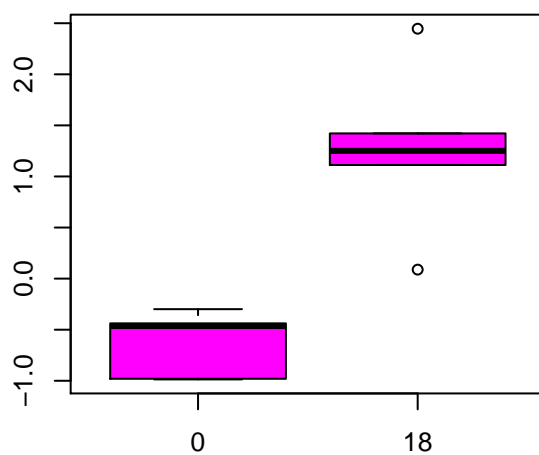
OVCAR

5-oxoproline



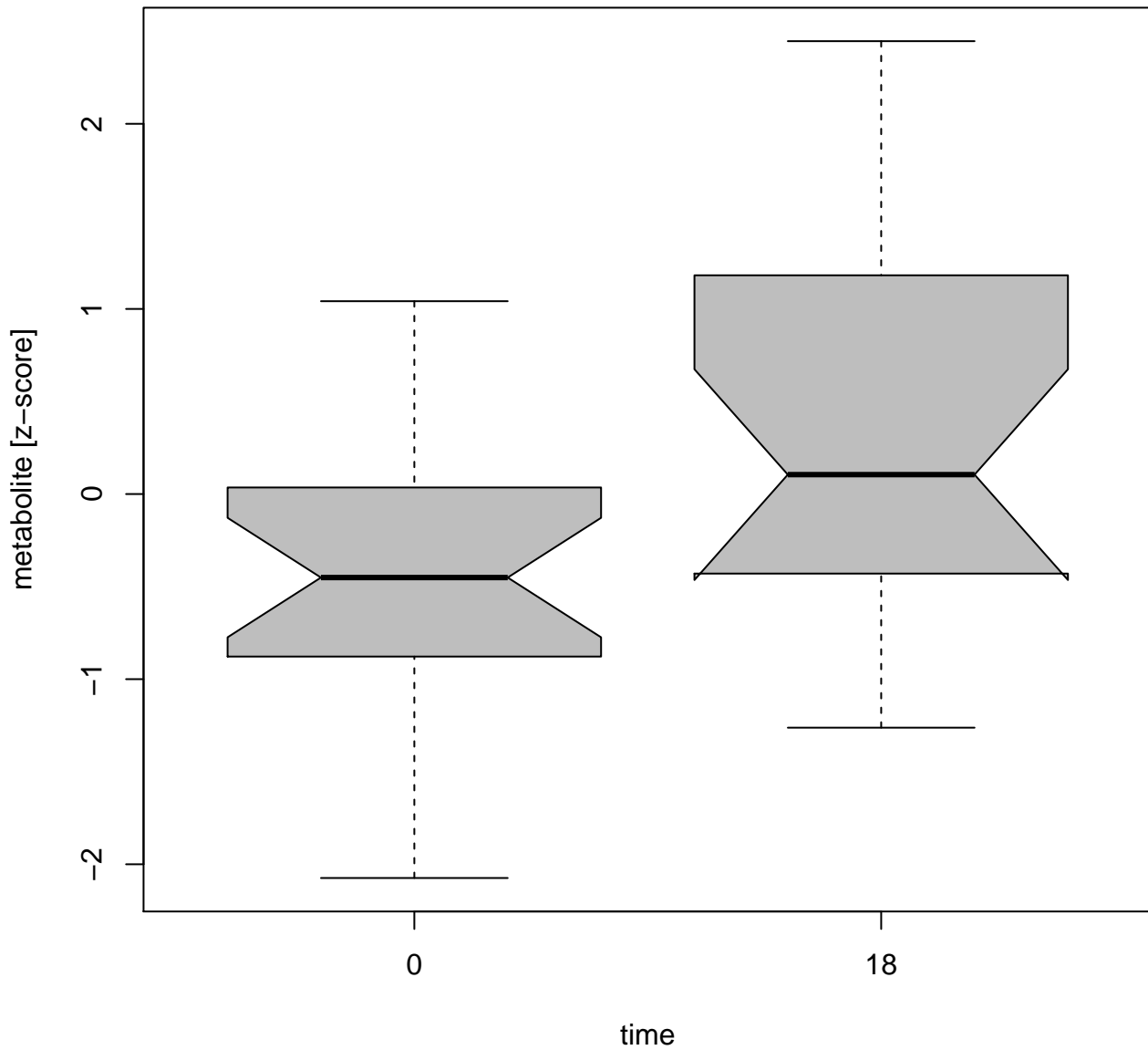
HCT15

5-oxoproline

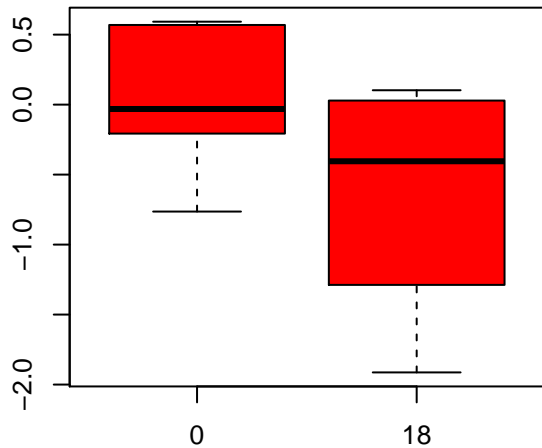


SKOV3

5-oxoproline

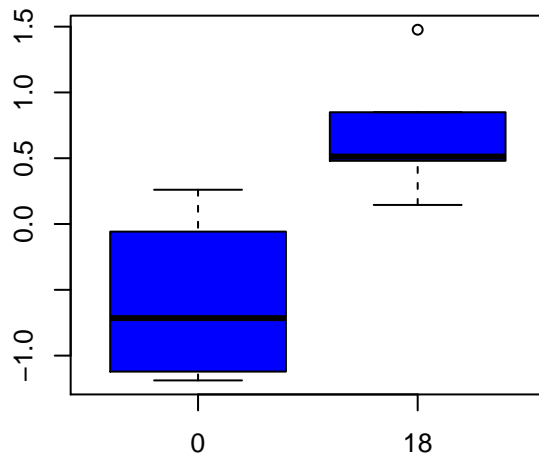


acetylcarnitine



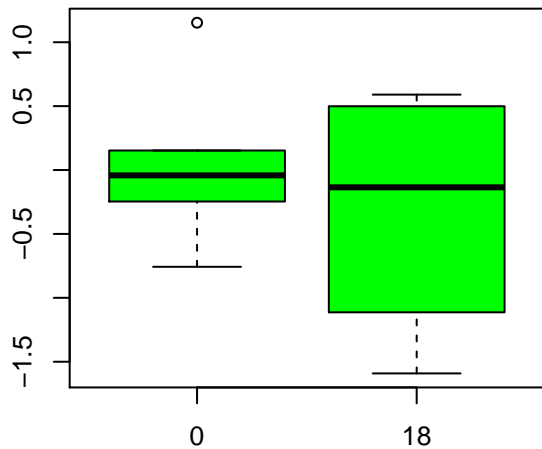
HCT116

acetylcarnitine



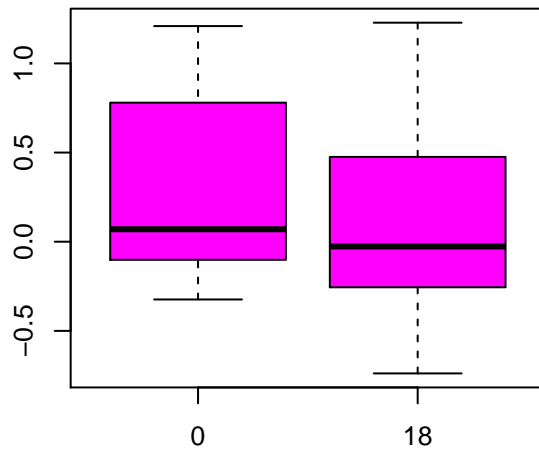
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acetylcarnitine



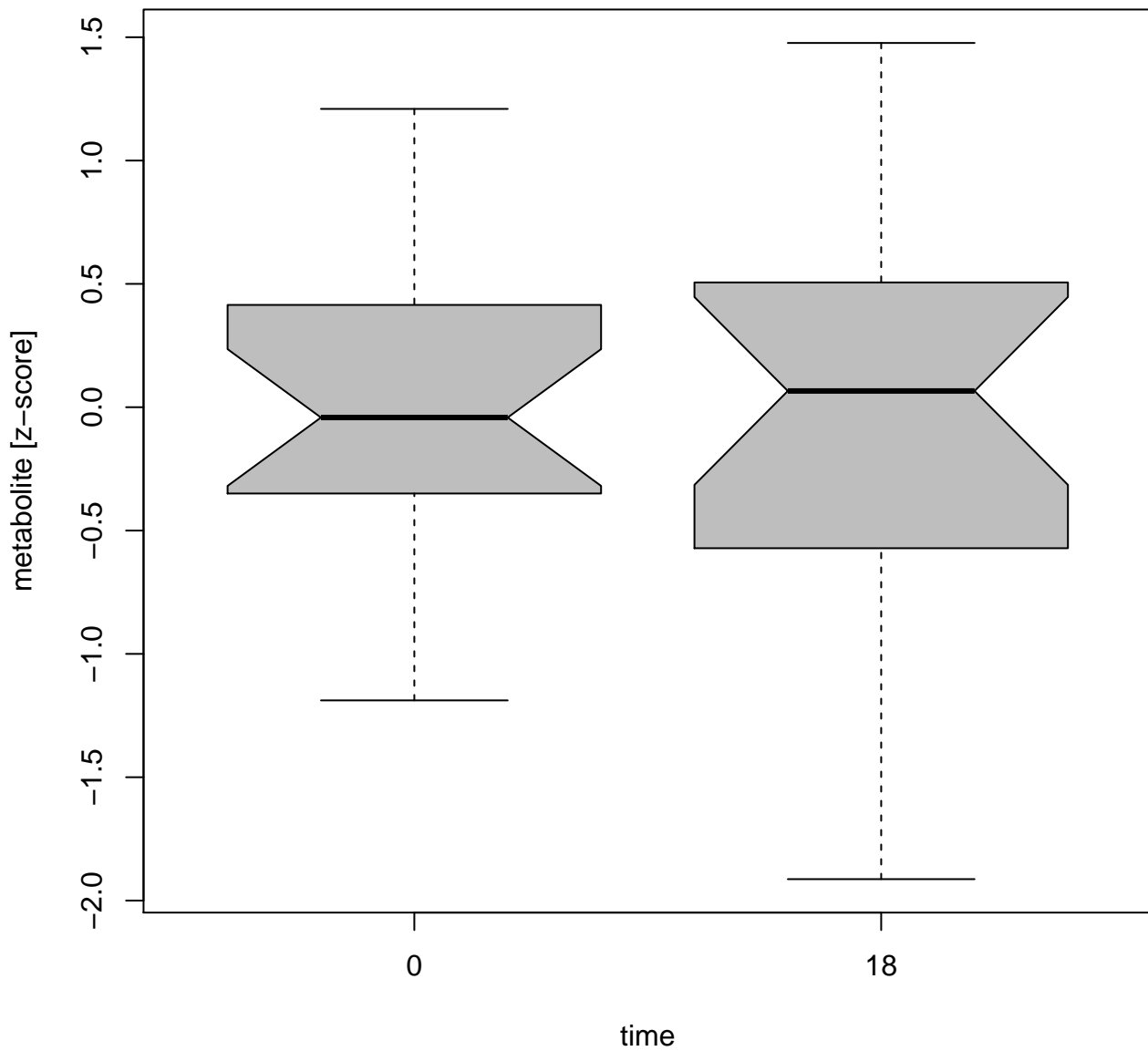
HCT15

acetylcarnitine

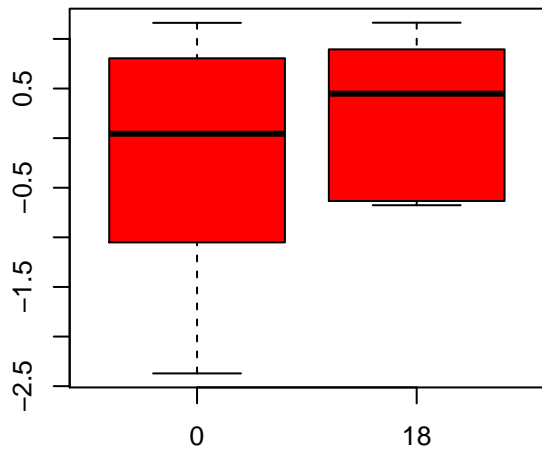


SKOV3

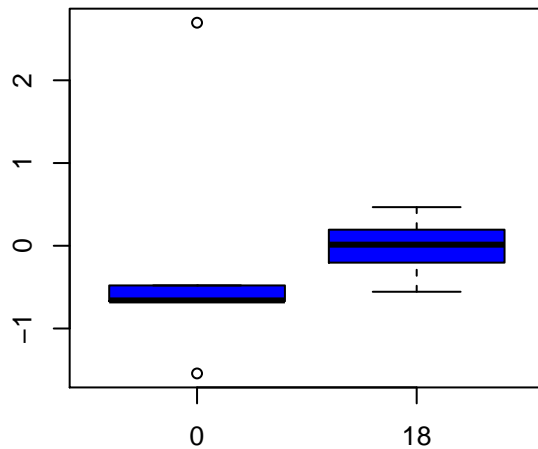
acetylcarnitine



adenine



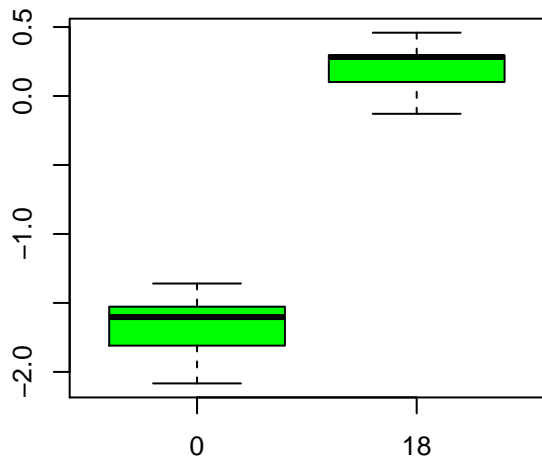
adenine



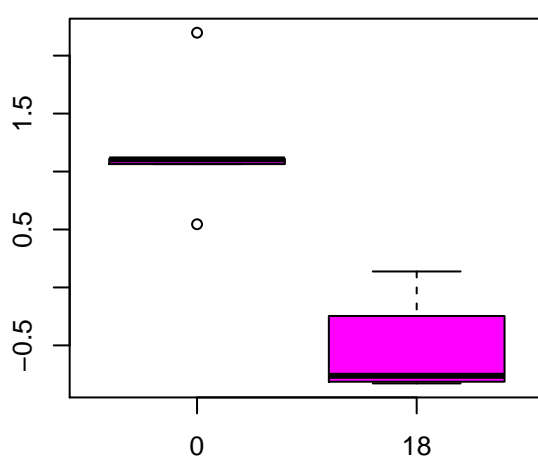
HCT116

OVCAR

adenine



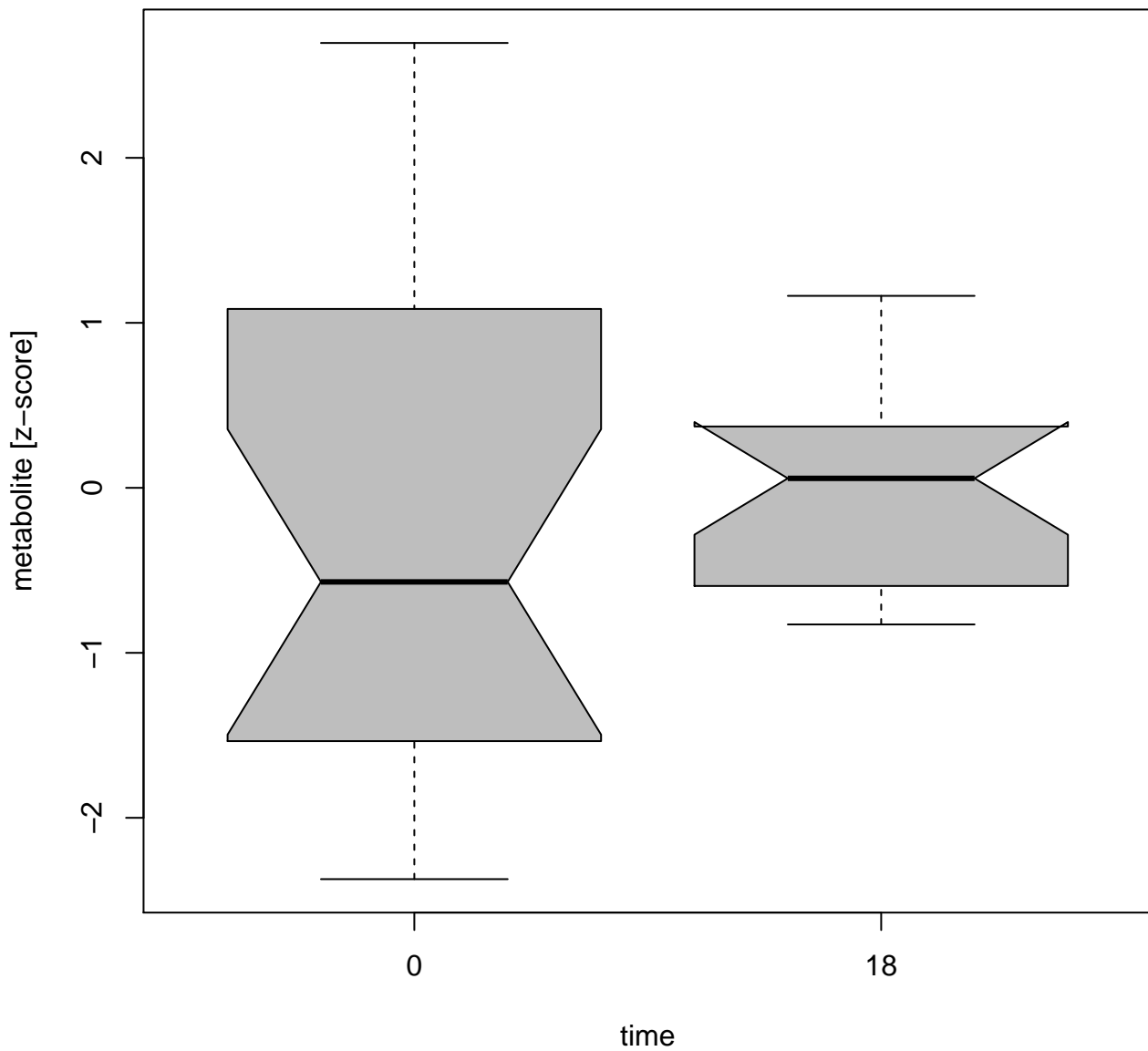
adenine



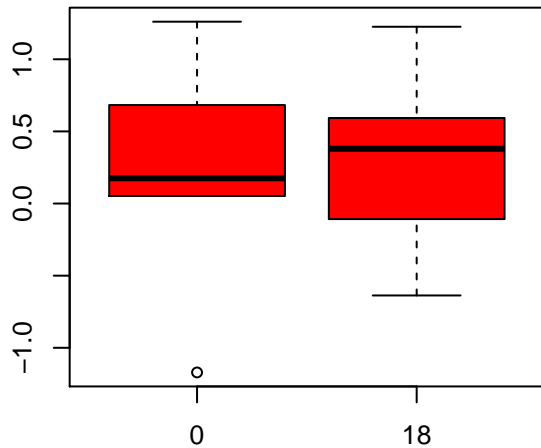
HCT15

SKOV3

adenine

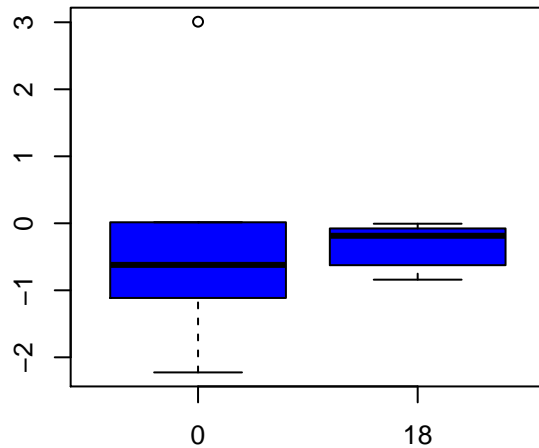


adenosine



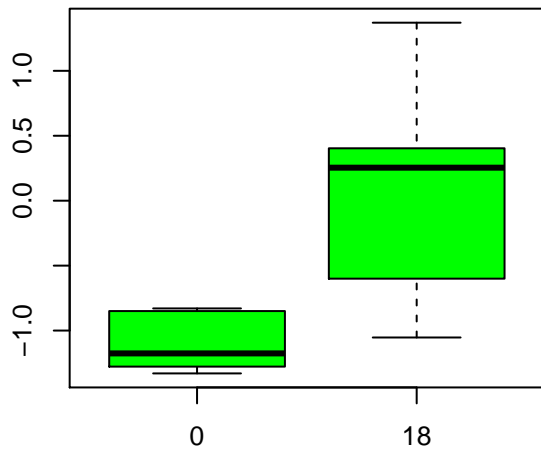
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adenosine



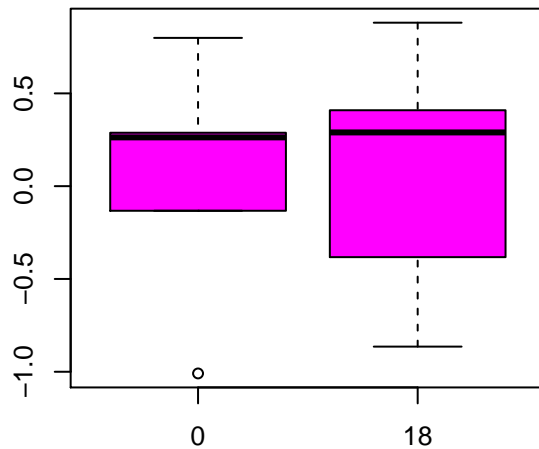
OVCAR

adenosine



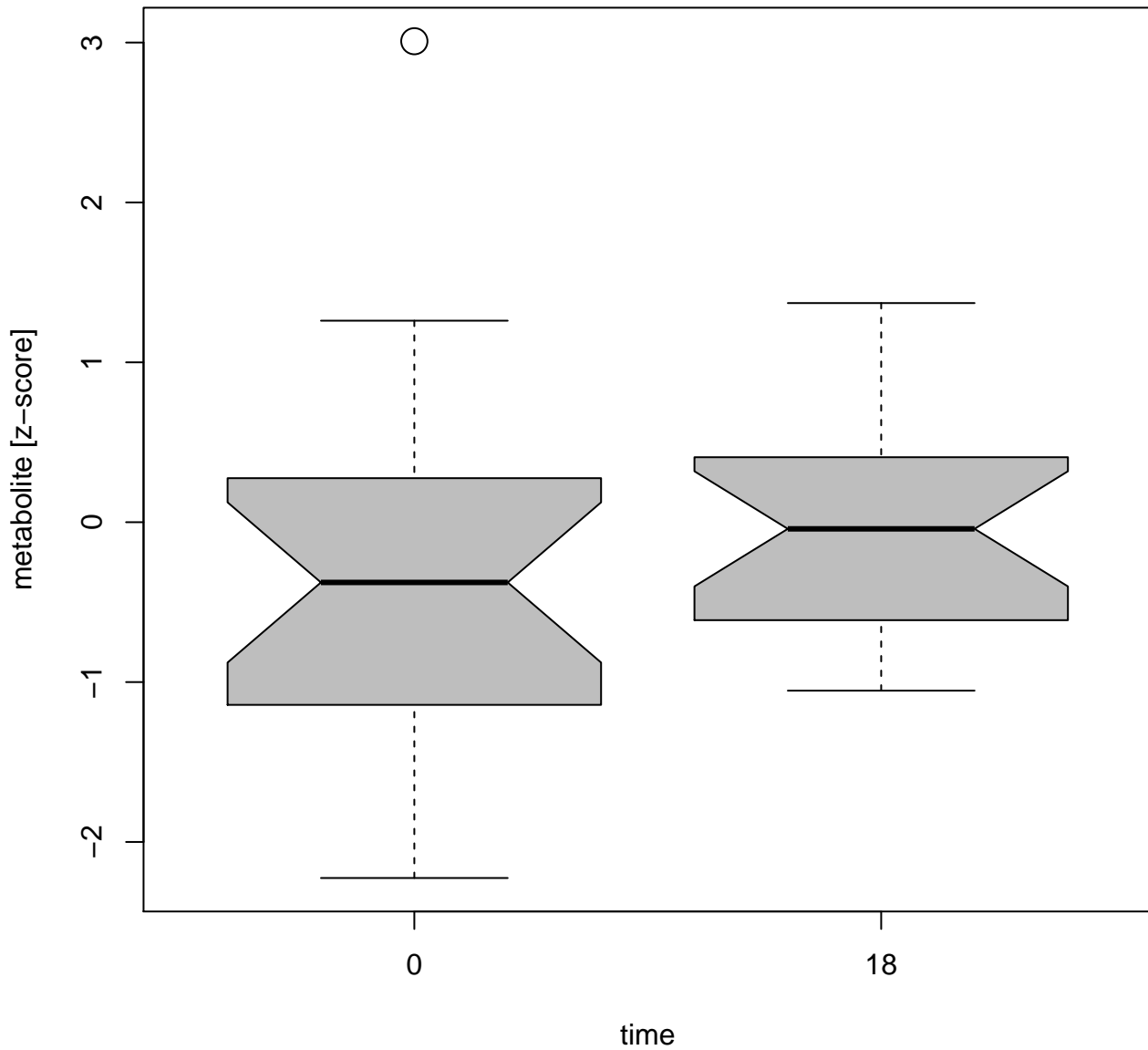
HCT15

adenosine

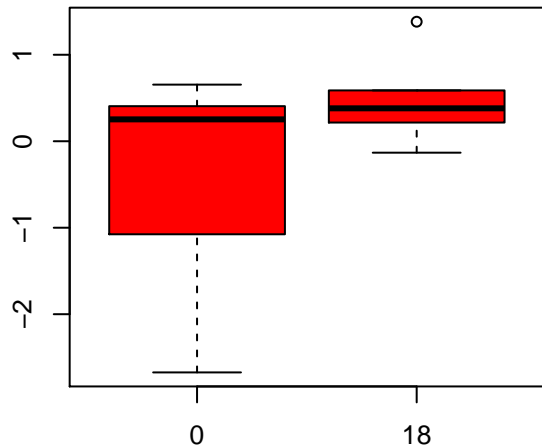


SKOV3

adenosine

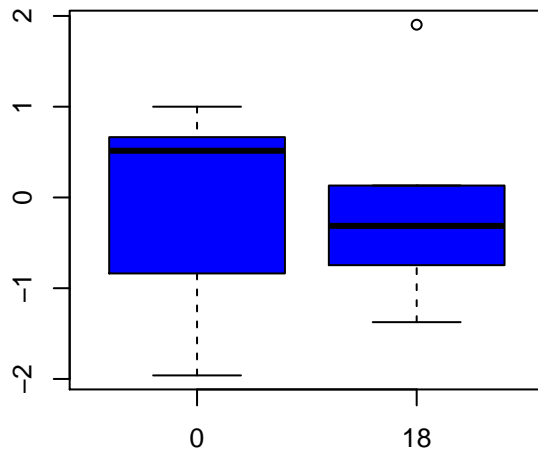


adenosine 3'-monophosphate (3'-AMP)



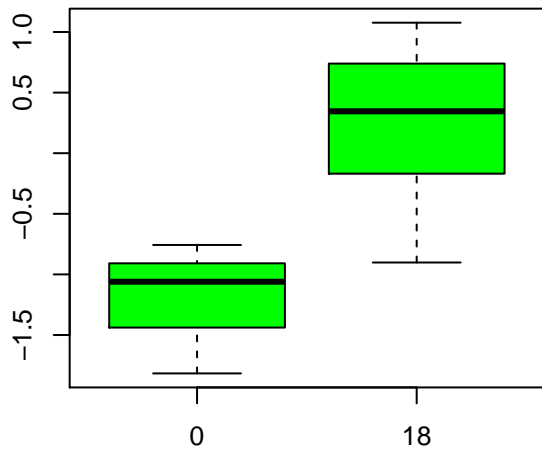
HCT116

adenosine 3'-monophosphate (3'-AMP)



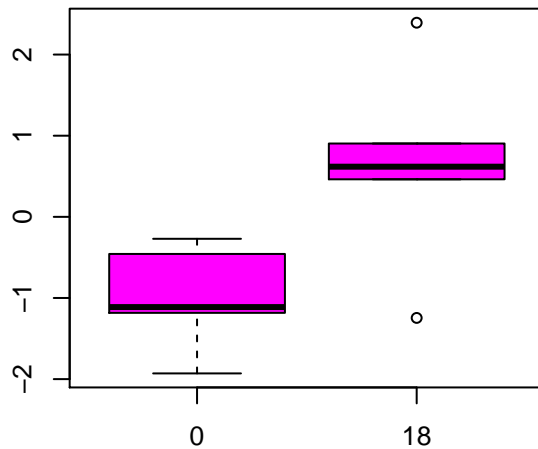
OVCAR

adenosine 3'-monophosphate (3'-AMP)



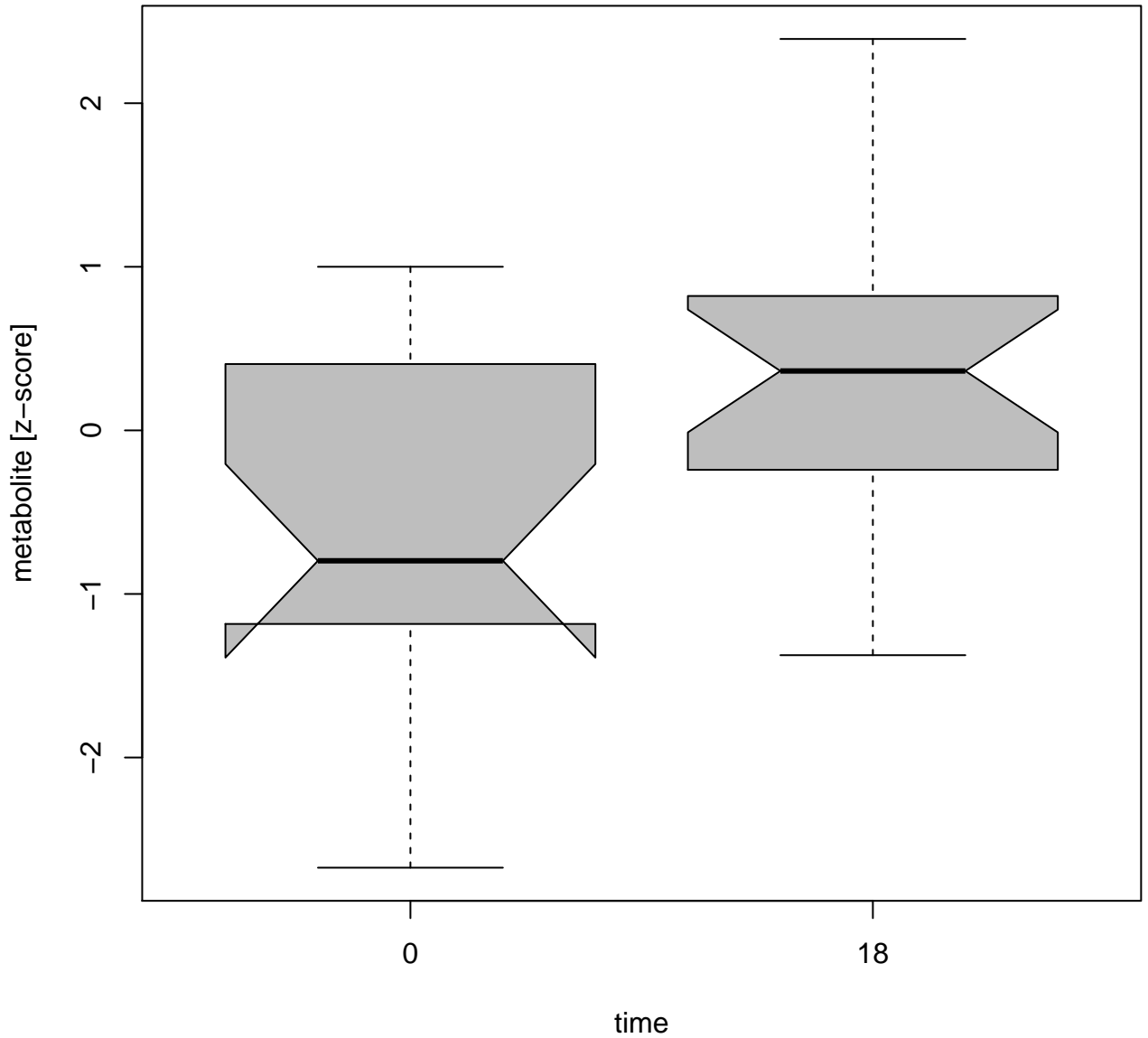
HCT15

adenosine 3'-monophosphate (3'-AMP)

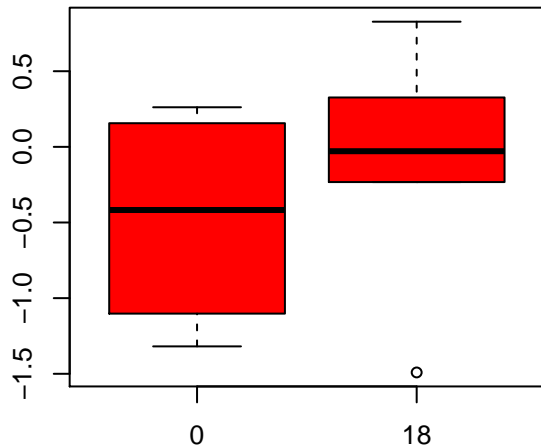


SKOV3

adenosine 3'-monophosphate (3'-AMP)

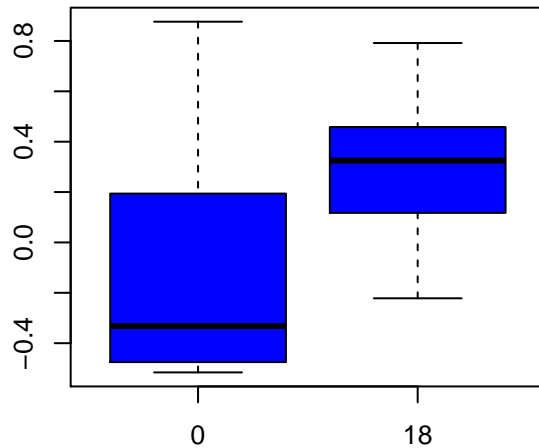


adenosine 5'-diphosphate (ADP)



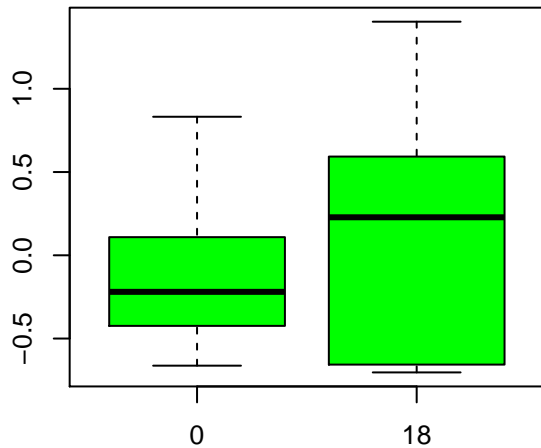
HCT116

adenosine 5'-diphosphate (ADP)



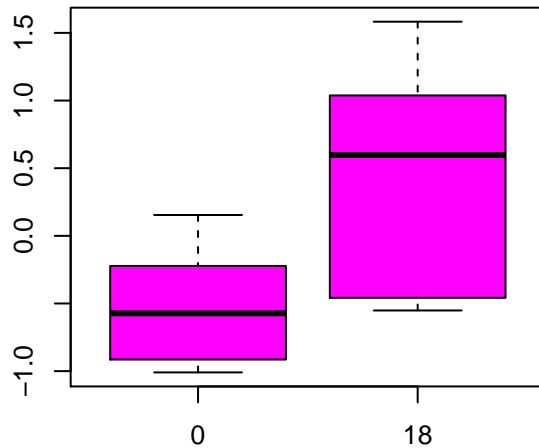
OVCAR

adenosine 5'-diphosphate (ADP)



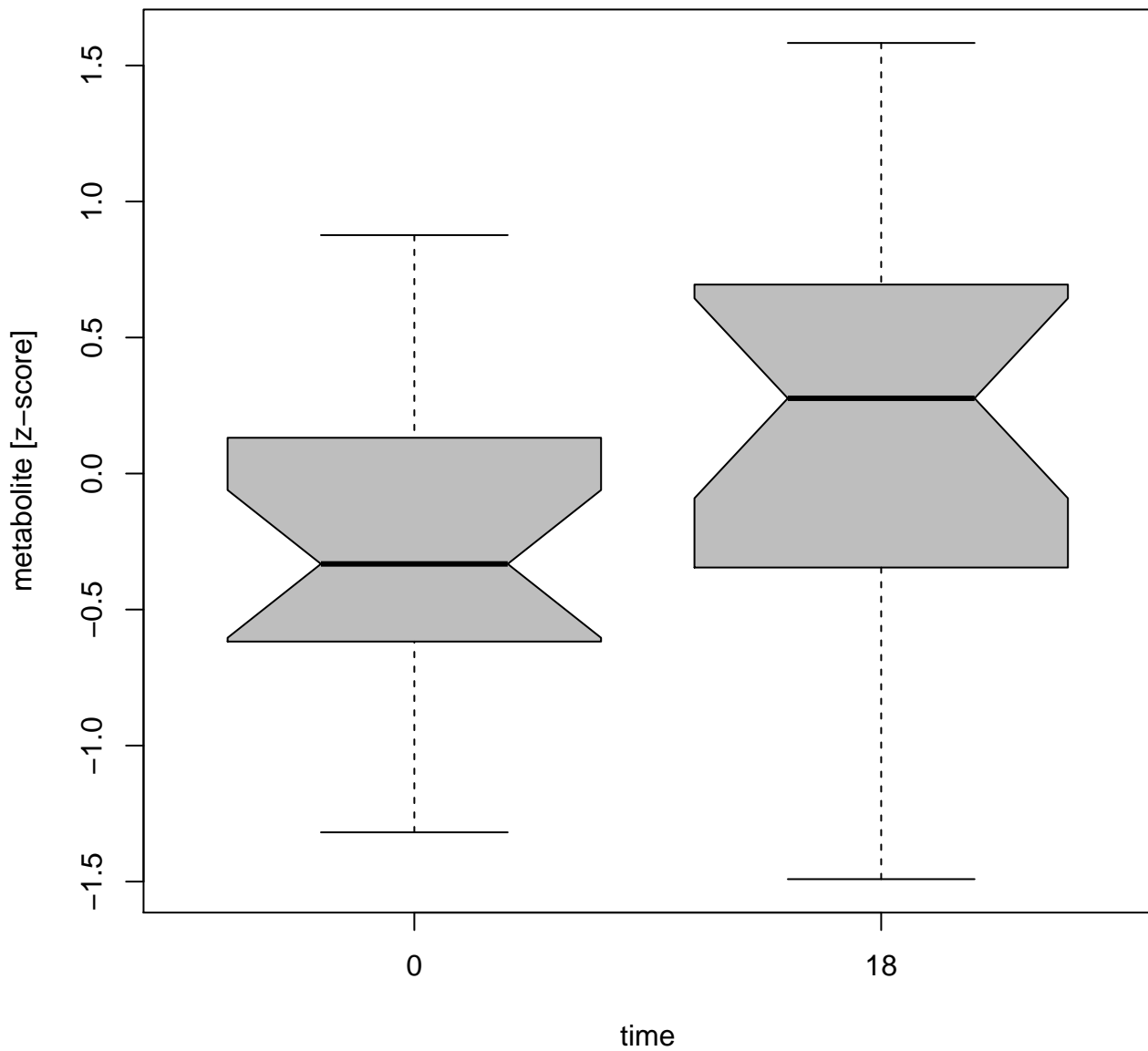
HCT15

adenosine 5'-diphosphate (ADP)

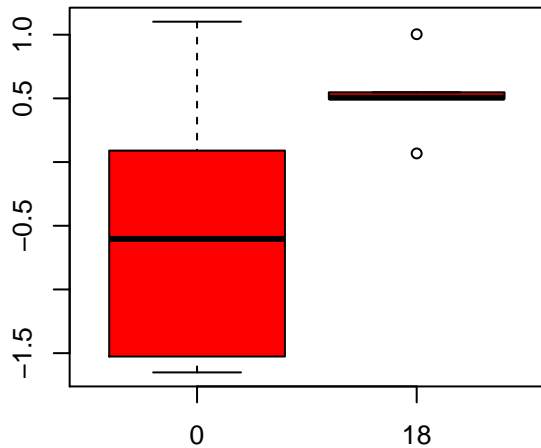


SKOV3

adenosine 5'-diphosphate (ADP)

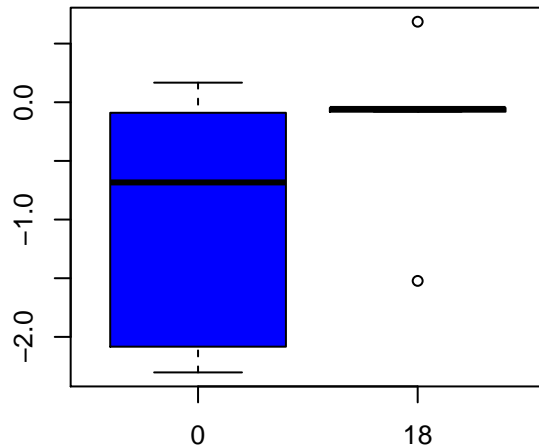


adenosine 5'-monophosphate (AMP)



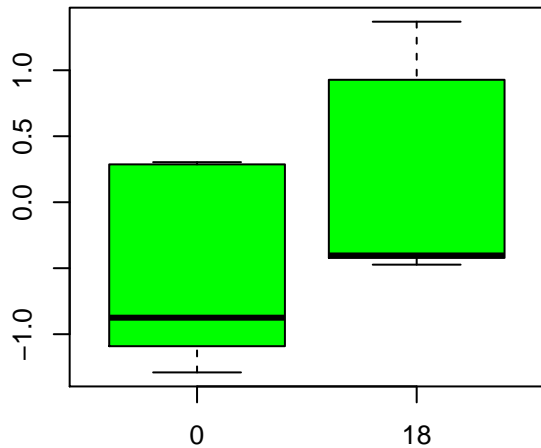
HCT116

adenosine 5'-monophosphate (AMP)



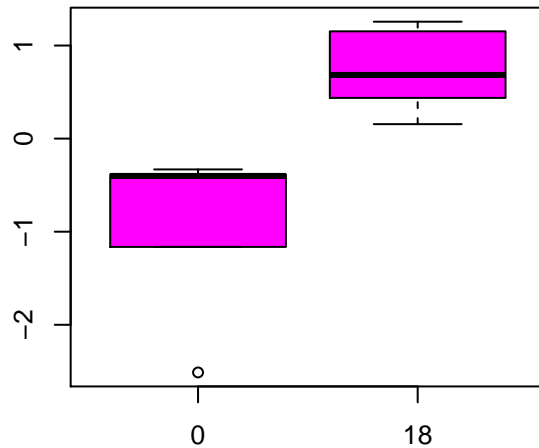
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adenosine 5'-monophosphate (AMP)



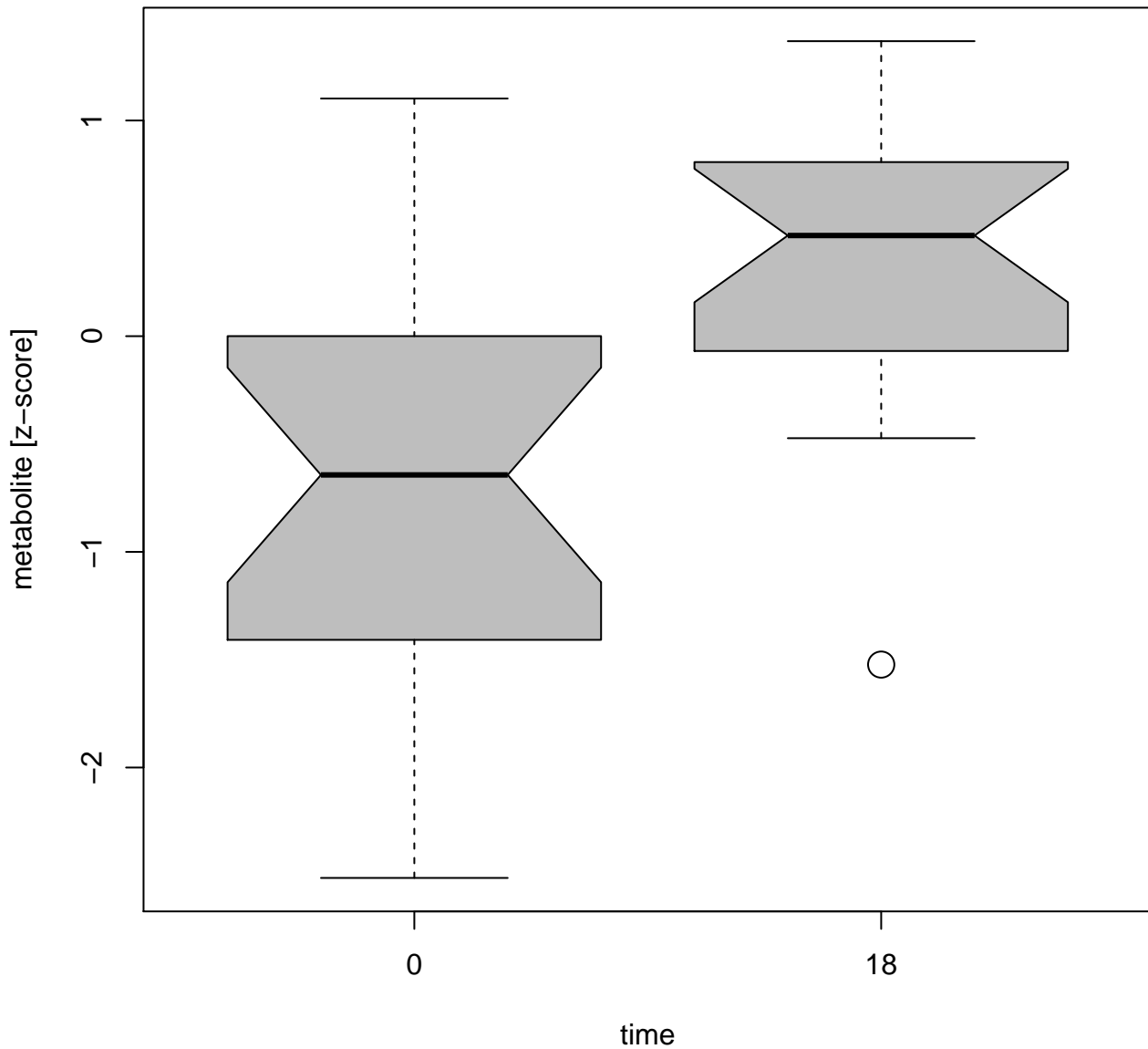
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adenosine 5'-monophosphate (AMP)

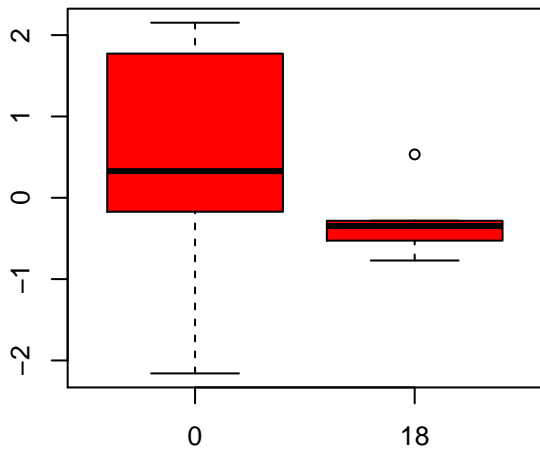


SKOV3

adenosine 5'-monophosphate (AMP)

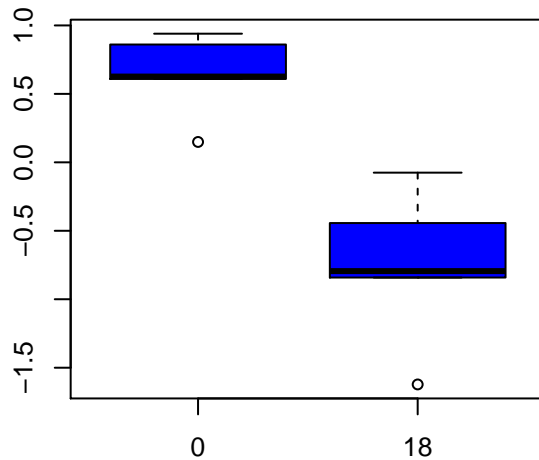


adenosine 5'diphosphoribose



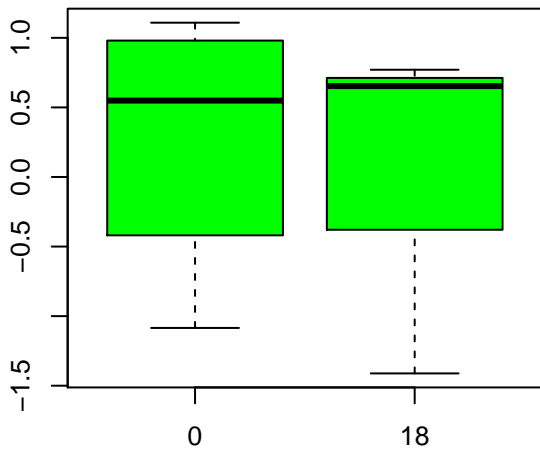
HCT116

adenosine 5'diphosphoribose



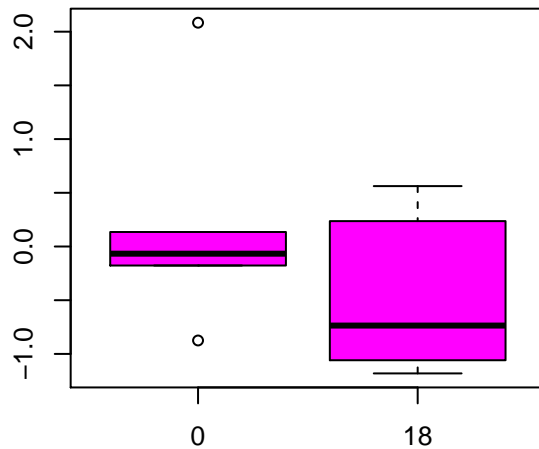
OVCAR

adenosine 5'diphosphoribose



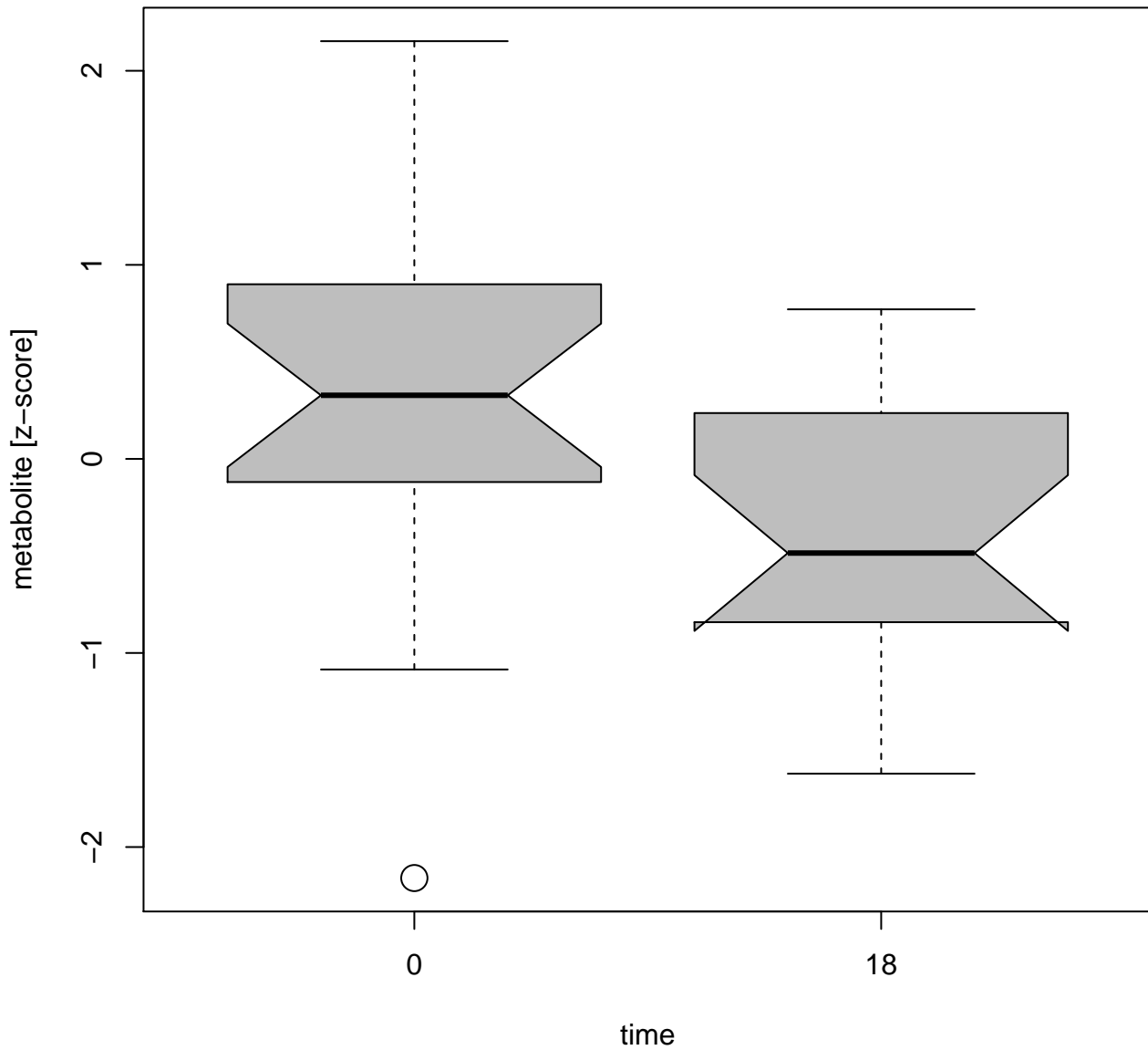
HCT15

adenosine 5'diphosphoribose

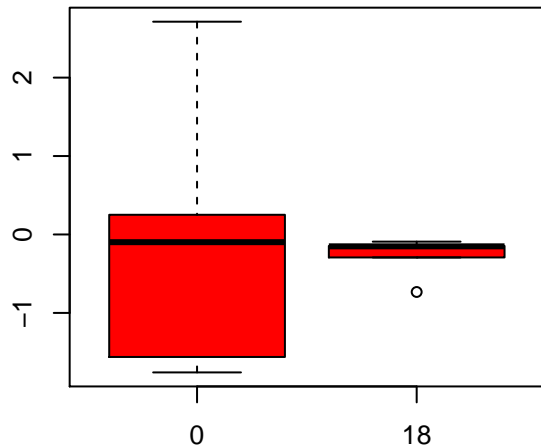


SKOV3

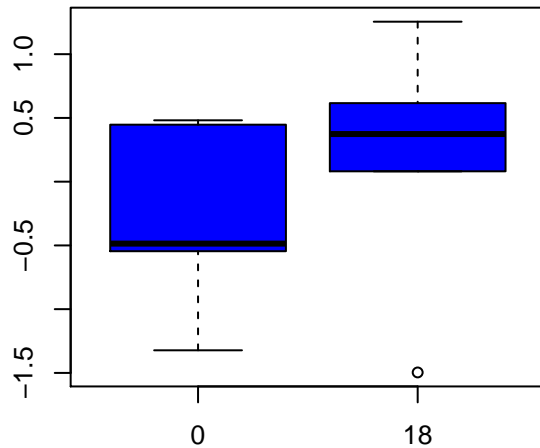
adenosine 5'diphosphoribose



alanine

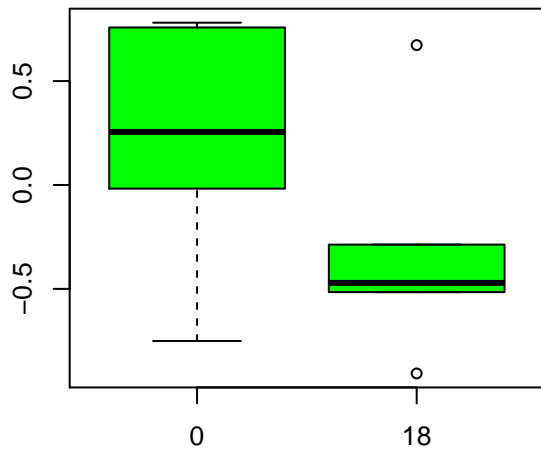


alanine



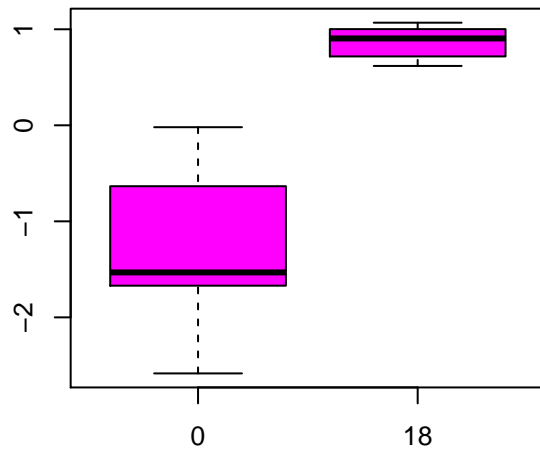
HCT116

alanine



OVCAR

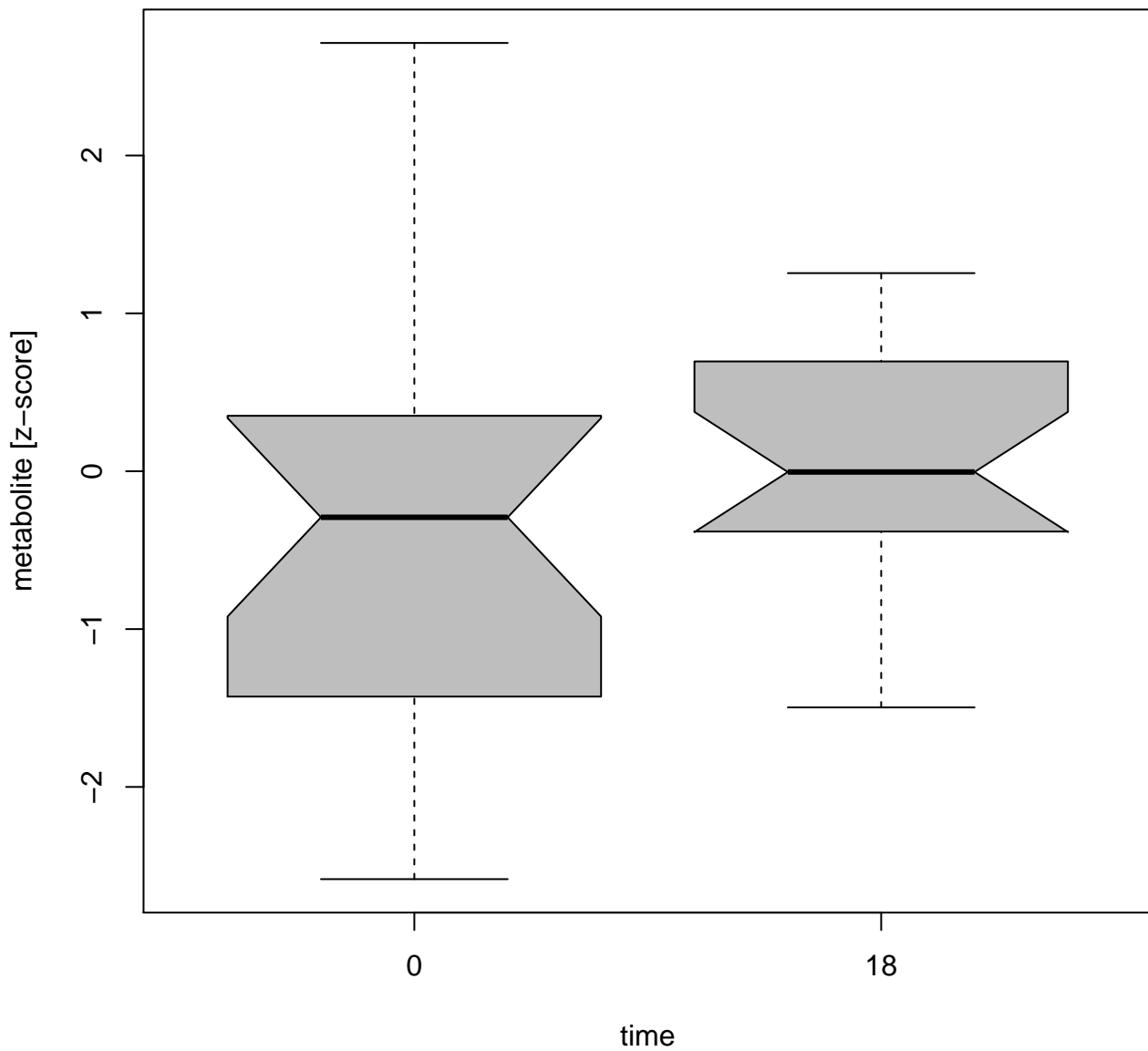
alanine



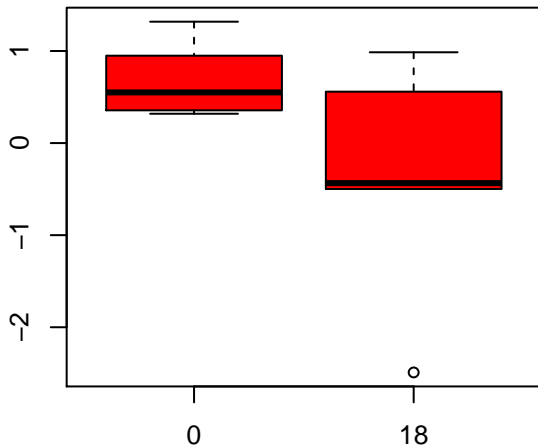
HCT15

SKOV3

alanine

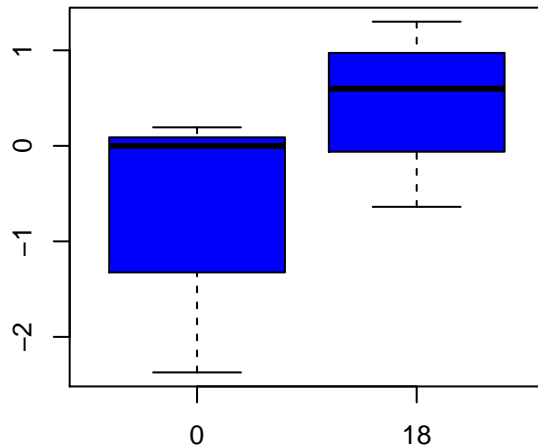


alanylleucine



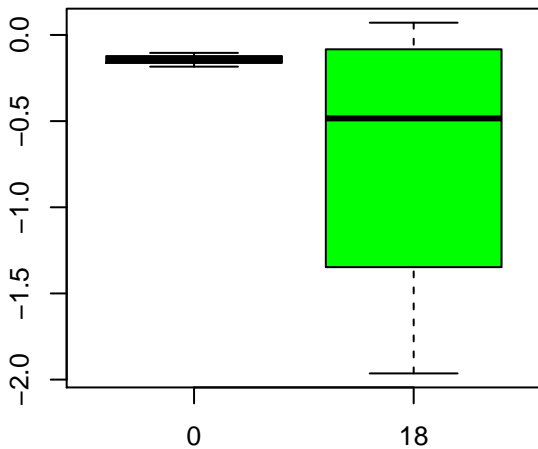
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alanylleucine



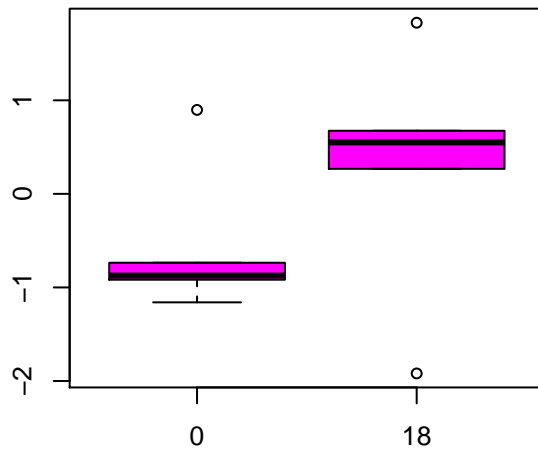
OVCAR

alanylleucine



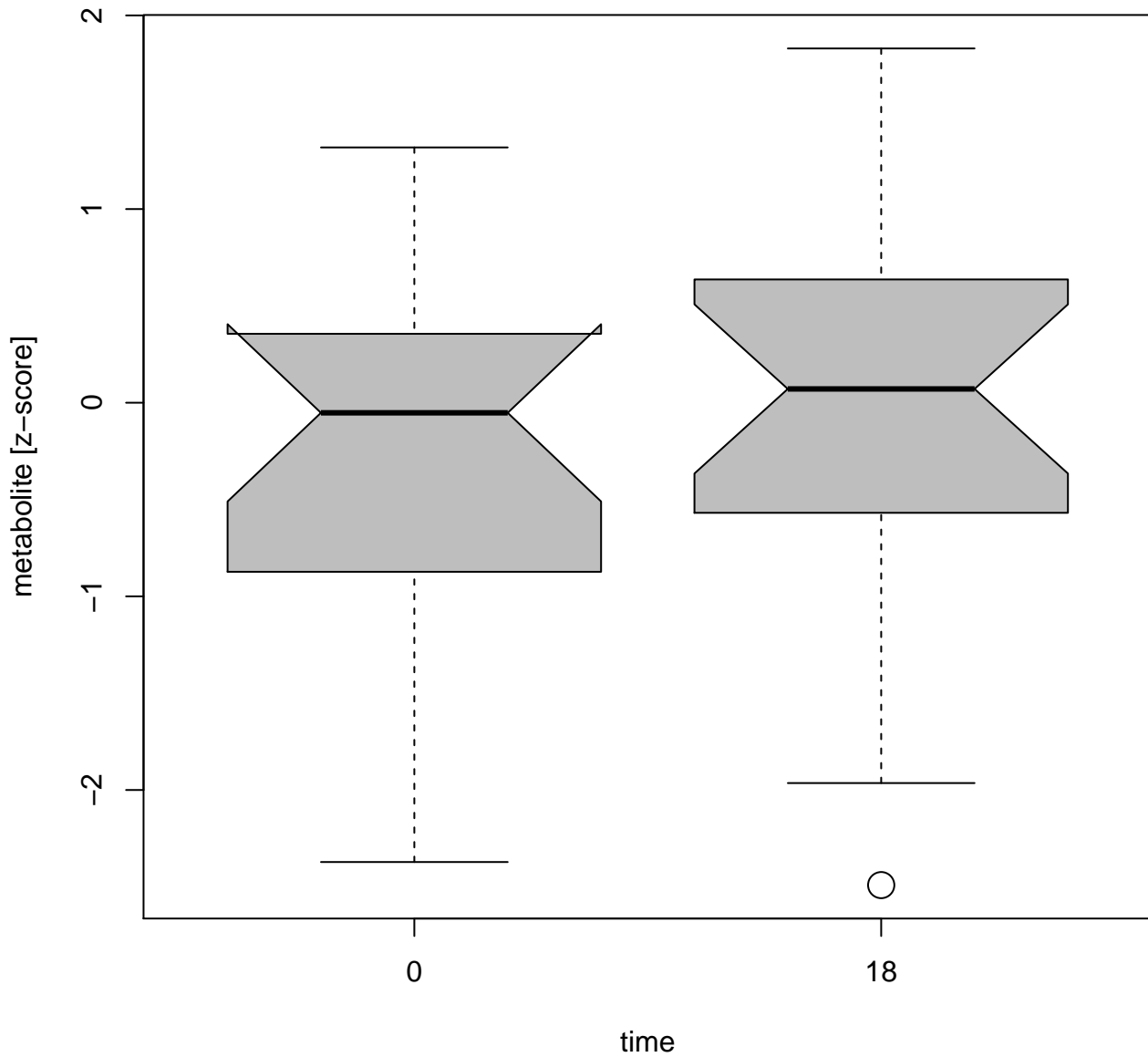
HCT15

alanylleucine

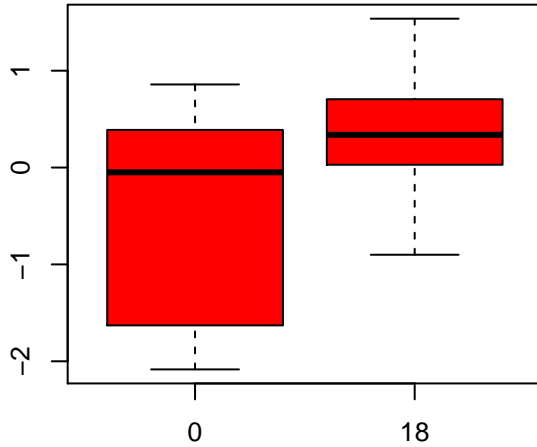


SKOV3

alanylleucine

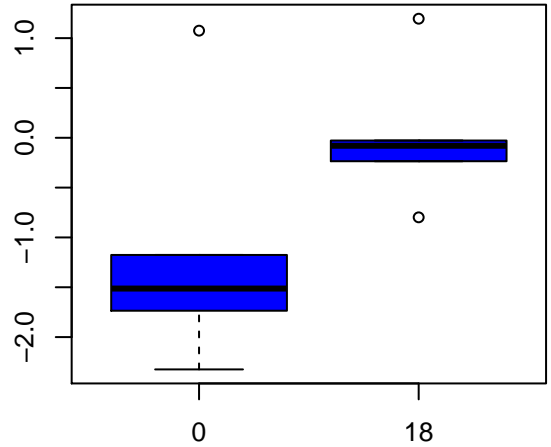


arachidonate (20:4n6)



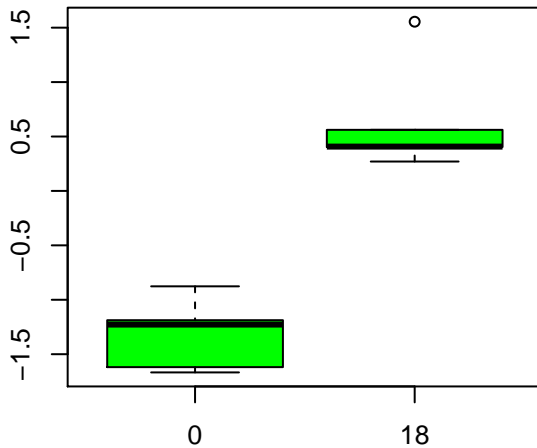
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arachidonate (20:4n6)



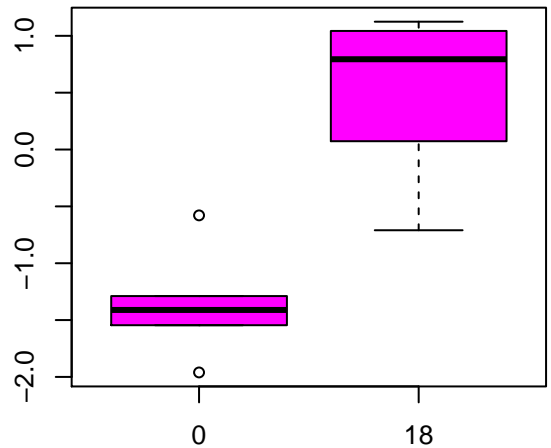
OVCAR

arachidonate (20:4n6)



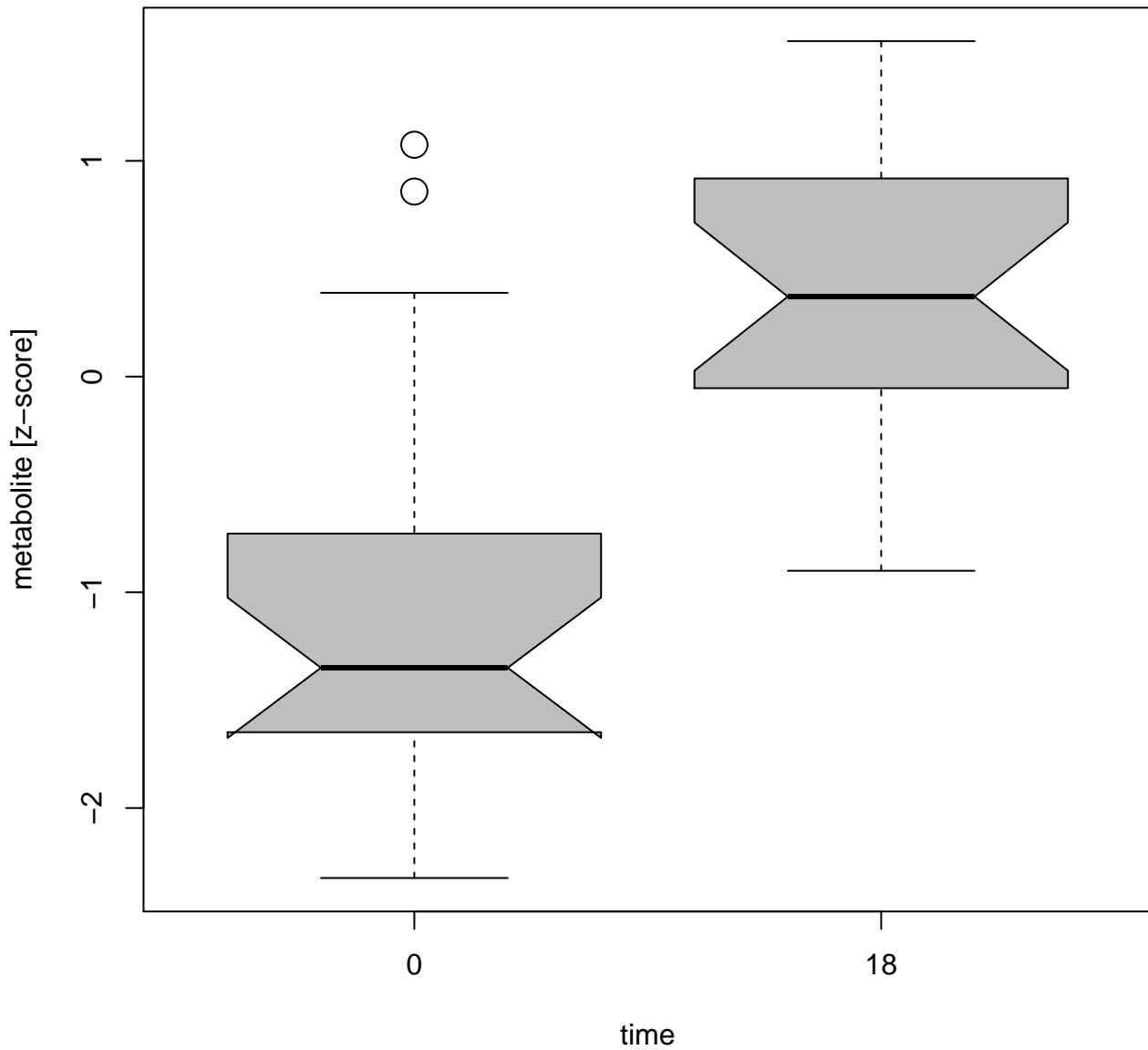
HCT15

arachidonate (20:4n6)

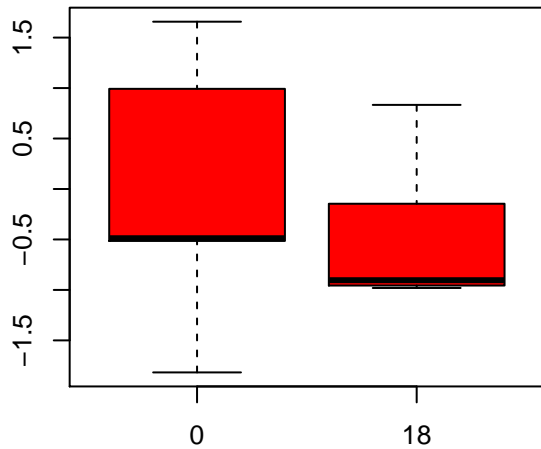


SKOV3

arachidonate (20:4n6)

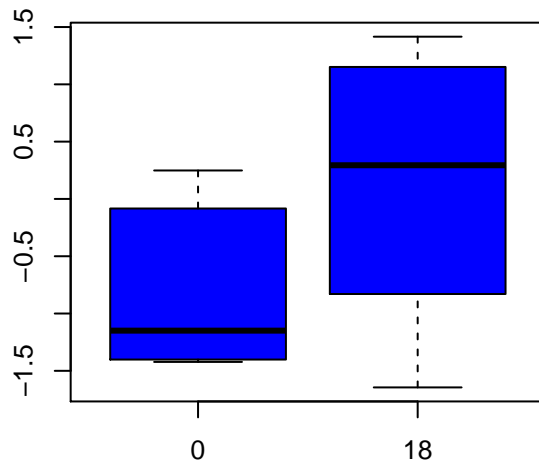


arginine



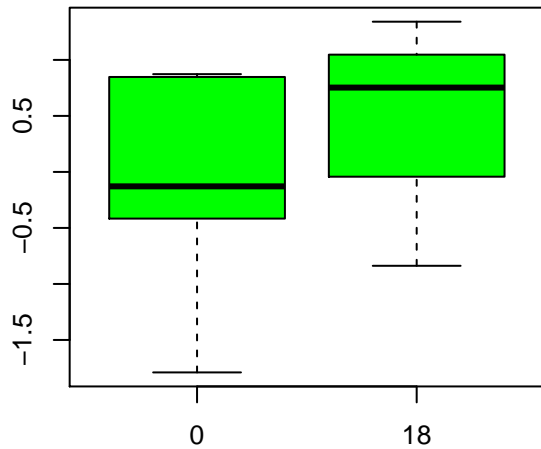
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arginine



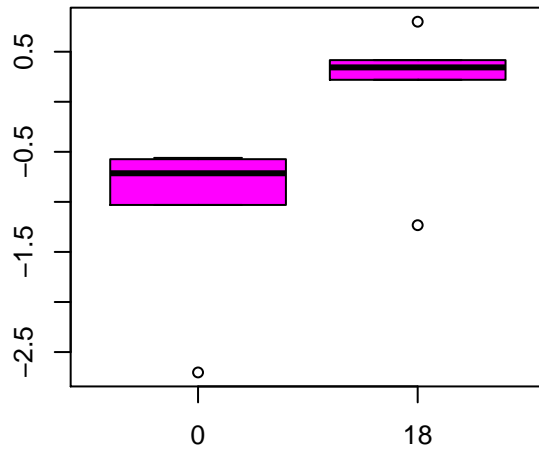
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arginine



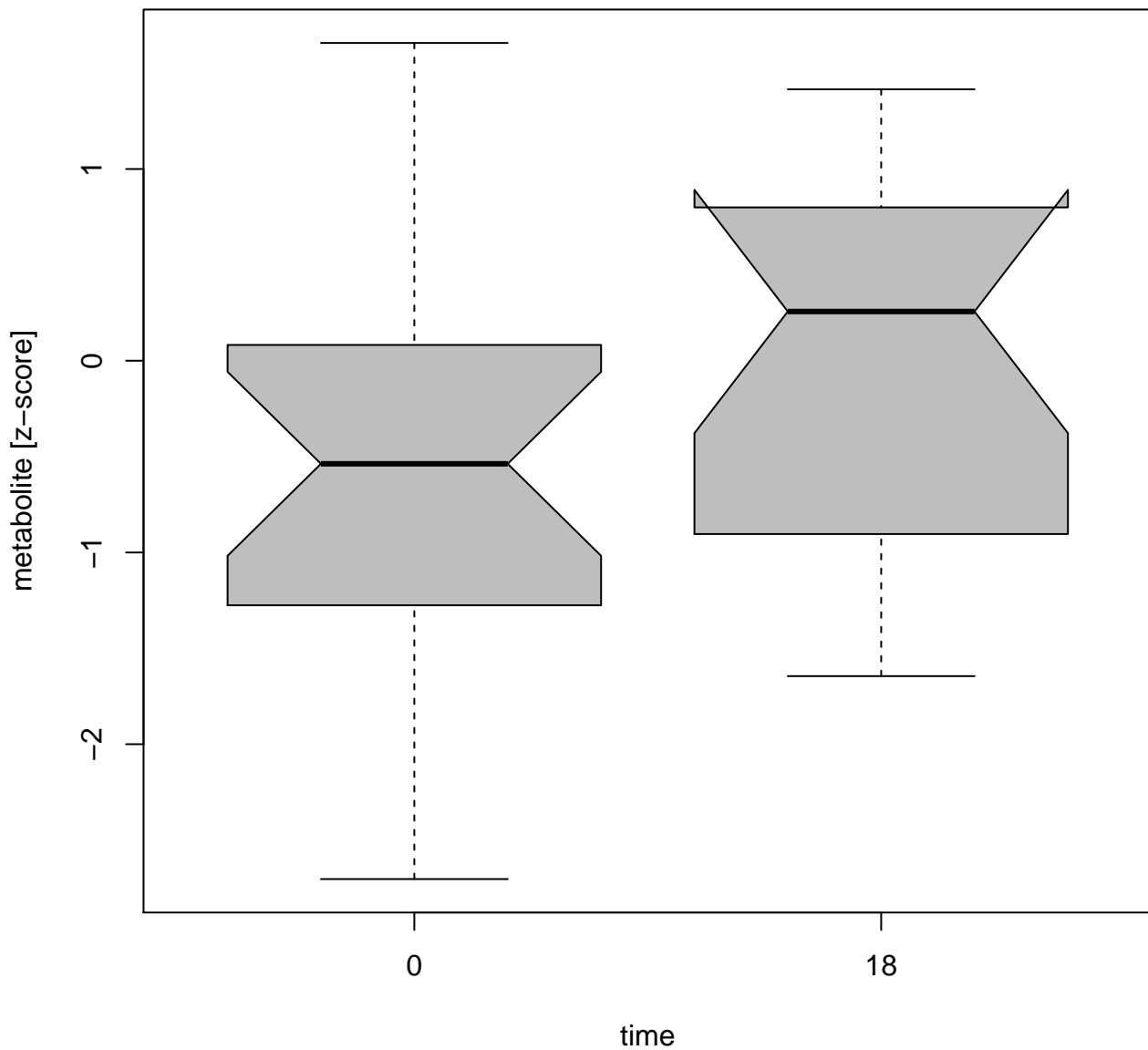
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arginine

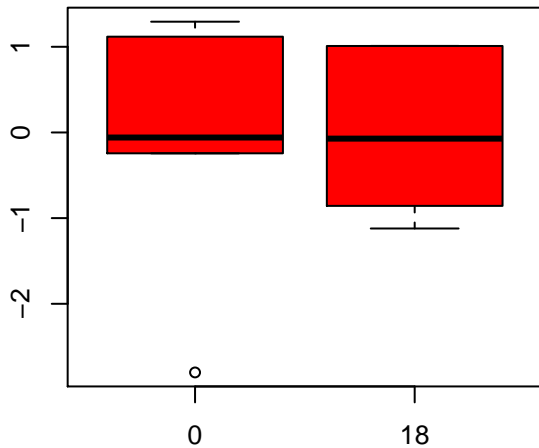


SKOV3

arginine

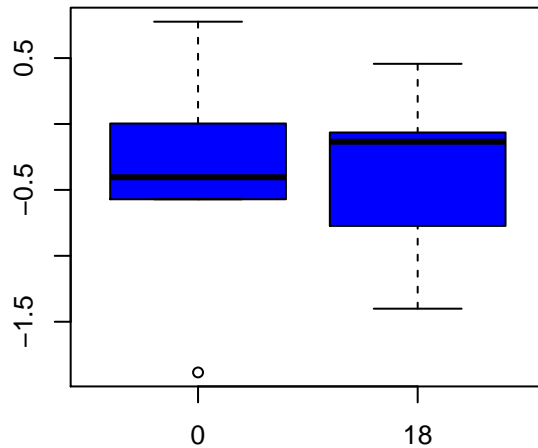


aspartate



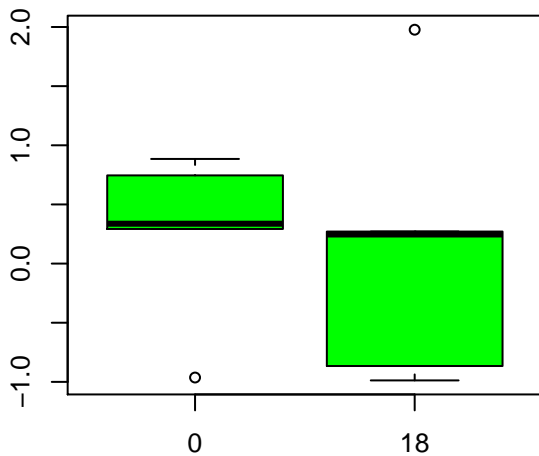
HCT116

aspartate



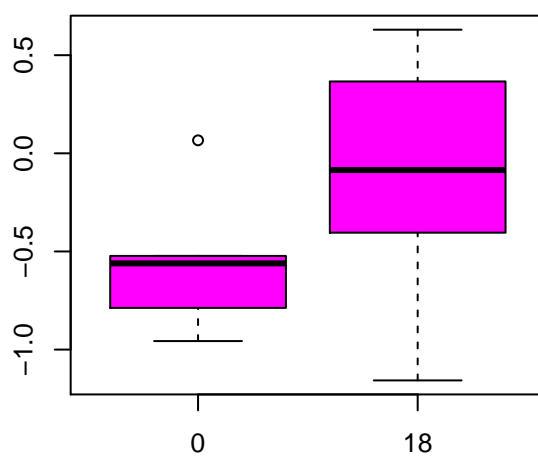
OVCAR

aspartate



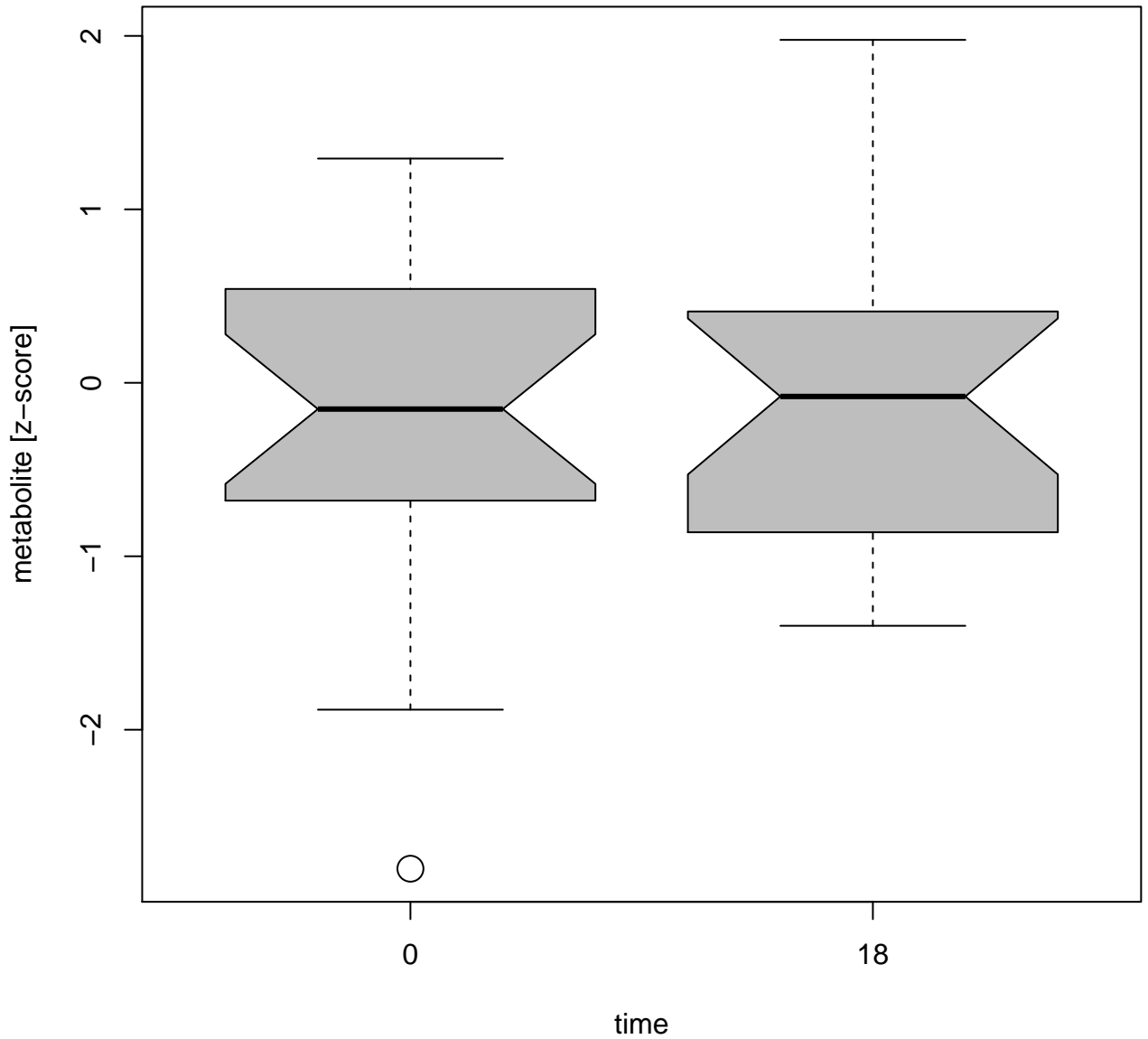
HCT15

aspartate

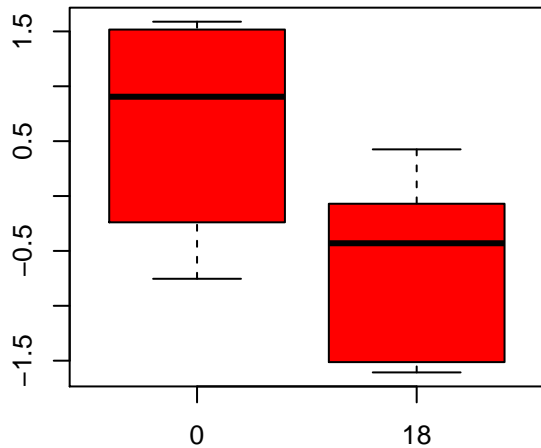


SKOV3

aspartate

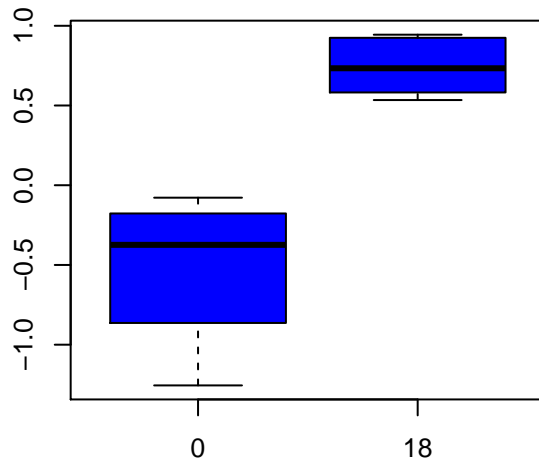


butyrylcarnitine



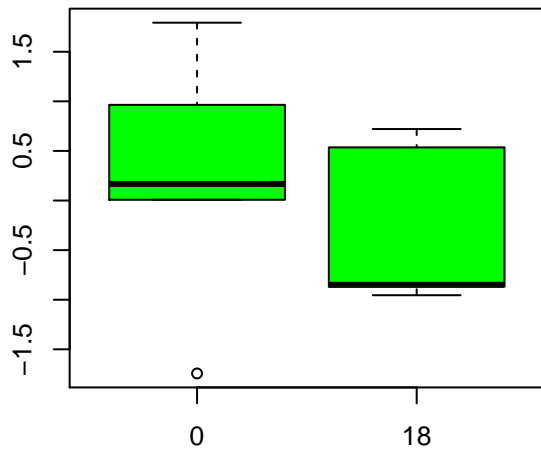
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butyrylcarnitine



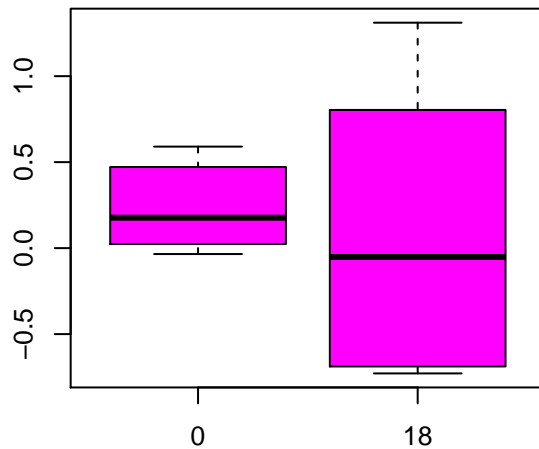
OVCAR

butyrylcarnitine



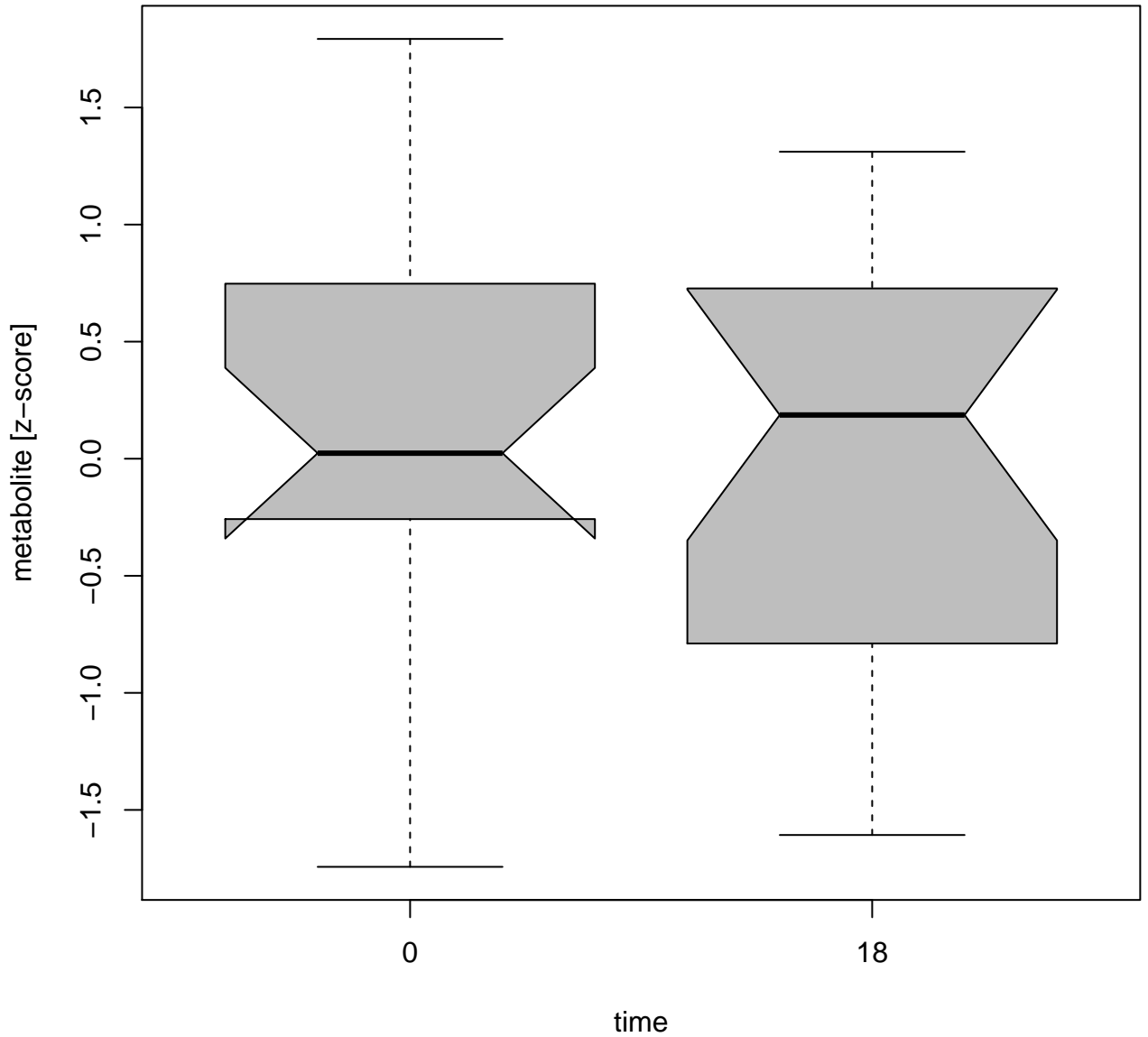
HCT15

butyrylcarnitine

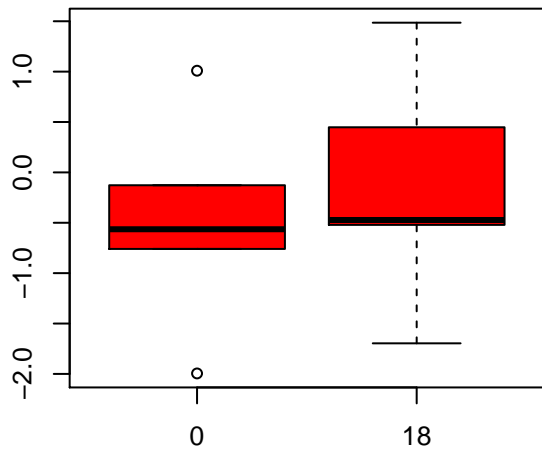


SKOV3

butyrylcarnitine

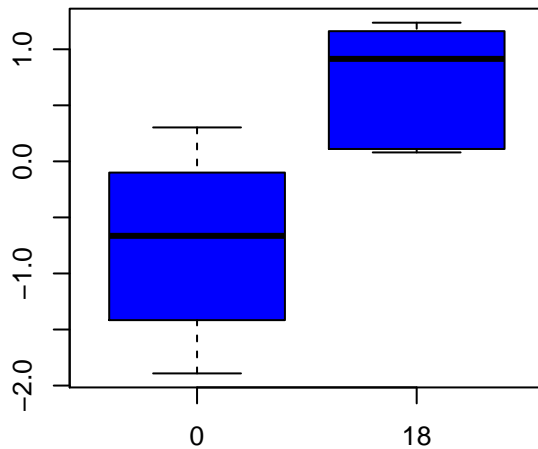


carnitine



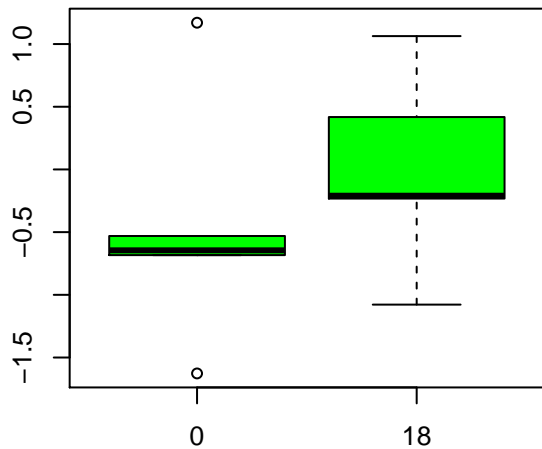
HCT116

carnitine



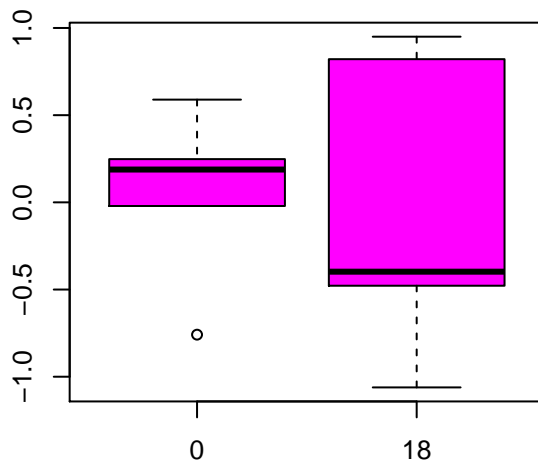
OVCAR

carnitine



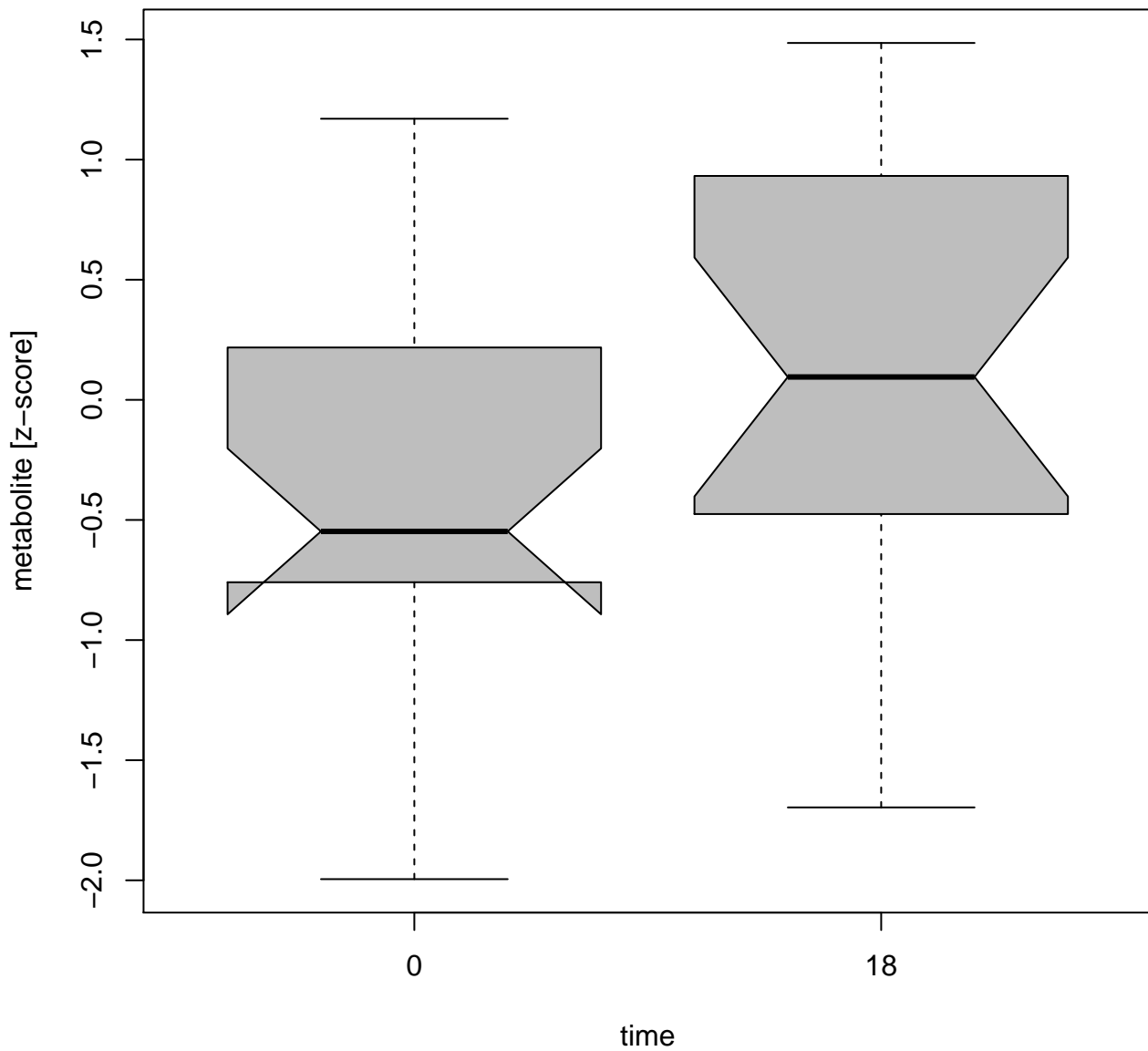
HCT15

carnitine

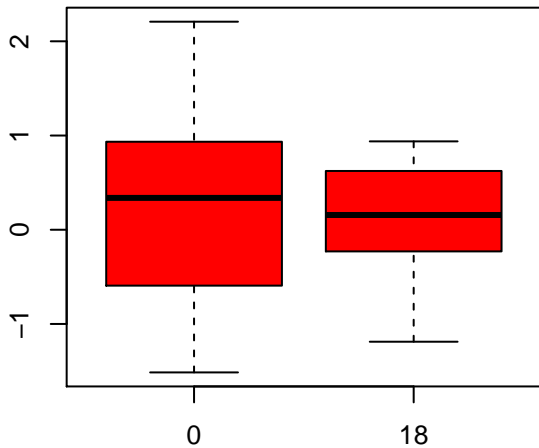


SKOV3

carnitine

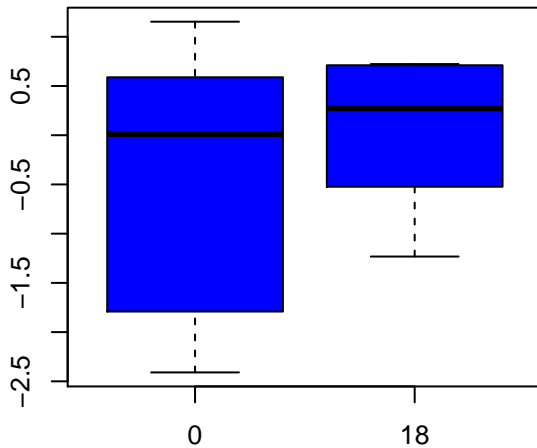


cholesterol



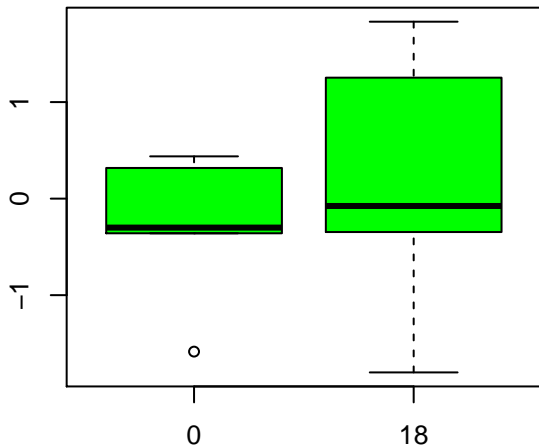
HCT116

cholesterol



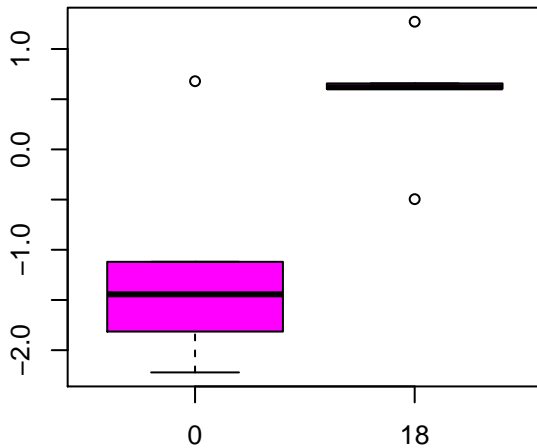
OVCAR

cholesterol



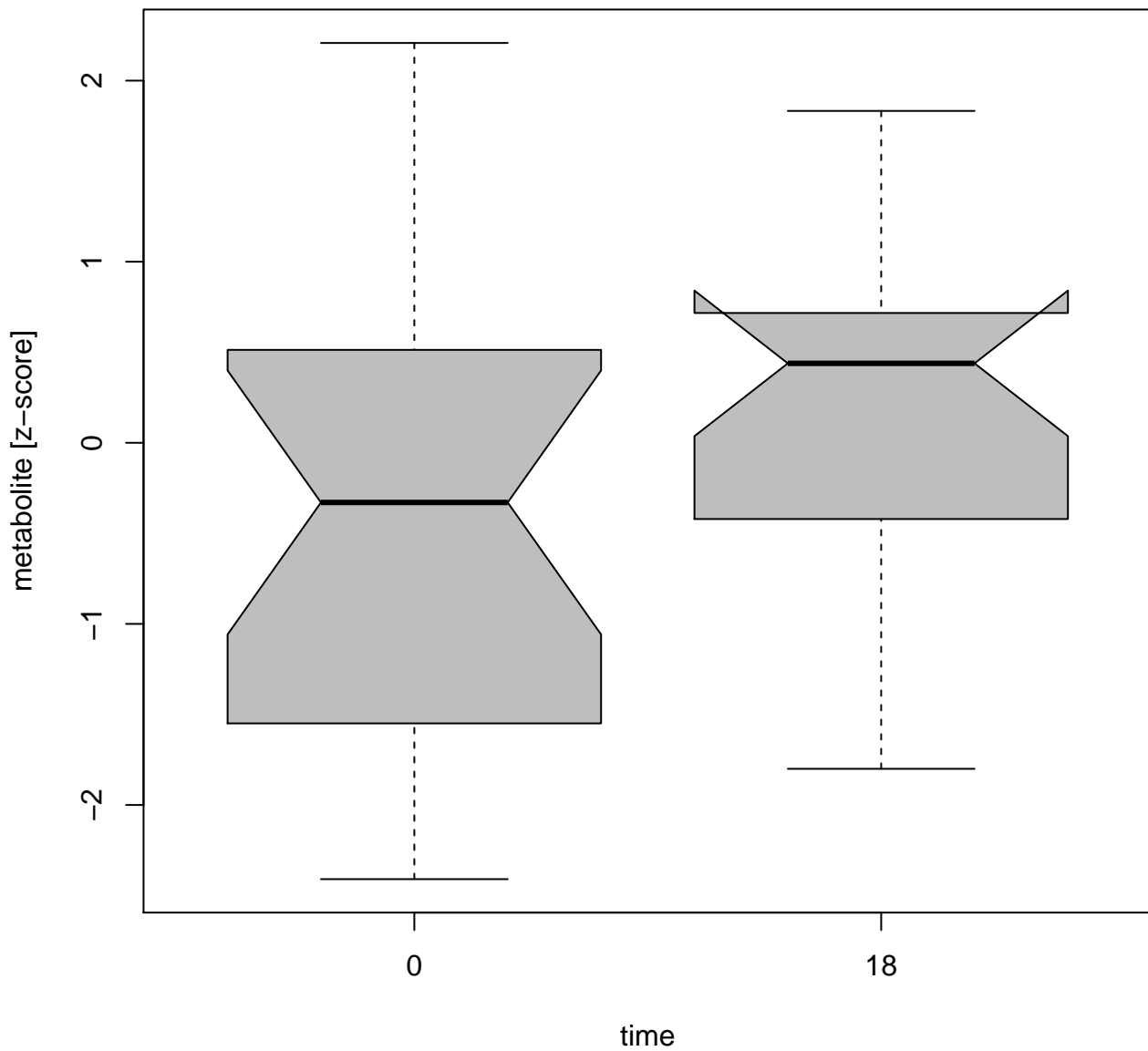
HCT15

cholesterol

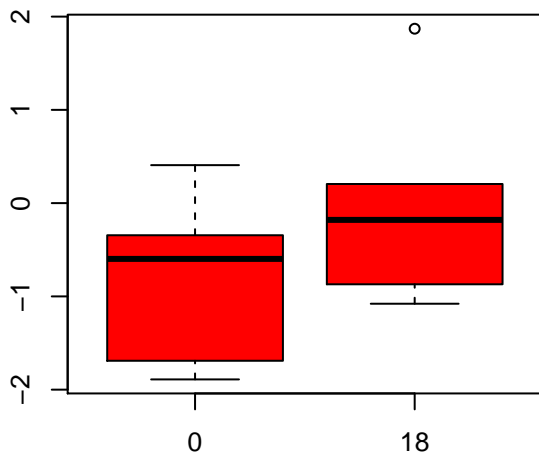


SKOV3

cholesterol

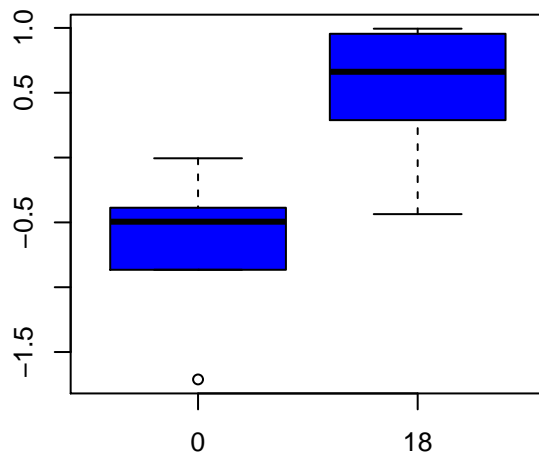


choline



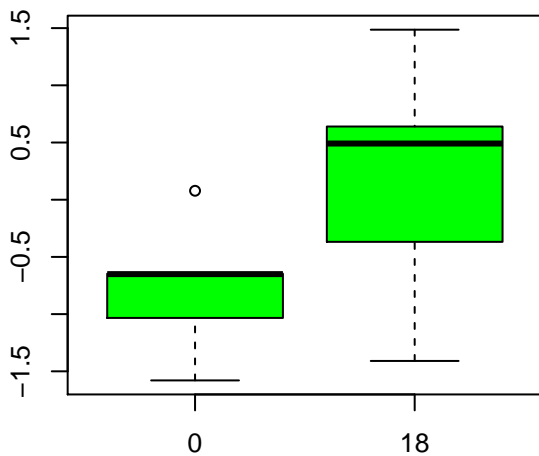
HCT116

choline



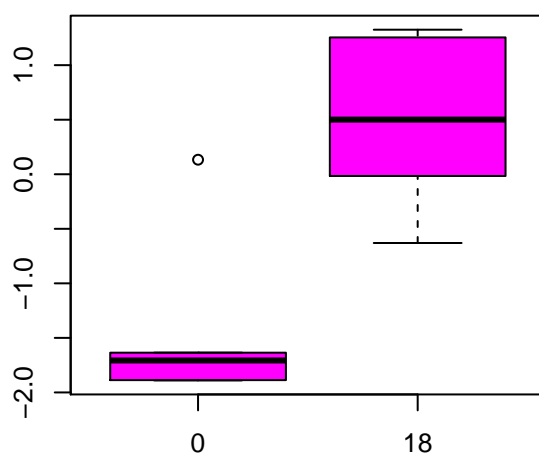
OVCAR

choline



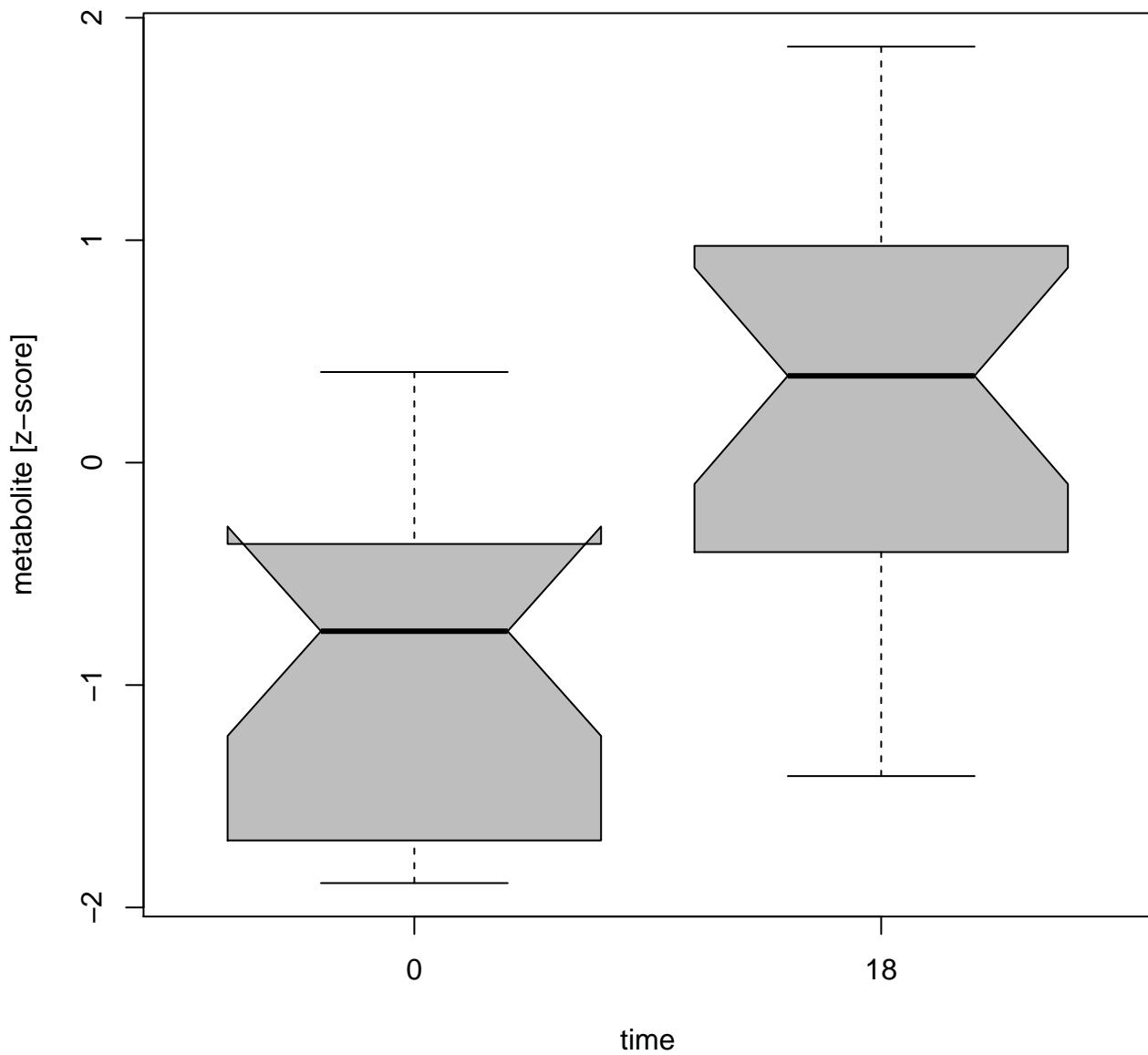
HCT15

choline

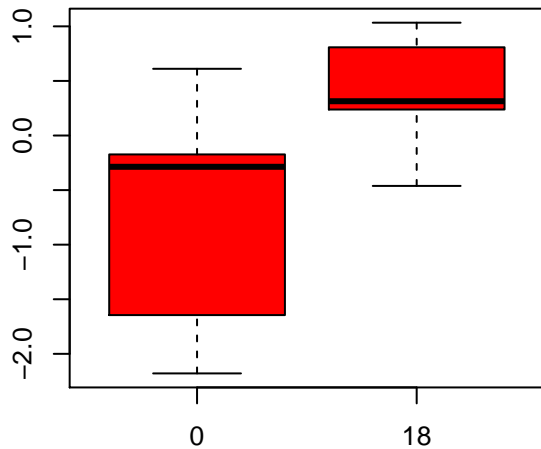


SKOV3

choline

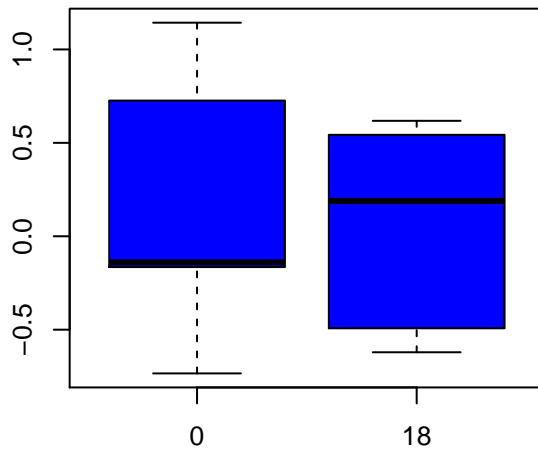


choline phosphate



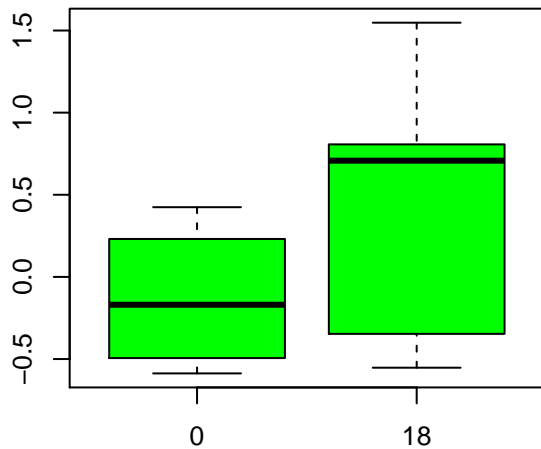
HCT116

choline phosphate



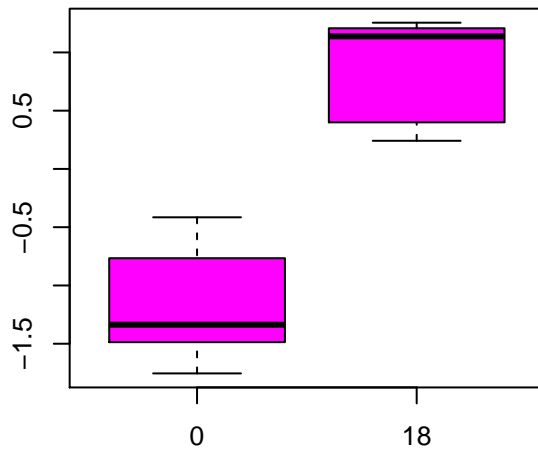
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choline phosphate



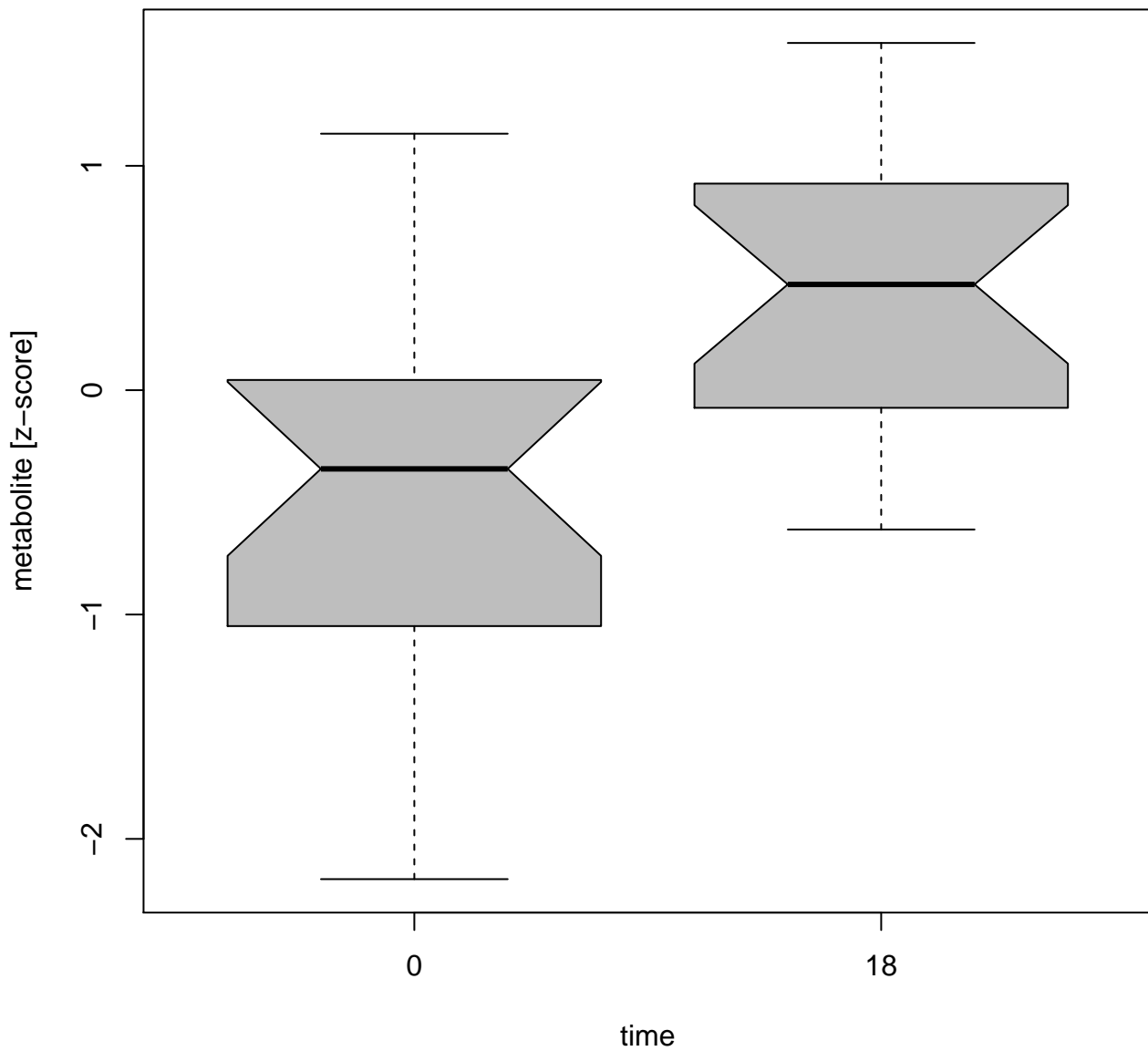
HCT15

choline phosphate

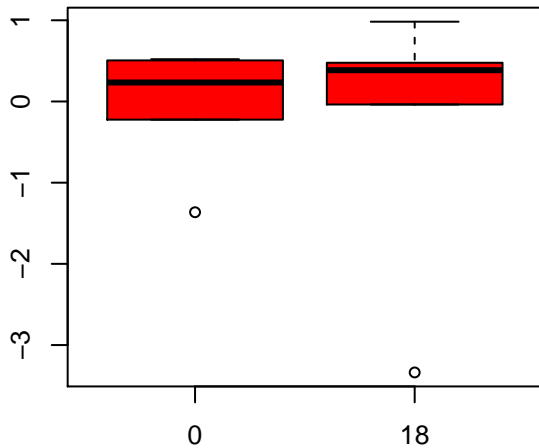


SKOV3

choline phosphate

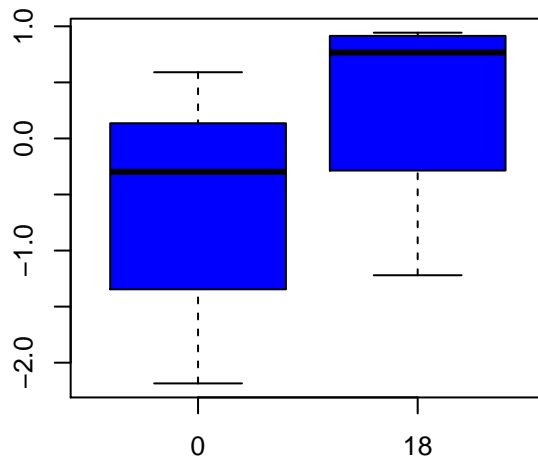


cis-vaccenate (18:1n7)



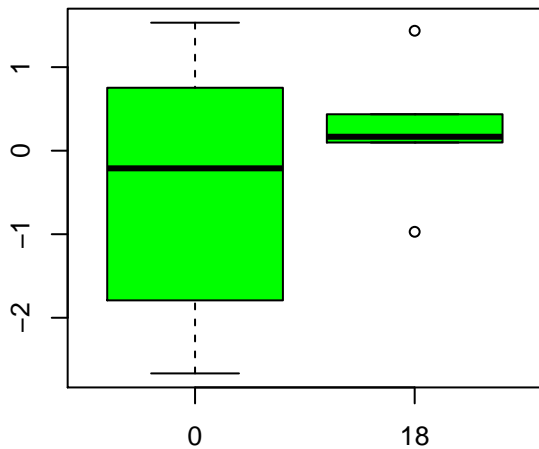
HCT116

cis-vaccenate (18:1n7)



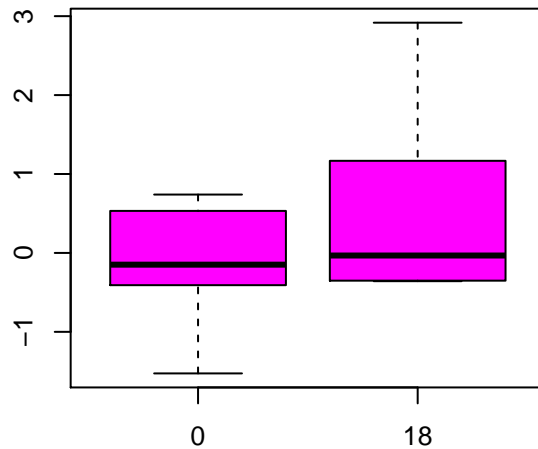
OVCAR

cis-vaccenate (18:1n7)



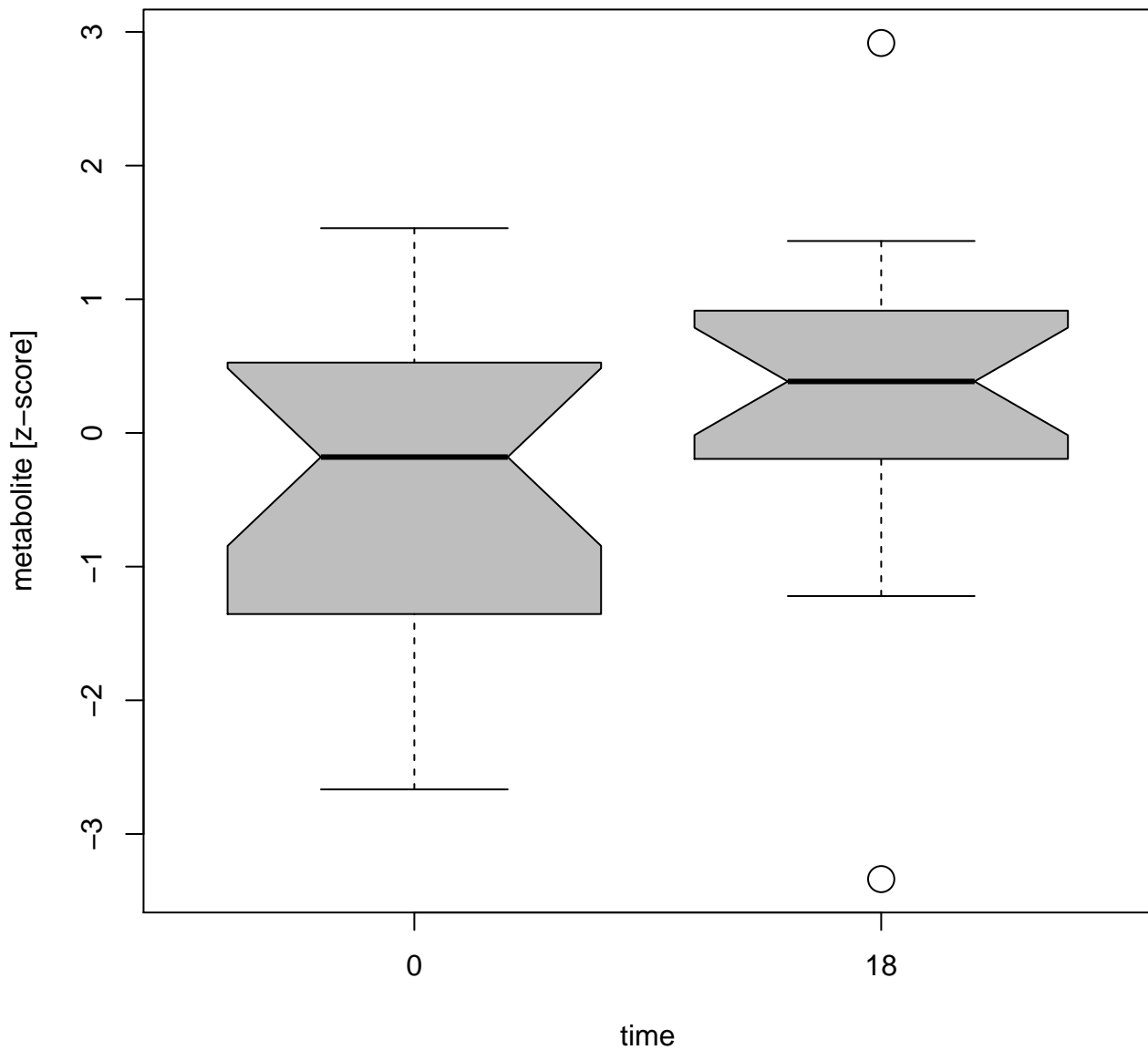
HCT15

cis-vaccenate (18:1n7)

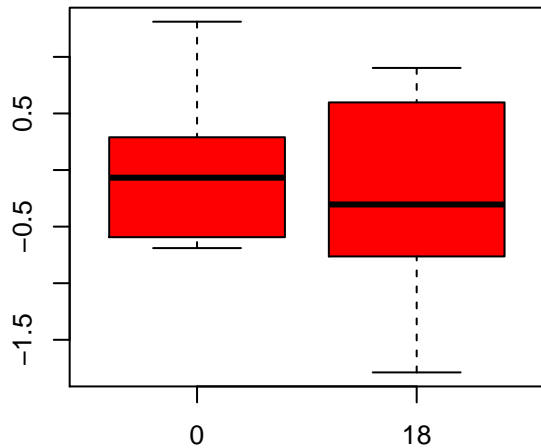


SKOV3

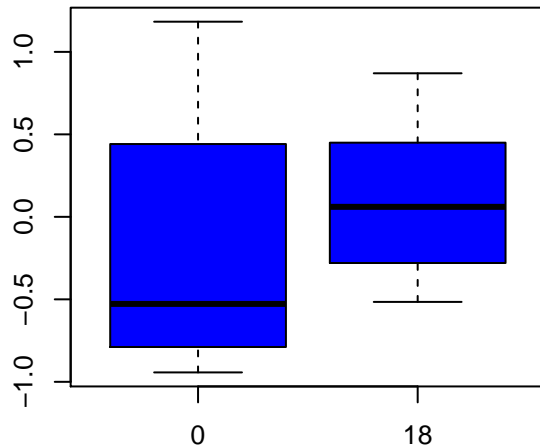
cis-vaccenate (18:1n7)



citrate



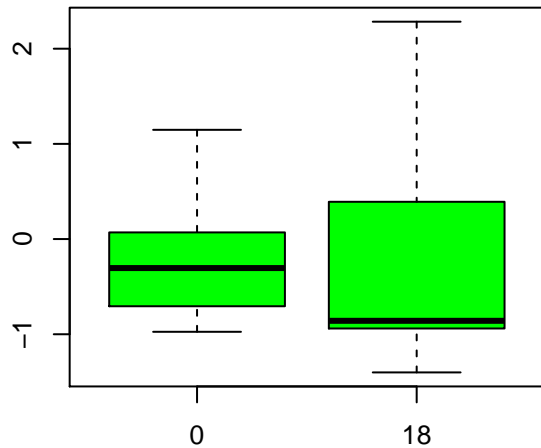
citrate



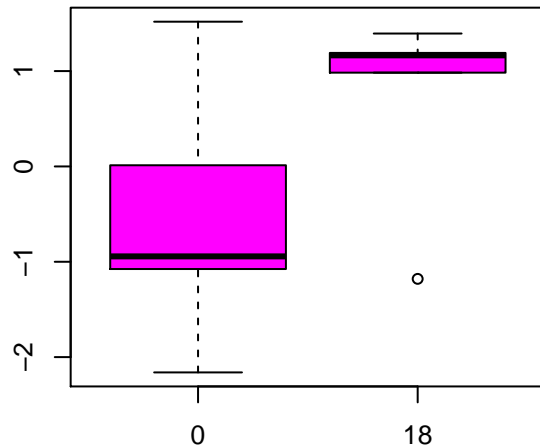
HCT116

OVCAR

citrate



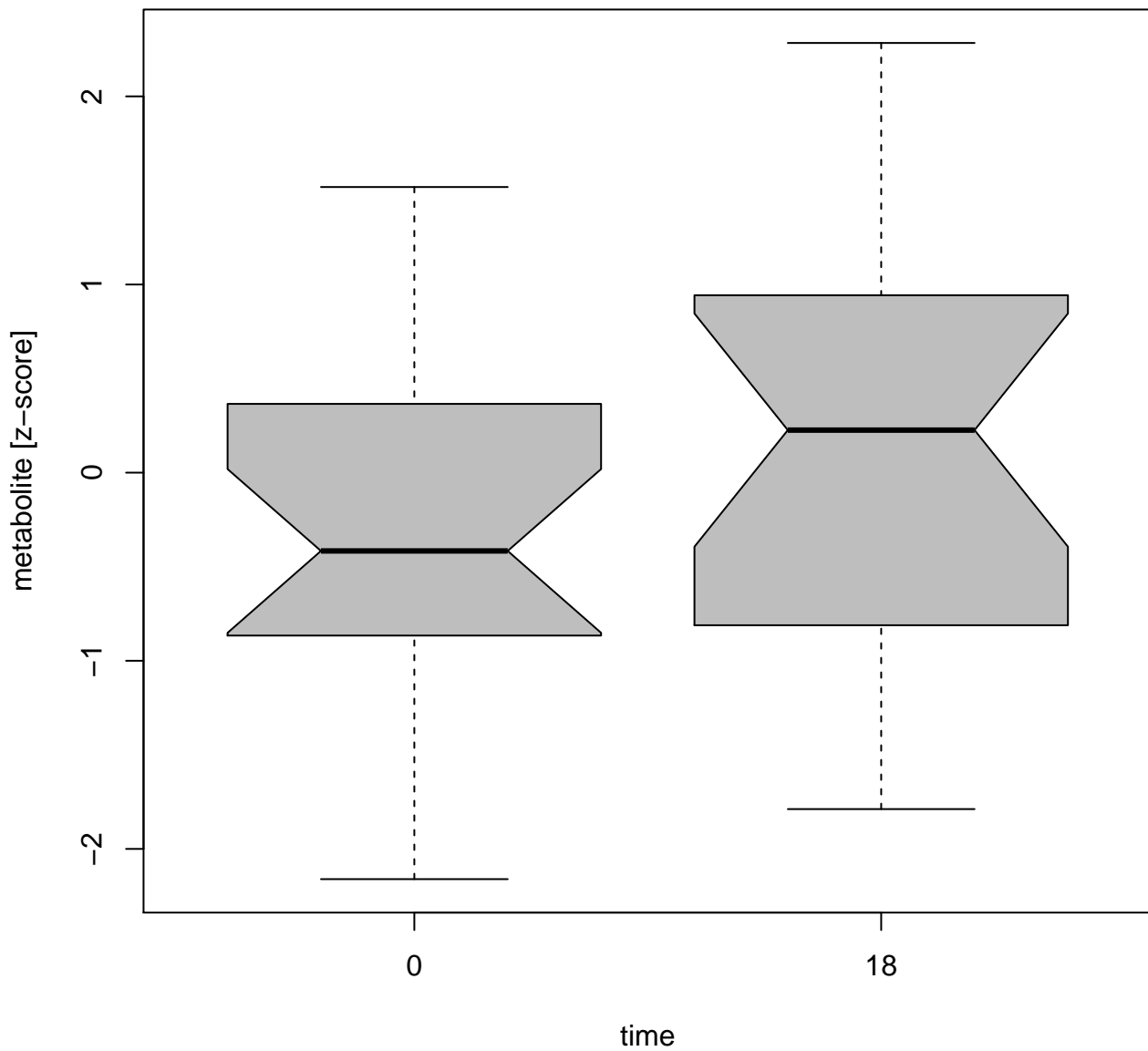
citrate



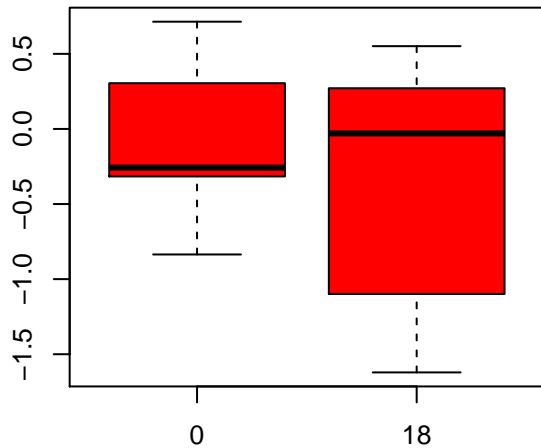
HCT15

SKOV3

citrate

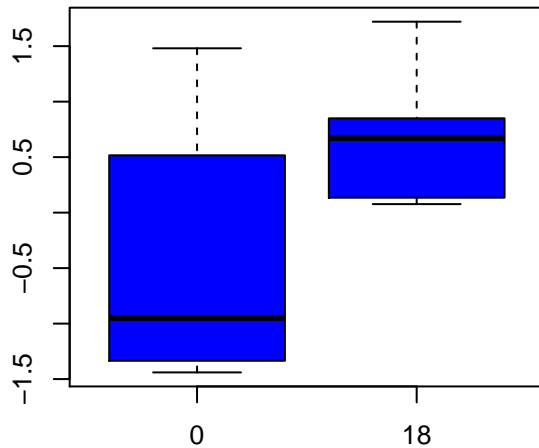


creatinine



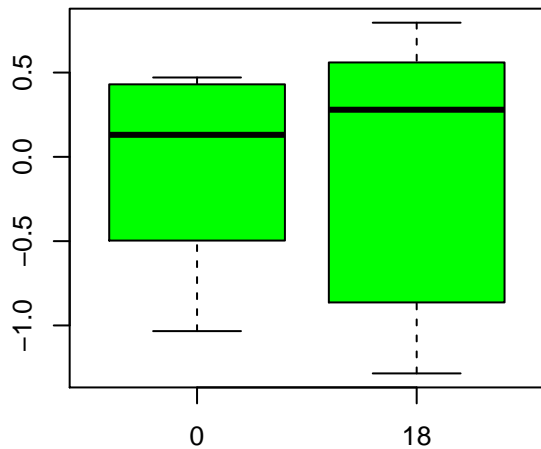
HCT116

creatinine



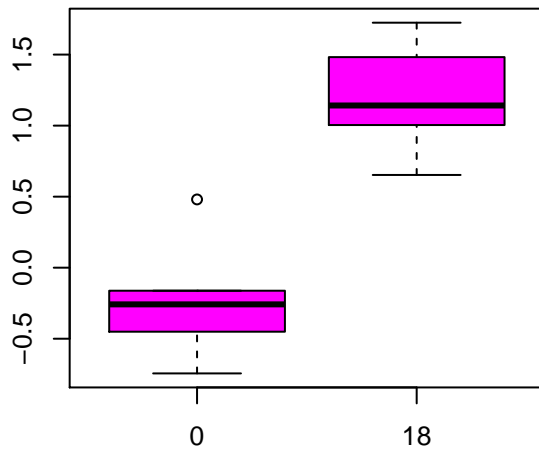
OVCAR

creatinine



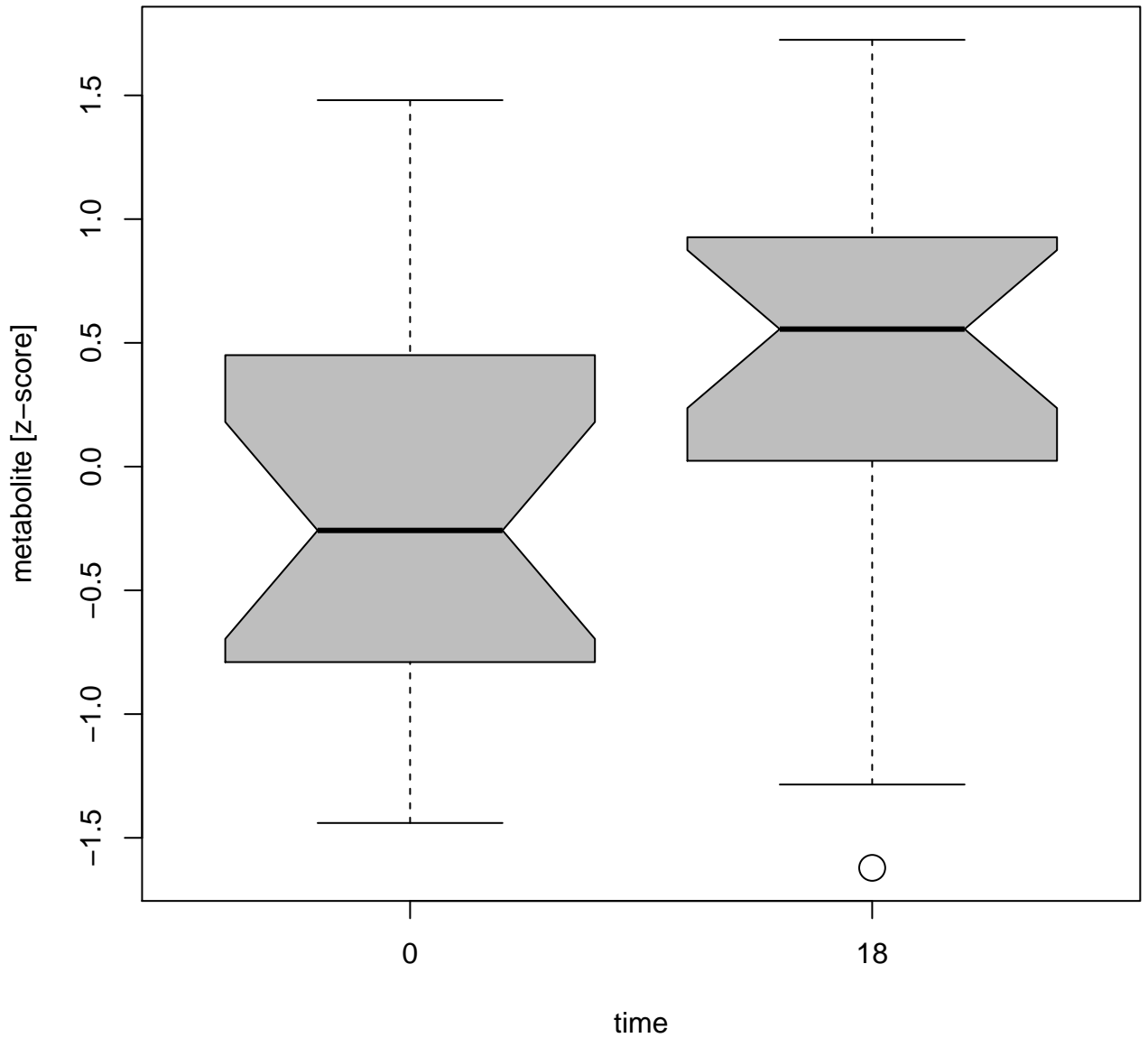
HCT15

creatinine

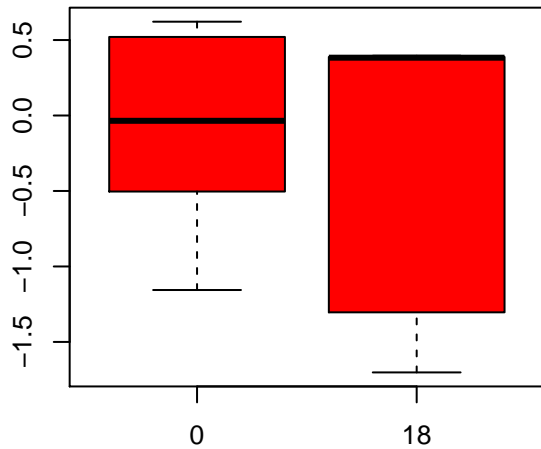


SKOV3

creatine

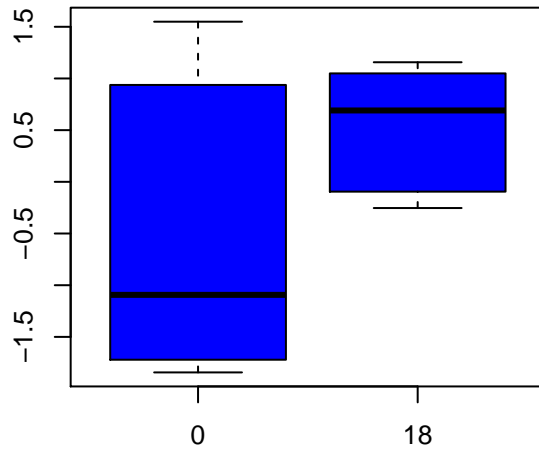


creatinine



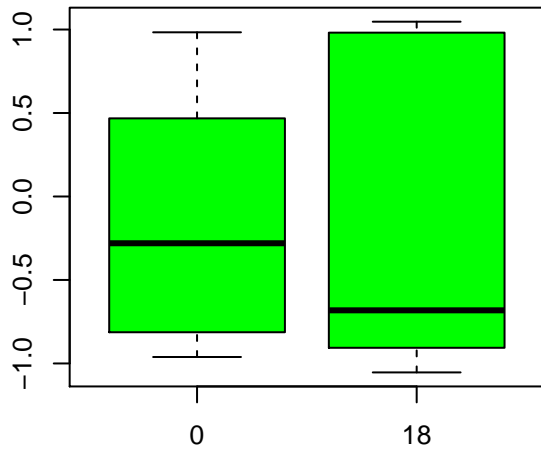
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creatinine



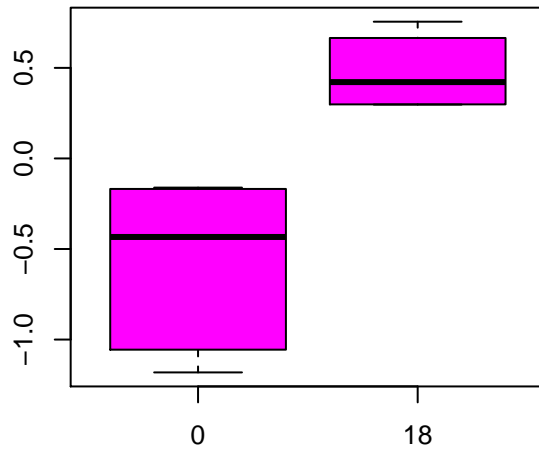
OVCAR

creatinine



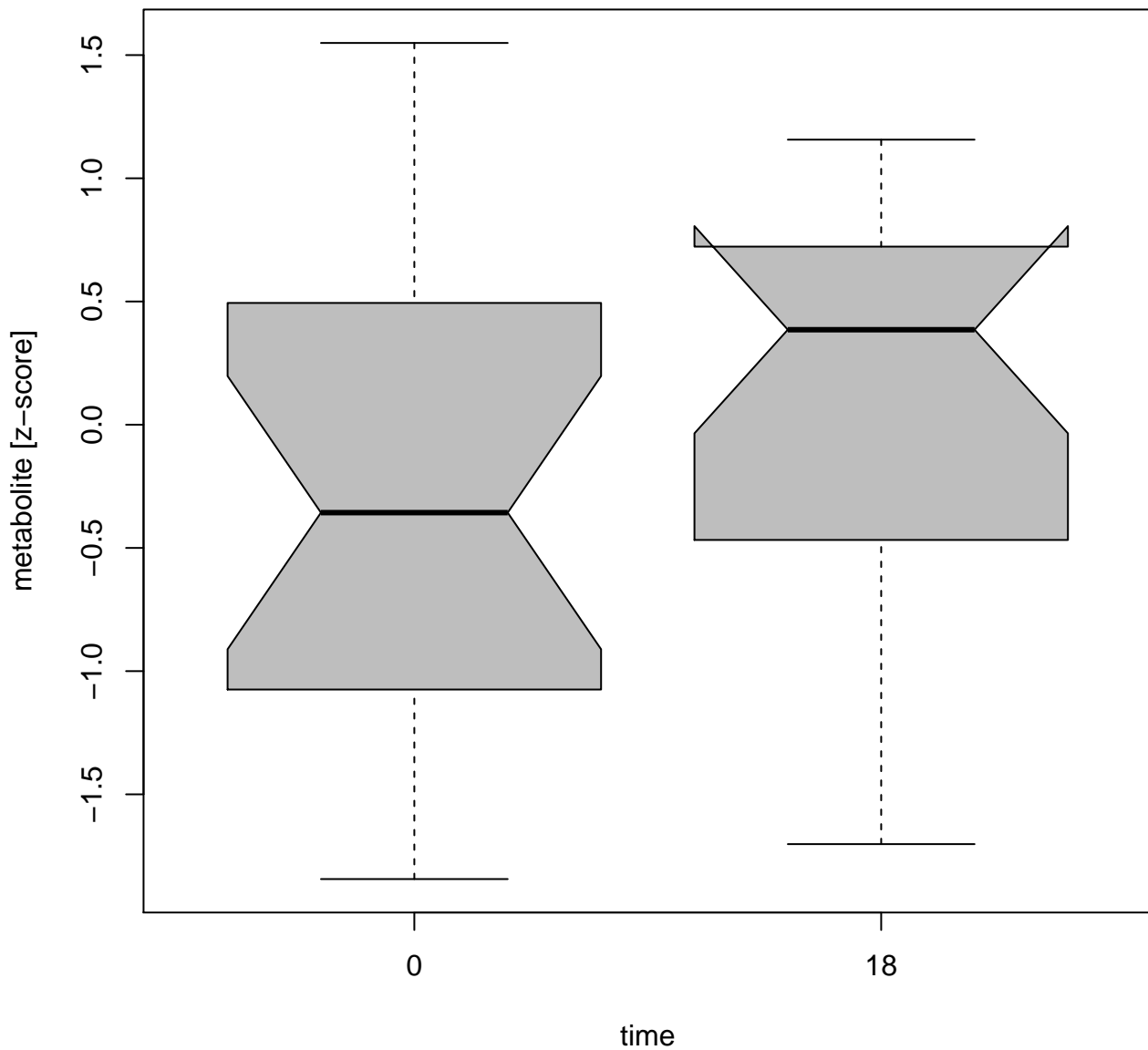
HCT15

creatinine

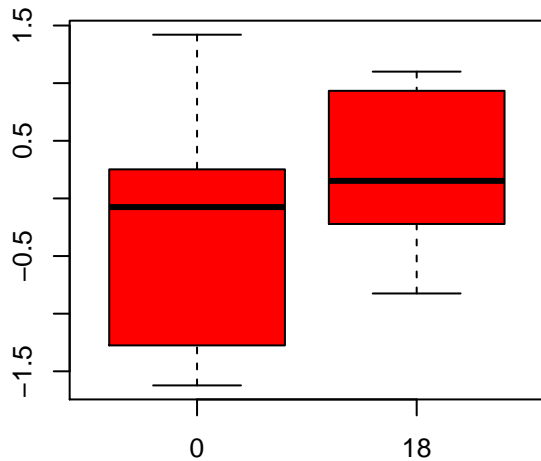


SKOV3

creatinine

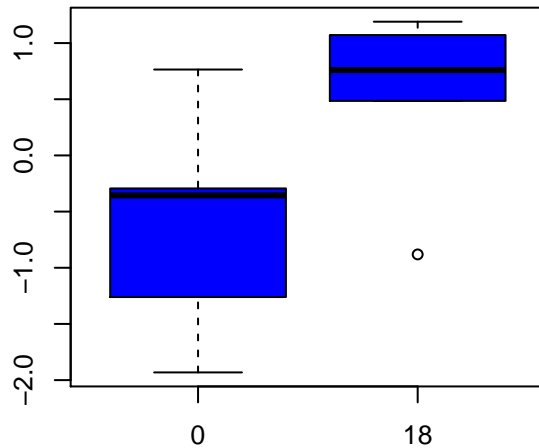


cysteinyglycine



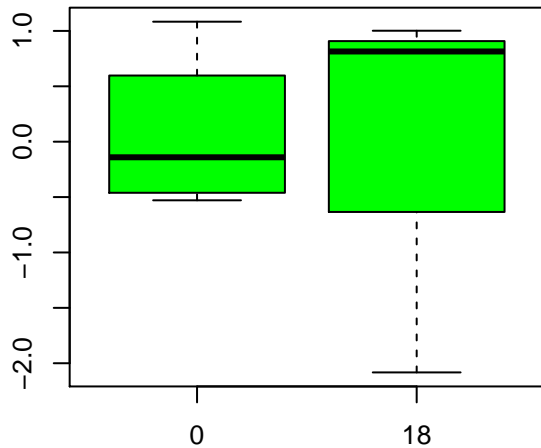
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cysteinyglycine



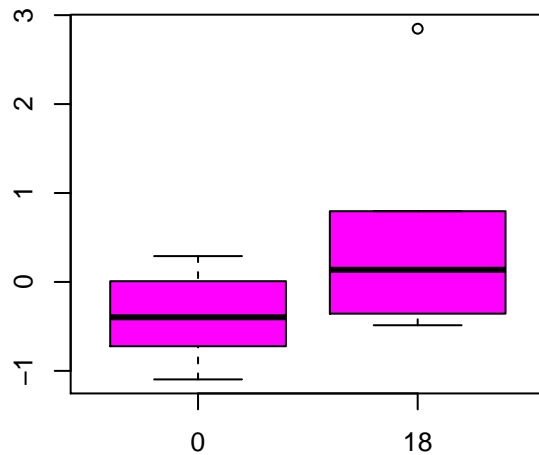
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cysteinyglycine



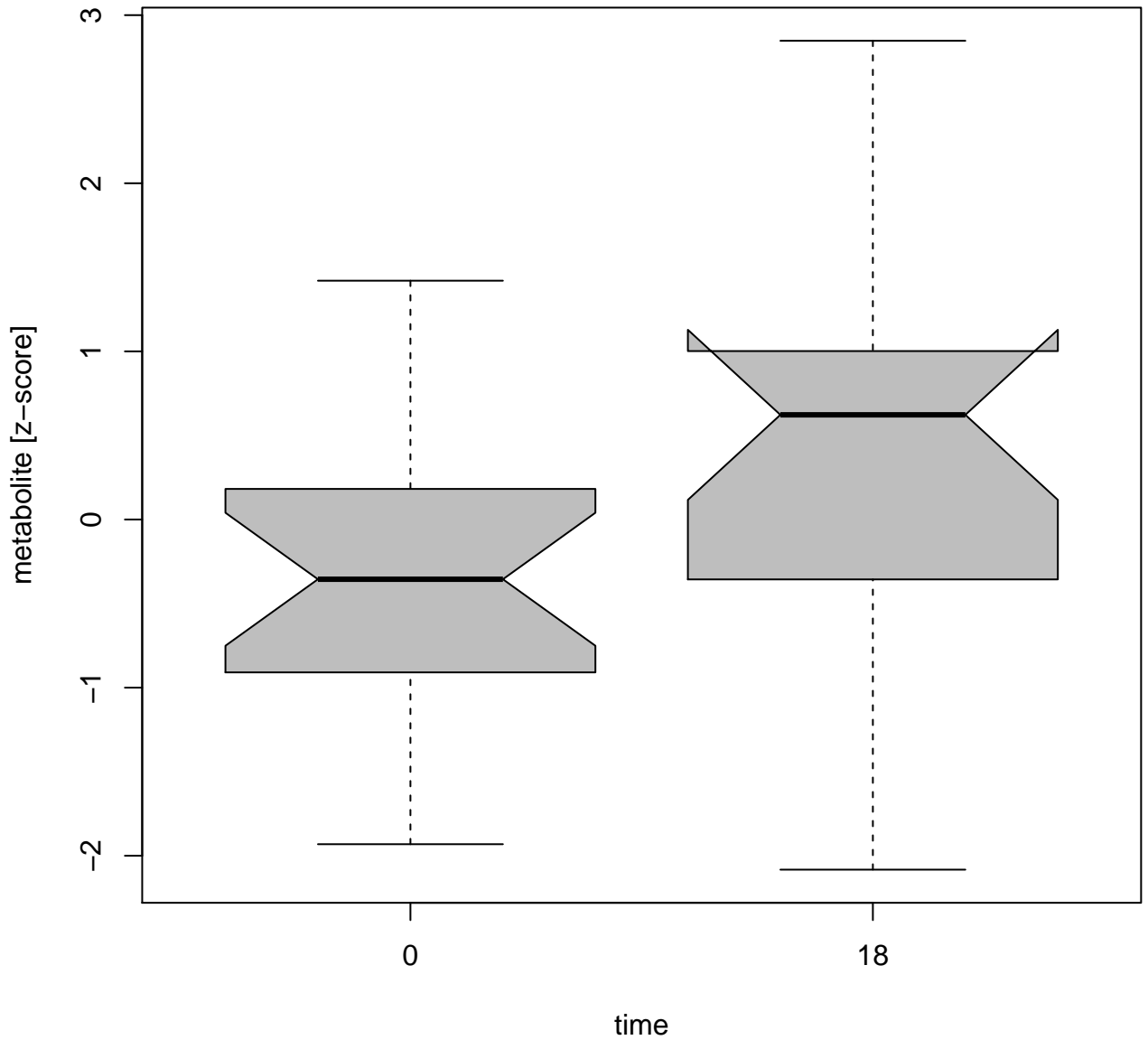
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cysteinyglycine

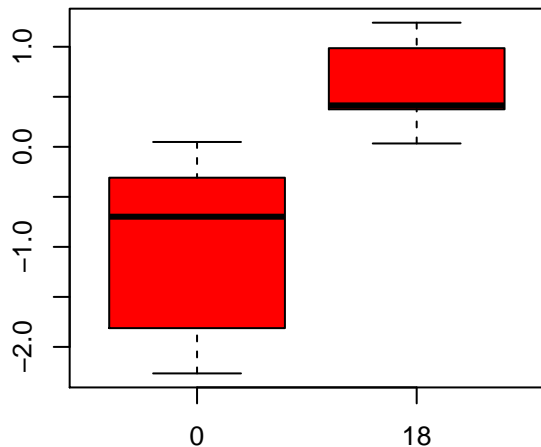


SKOV3

cysteinylglycine

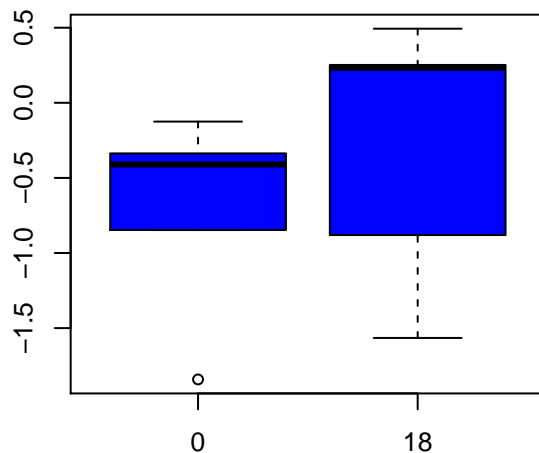


cytidine 5'-diphosphocholine



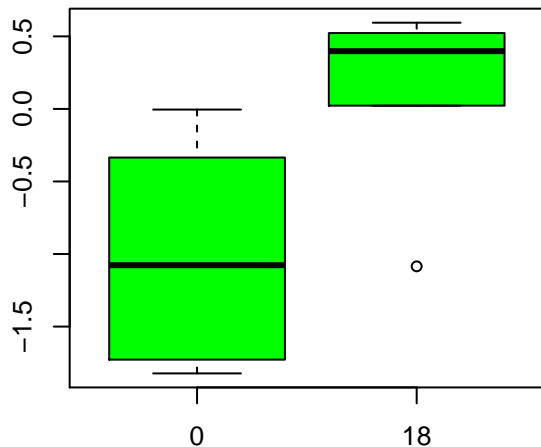
HCT116

cytidine 5'-diphosphocholine



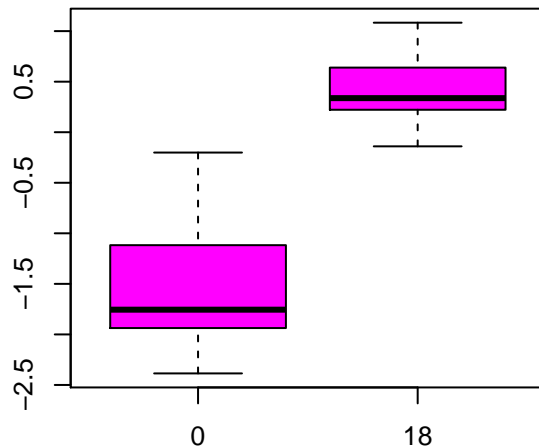
OVCAR

cytidine 5'-diphosphocholine



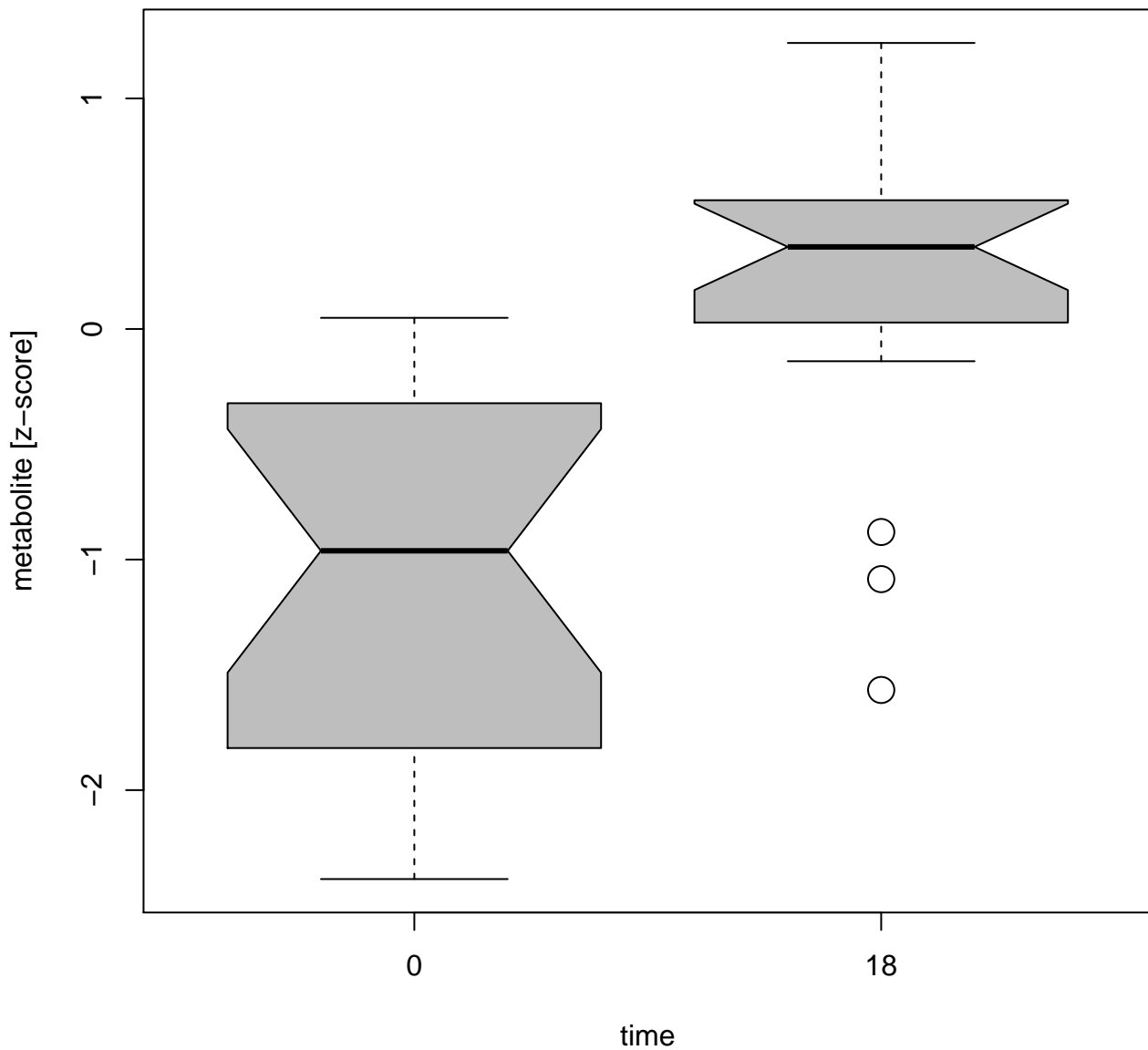
HCT15

cytidine 5'-diphosphocholine

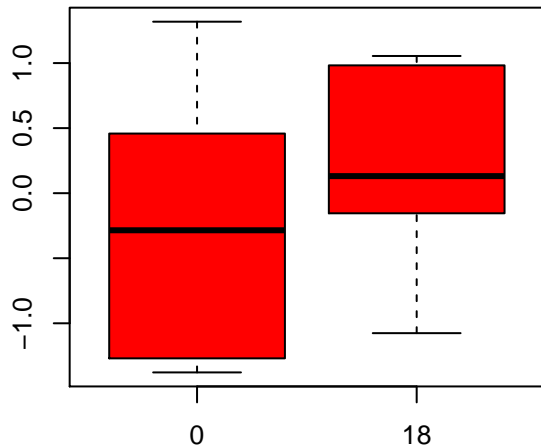


SKOV3

cytidine 5'-diphosphocholine

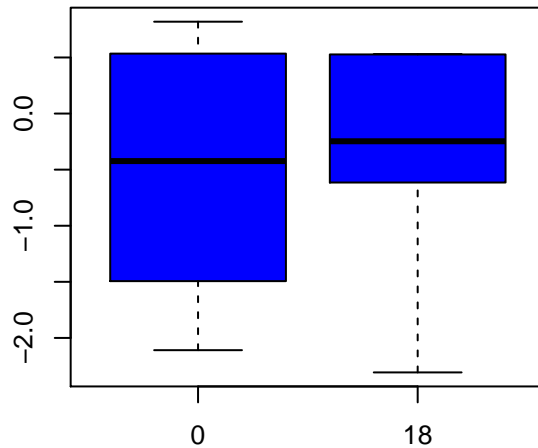


cytidine 5'-monophosphate (5'-CMP)



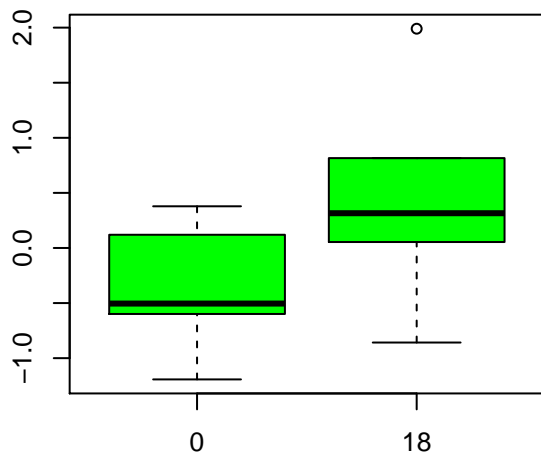
HCT116

cytidine 5'-monophosphate (5'-CMP)



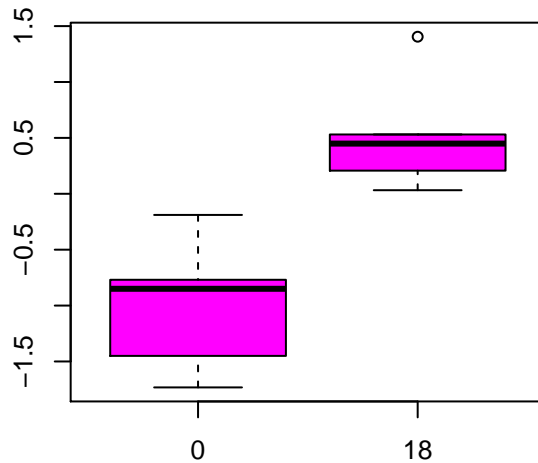
OVCAR

cytidine 5'-monophosphate (5'-CMP)



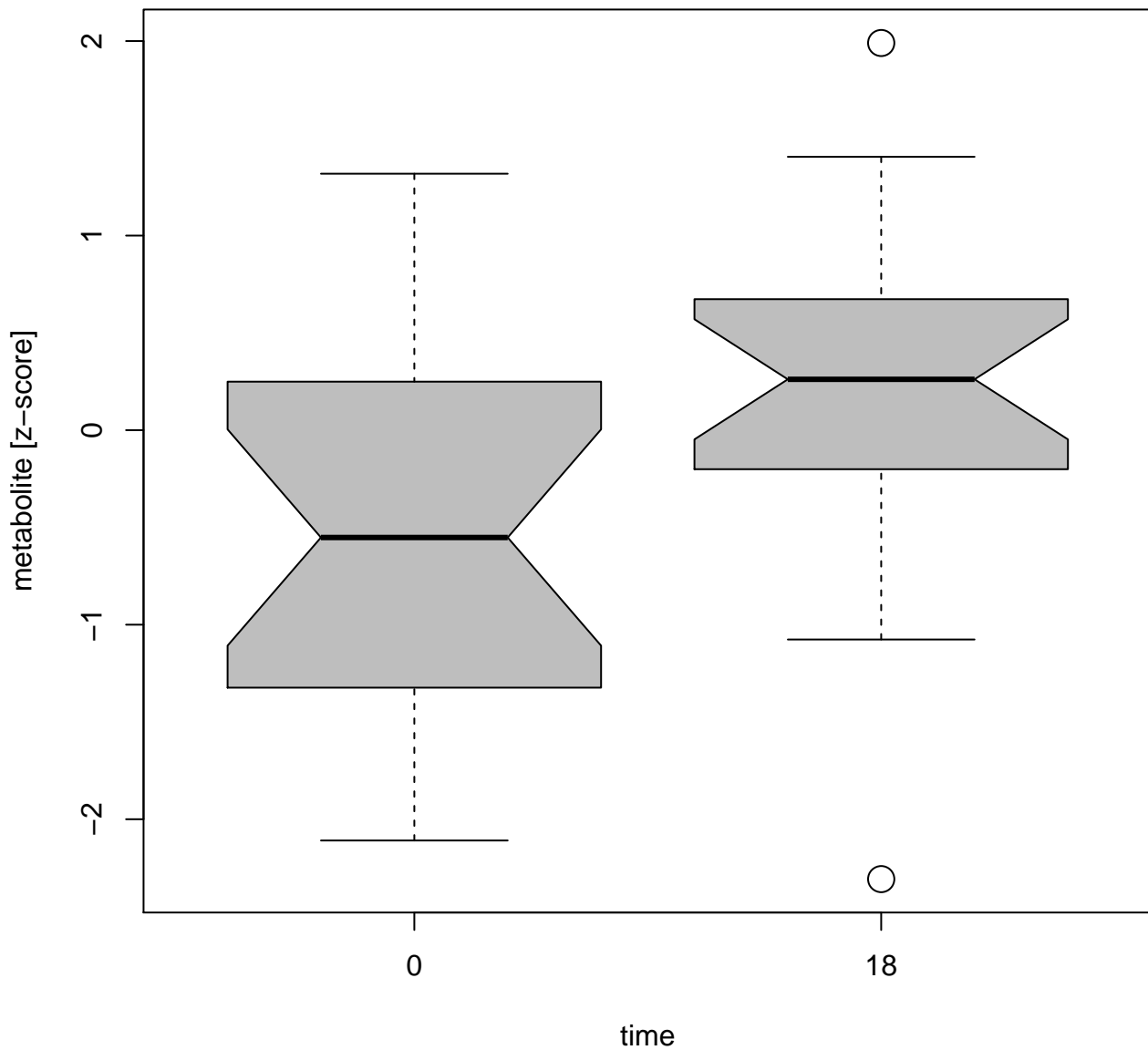
HCT15

cytidine 5'-monophosphate (5'-CMP)

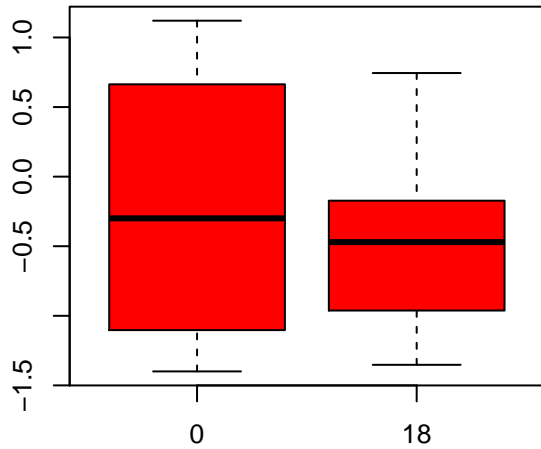


SKOV3

cytidine 5'-monophosphate (5'-CMP)

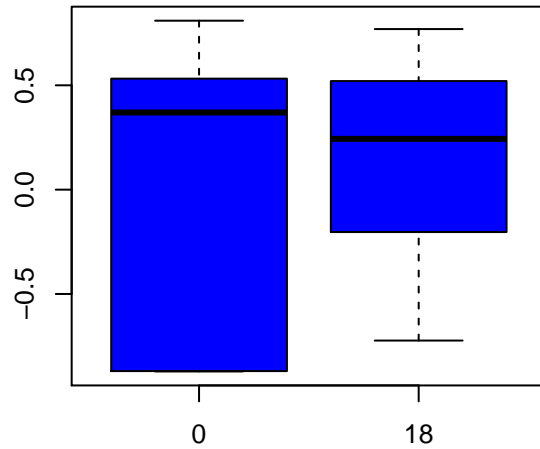


cytidine diphosphate



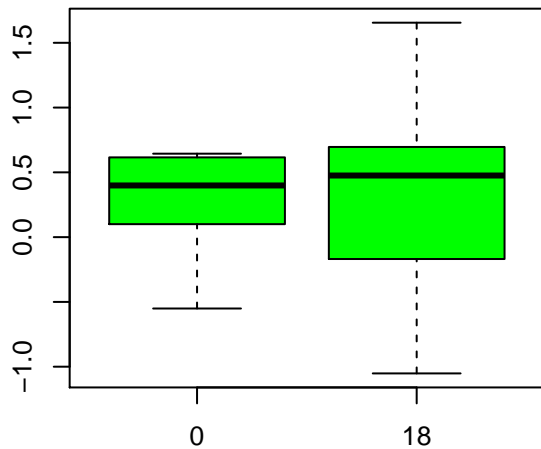
HCT116

cytidine diphosphate



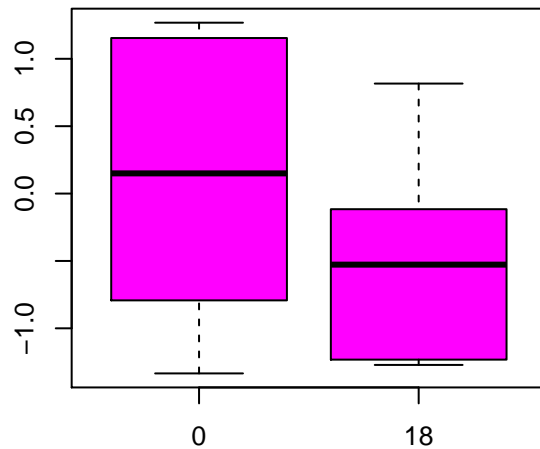
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cytidine diphosphate



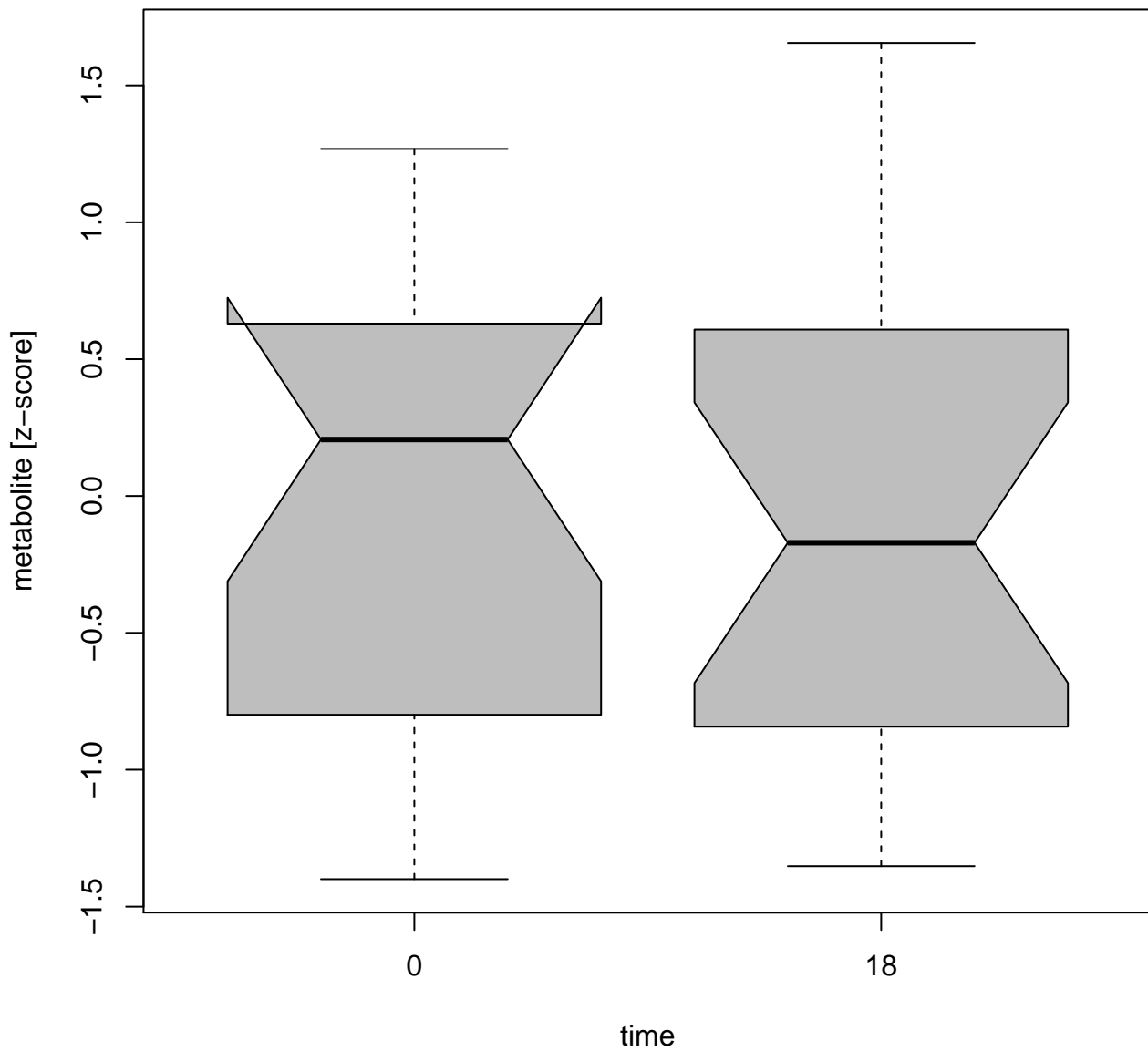
HCT15

cytidine diphosphate

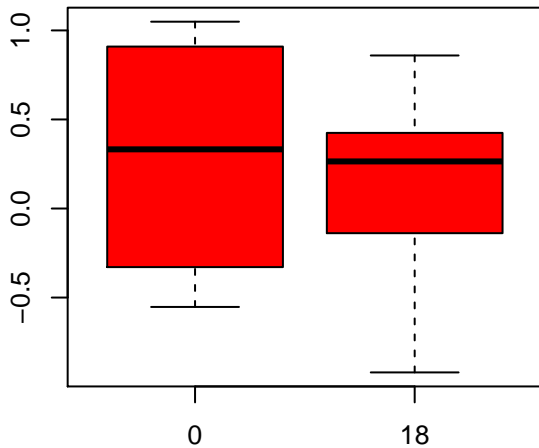


SKOV3

cytidine diphosphate

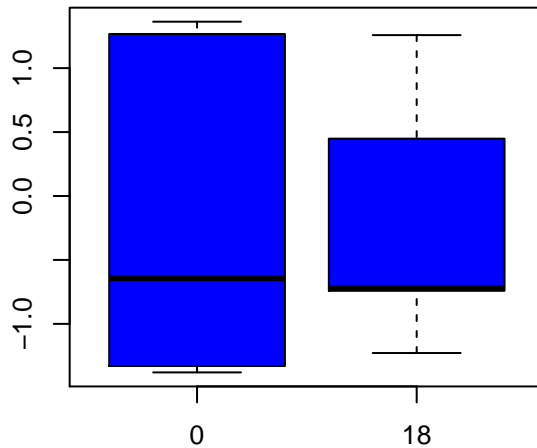


cytidine-5'-diphosphoethanolamine



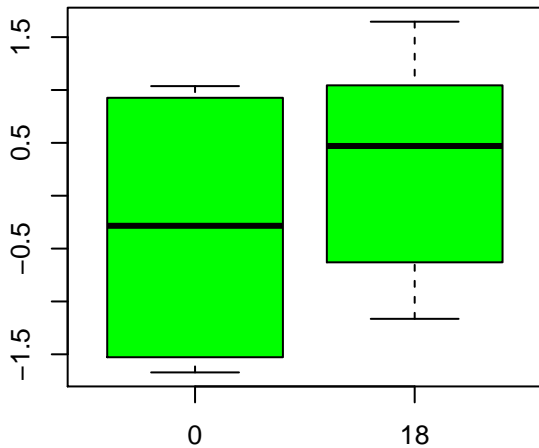
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cytidine-5'-diphosphoethanolamine



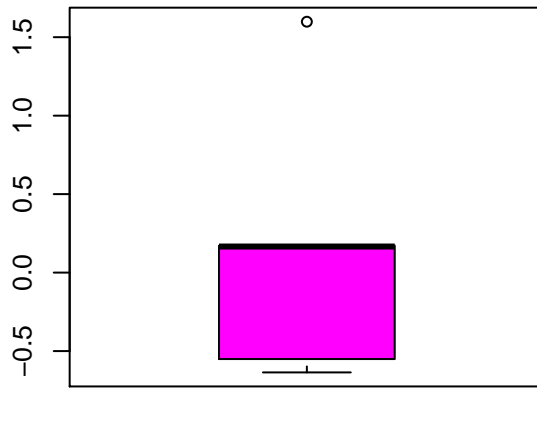
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cytidine-5'-diphosphoethanolamine



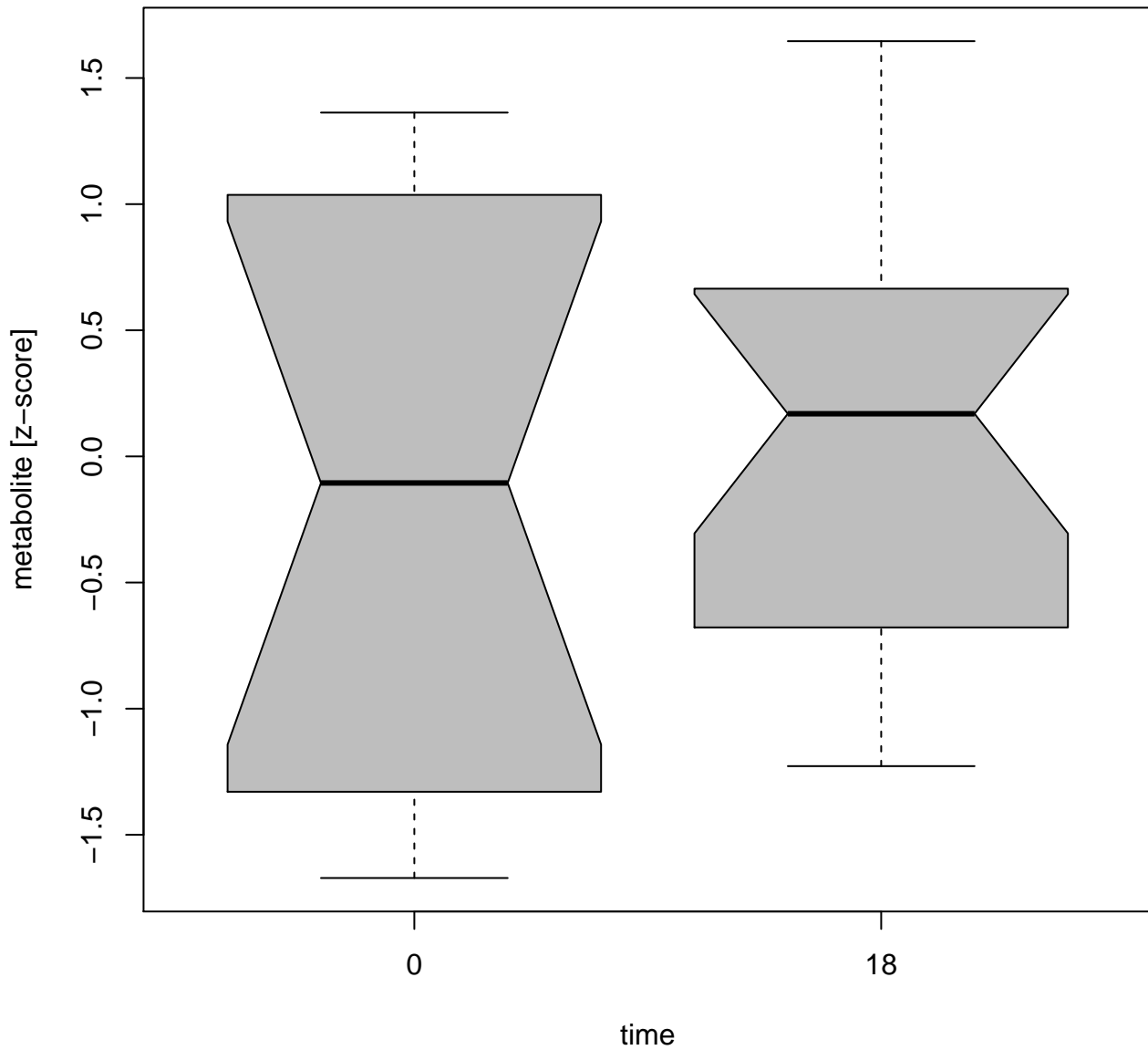
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cytidine-5'-diphosphoethanolamine

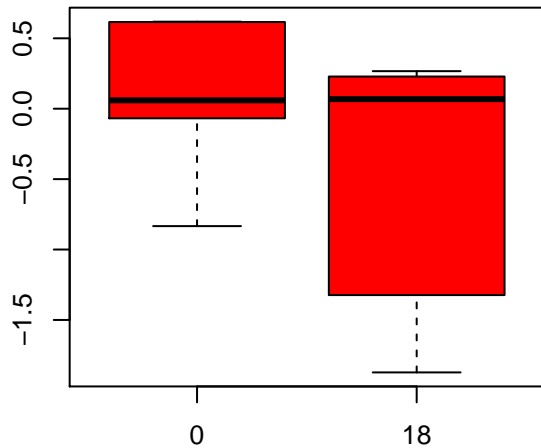


SKOV3

cytidine-5'-diphosphoethanolamine

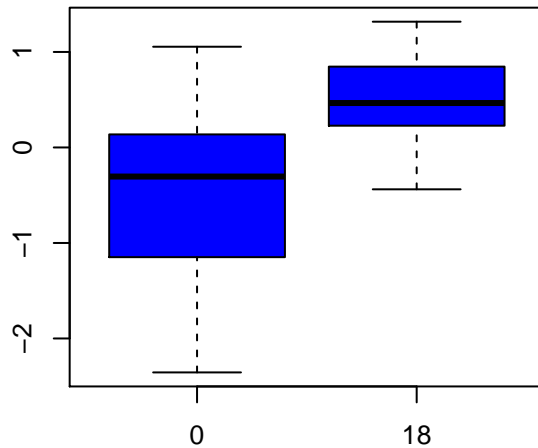


deoxycarnitine



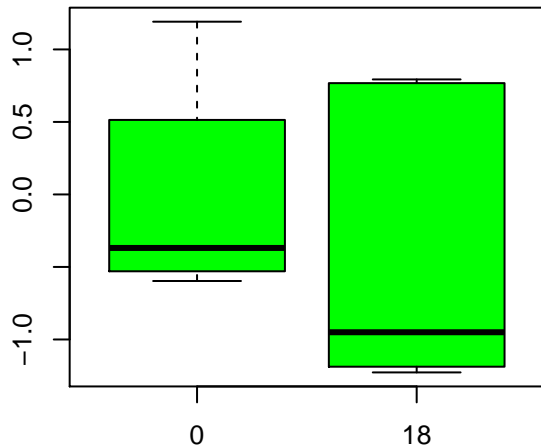
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deoxycarnitine



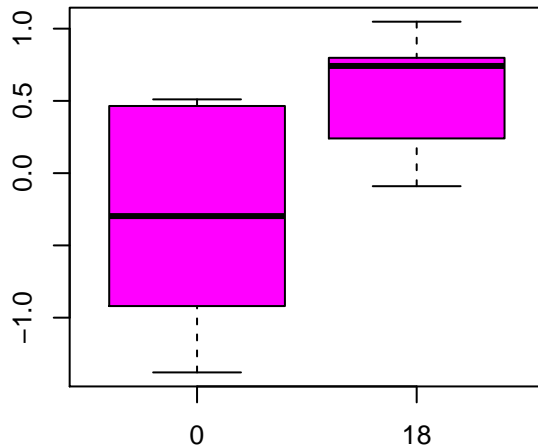
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deoxycarnitine



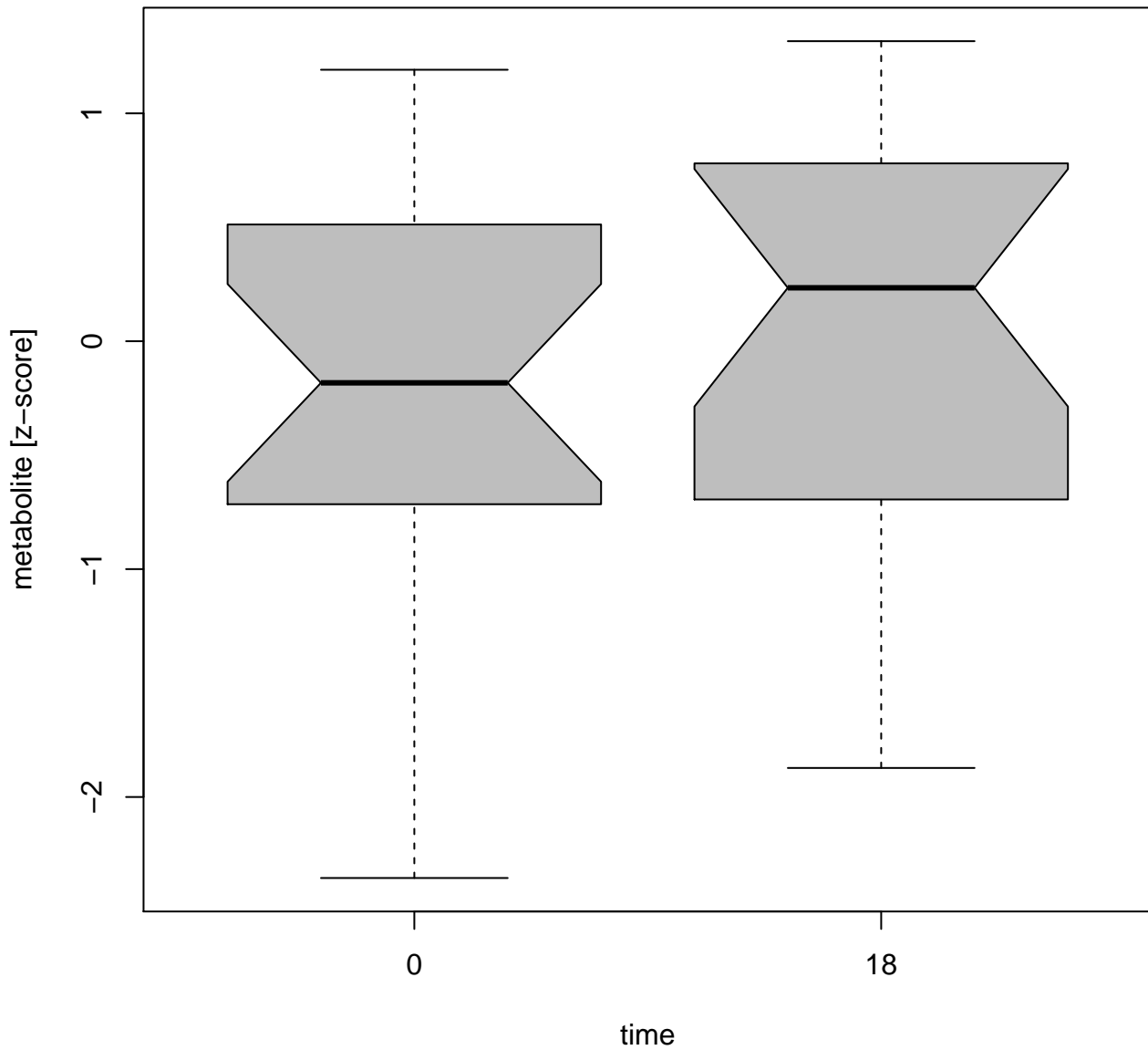
HCT15

deoxycarnitine

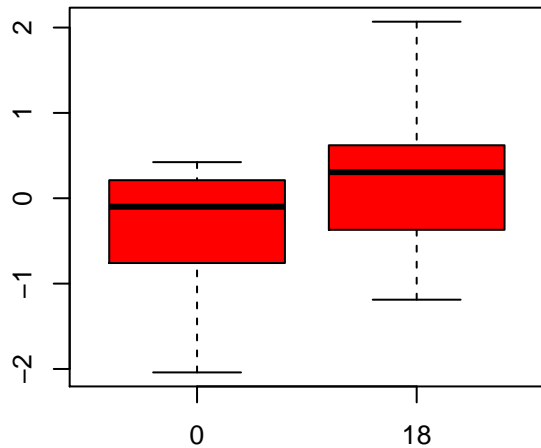


SKOV3

deoxycarnitine

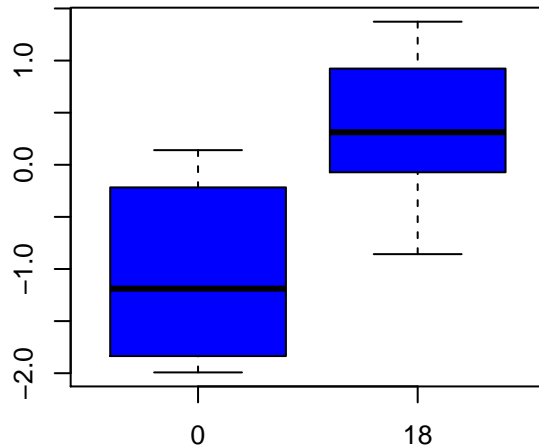


dihomo-linoleate (20:2n6)



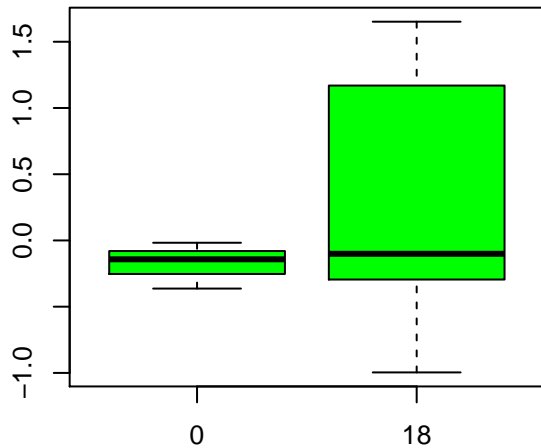
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dihomo-linoleate (20:2n6)



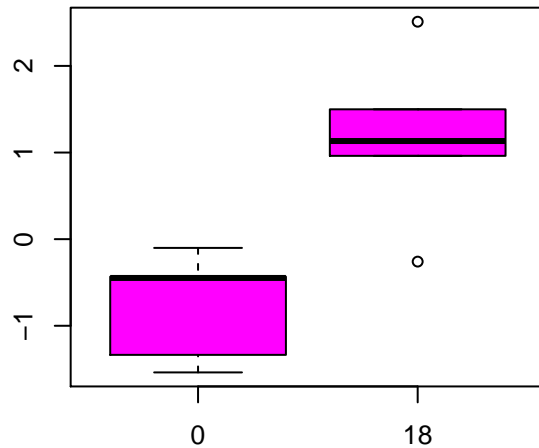
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dihomo-linoleate (20:2n6)



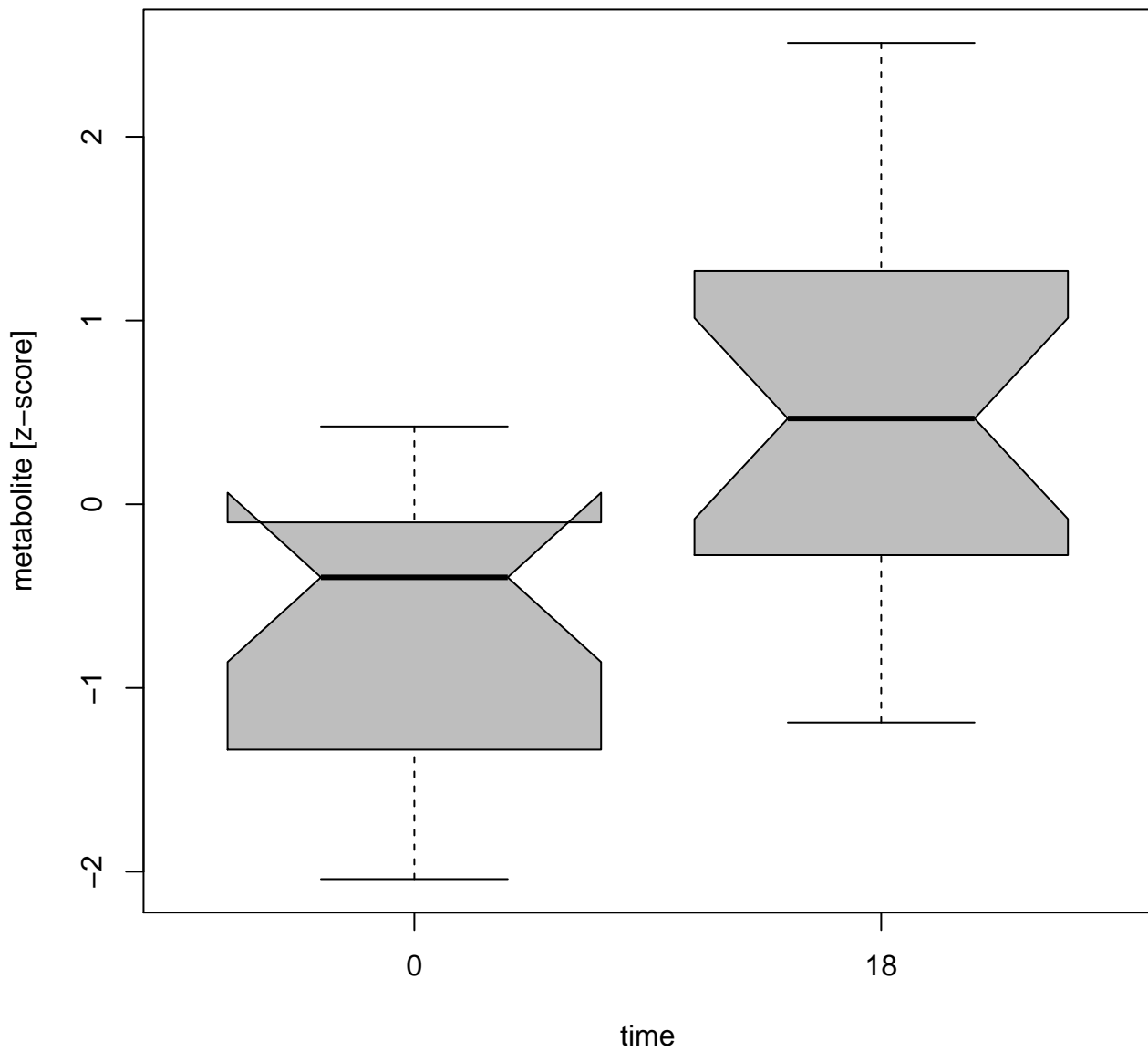
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dihomo-linoleate (20:2n6)

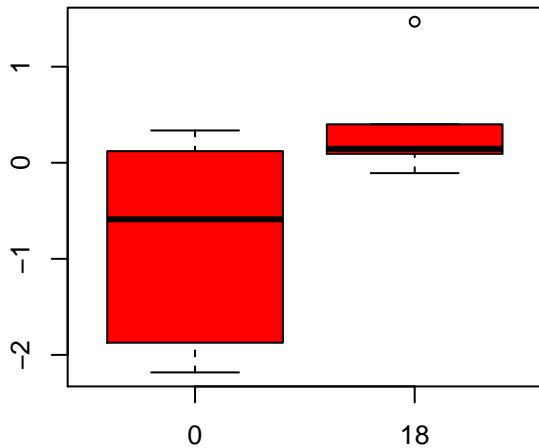


SKOV3

dihomo-linoleate (20:2n6)

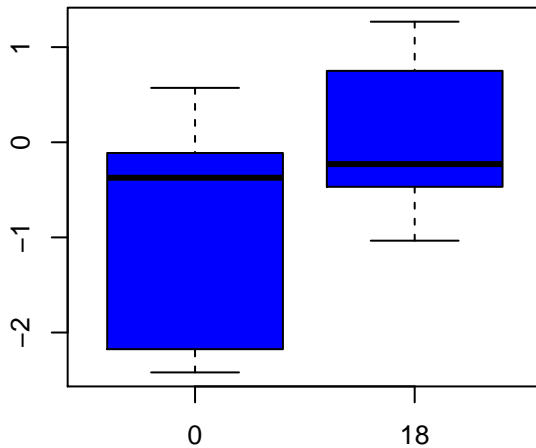


dihomo-linolenate (20:3n3 or n6)



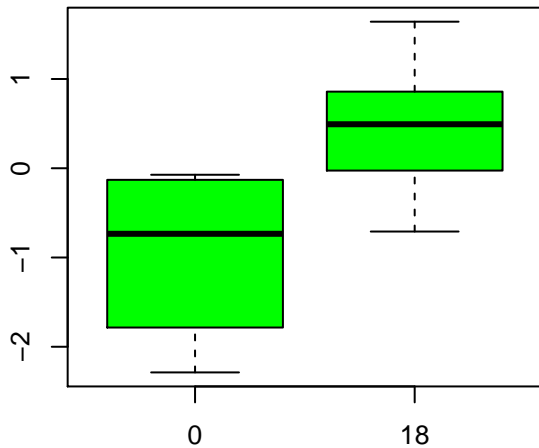
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dihomo-linolenate (20:3n3 or n6)



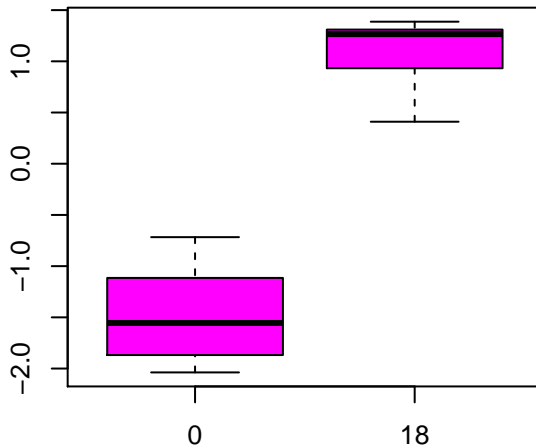
OVCAR

dihomo-linolenate (20:3n3 or n6)



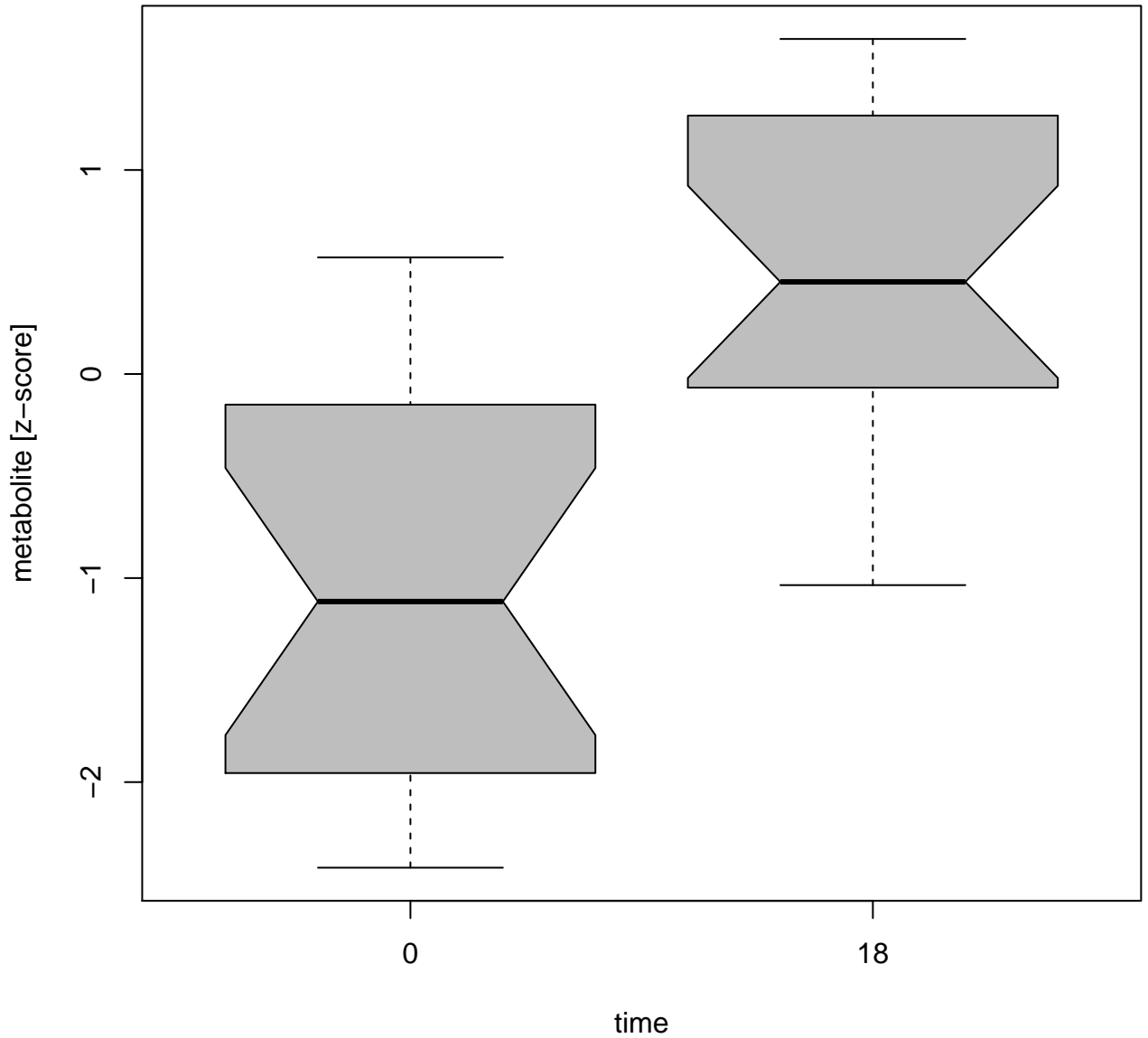
HCT15

dihomo-linolenate (20:3n3 or n6)

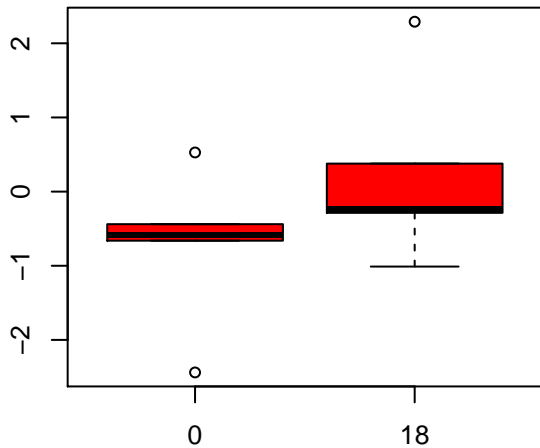


SKOV3

dihomo-linolenate (20:3n3 or n6)

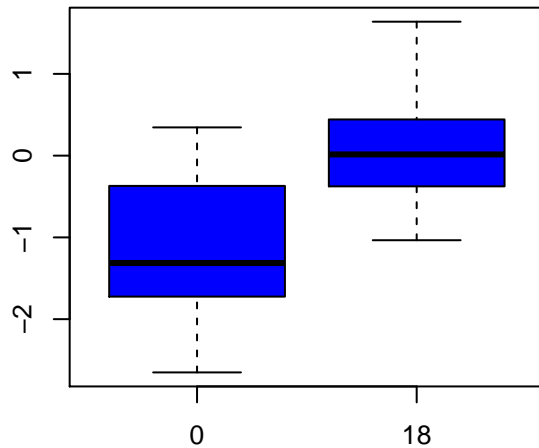


docosahexaenoate (DHA 22:6n3)



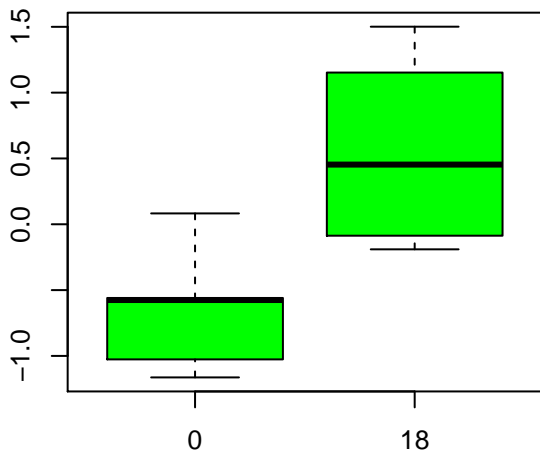
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docosahexaenoate (DHA 22:6n3)



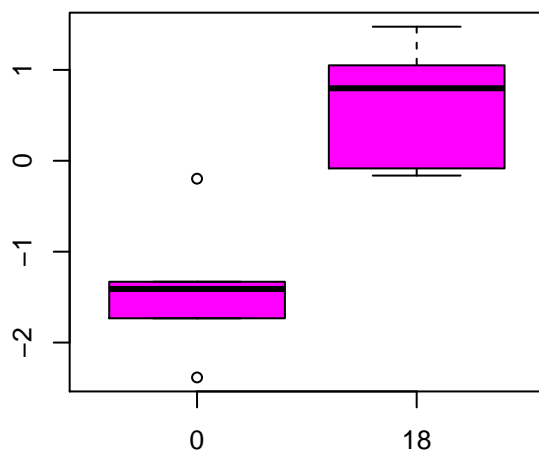
OVCAR

docosahexaenoate (DHA 22:6n3)



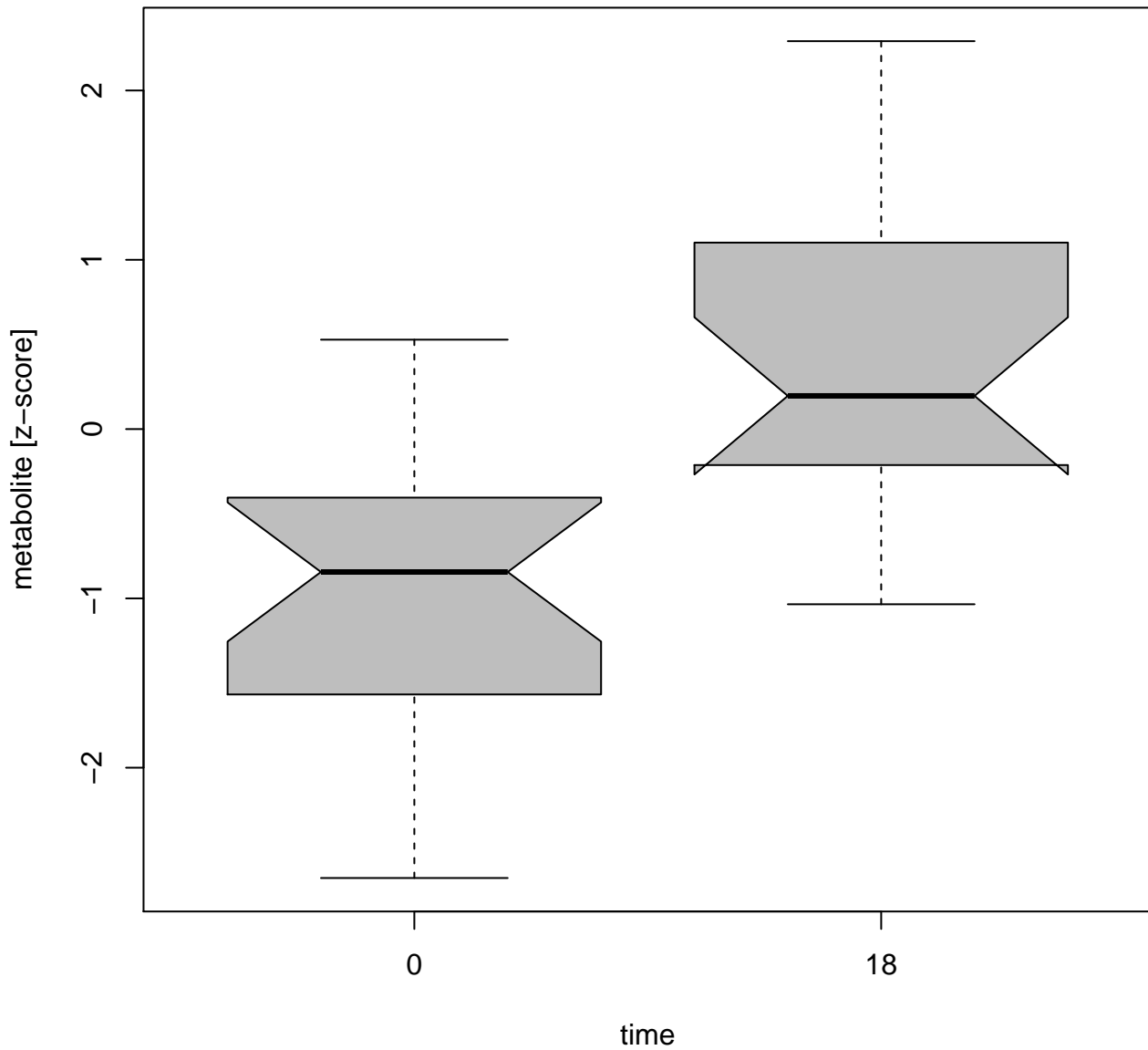
HCT15

docosahexaenoate (DHA 22:6n3)

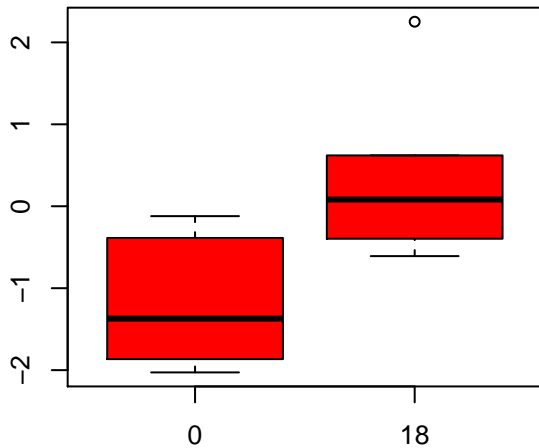


SKOV3

docosaehaenoate (DHA 22:6n3)

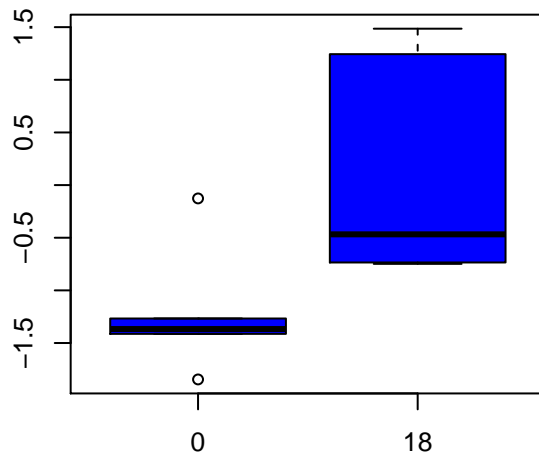


docosapentaenoate (n3 DPA 22:5n3)



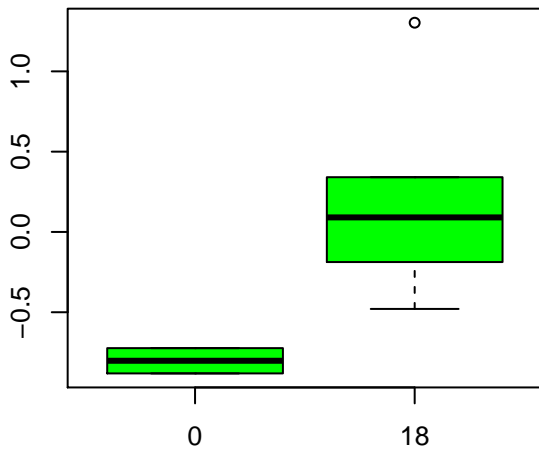
HCT116

docosapentaenoate (n3 DPA 22:5n3)



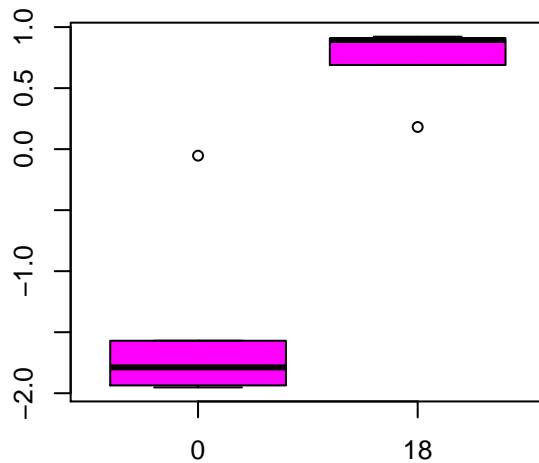
OVCAR

docosapentaenoate (n3 DPA 22:5n3)



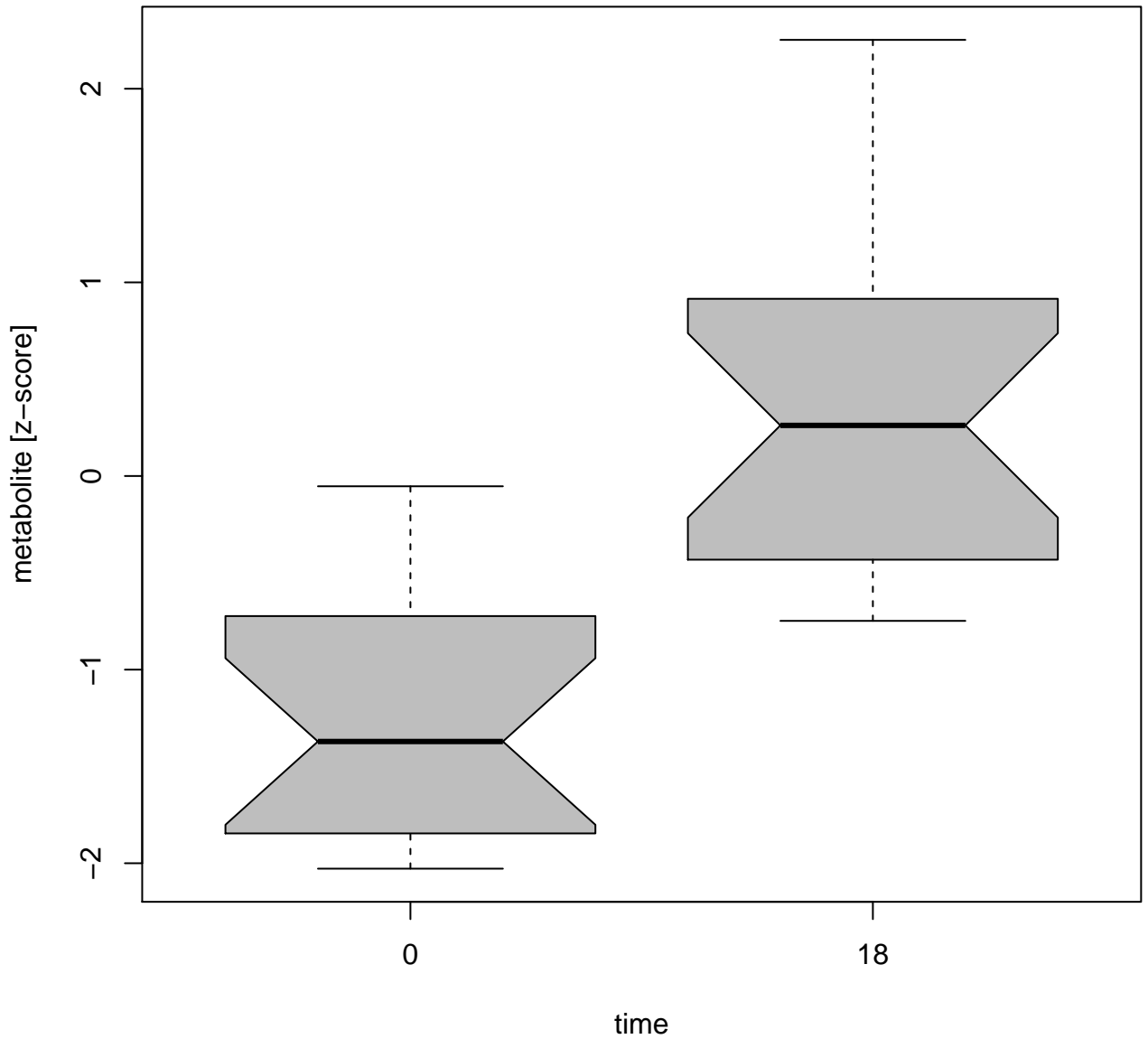
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docosapentaenoate (n3 DPA 22:5n3)

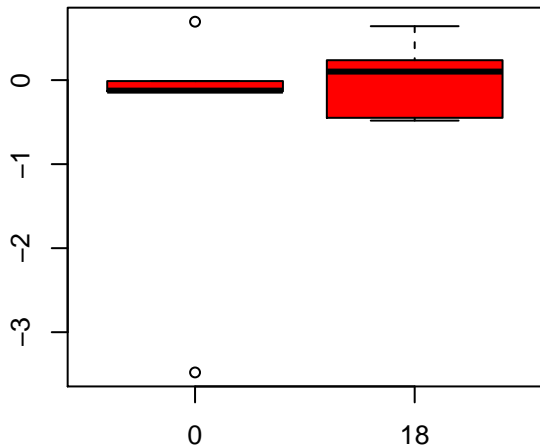


SKOV3

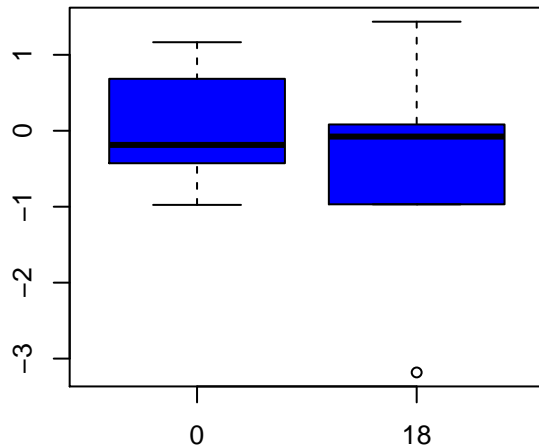
docosapentaenoate (n3 DPA 22:5n3)



EDTA

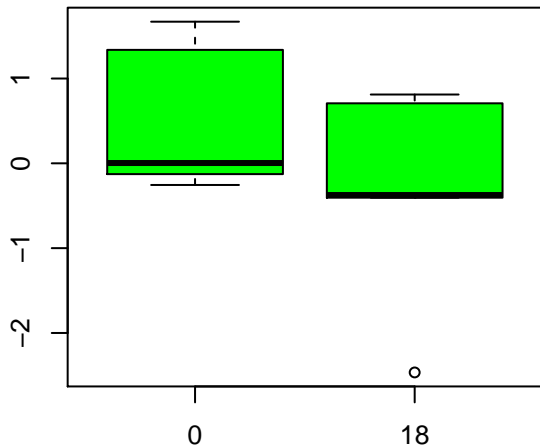


EDTA



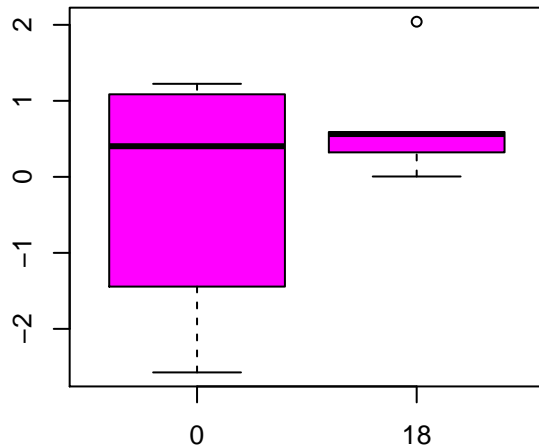
HCT116

EDTA



OVCAR

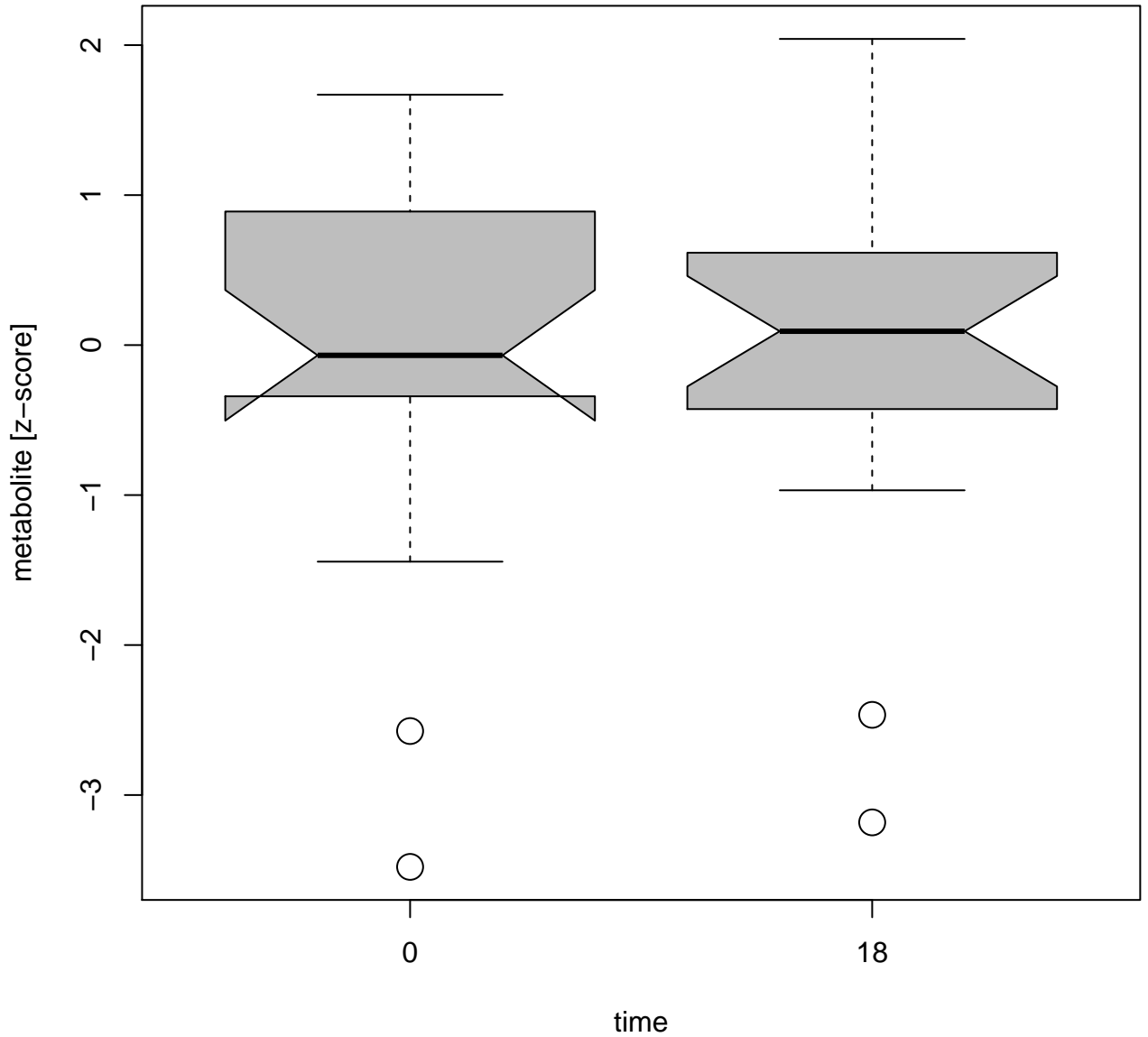
EDTA



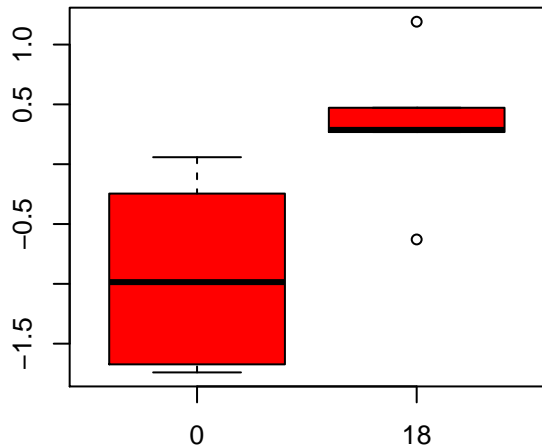
HCT15

SKOV3

EDTA

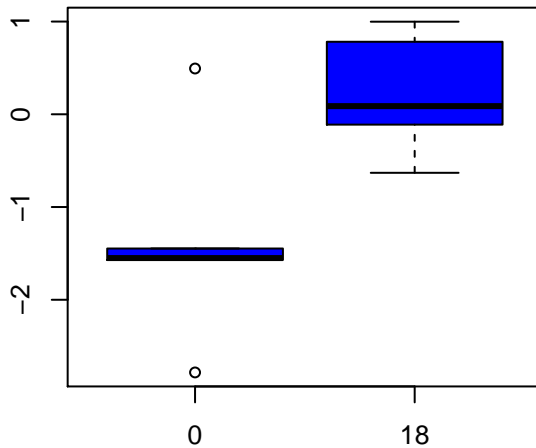


eicosapentaenoate (EPA 20:5n3)



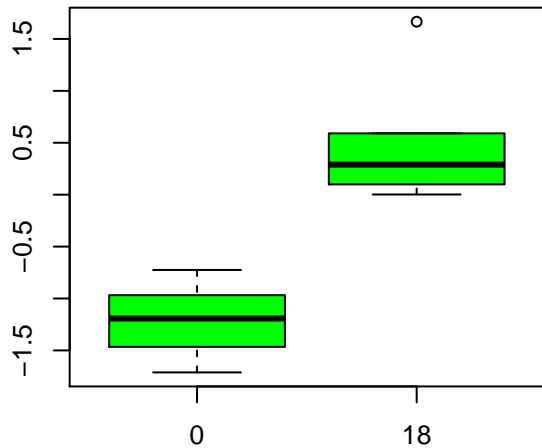
HCT116

eicosapentaenoate (EPA 20:5n3)



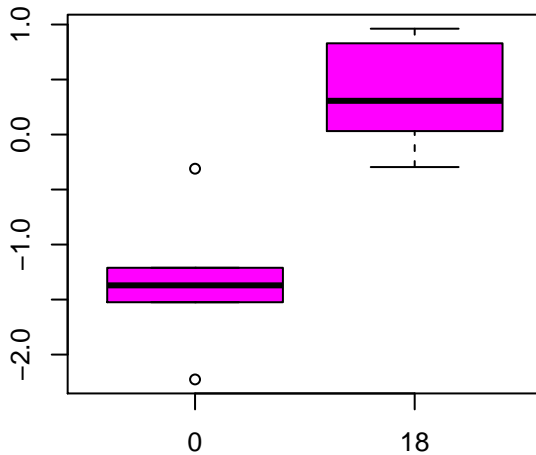
OVCAR

eicosapentaenoate (EPA 20:5n3)



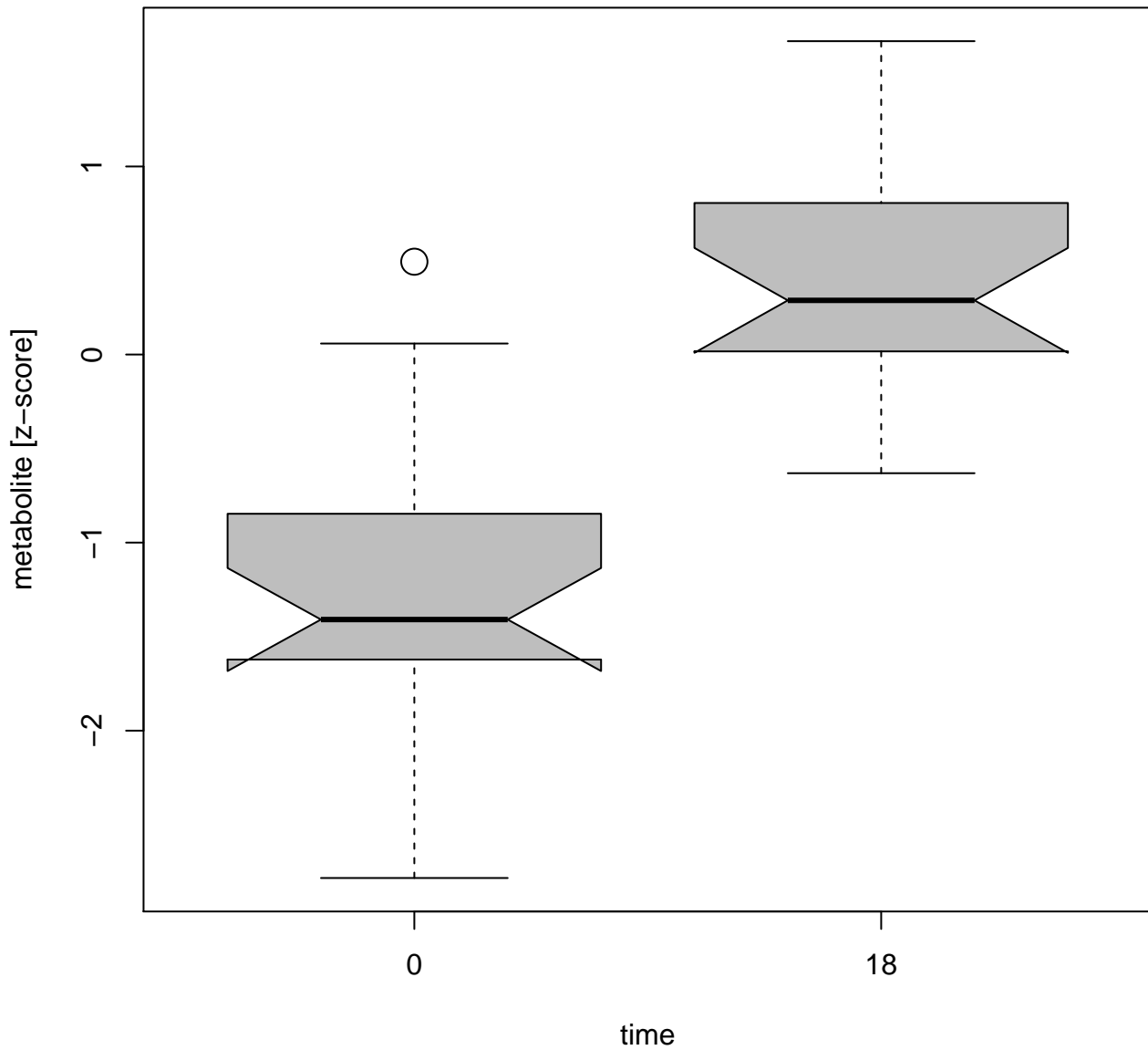
HCT15

eicosapentaenoate (EPA 20:5n3)

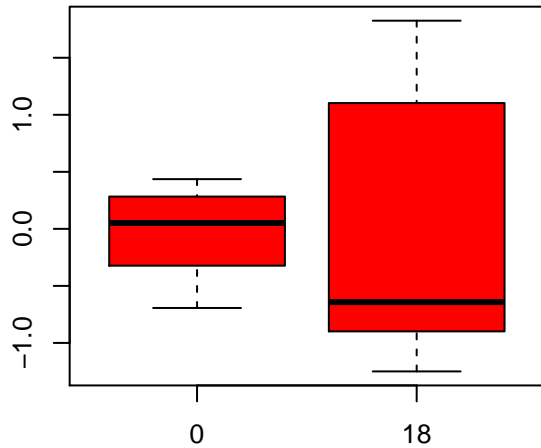


SKOV3

eicosapentaenoate (EPA 20:5n3)

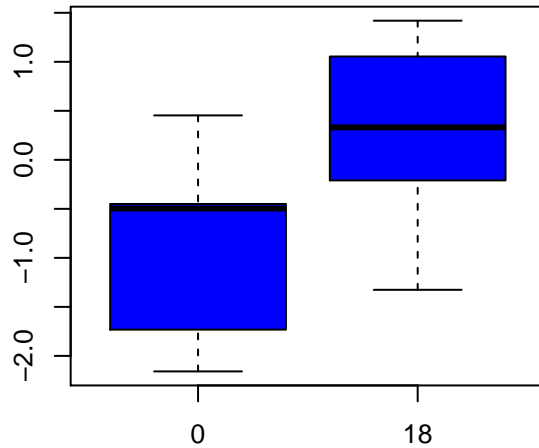


eicosenoate (20:1n9 or 11)



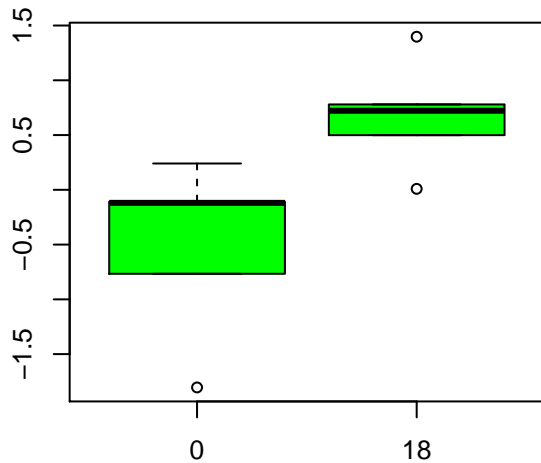
HCT116

eicosenoate (20:1n9 or 11)



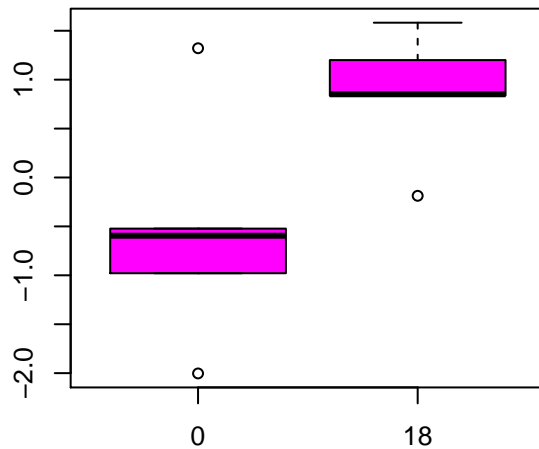
OVCAR

eicosenoate (20:1n9 or 11)



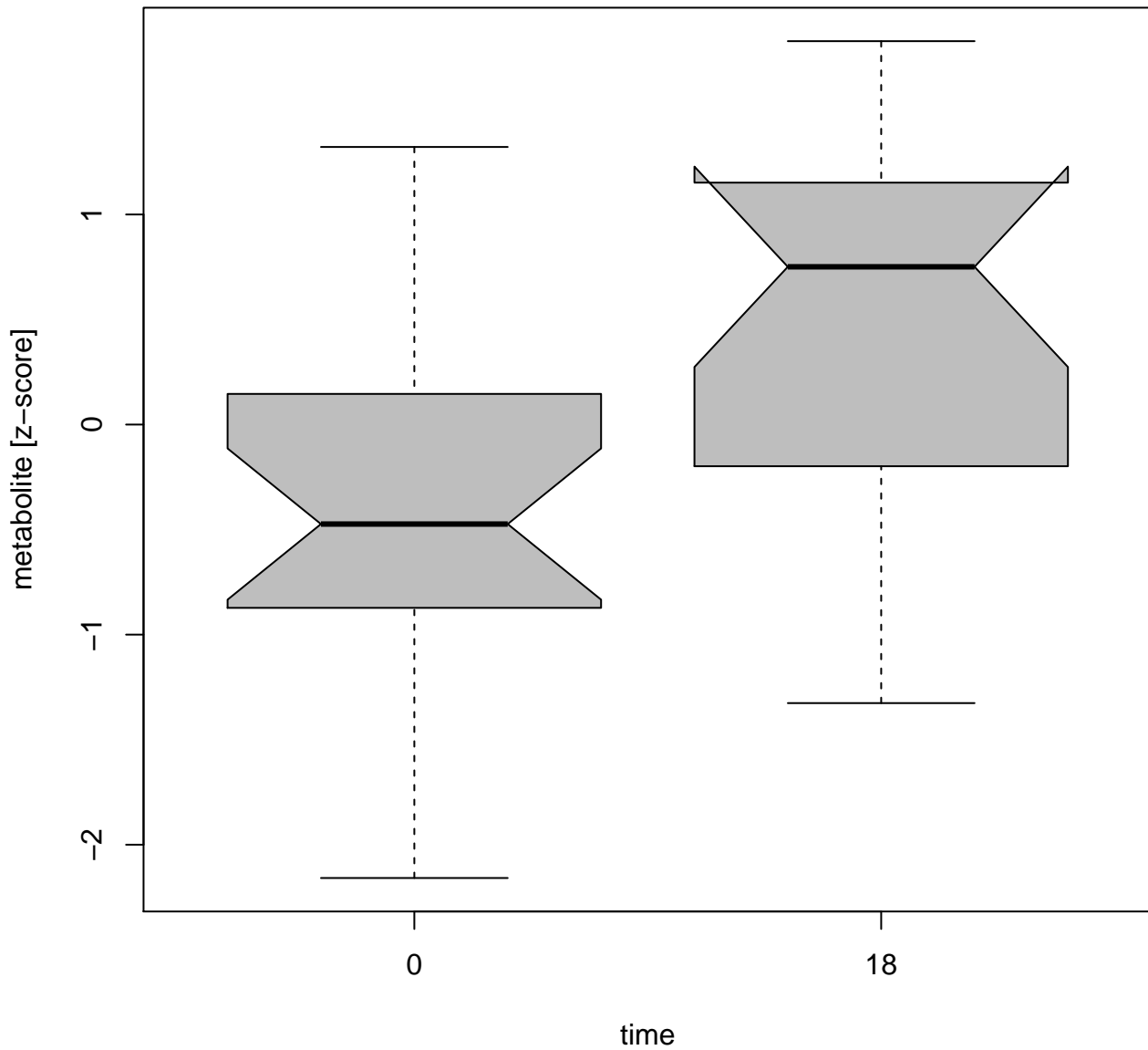
HCT15

eicosenoate (20:1n9 or 11)

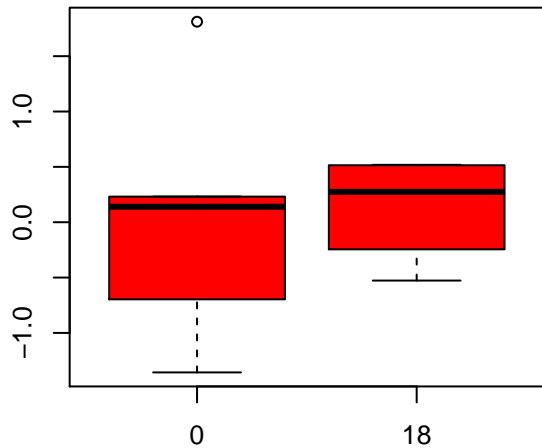


SKOV3

eicosenoate (20:1n9 or 11)

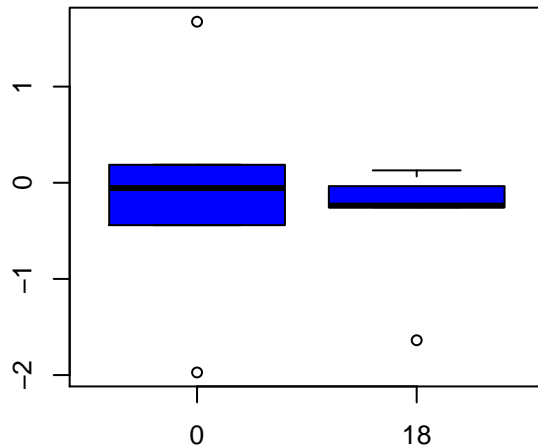


fumarate



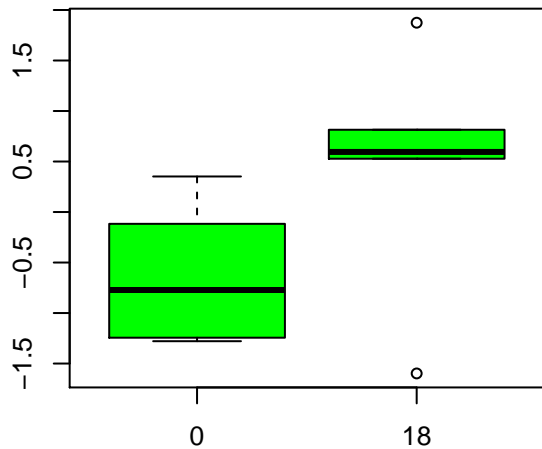
HCT116

fumarate



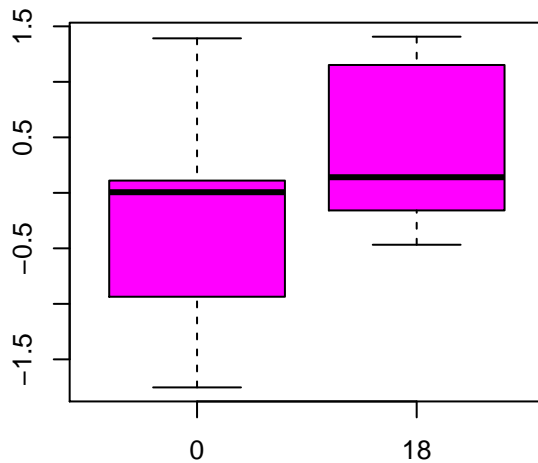
OVCAR

fumarate



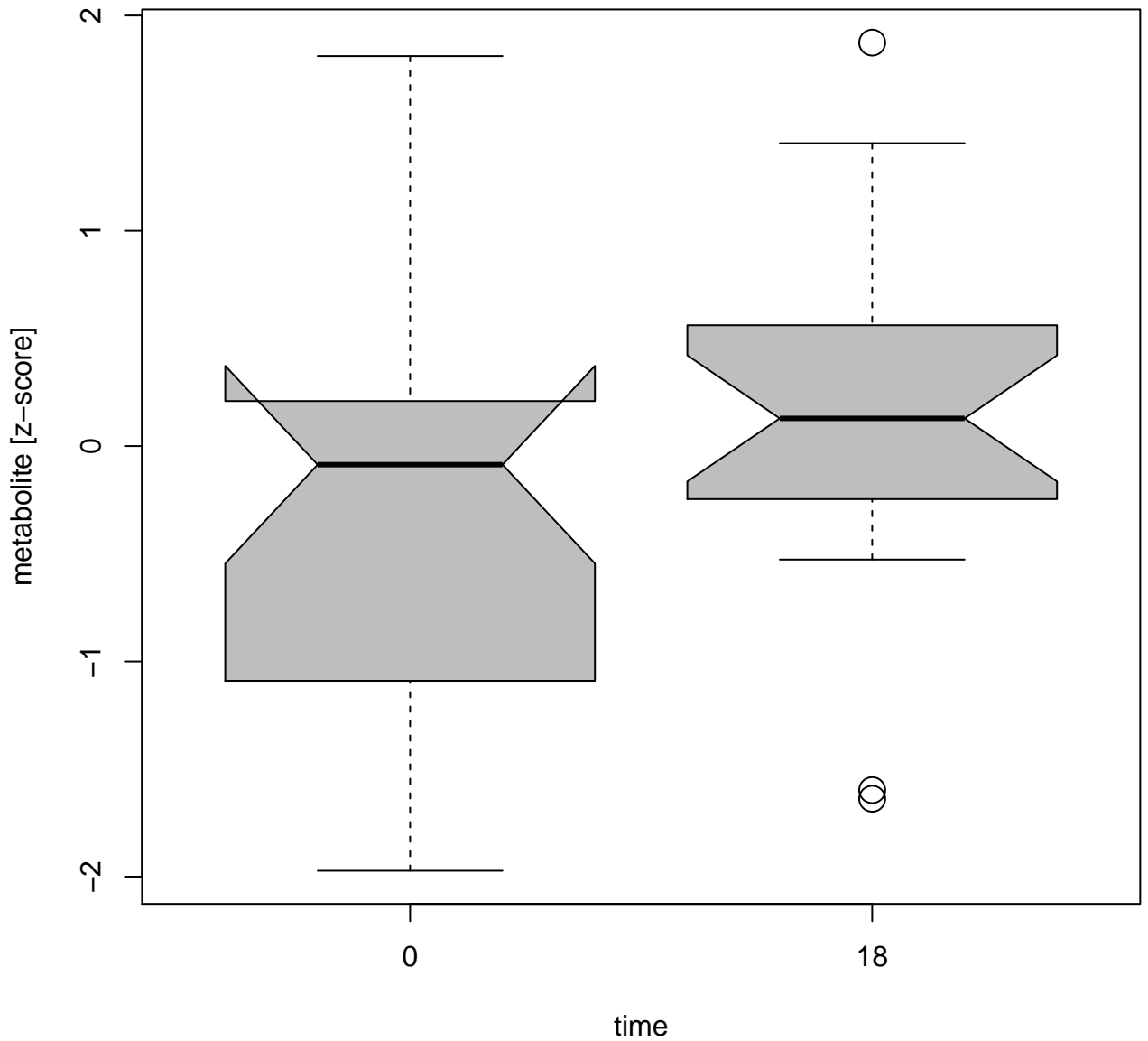
HCT15

fumarate

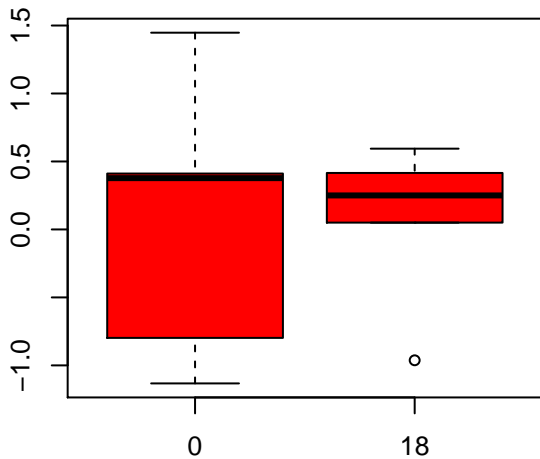


SKOV3

fumarate

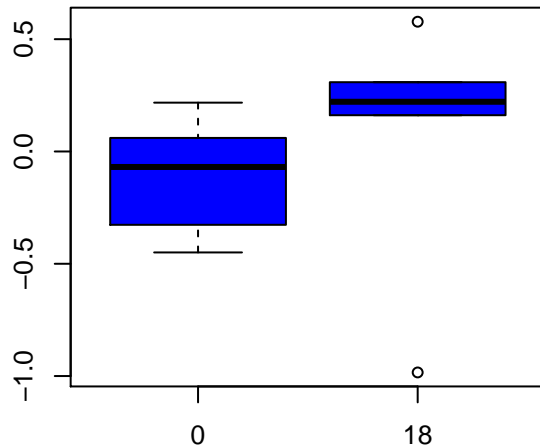


gamma-glutamylglutamate



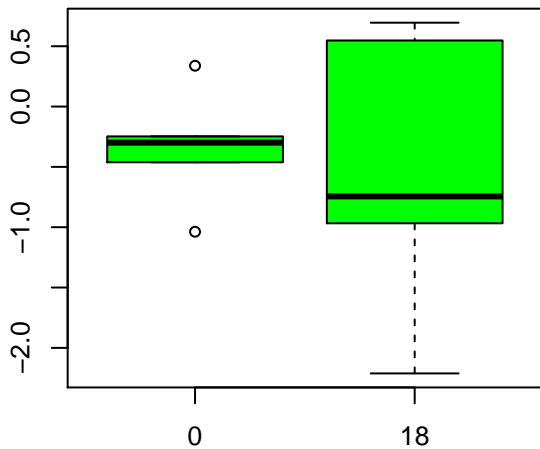
HCT116

gamma-glutamylglutamate



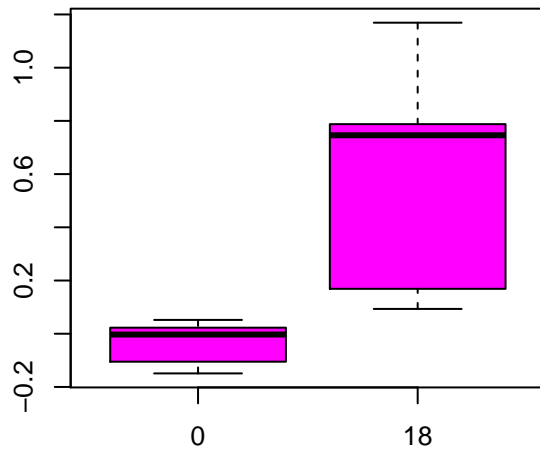
OVCAR

gamma-glutamylglutamate



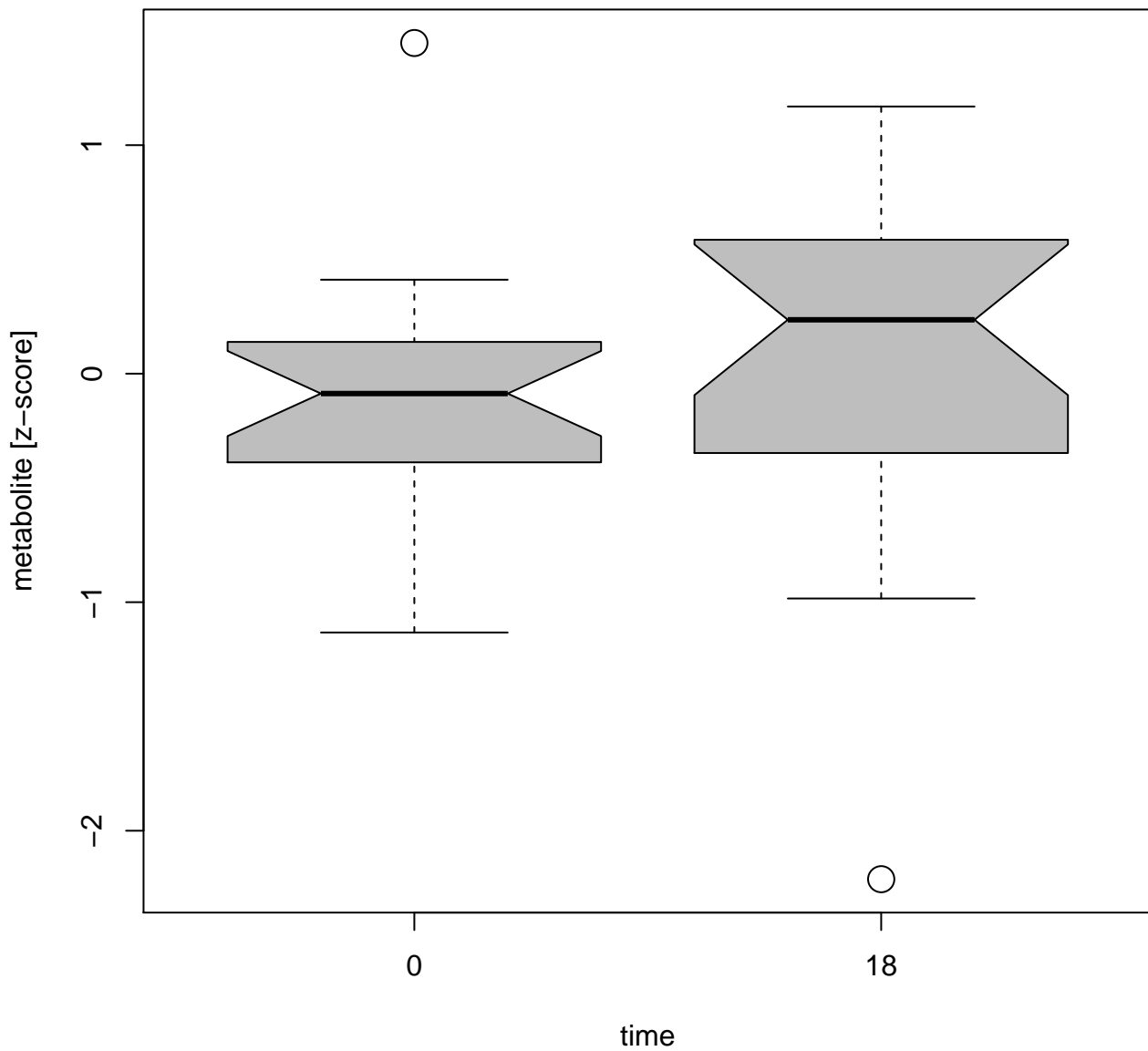
HCT15

gamma-glutamylglutamate

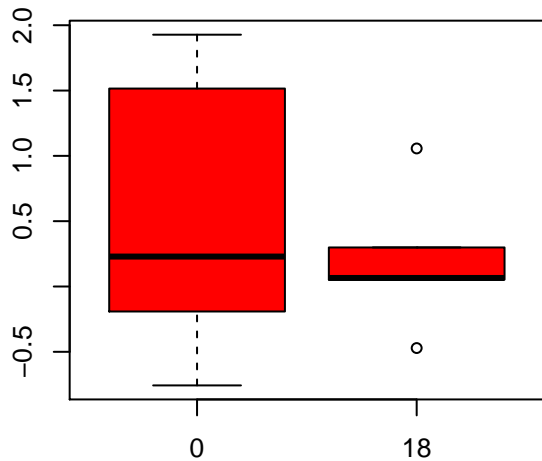


SKOV3

gamma-glutamylglutamate

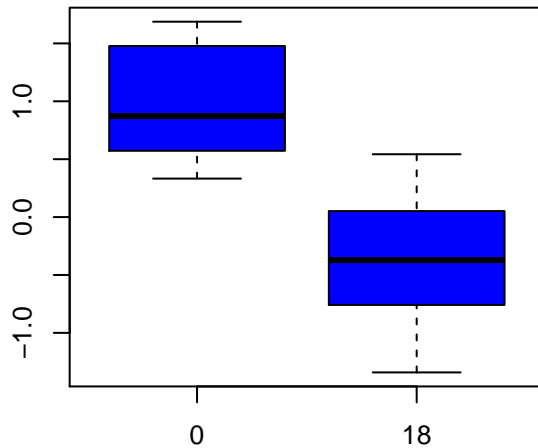


glucose



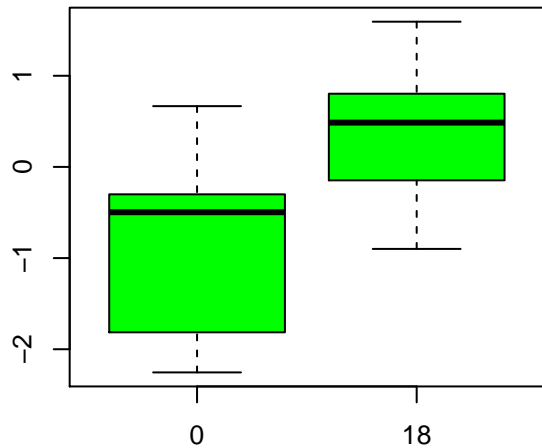
HCT116

glucose



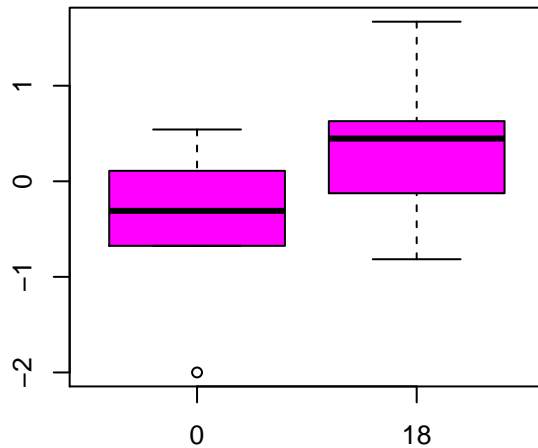
OVCAR

glucose



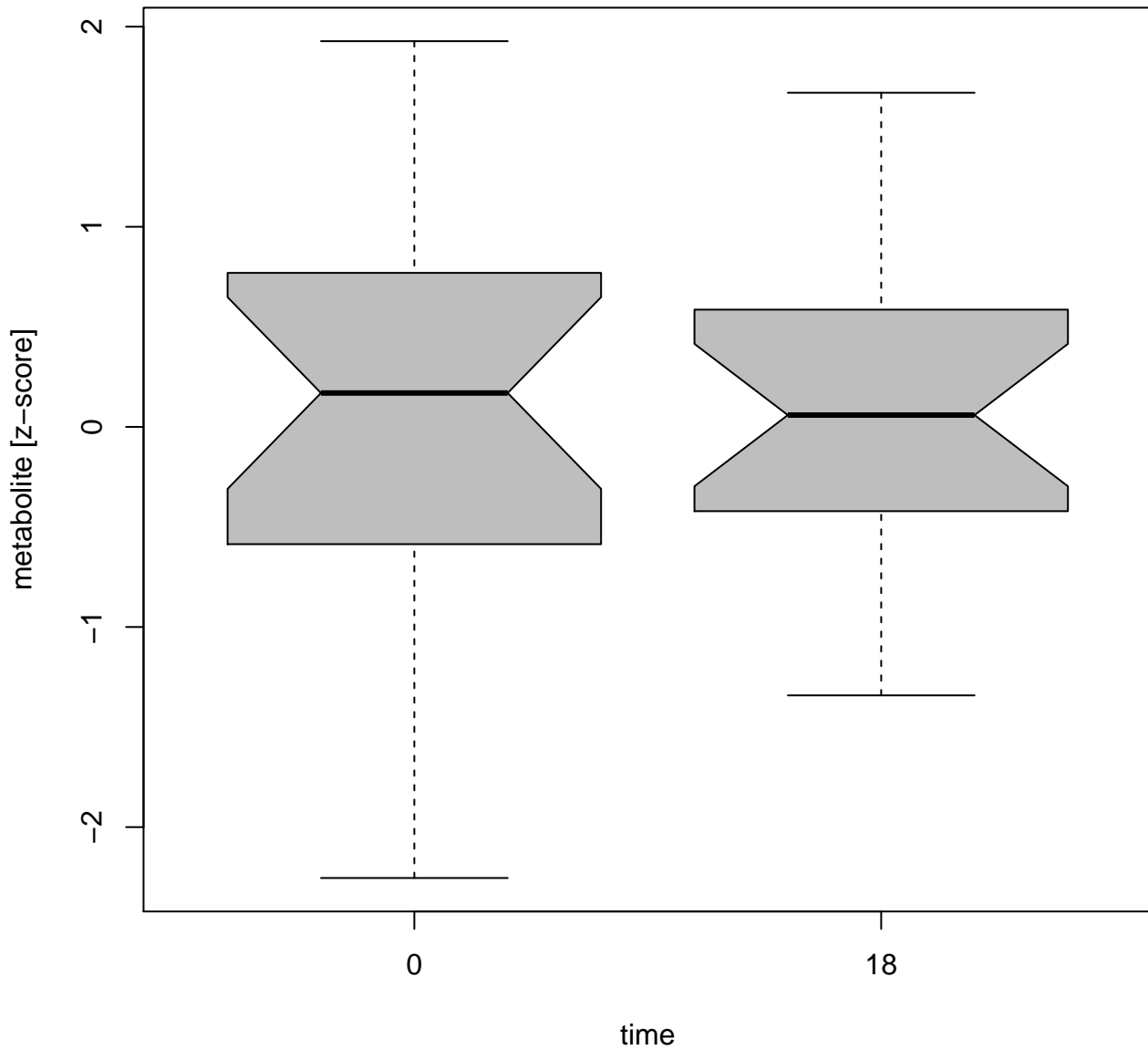
HCT15

glucose

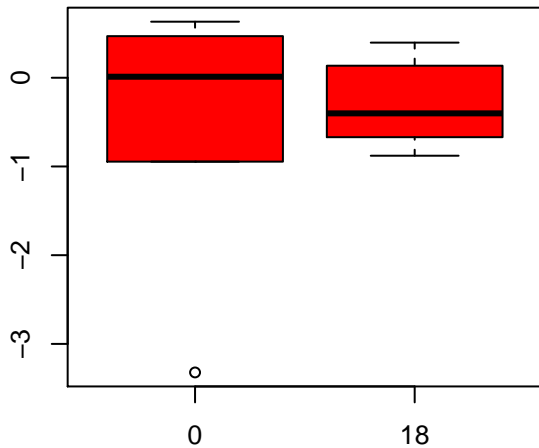


SKOV3

glucose

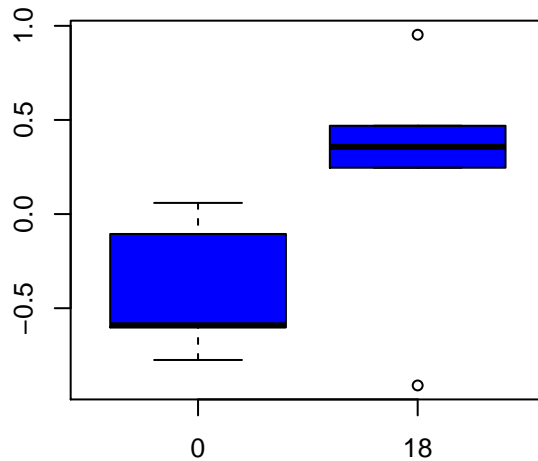


glutamate



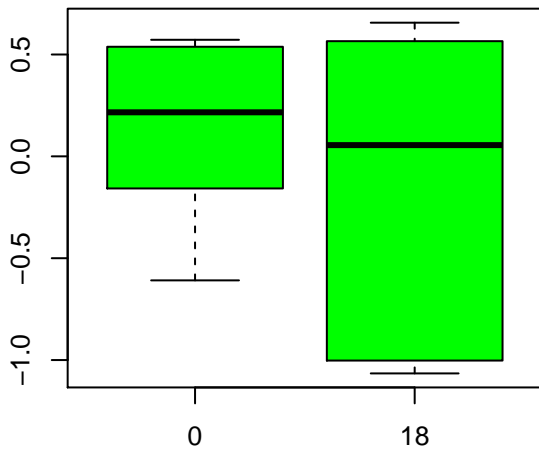
HCT116

glutamate



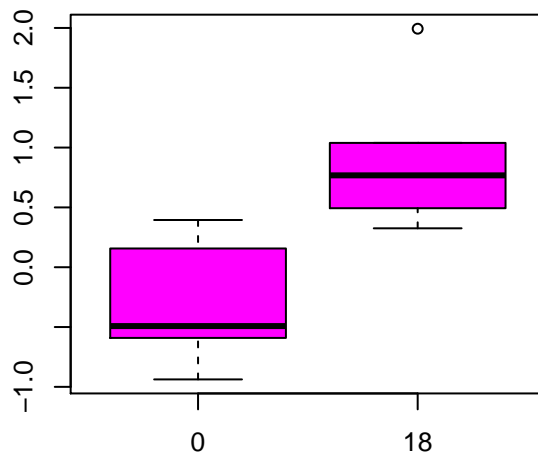
OVCAR

glutamate



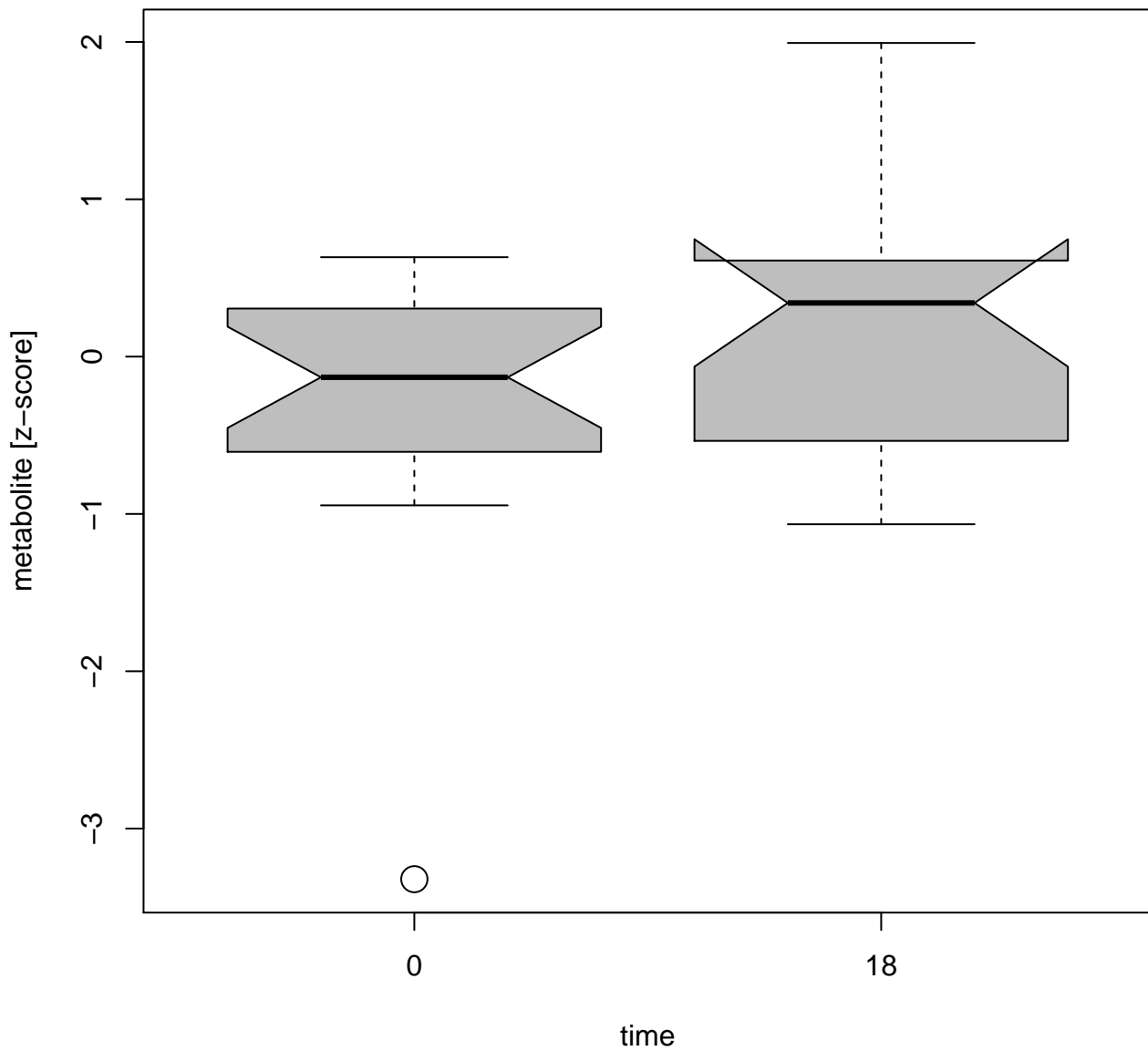
HCT15

glutamate

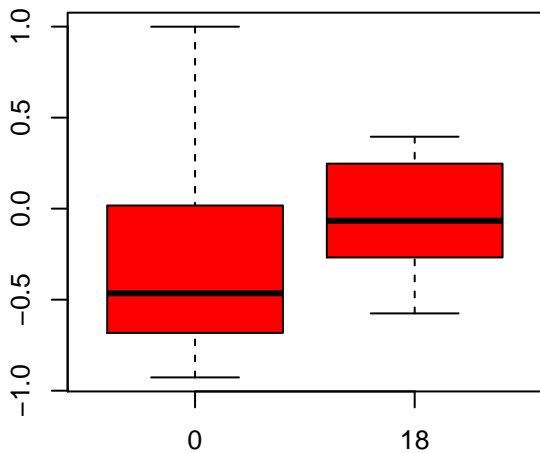


SKOV3

glutamate

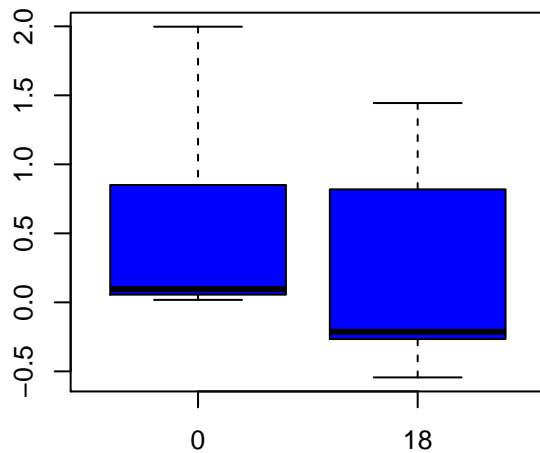


glutamine



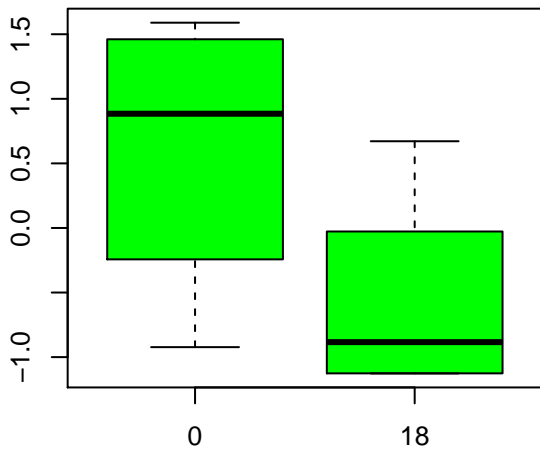
HCT116

glutamine



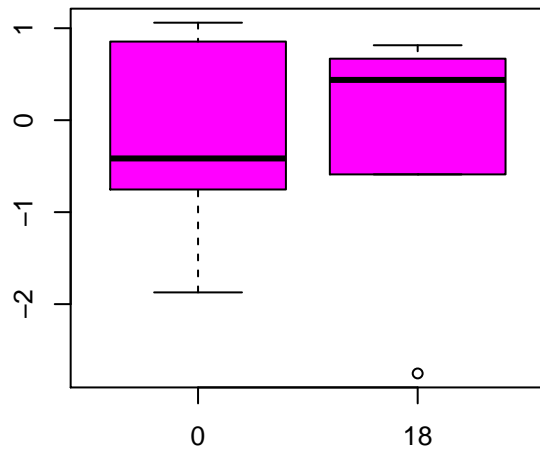
OVCAR

glutamine



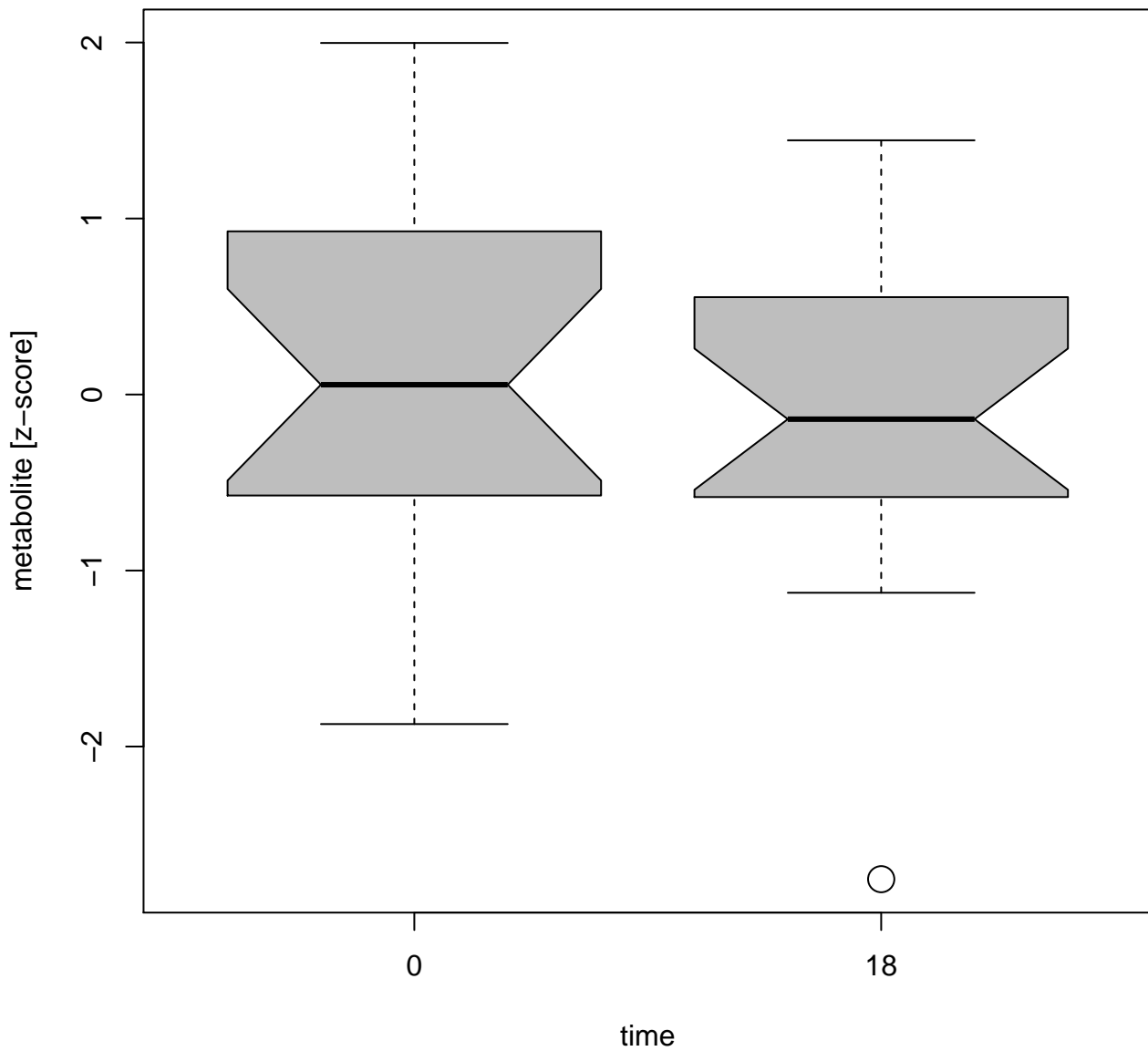
HCT15

glutamine

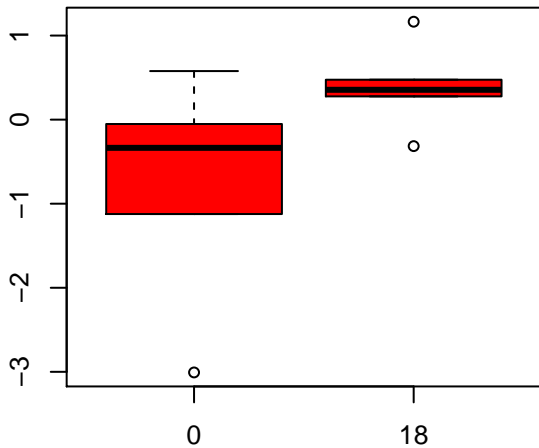


SKOV3

glutamine

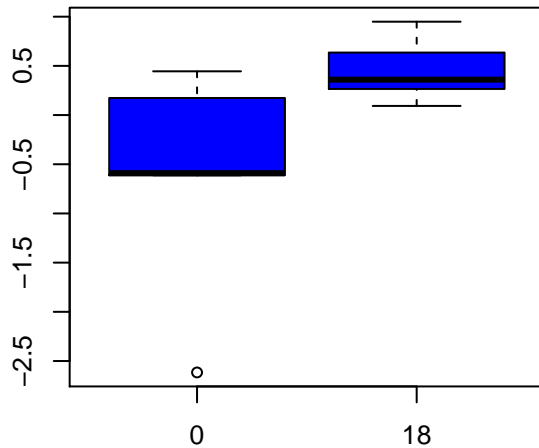


glutathione, oxidized (GSSG)



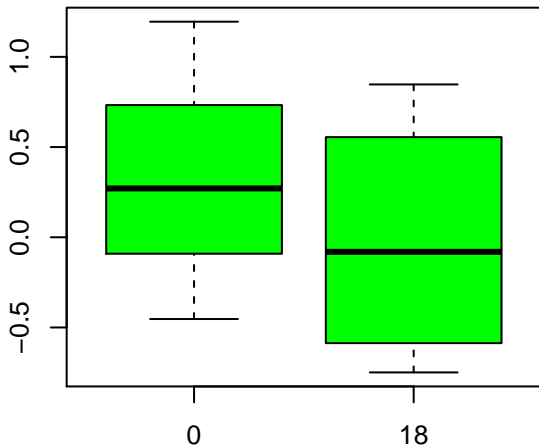
HCT116

glutathione, oxidized (GSSG)



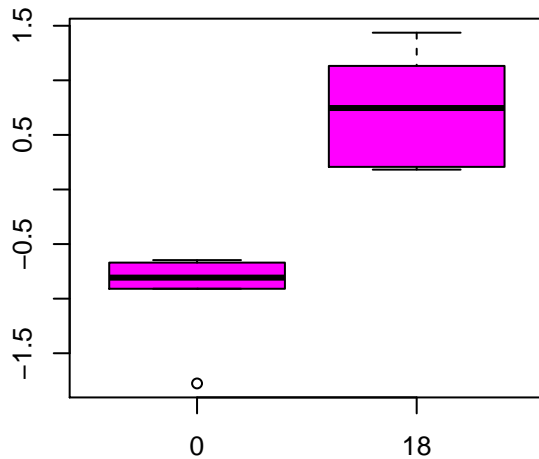
OVCAR

glutathione, oxidized (GSSG)



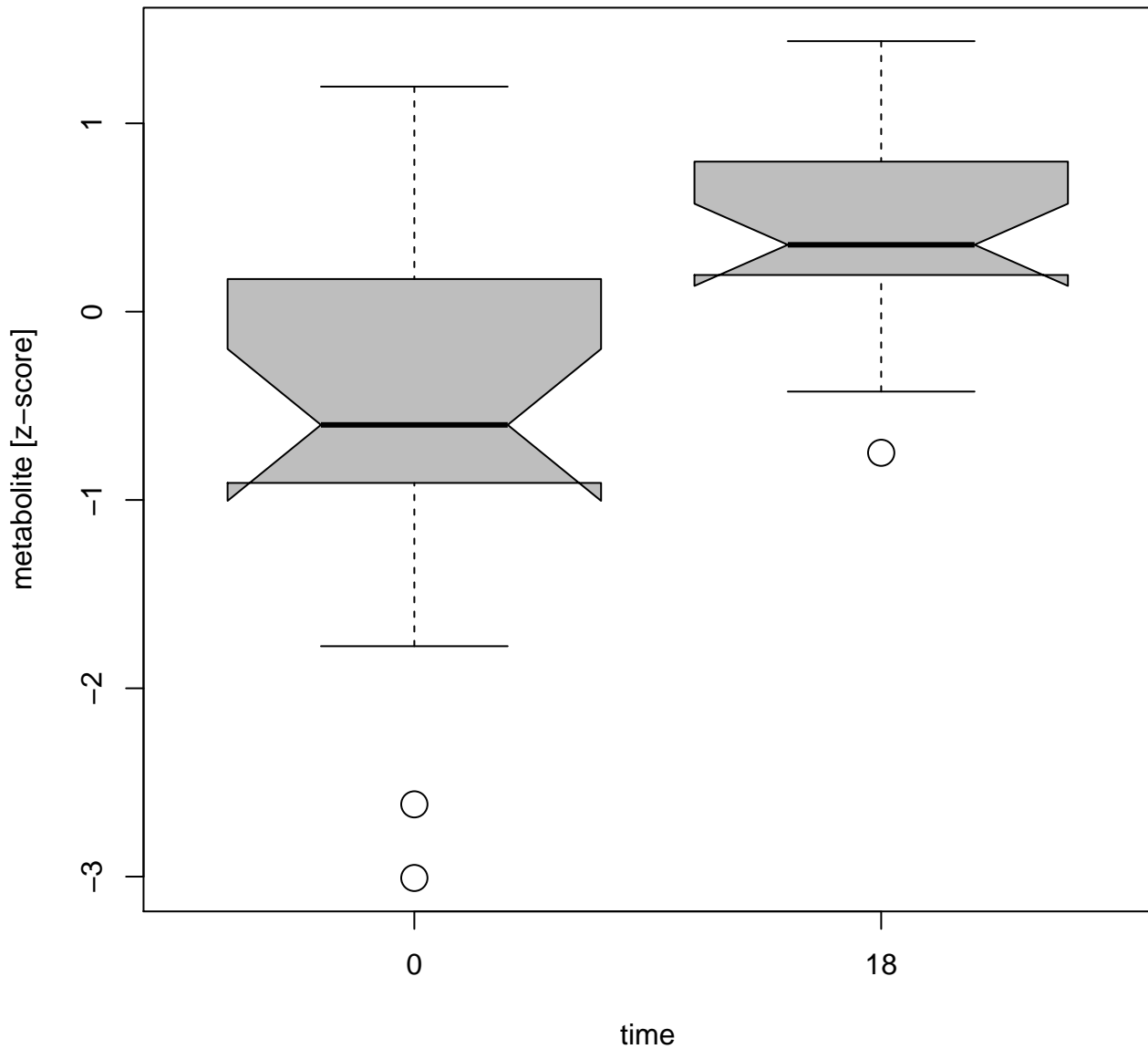
HCT15

glutathione, oxidized (GSSG)

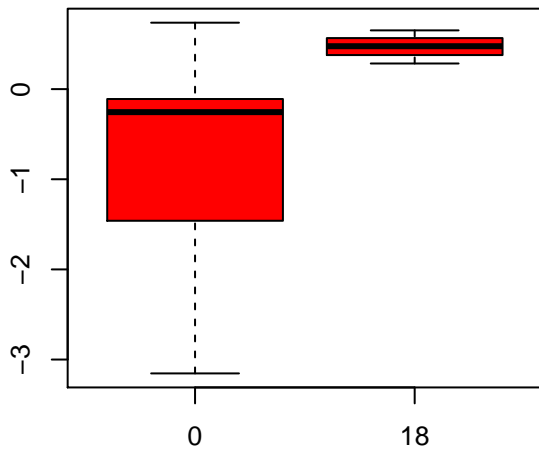


SKOV3

glutathione, oxidized (GSSG)

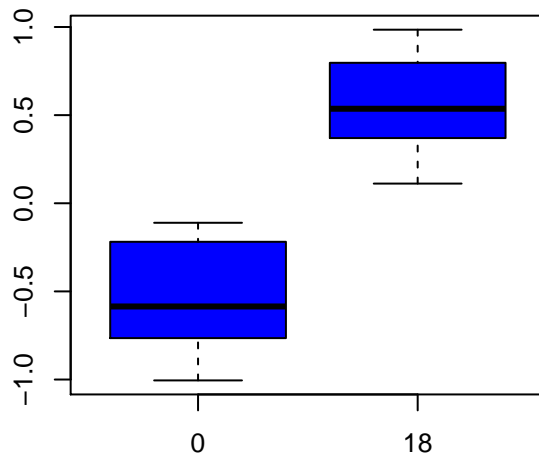


glutathione, reduced (GSH)



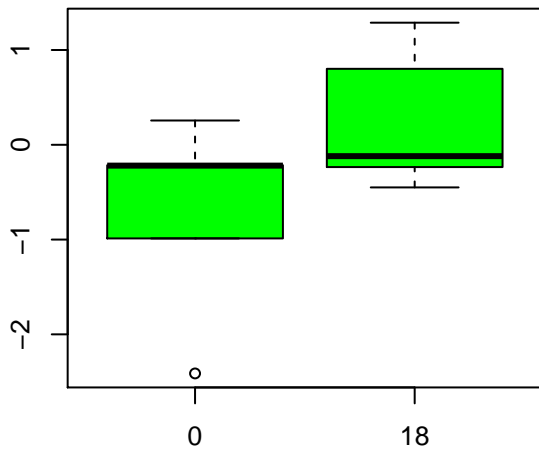
HCT116

glutathione, reduced (GSH)



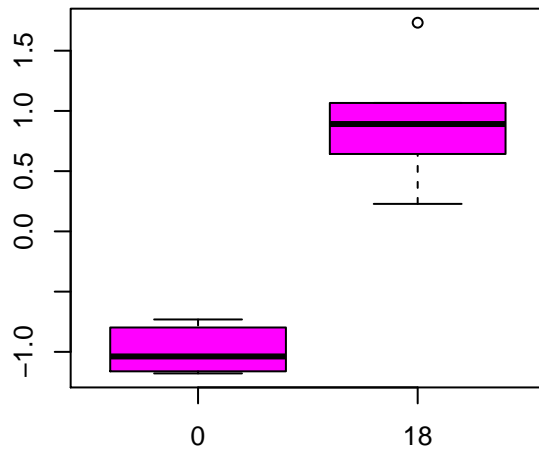
OVCAR

glutathione, reduced (GSH)



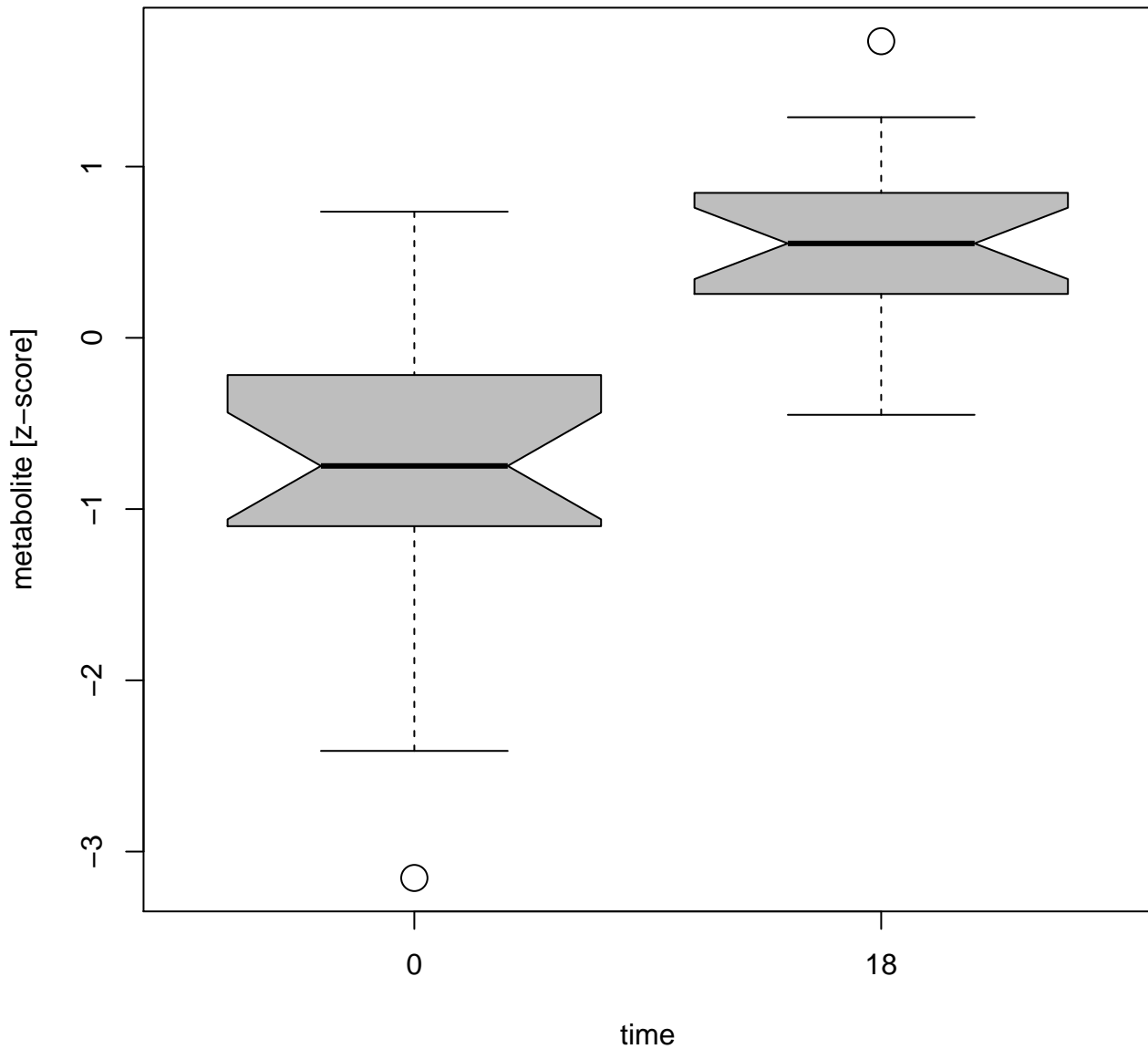
HCT15

glutathione, reduced (GSH)

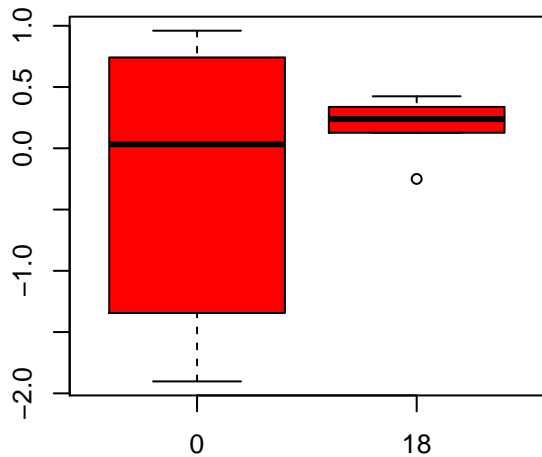


SKOV3

glutathione, reduced (GSH)

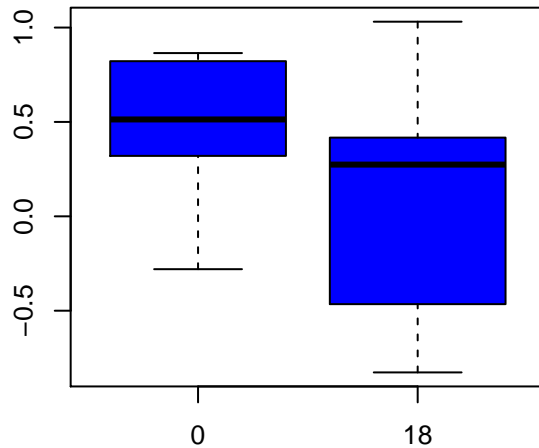


glycerol



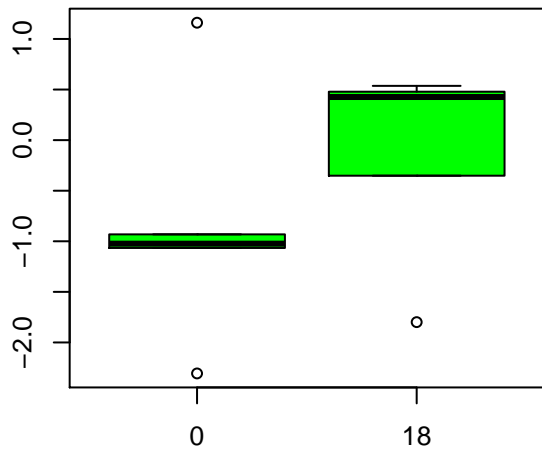
HCT116

glycerol



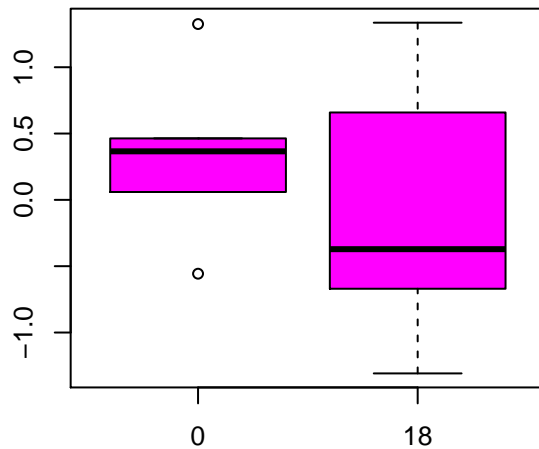
OVCAR

glycerol



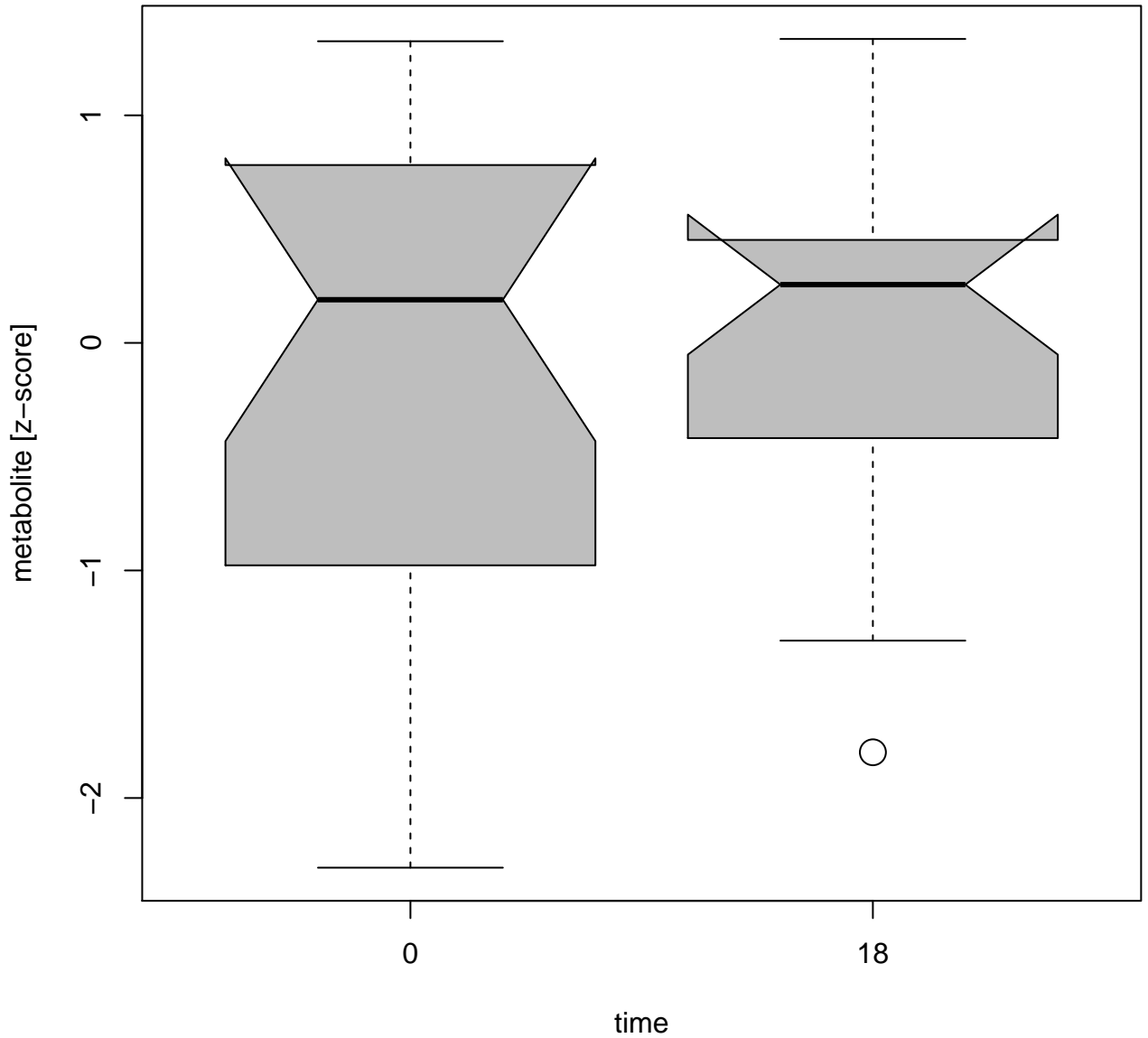
HCT15

glycerol

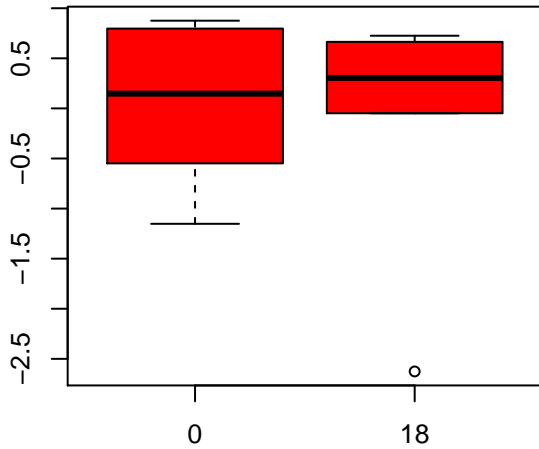


SKOV3

glycerol

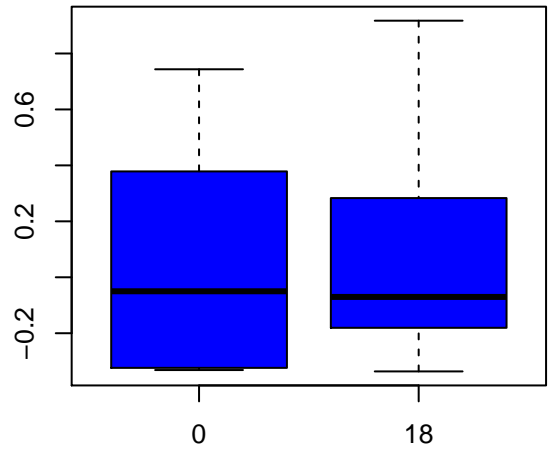


glycerol 3-phosphate (G3P)



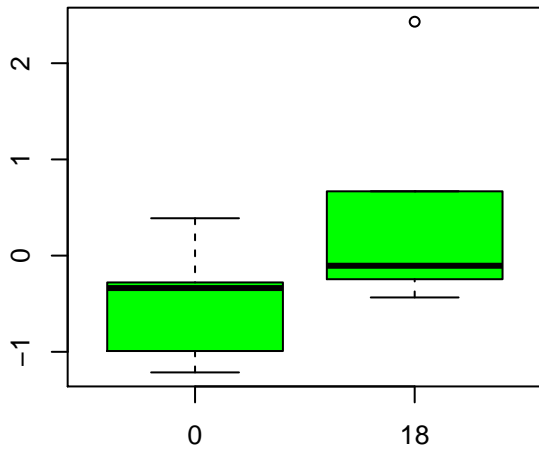
HCT116

glycerol 3-phosphate (G3P)



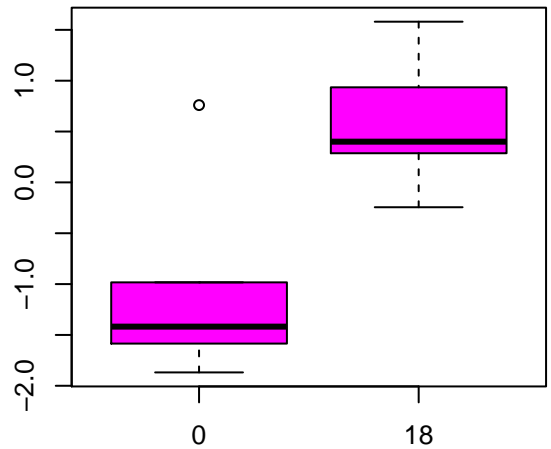
OVCAR

glycerol 3-phosphate (G3P)



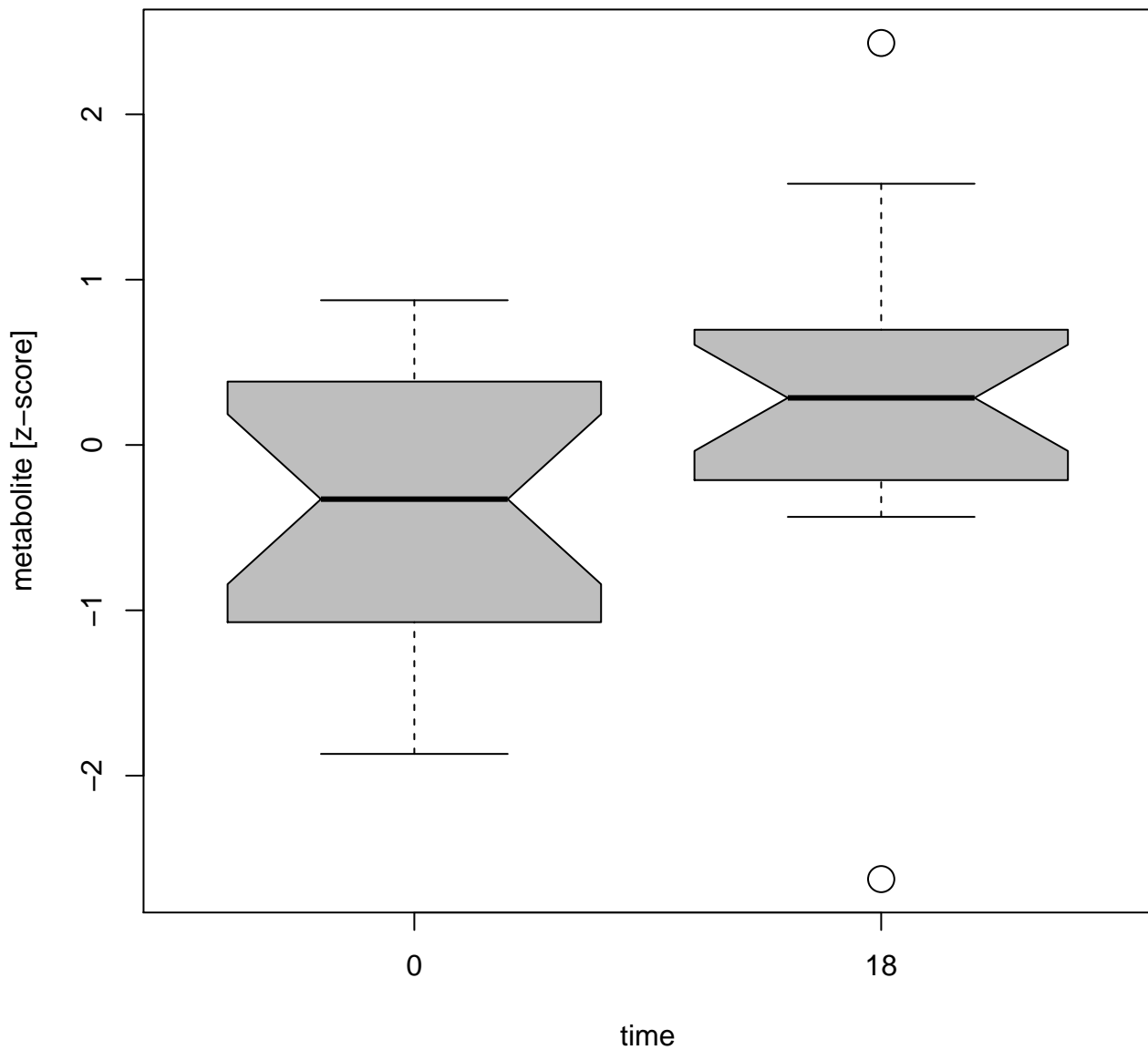
HCT15

glycerol 3-phosphate (G3P)

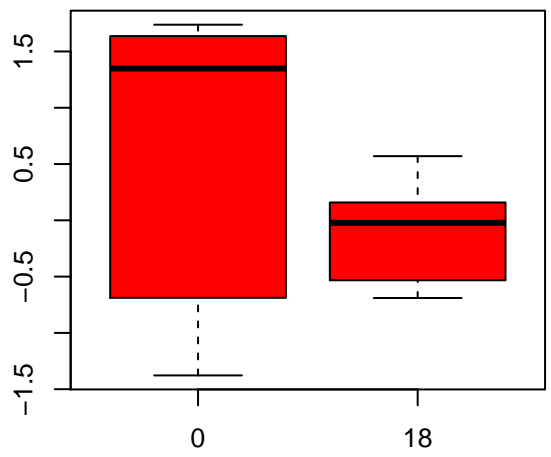


SKOV3

glycerol 3-phosphate (G3P)

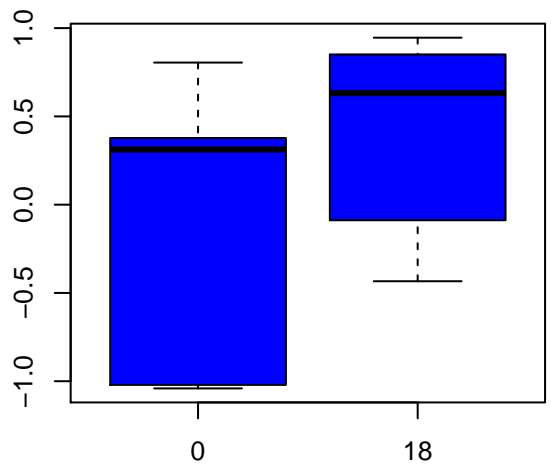


glycerophosphoethanolamine



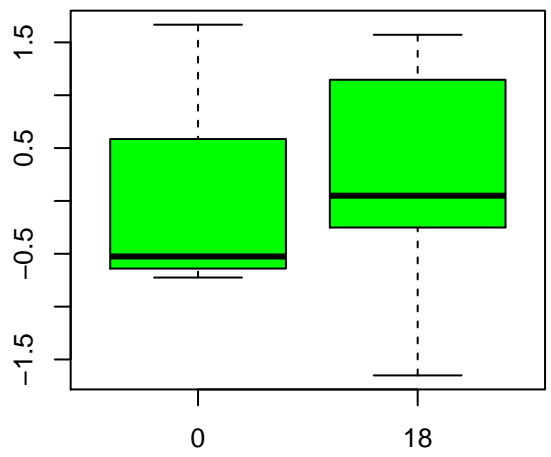
HCT116

glycerophosphoethanolamine



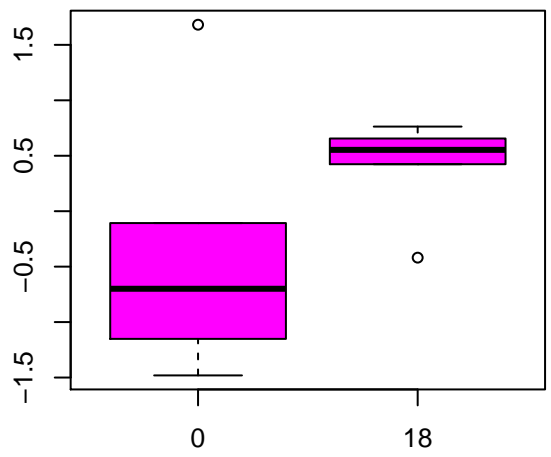
OVCAR

glycerophosphoethanolamine



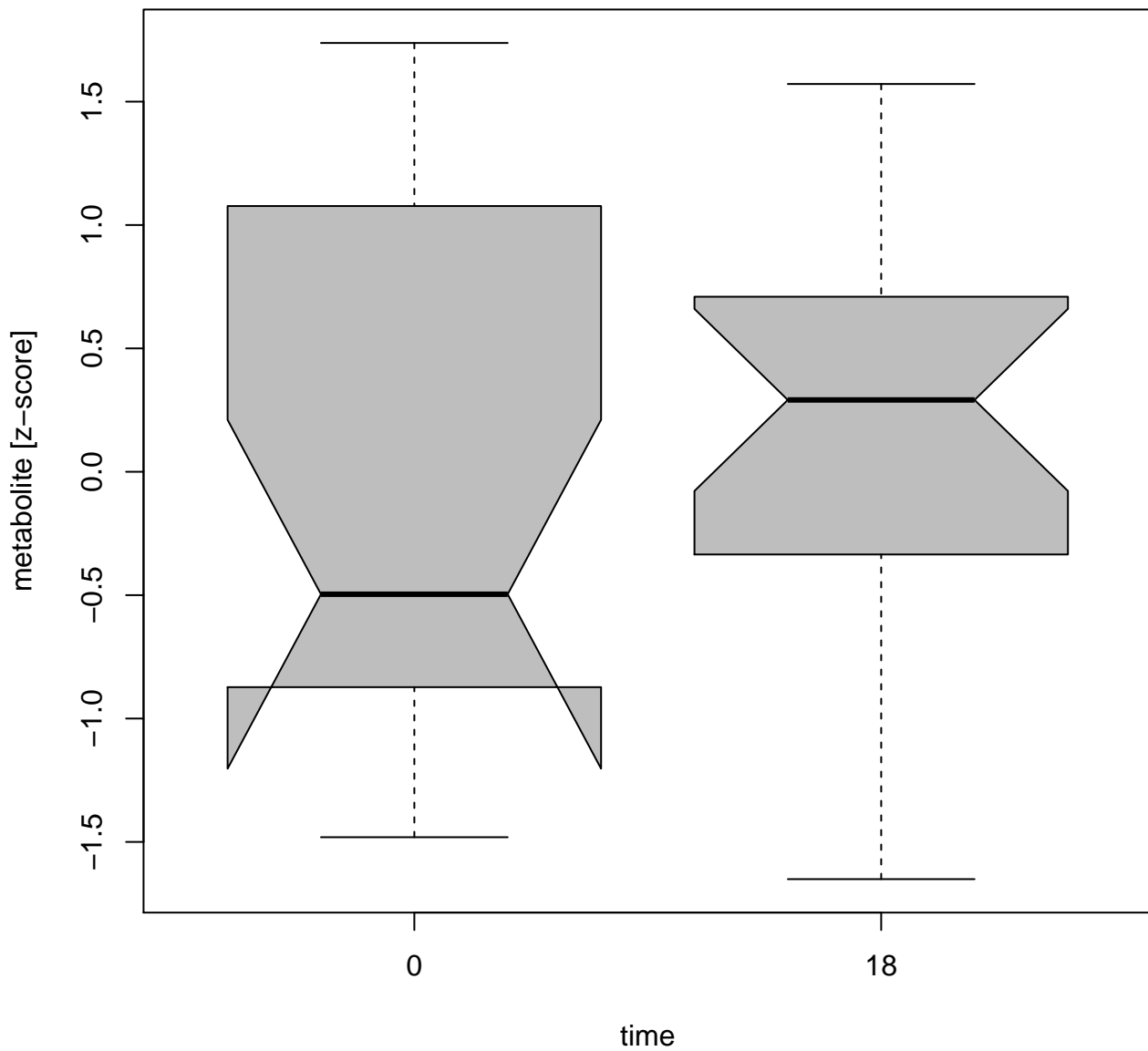
HCT15

glycerophosphoethanolamine

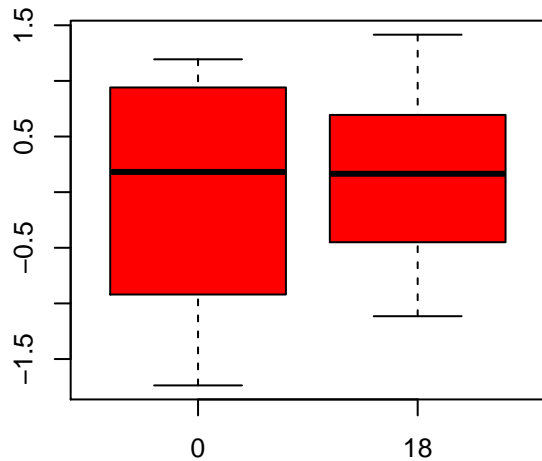


SKOV3

glycerophosphoethanolamine

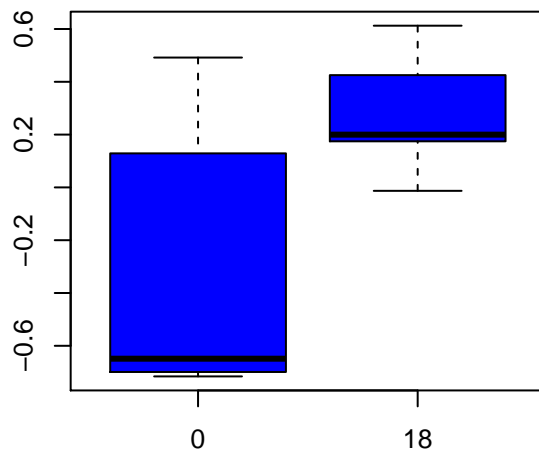


glycerophosphorylcholine (GPC)



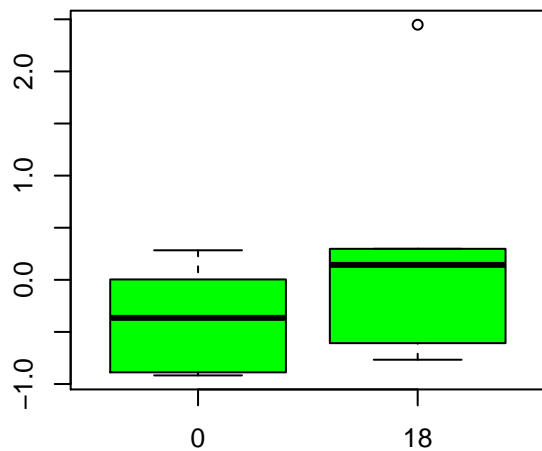
HCT116

glycerophosphorylcholine (GPC)



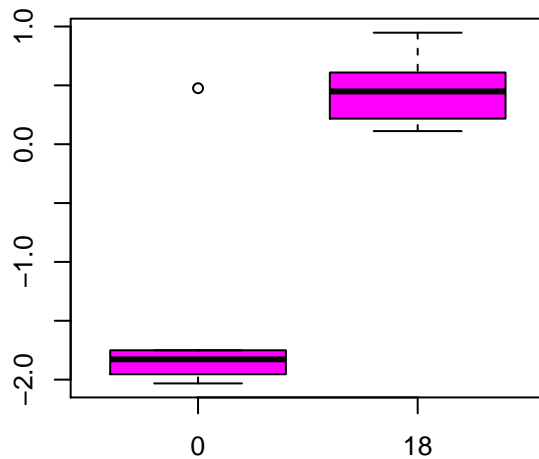
OVCAR

glycerophosphorylcholine (GPC)



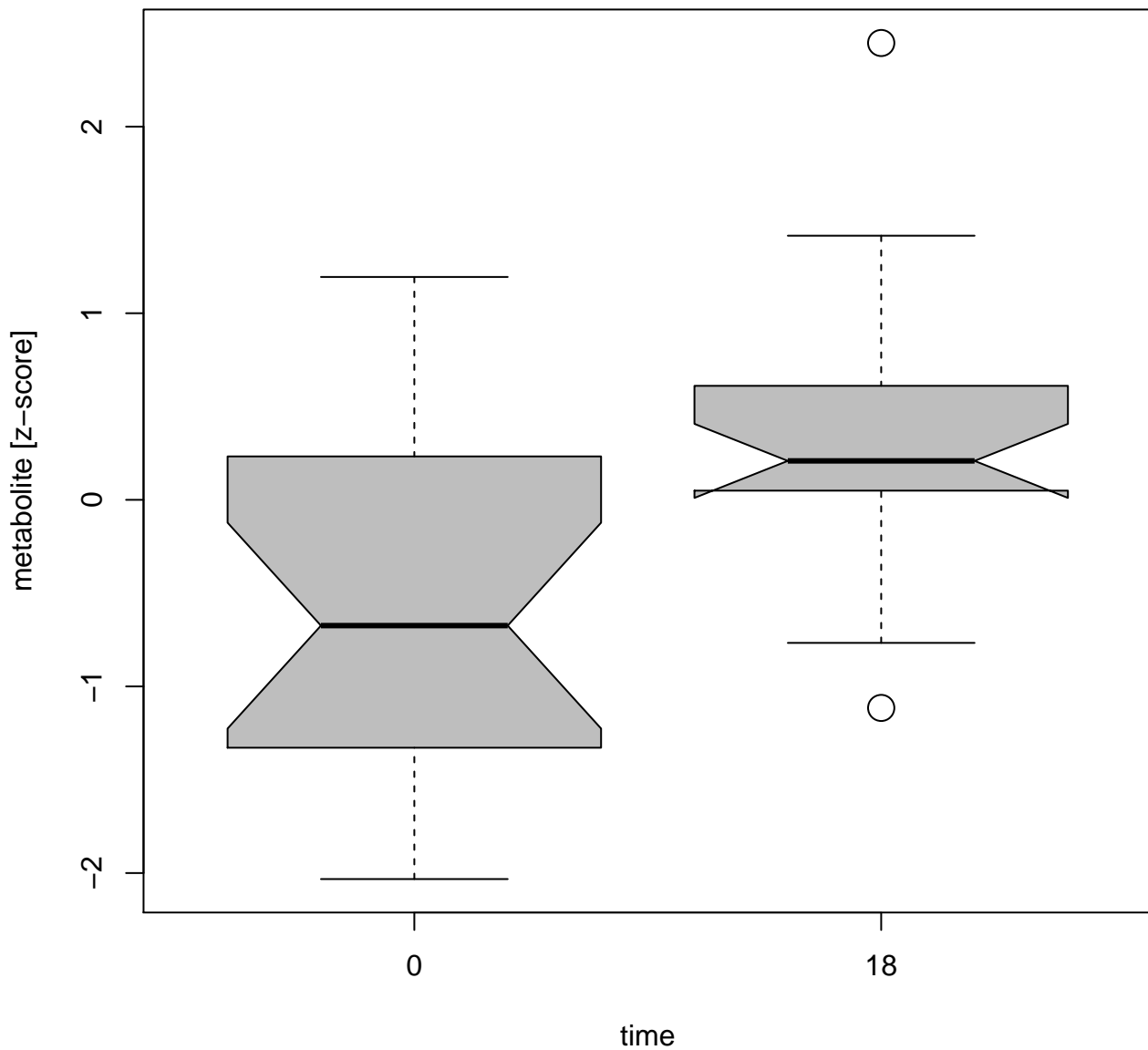
HCT15

glycerophosphorylcholine (GPC)

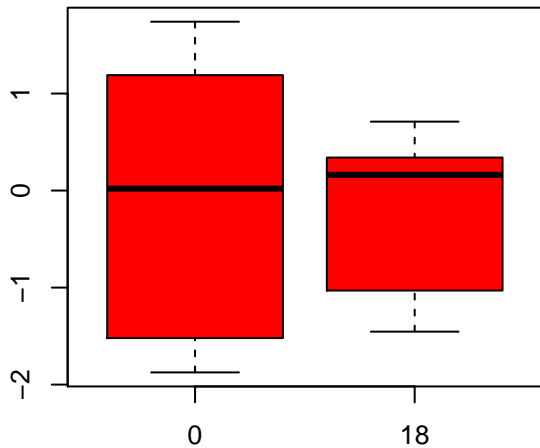


SKOV3

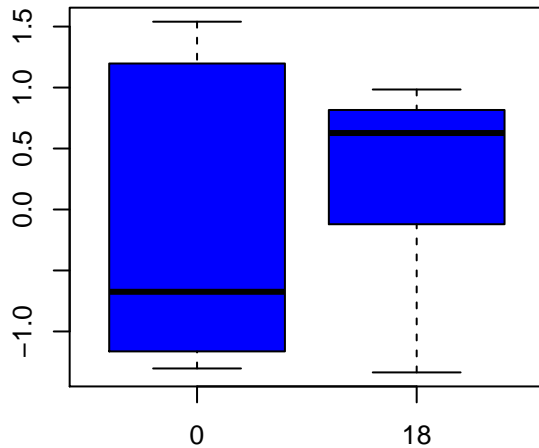
glycerophosphorylcholine (GPC)



glycine

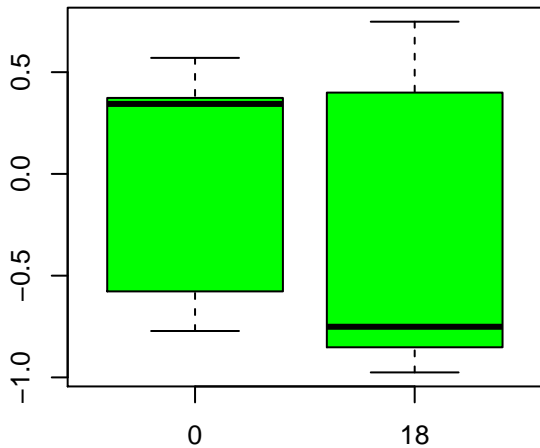


glycine



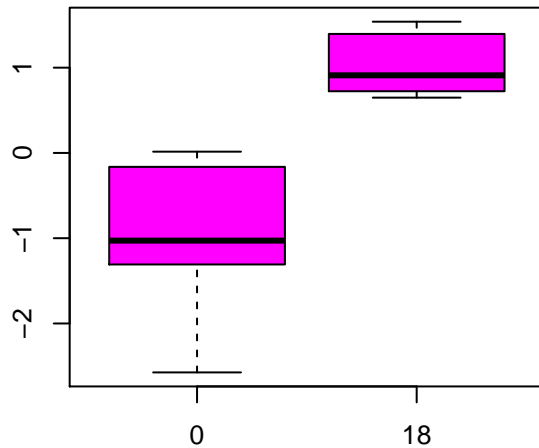
HCT116

glycine



OVCAR

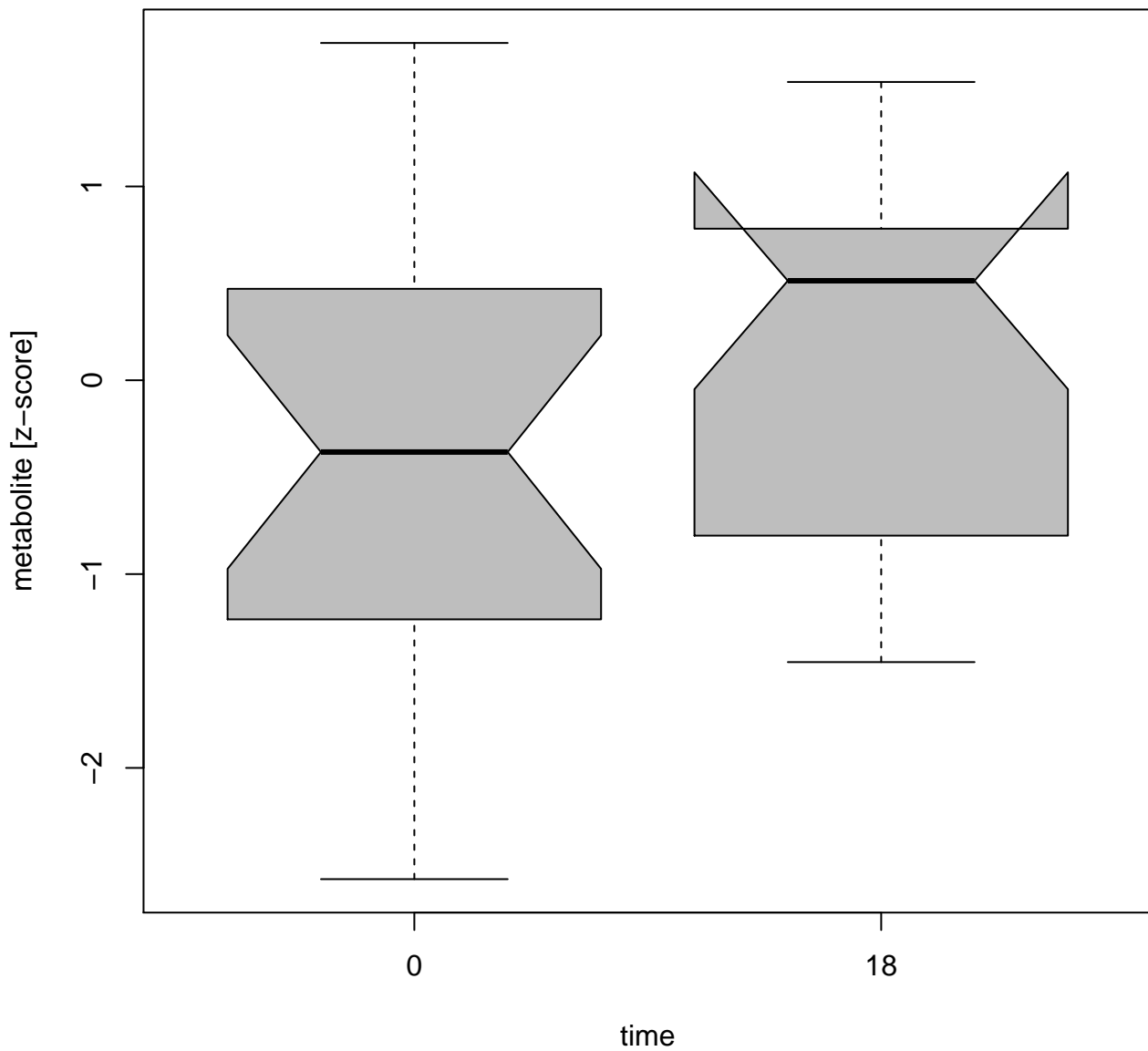
glycine



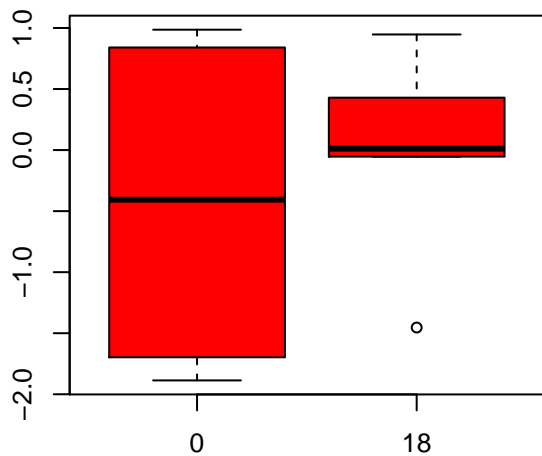
HCT15

SKOV3

glycine

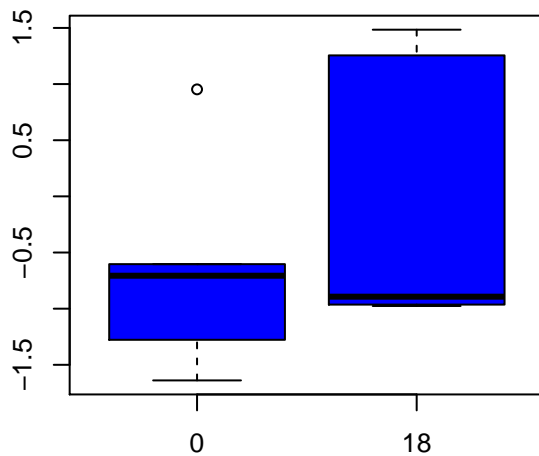


guanosine 5'- diphosphate (GDP)



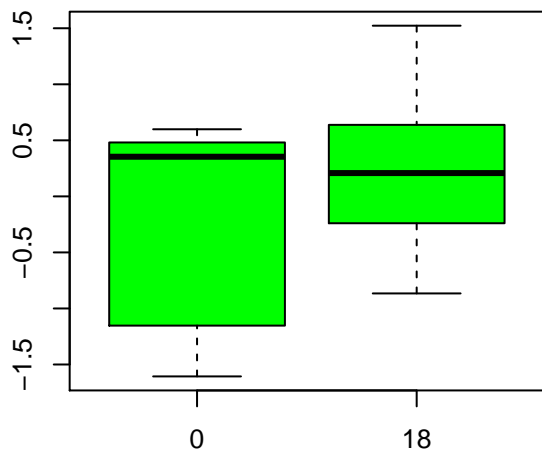
HCT116

guanosine 5'- diphosphate (GDP)



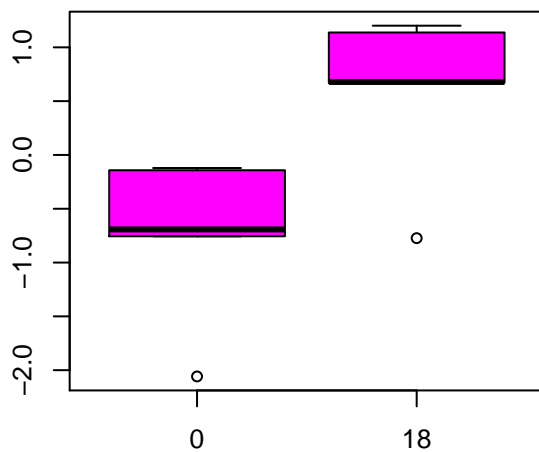
OVCAR

guanosine 5'- diphosphate (GDP)



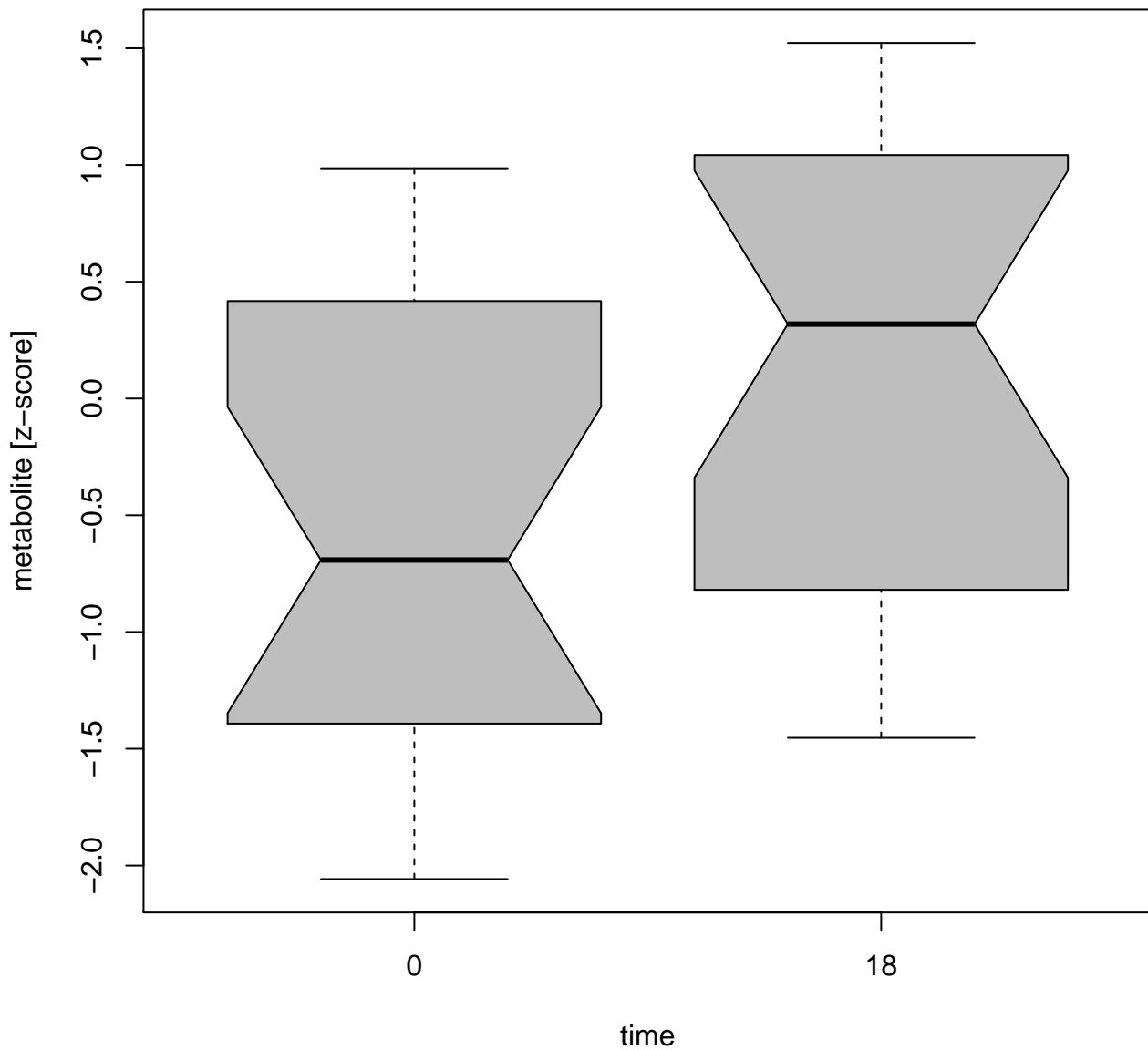
HCT15

guanosine 5'- diphosphate (GDP)

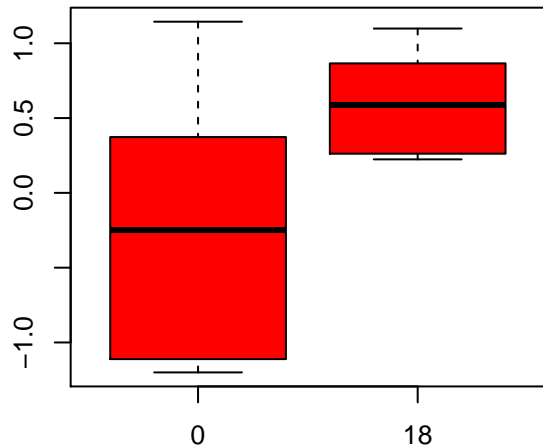


SKOV3

guanosine 5'- diphosphate (GDP)

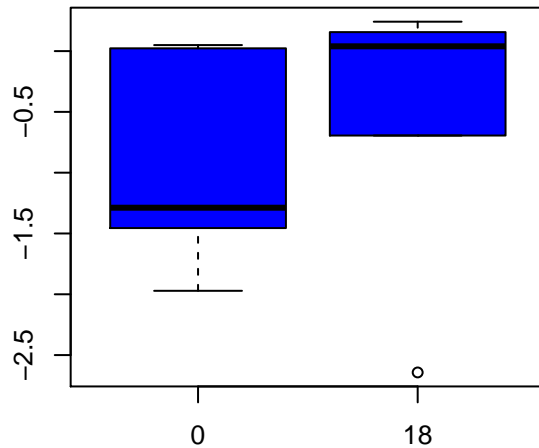


guanosine 5'- monophosphate (5'-GMP)



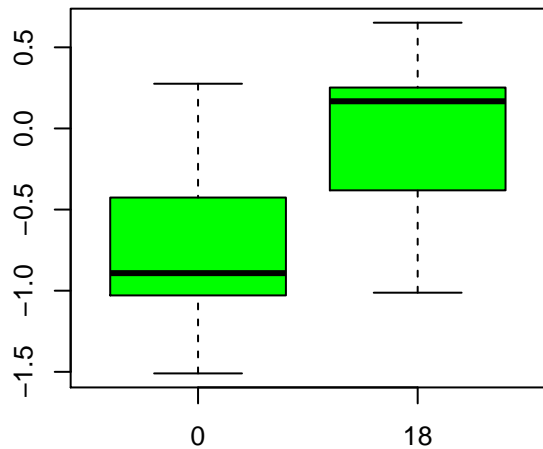
HCT116

guanosine 5'- monophosphate (5'-GMP)



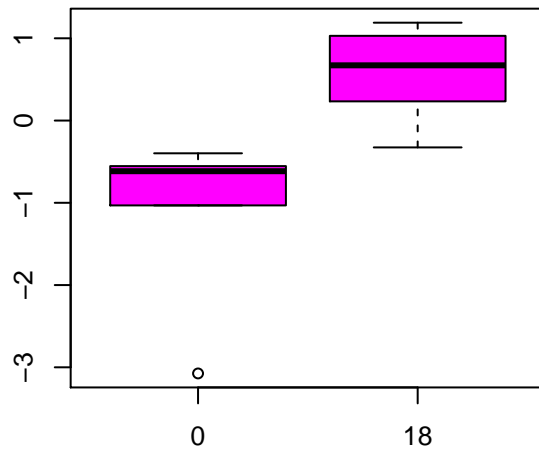
OVCAR

guanosine 5'- monophosphate (5'-GMP)



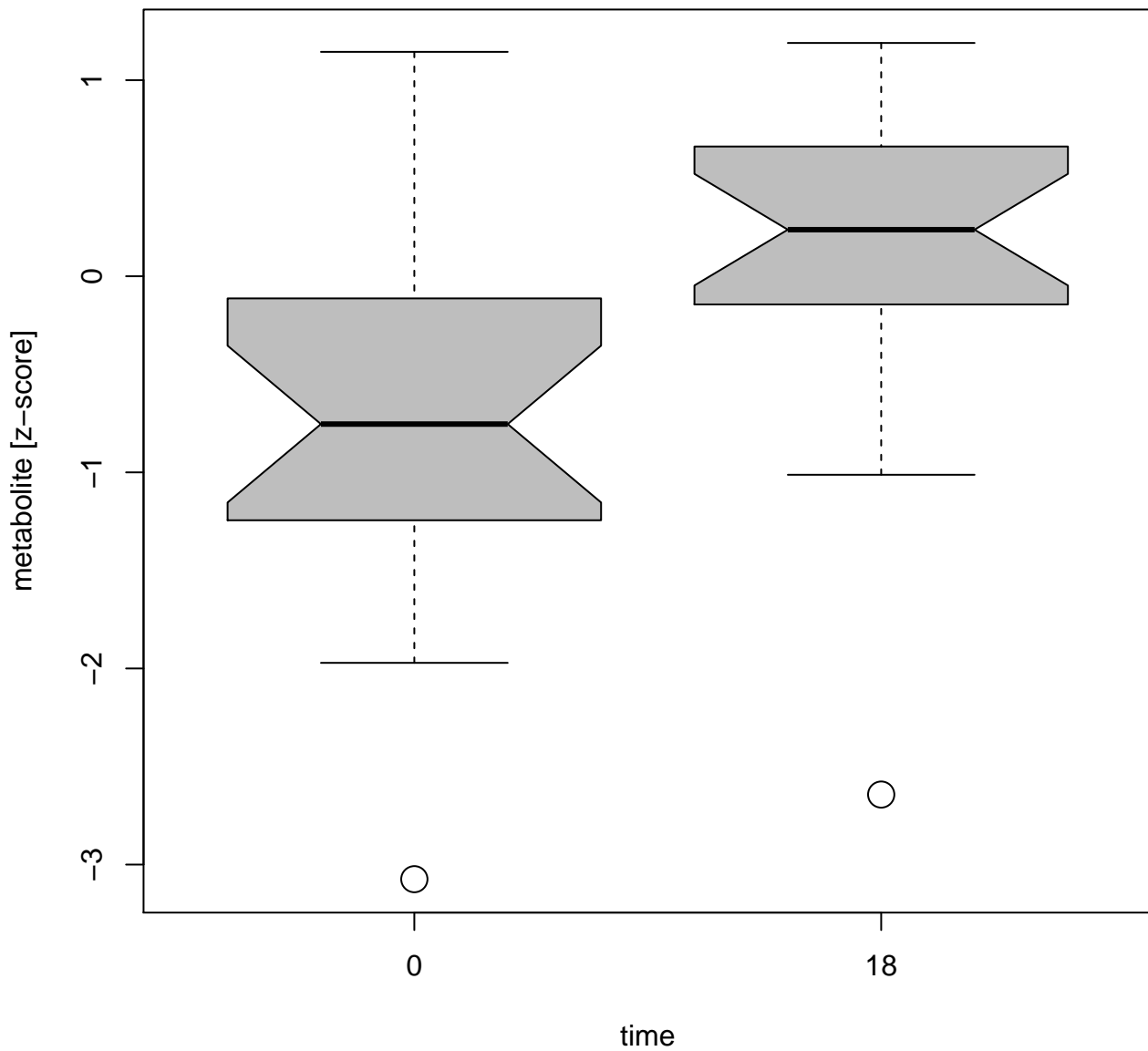
HCT15

guanosine 5'- monophosphate (5'-GMP)

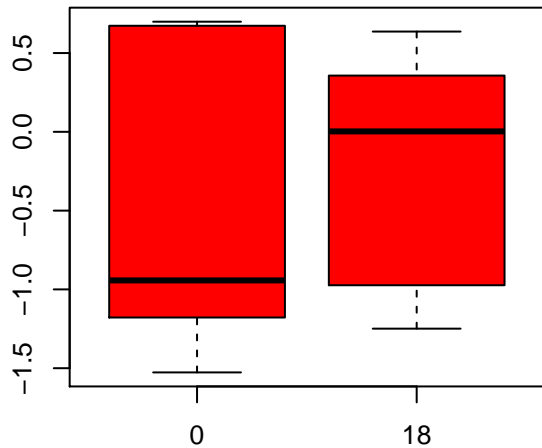


SKOV3

guanosine 5'- monophosphate (5'-GMP)

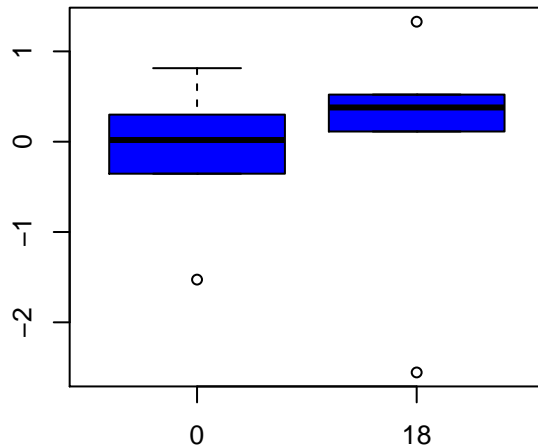


histidine



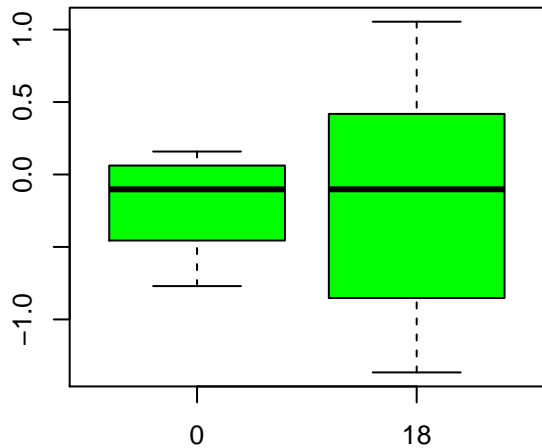
HCT116

histidine



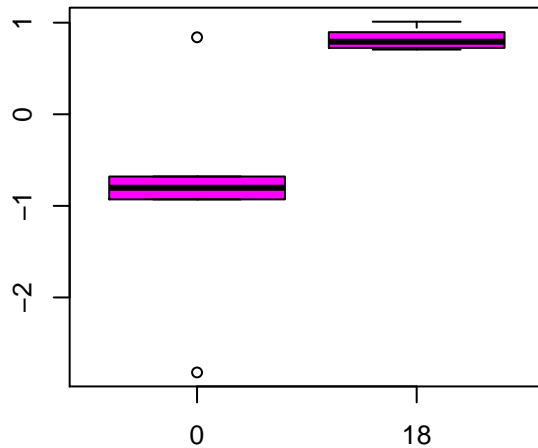
OVCAR

histidine



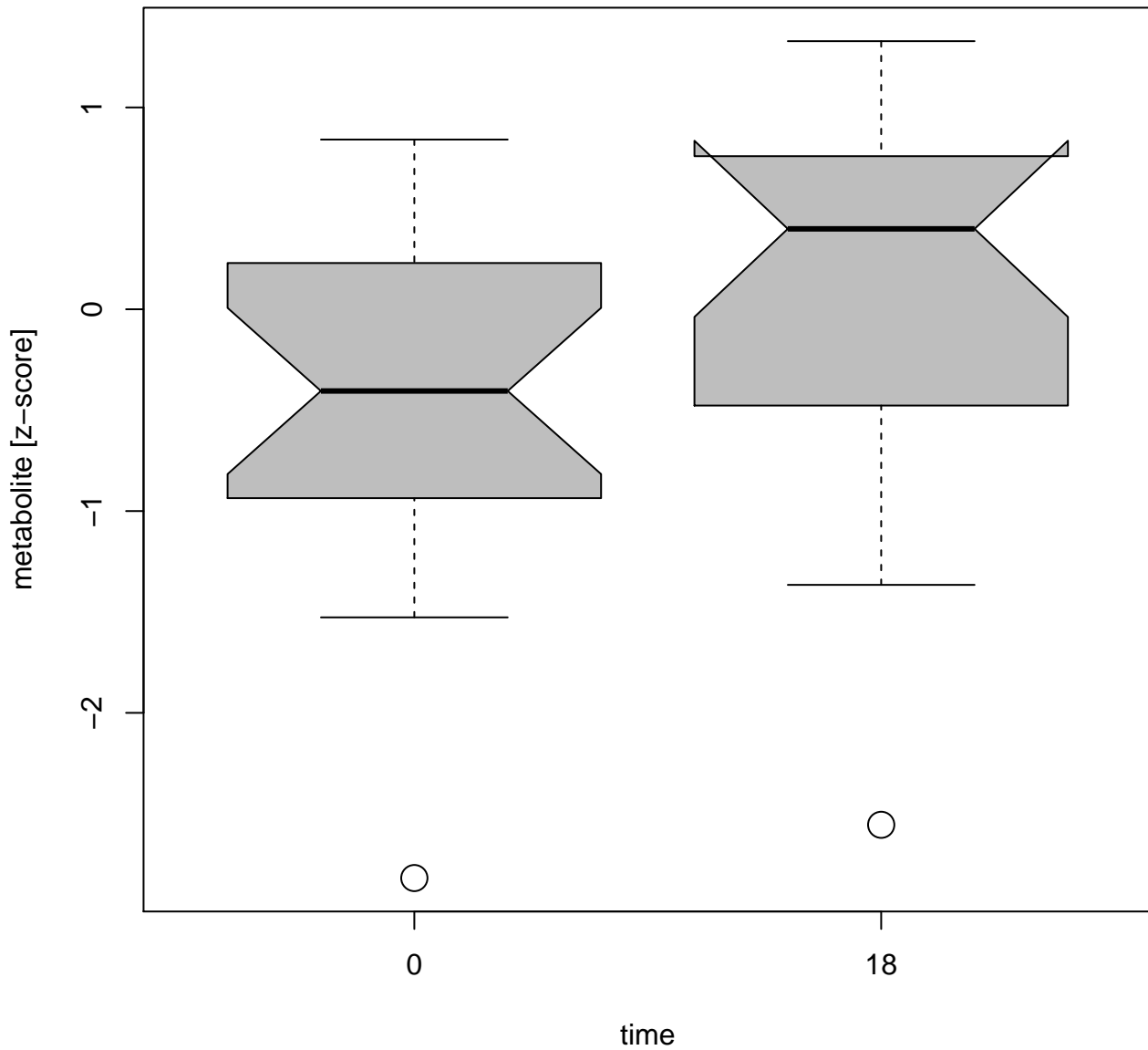
HCT15

histidine

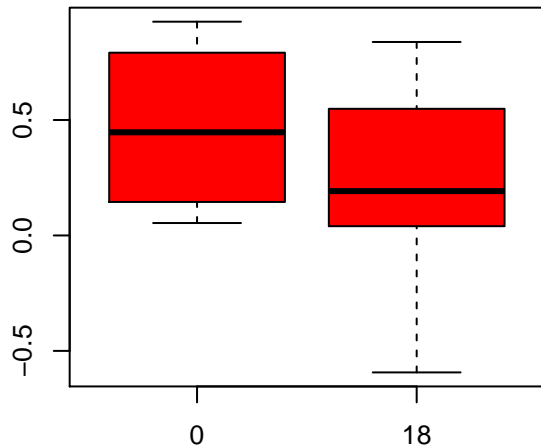


SKOV3

histidine

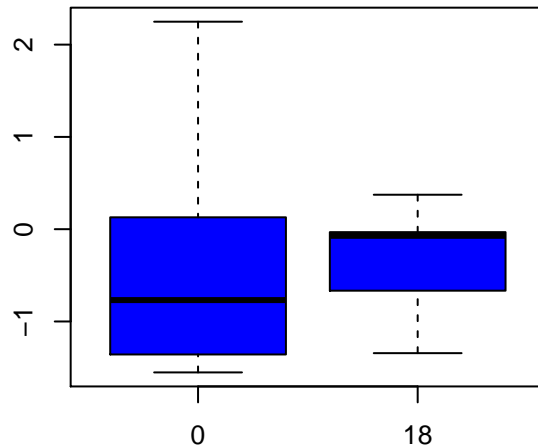


hypoxanthine



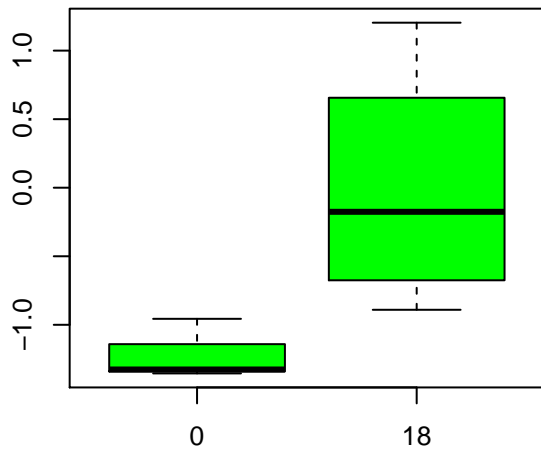
HCT116

hypoxanthine



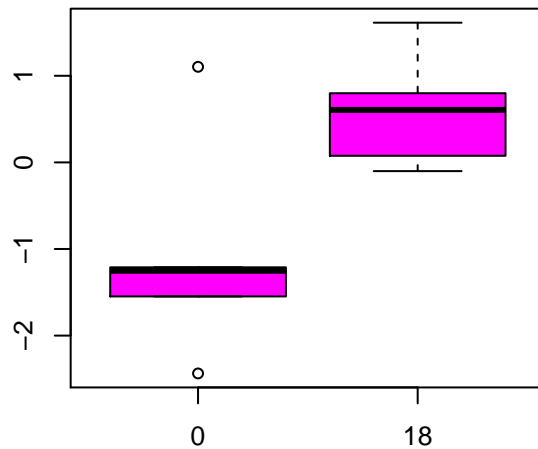
OVCAR

hypoxanthine



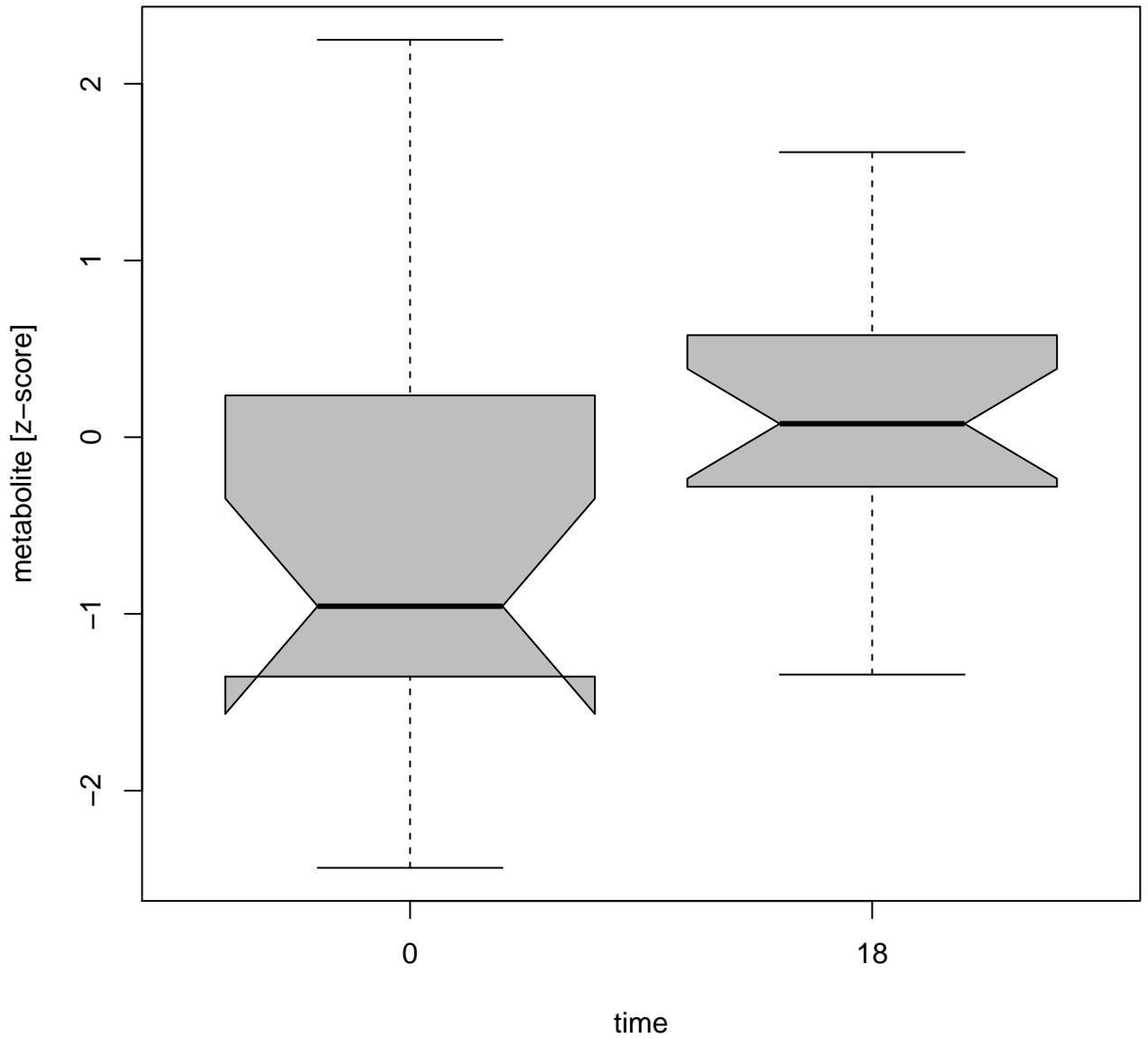
HCT15

hypoxanthine

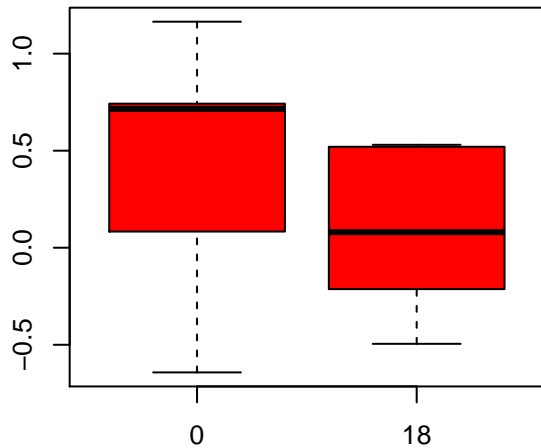


SKOV3

hypoxanthine

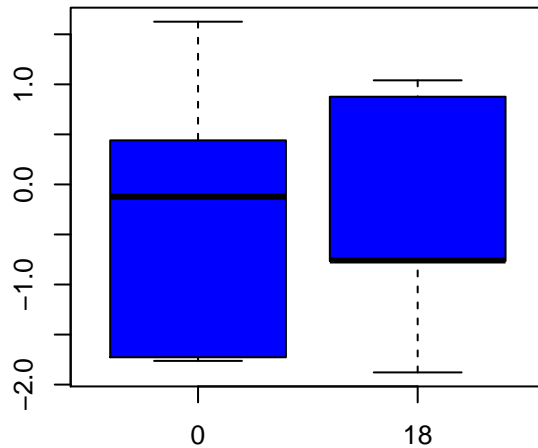


inosine



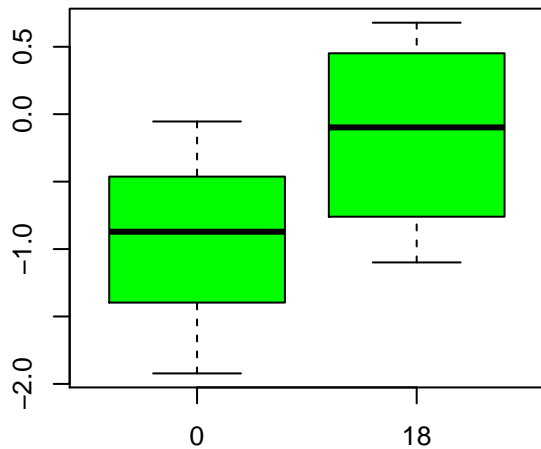
HCT116

inosine



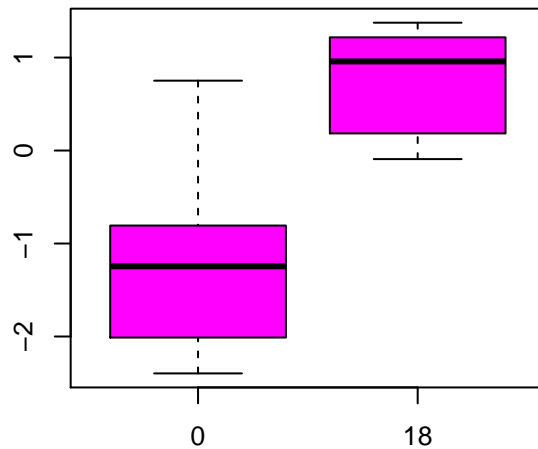
OVCAR

inosine



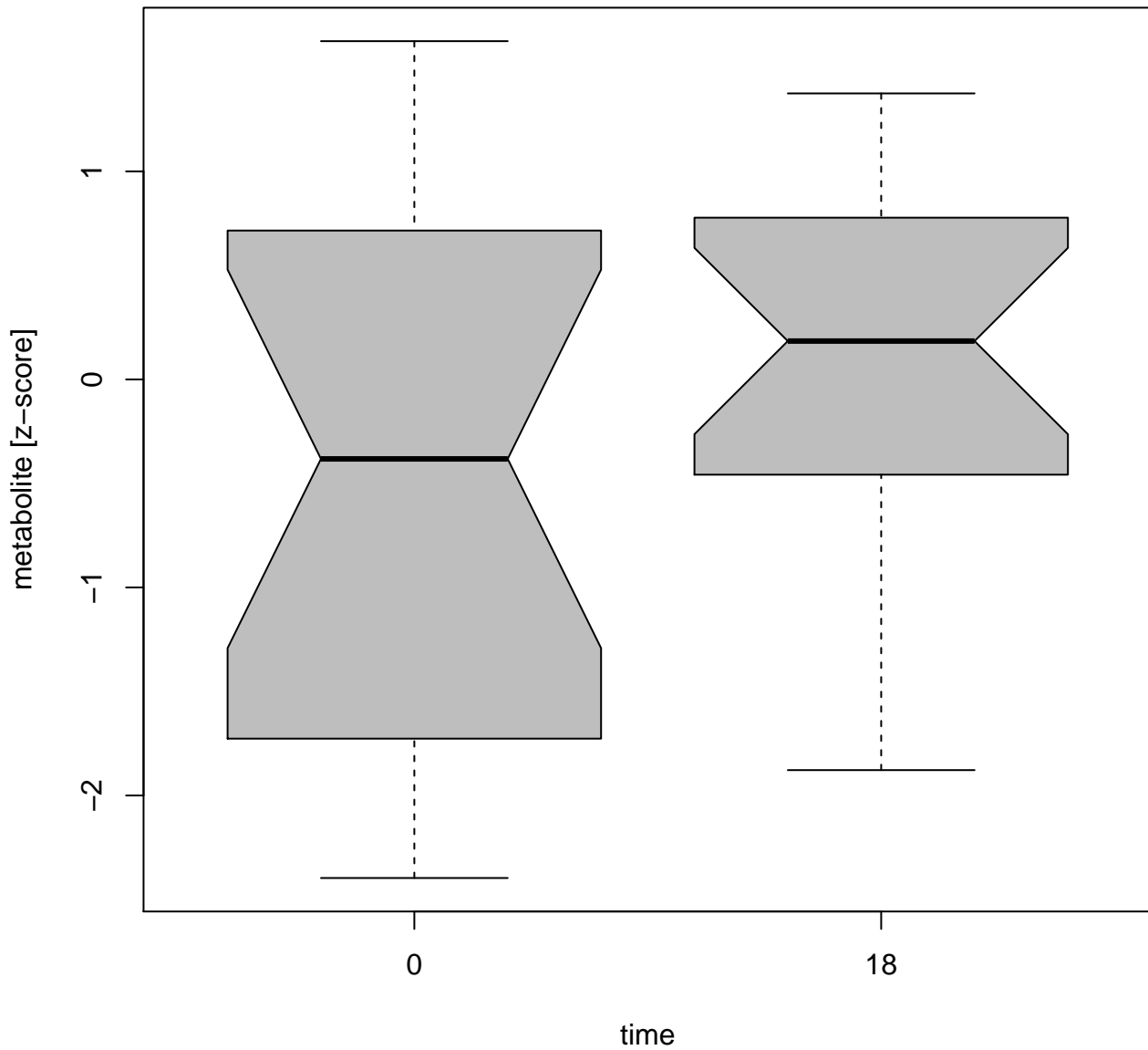
HCT15

inosine

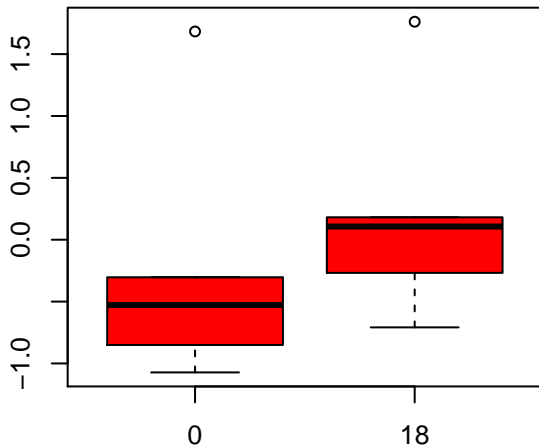


SKOV3

inosine

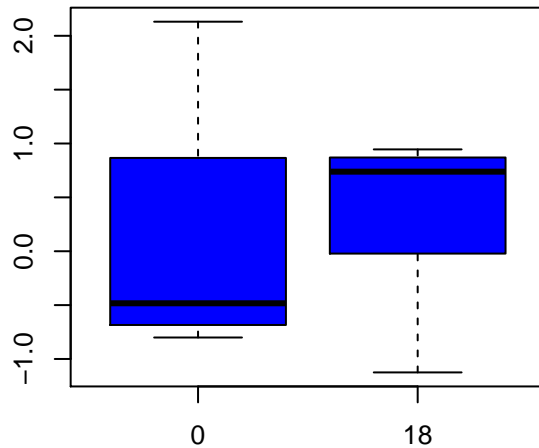


inosine 5'-monophosphate (IMP)



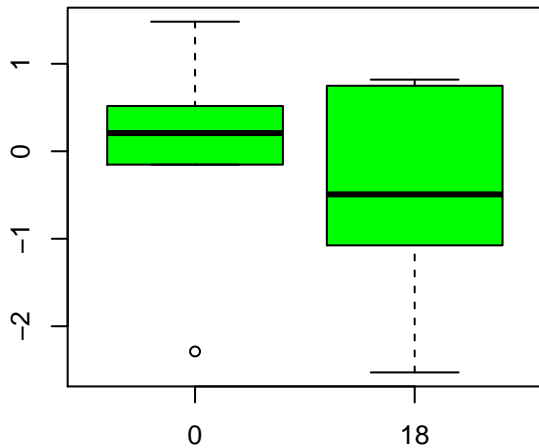
HCT116

inosine 5'-monophosphate (IMP)



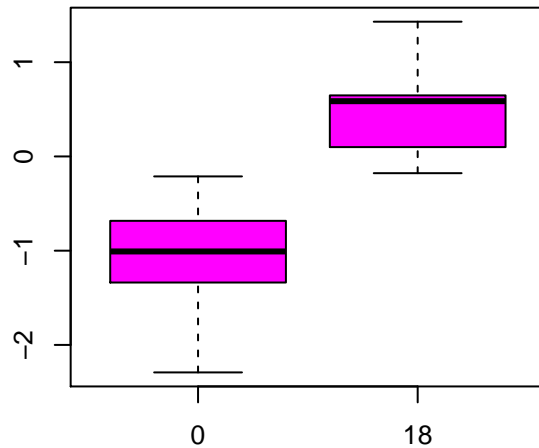
OVCAR

inosine 5'-monophosphate (IMP)



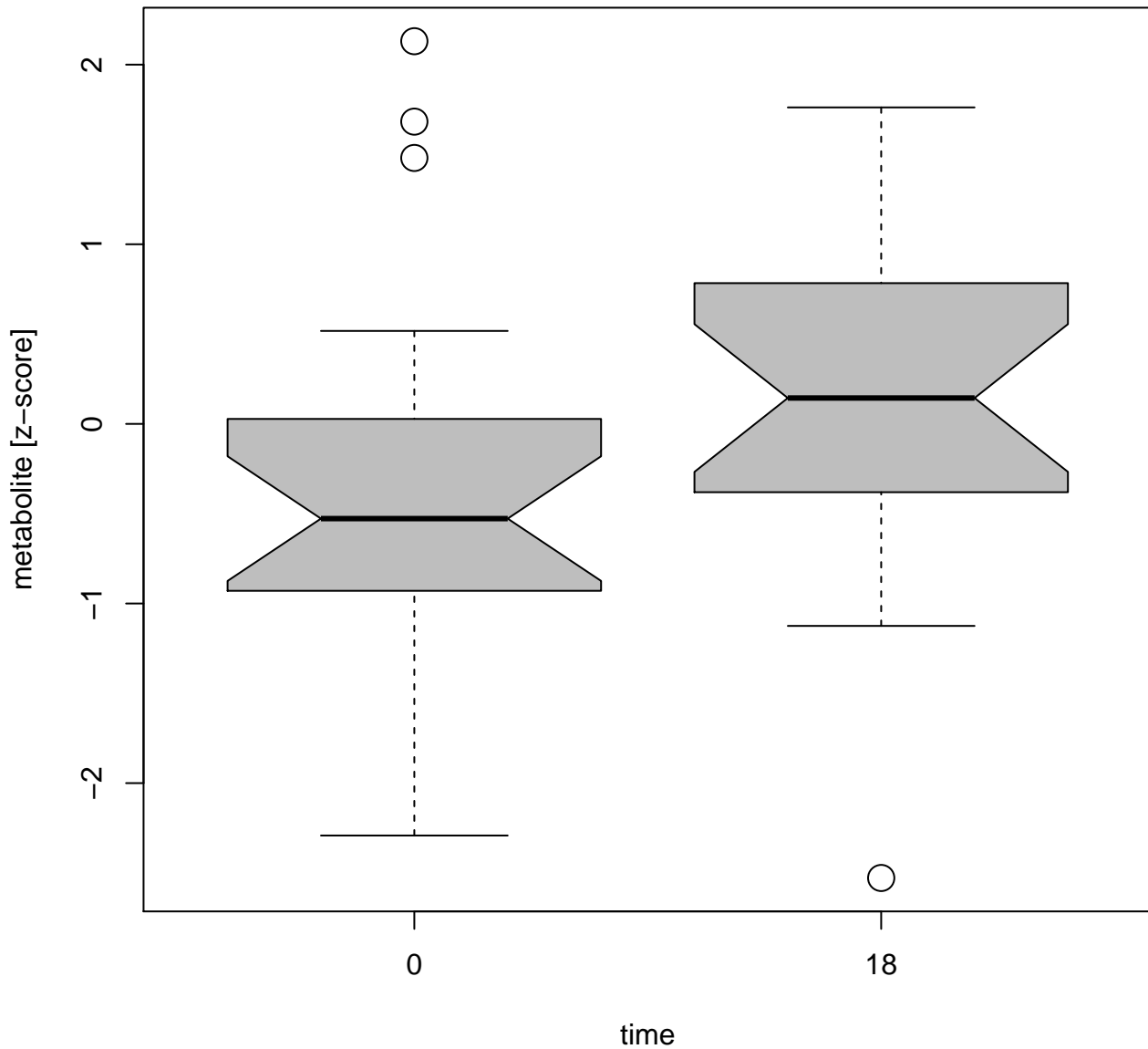
HCT15

inosine 5'-monophosphate (IMP)

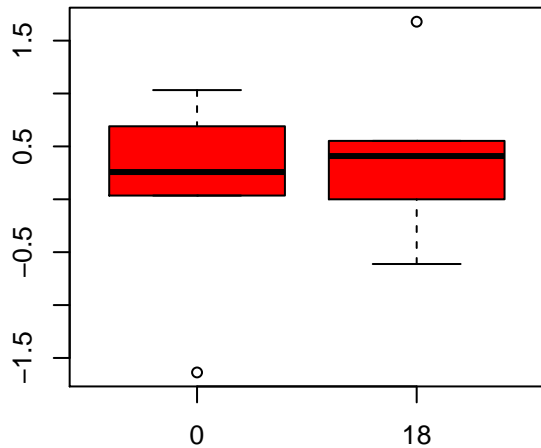


SKOV3

inosine 5'-monophosphate (IMP)

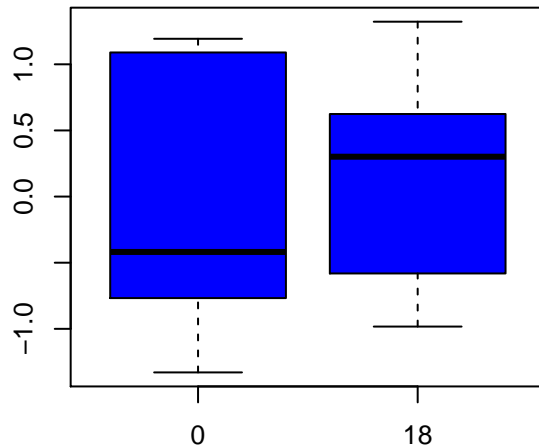


inositol 1-phosphate (I1P)



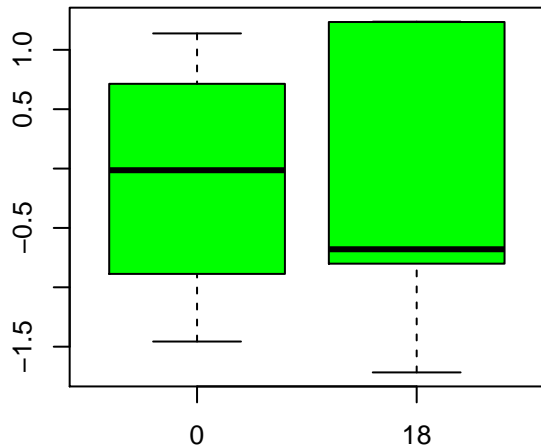
HCT116

inositol 1-phosphate (I1P)



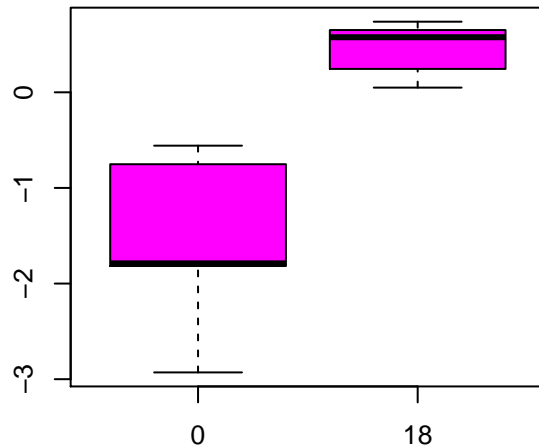
OVCAR

inositol 1-phosphate (I1P)



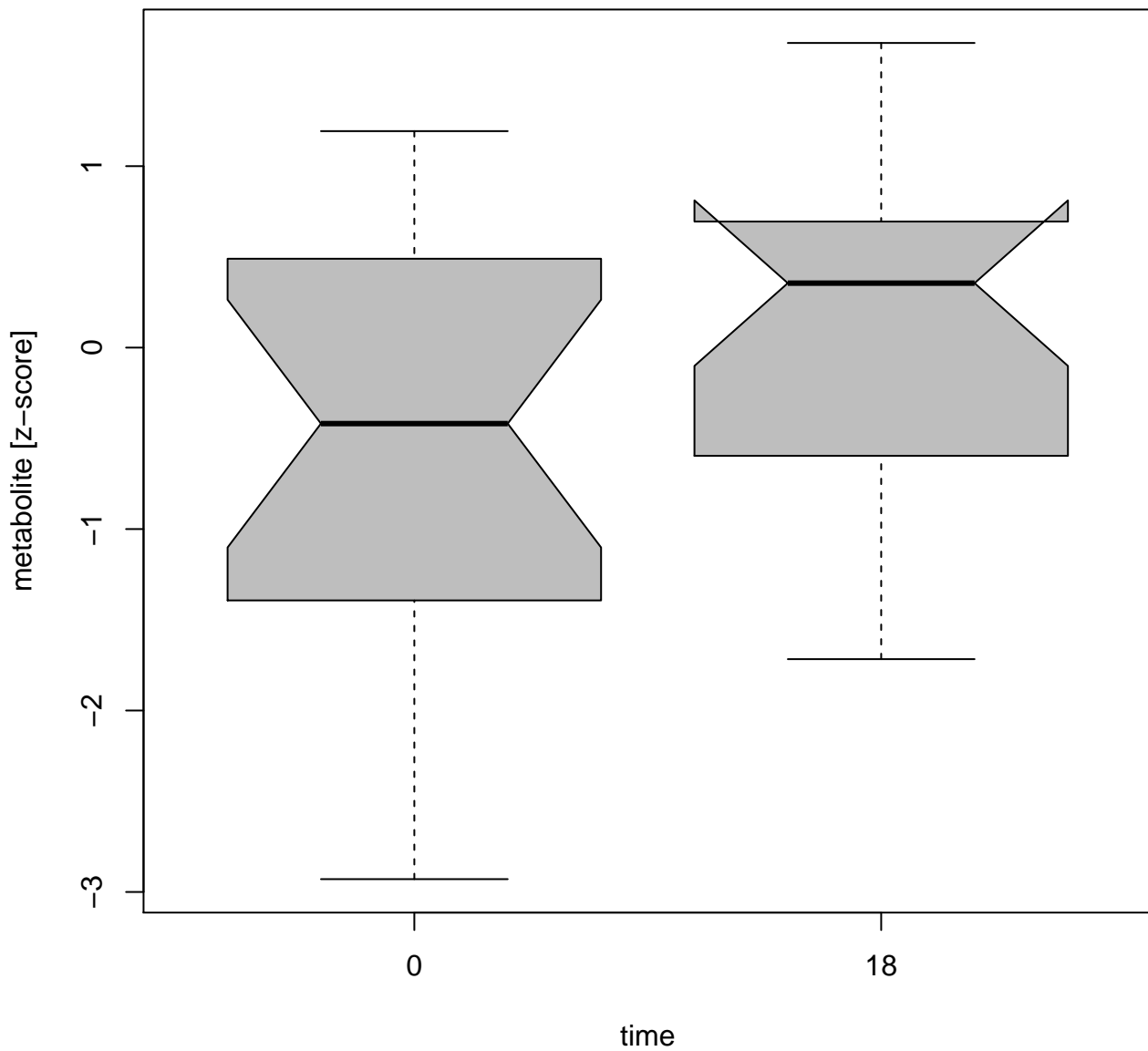
HCT15

inositol 1-phosphate (I1P)

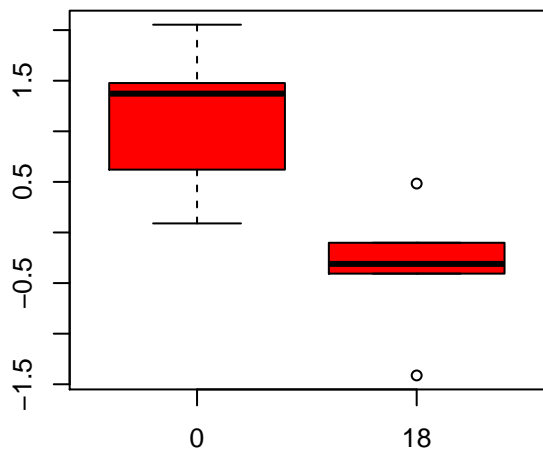


SKOV3

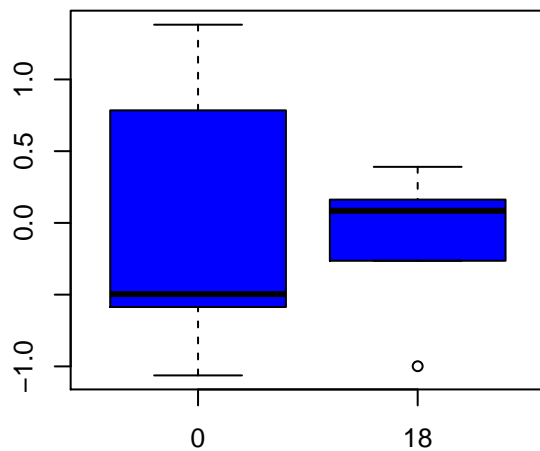
inositol 1-phosphate (I1P)



r: UDP-acetylglucosamine, UDP-acetylgalar: UDP-acetylglucosamine, UDP-acetylgalar

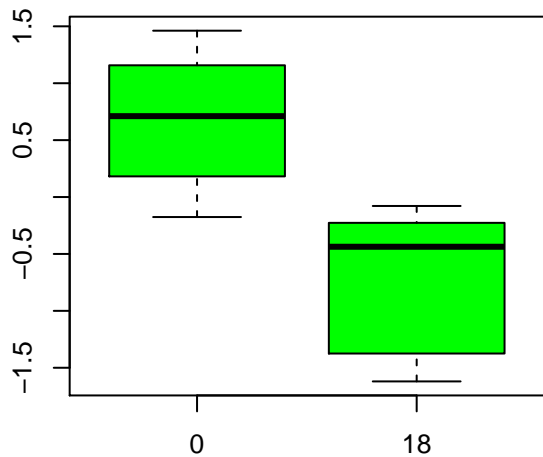


HCT116

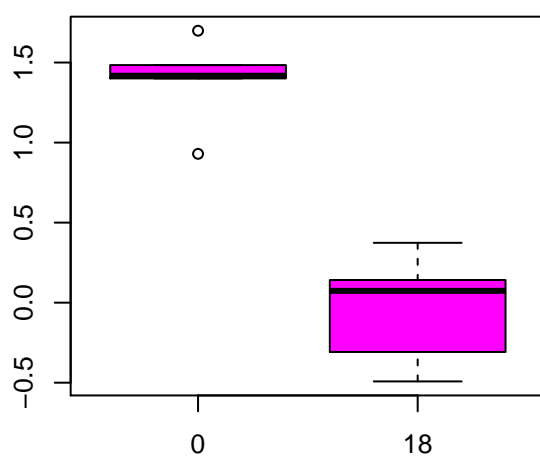


OVCAR

r: UDP-acetylglucosamine, UDP-acetylgalar: UDP-acetylglucosamine, UDP-acetylgalar

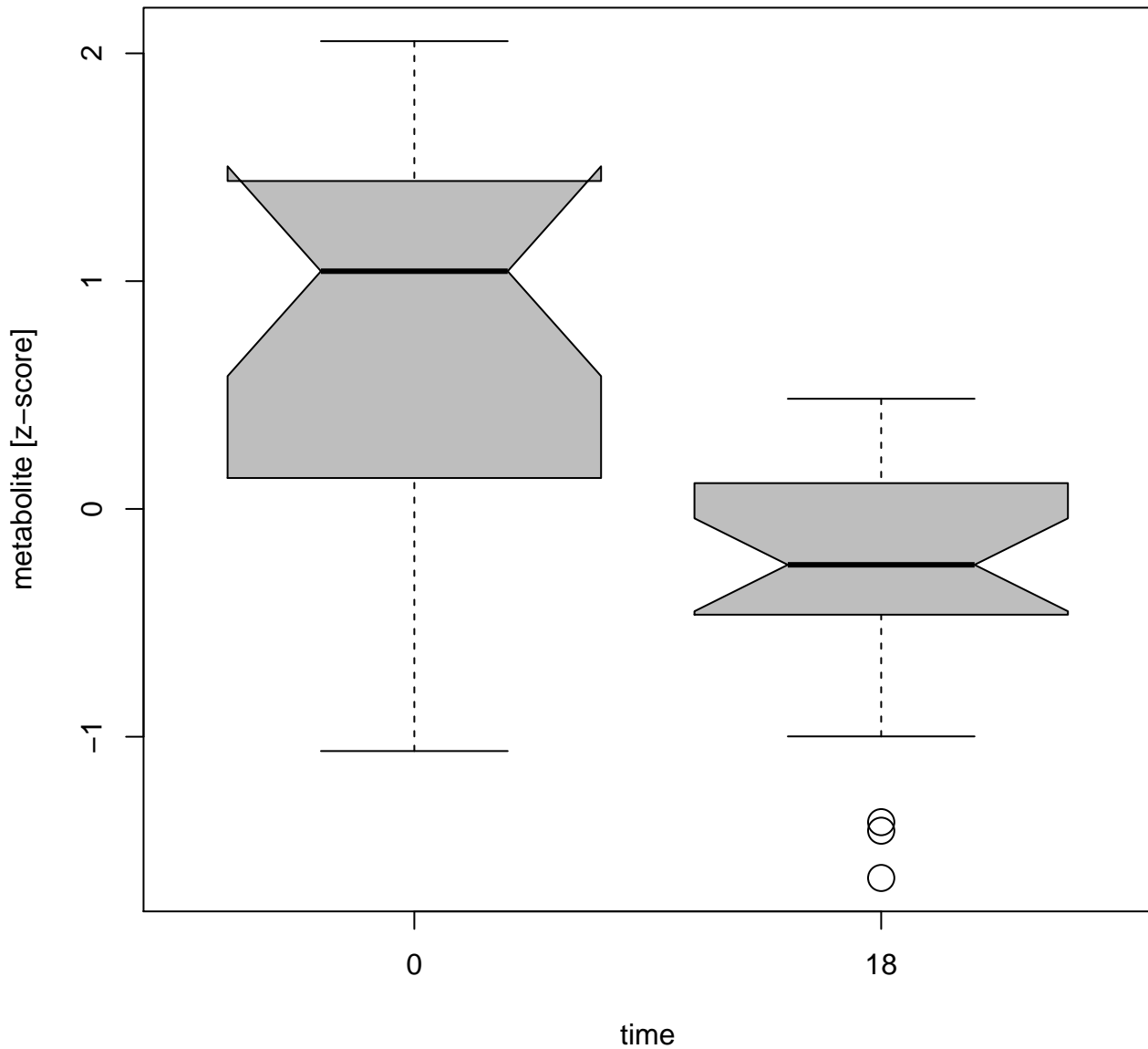


HCT15

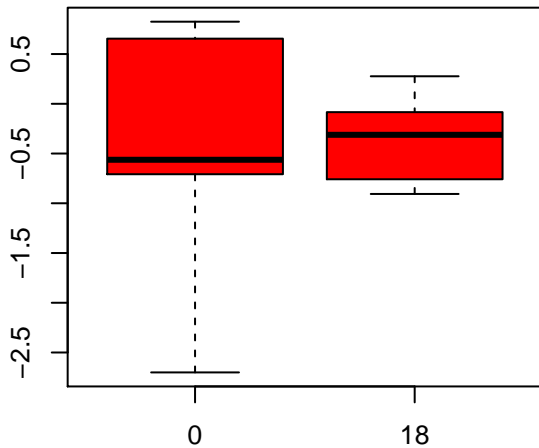


SKOV3

Isobar: UDP-acetylglucosamine, UDP-acetylgalactosamine

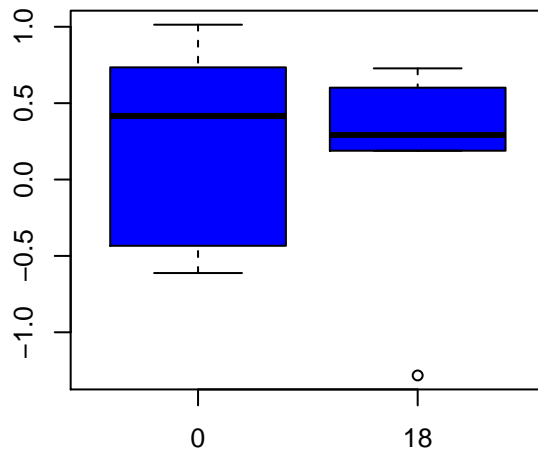


isoleucine



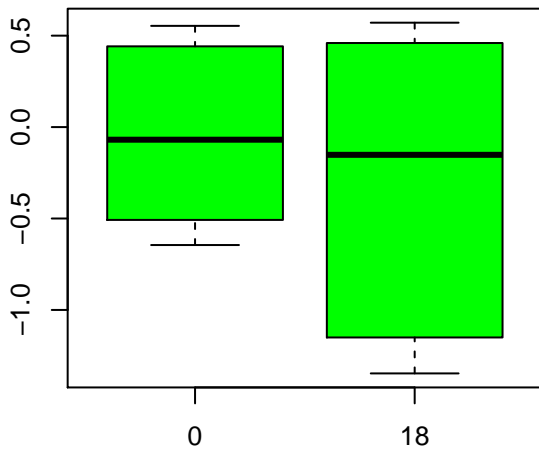
HCT116

isoleucine



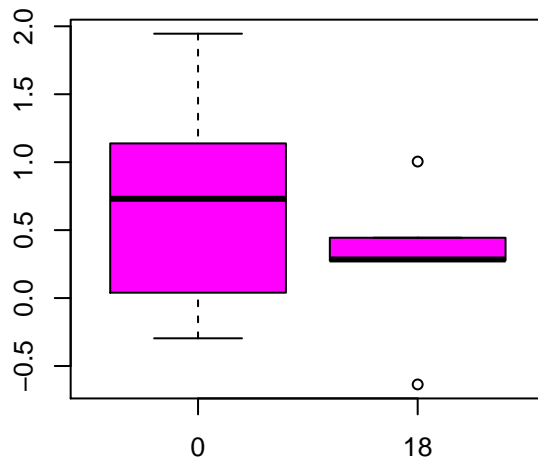
OVCAR

isoleucine



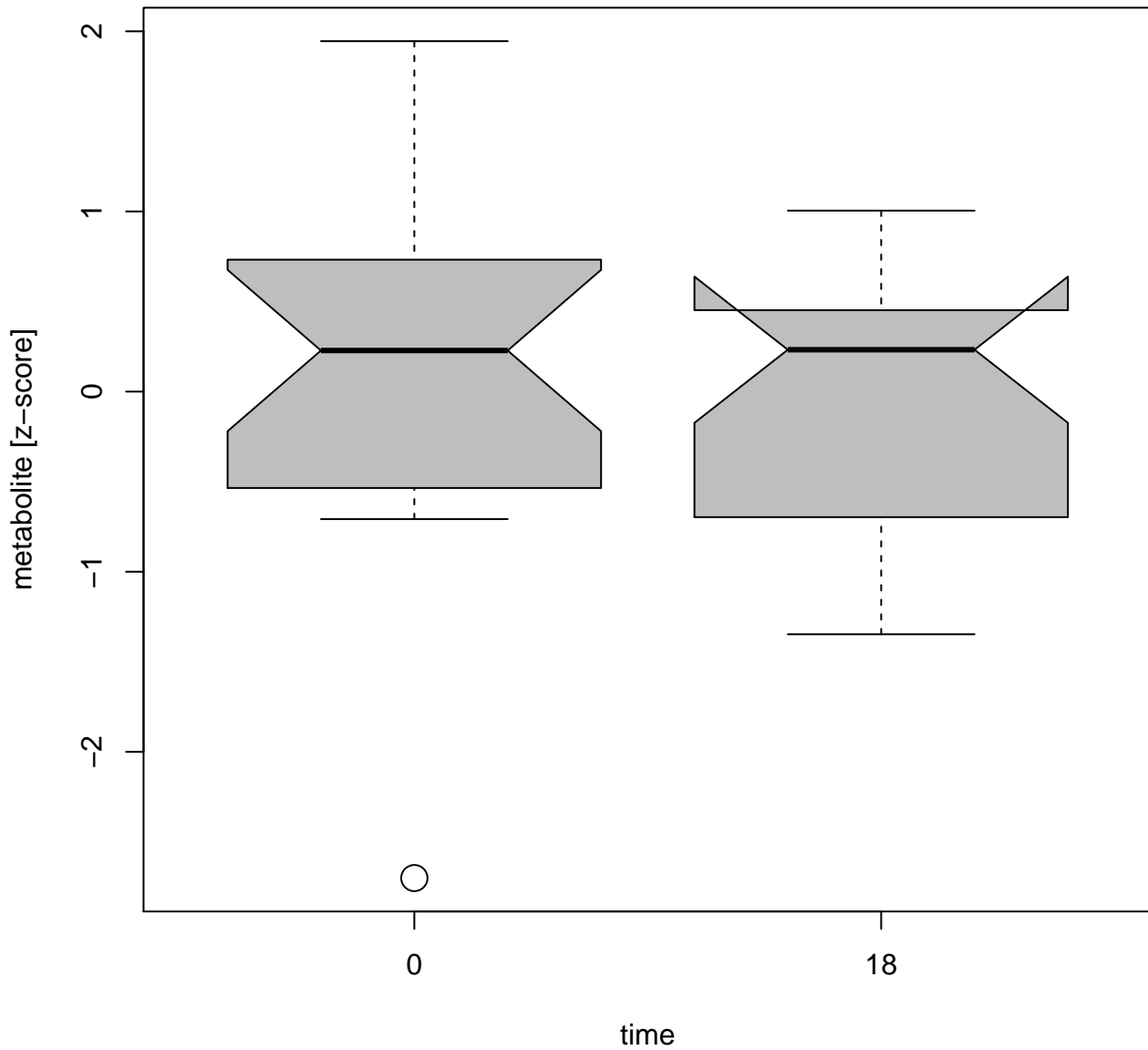
HCT15

isoleucine

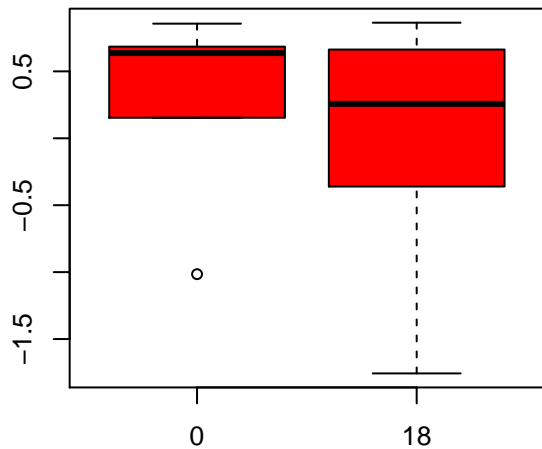


SKOV3

isoleucine

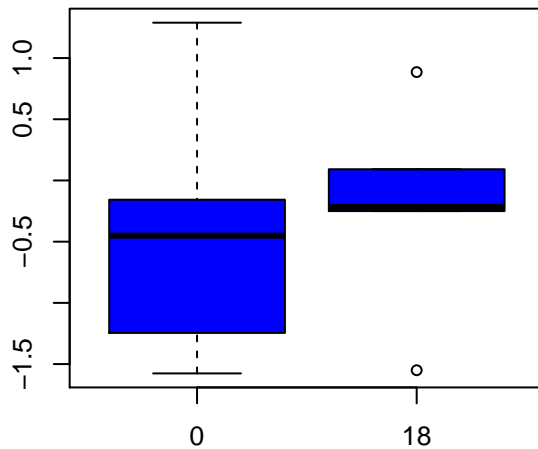


isoleucylalanine



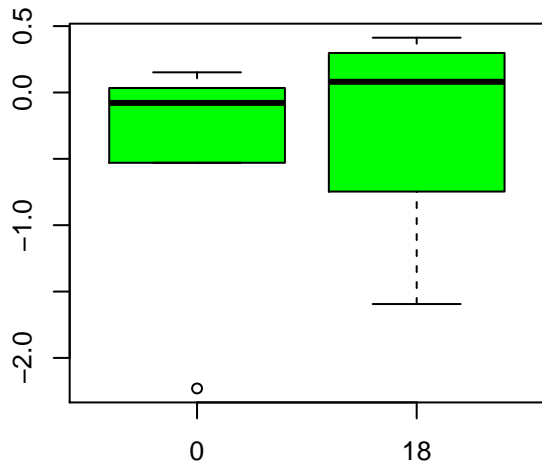
HCT116

isoleucylalanine



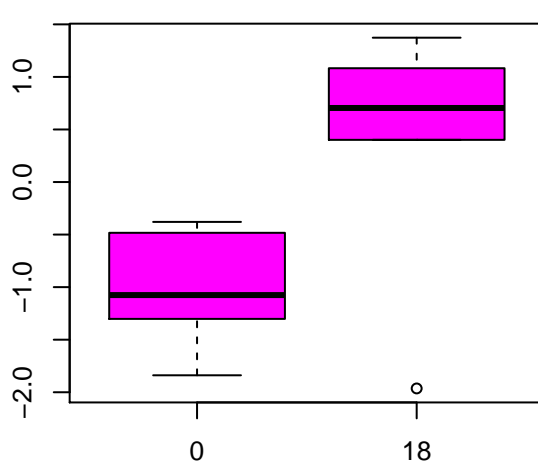
OVCAR

isoleucylalanine



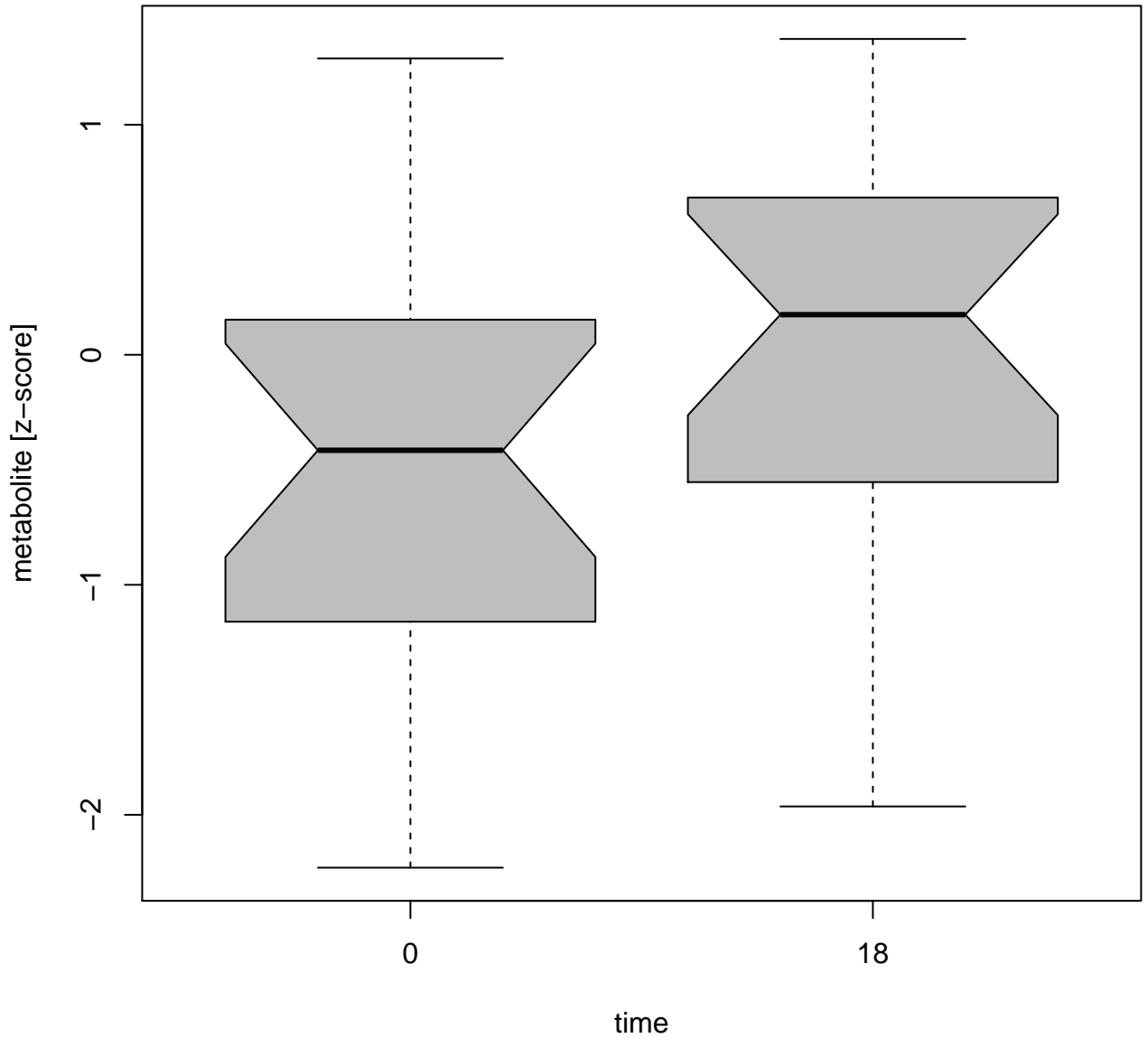
HCT15

isoleucylalanine

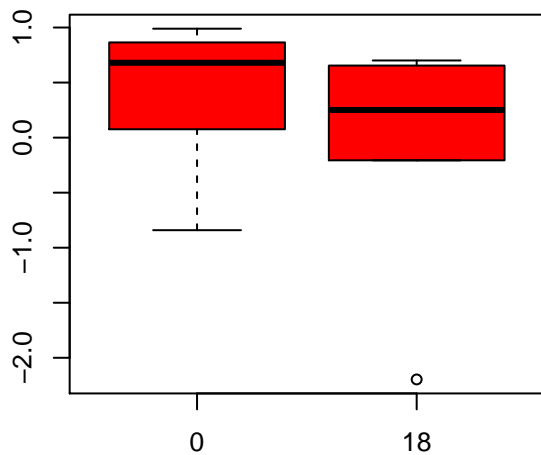


SKOV3

isoleucylalanine

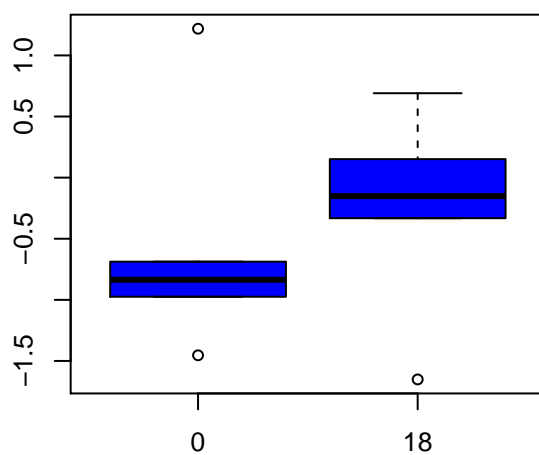


isoleucylserine



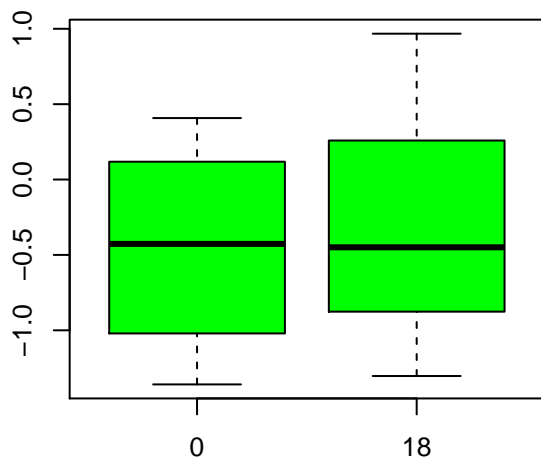
HCT116

isoleucylserine



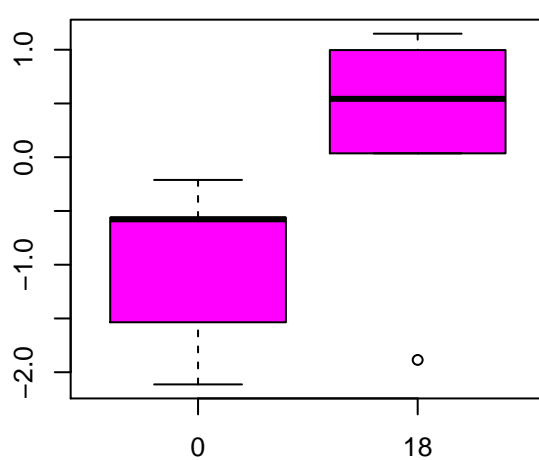
OVCAR

isoleucylserine



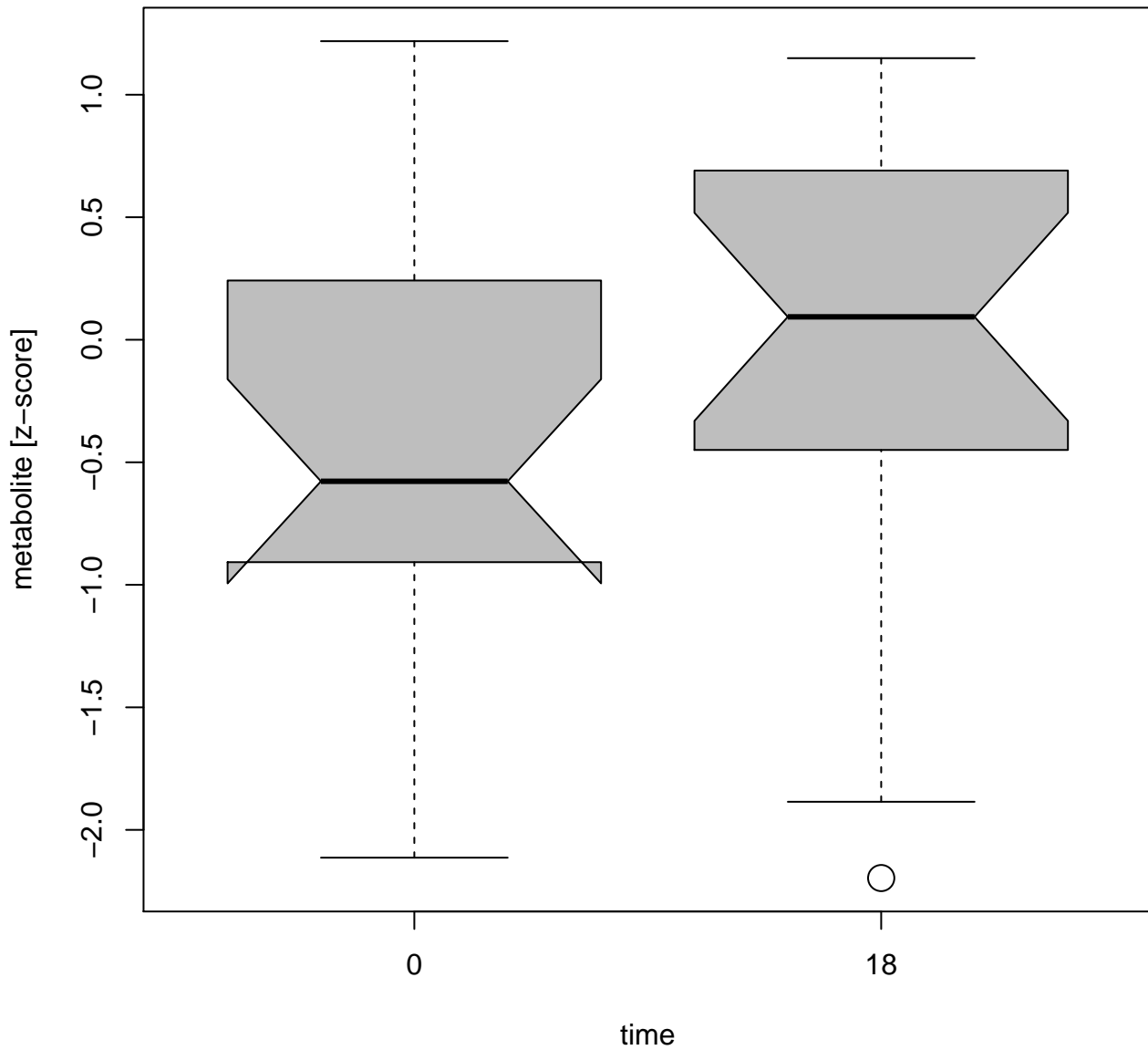
HCT15

isoleucylserine

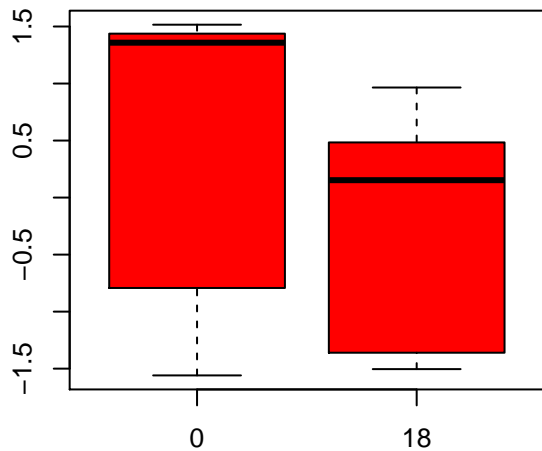


SKOV3

isoleucylserine

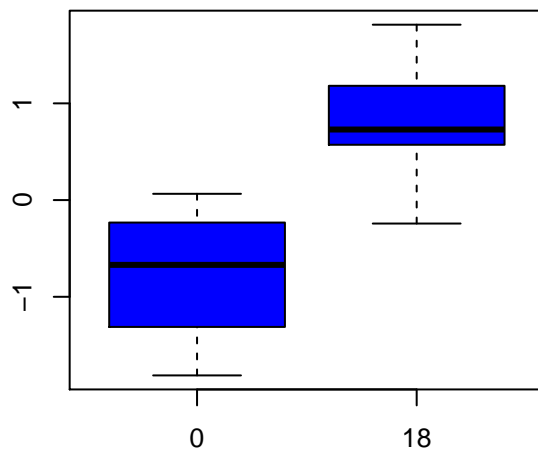


isovalerylcarnitine



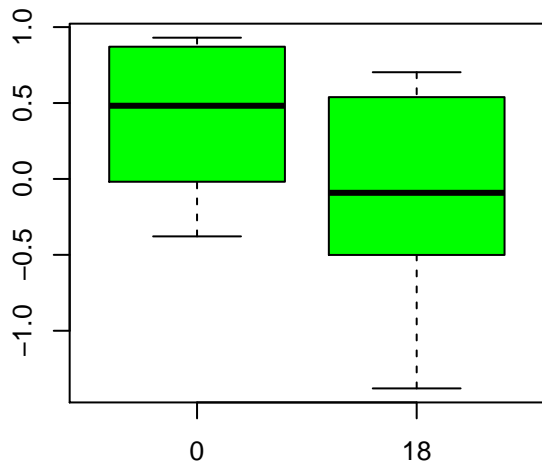
HCT116

isovalerylcarnitine



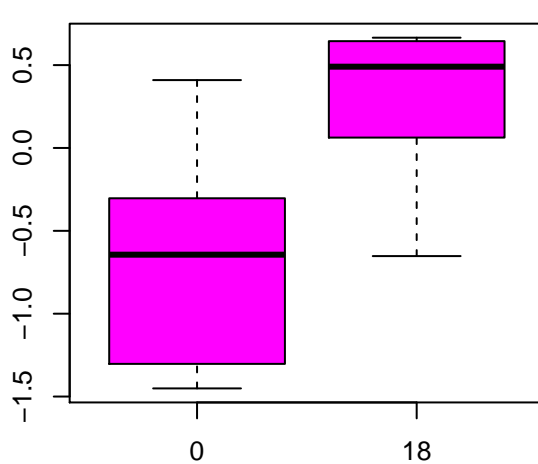
OVCAR

isovalerylcarnitine



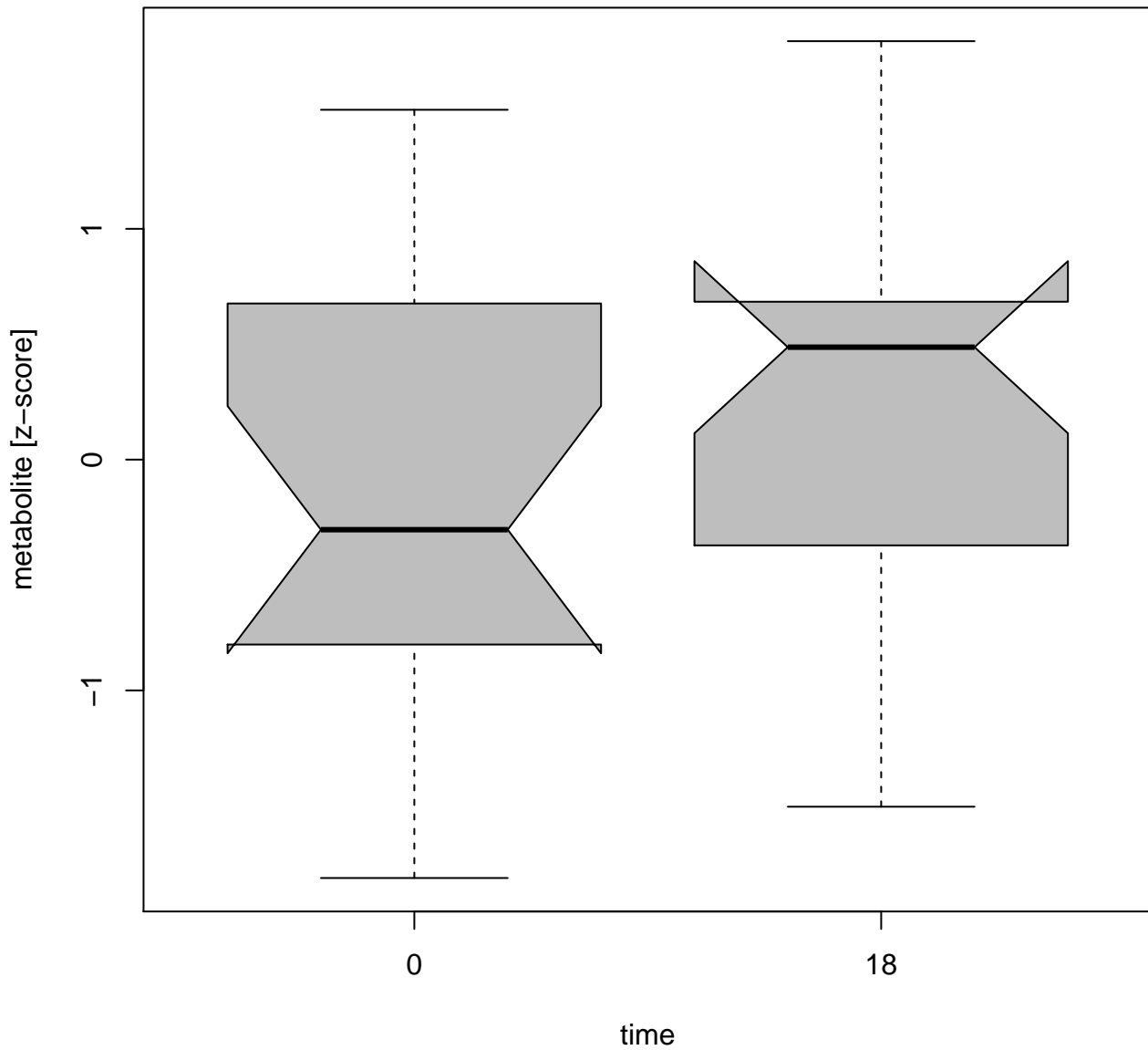
HCT15

isovalerylcarnitine

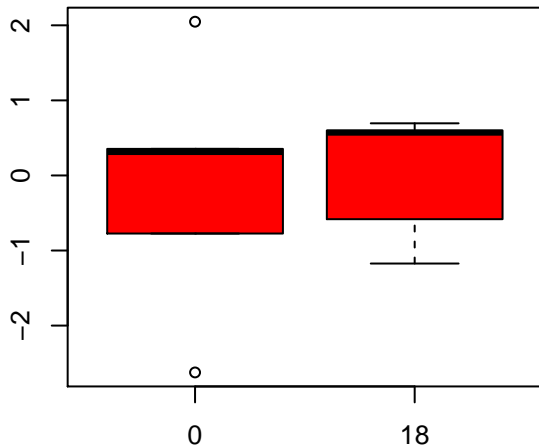


SKOV3

isovalerylcarnitine

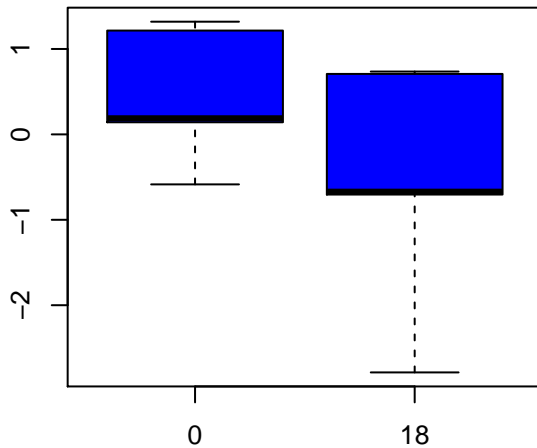


lactate



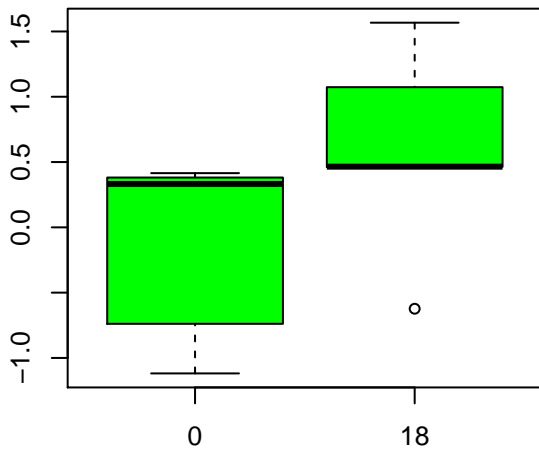
HCT116

lactate



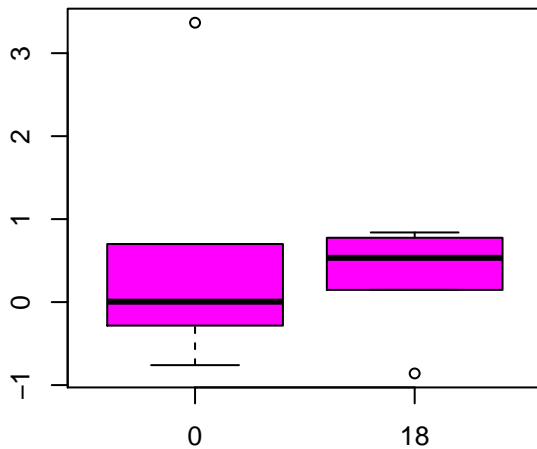
OVCAR

lactate



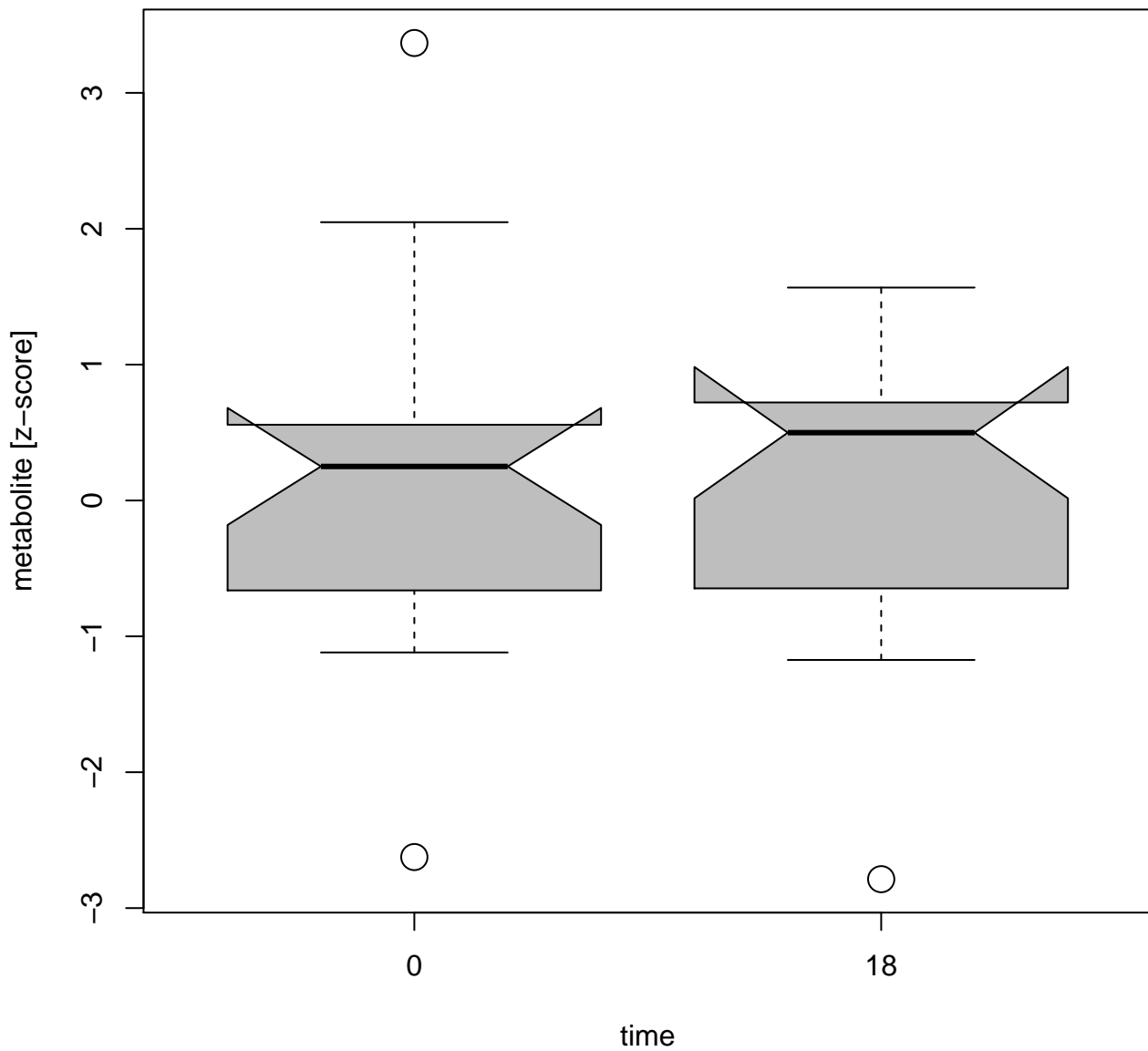
HCT15

lactate

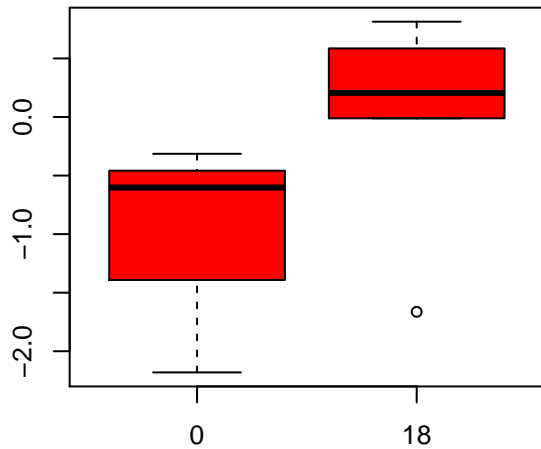


SKOV3

lactate

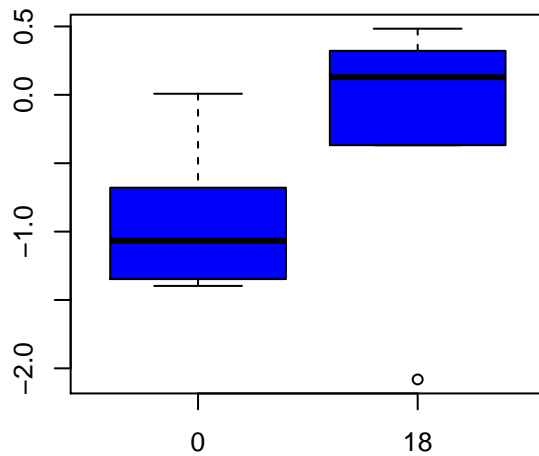


lactose



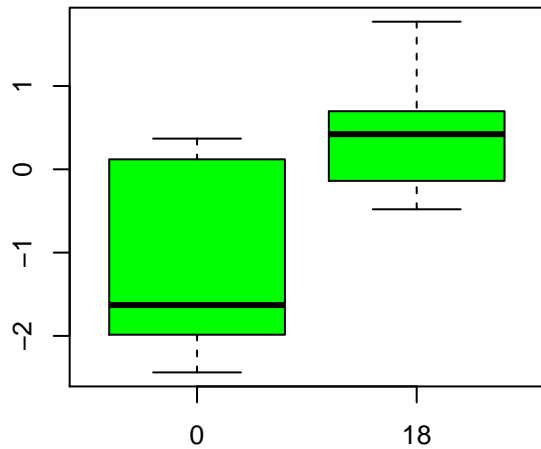
HCT116

lactose



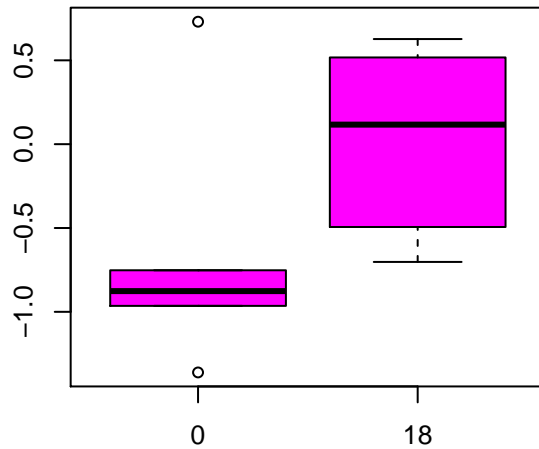
OVCAR

lactose



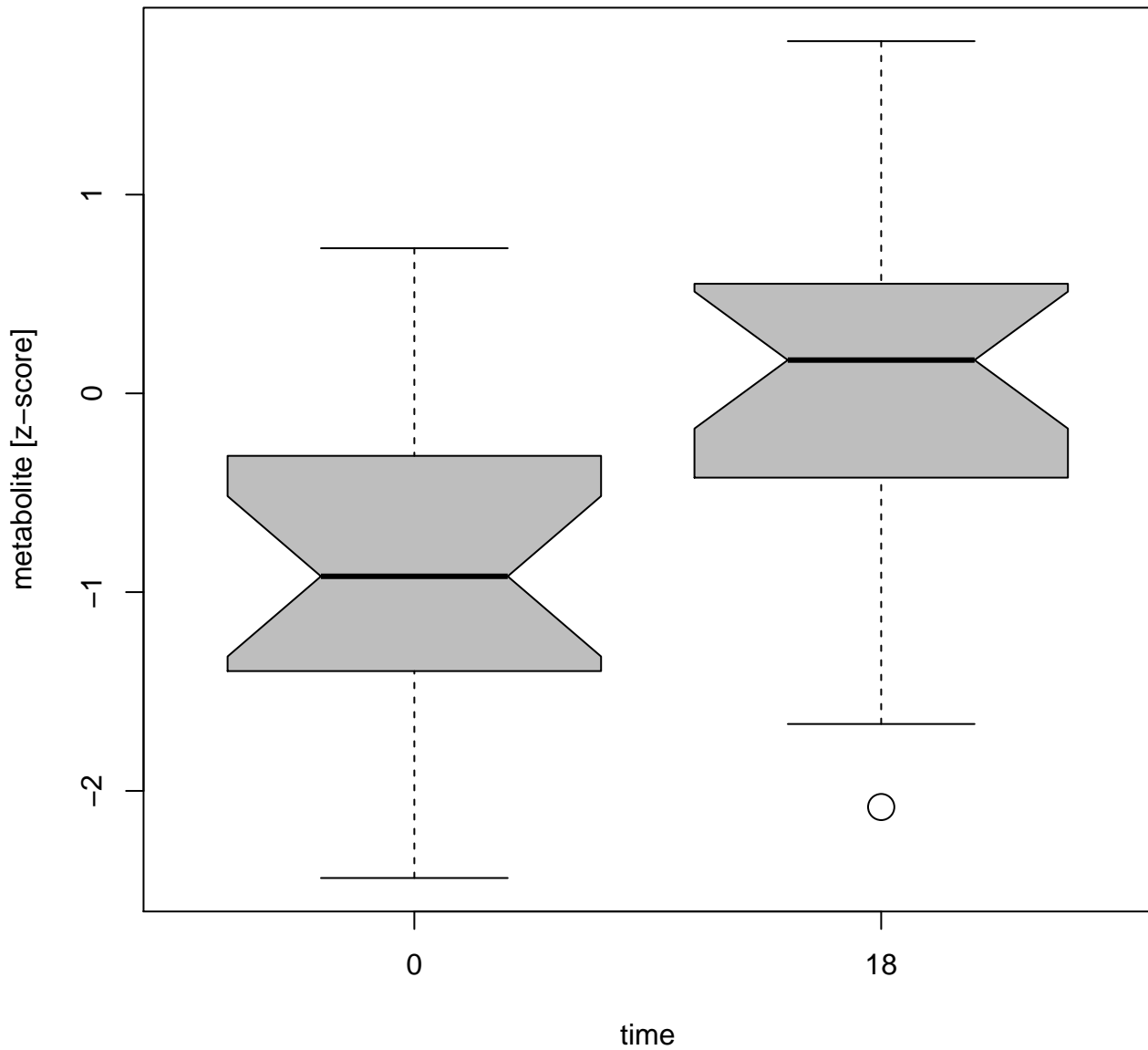
HCT15

lactose

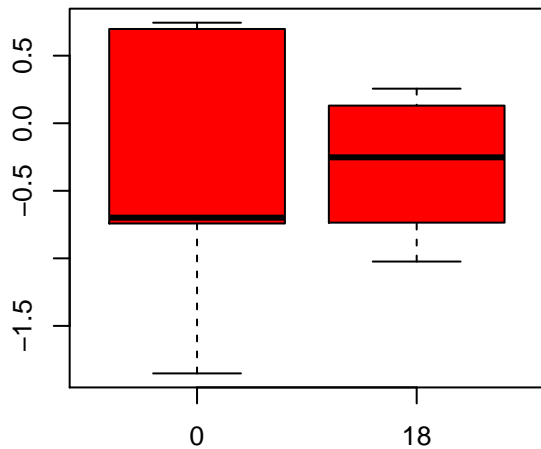


SKOV3

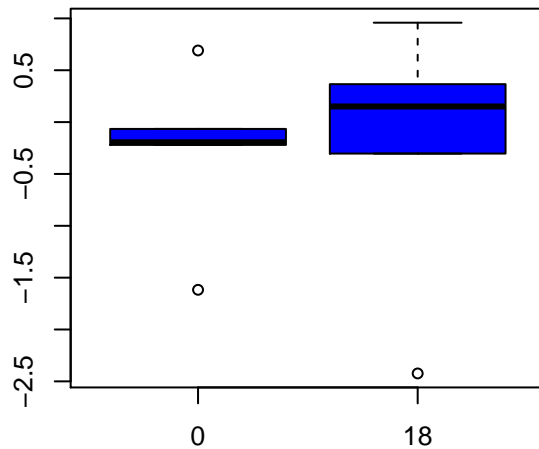
lactose



leucine

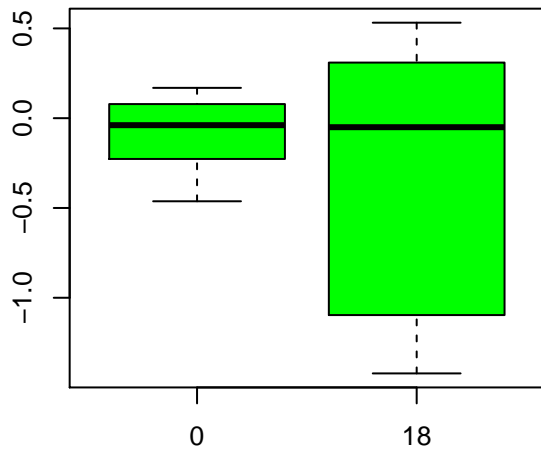


leucine



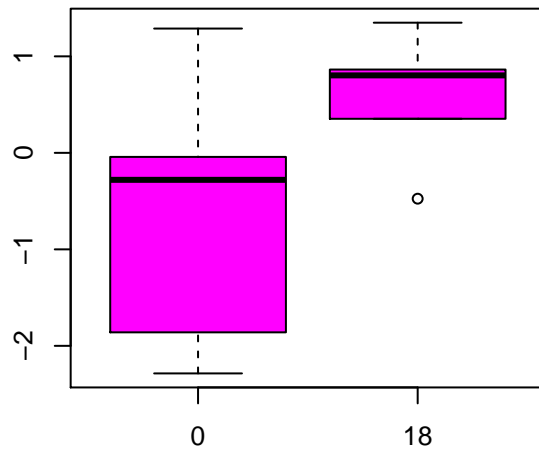
HCT116

leucine



OVCAR

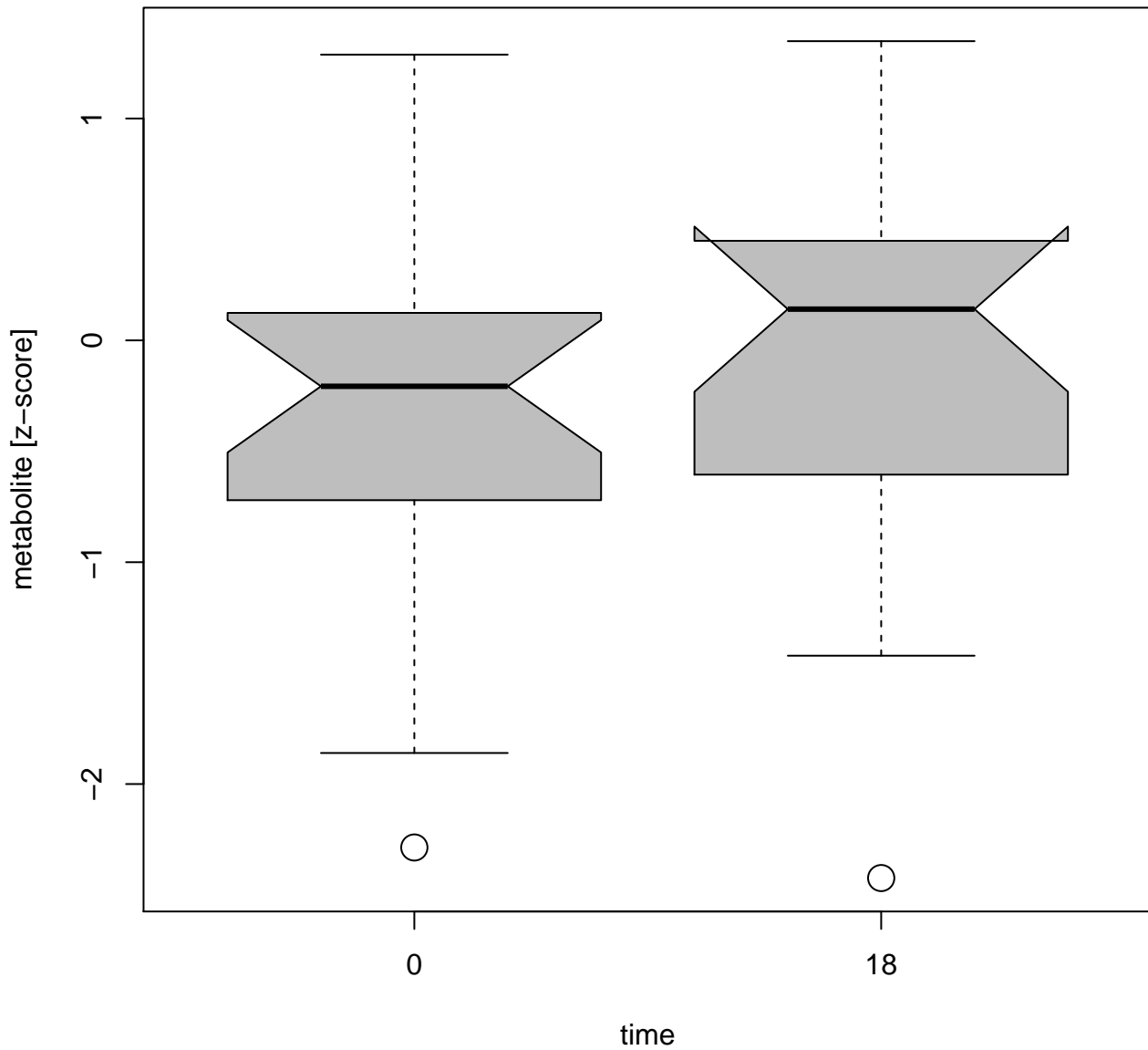
leucine



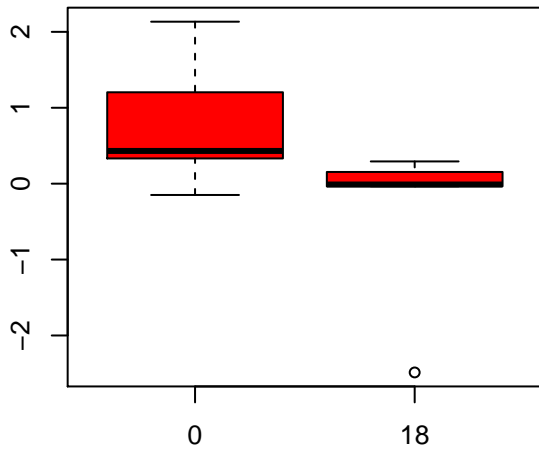
HCT15

SKOV3

leucine

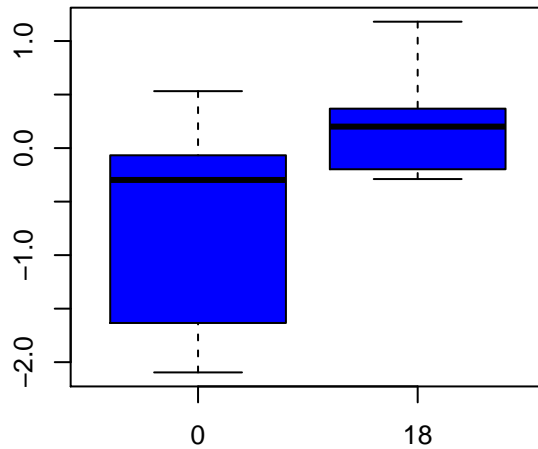


leucylalanine



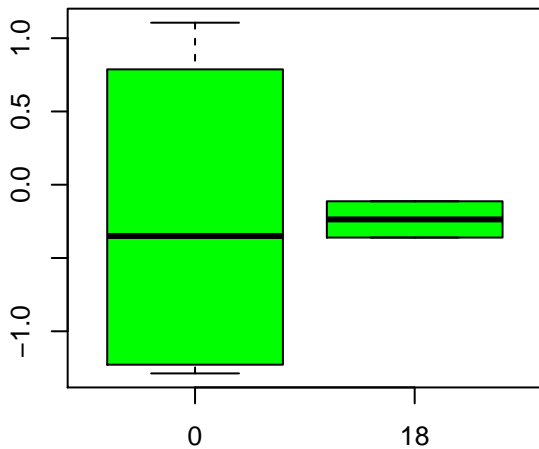
HCT116

leucylalanine



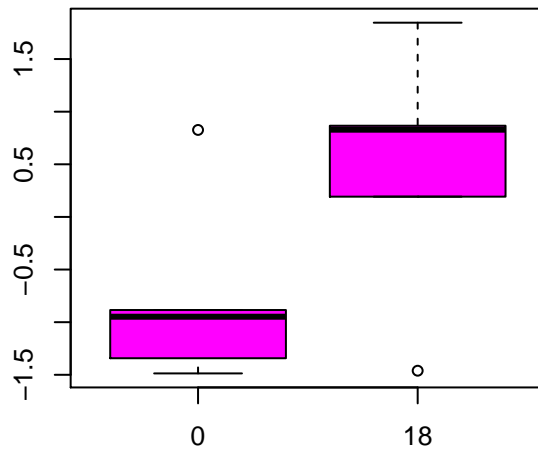
OVCAR

leucylalanine



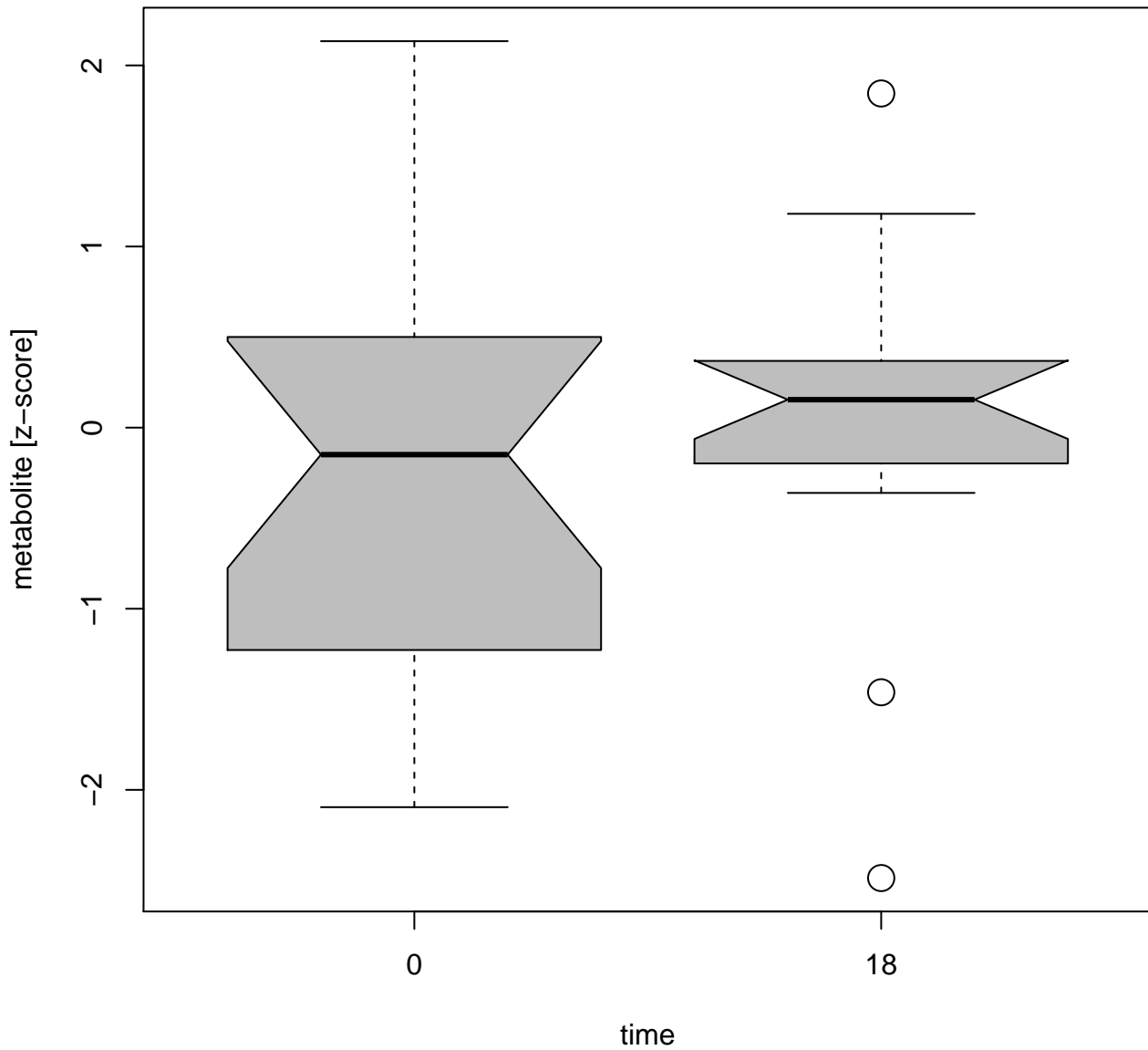
HCT15

leucylalanine

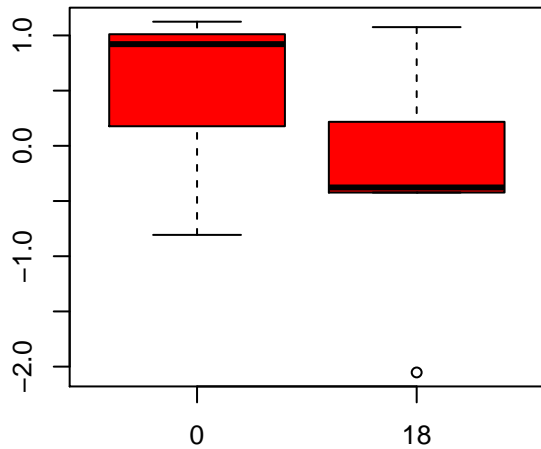


SKOV3

leucylalanine

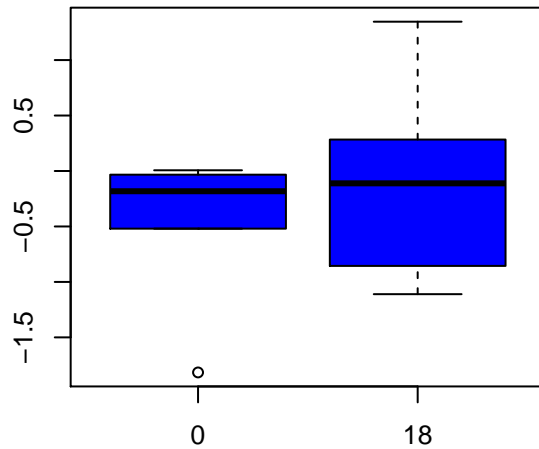


leucylglutamate



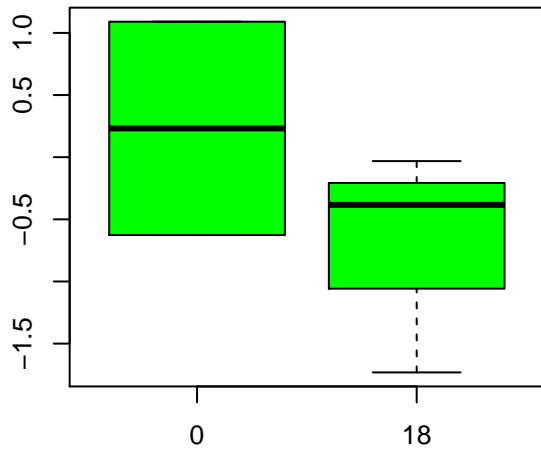
HCT116

leucylglutamate



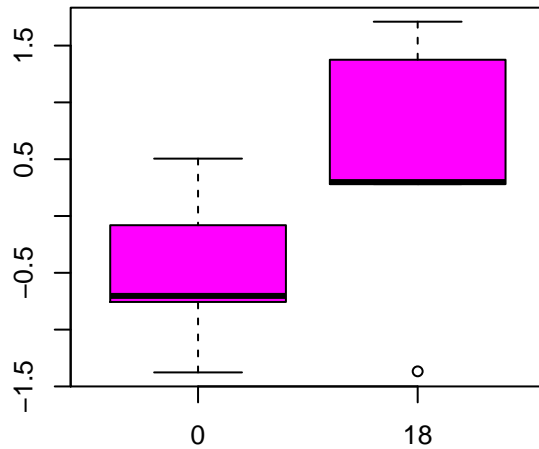
OVCAR

leucylglutamate



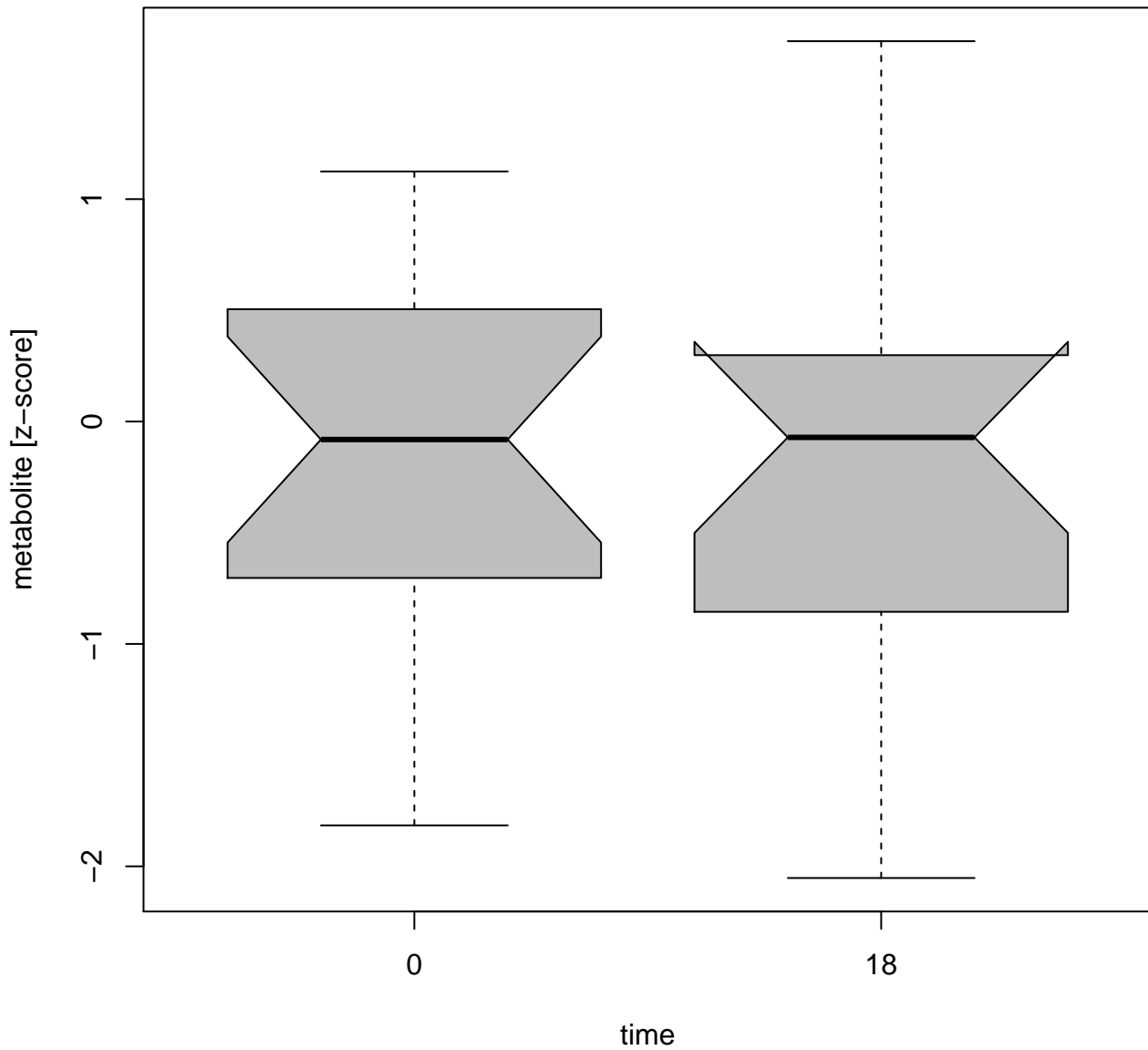
HCT15

leucylglutamate

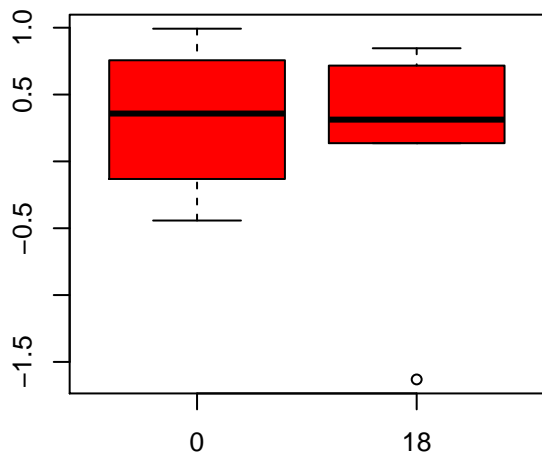


SKOV3

leucylglutamate

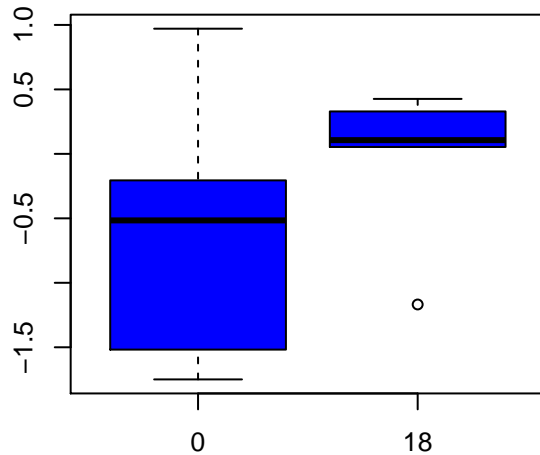


leucylglycine



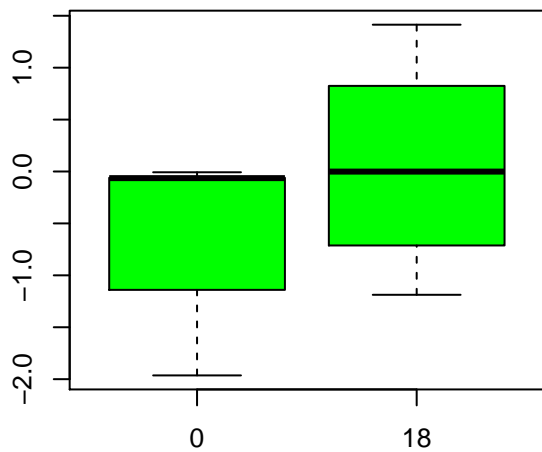
HCT116

leucylglycine



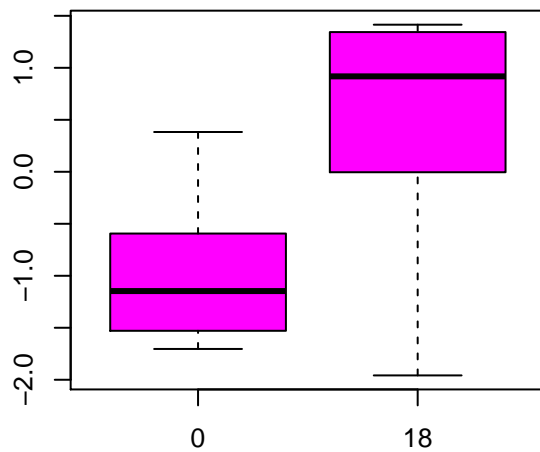
OVCAR

leucylglycine



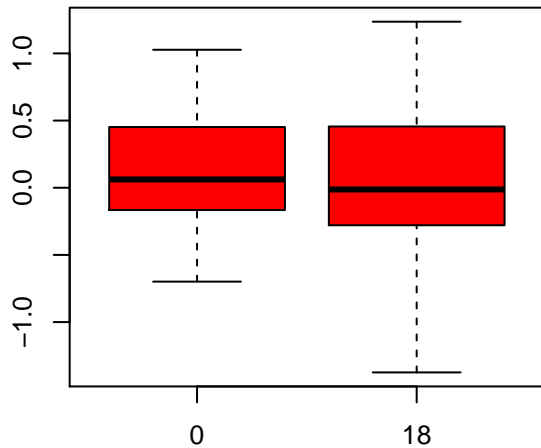
HCT15

leucylglycine



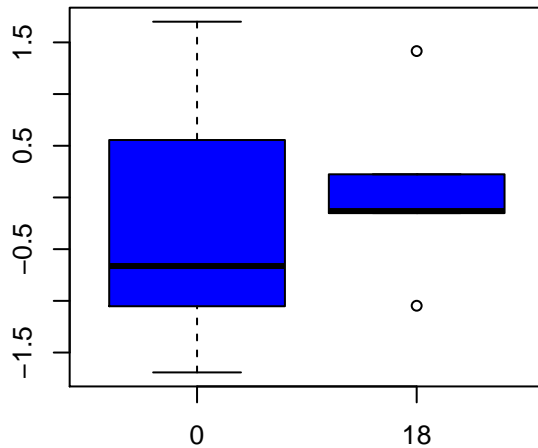
SKOV3

leucylisoleucine



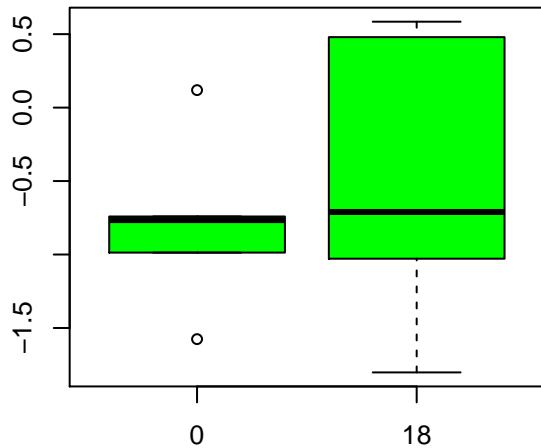
HCT116

leucylisoleucine



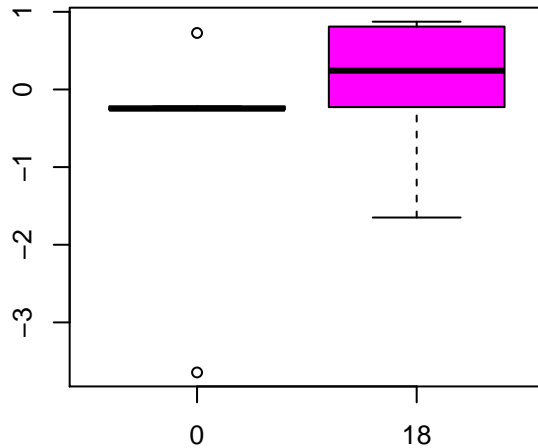
OVCAR

leucylisoleucine



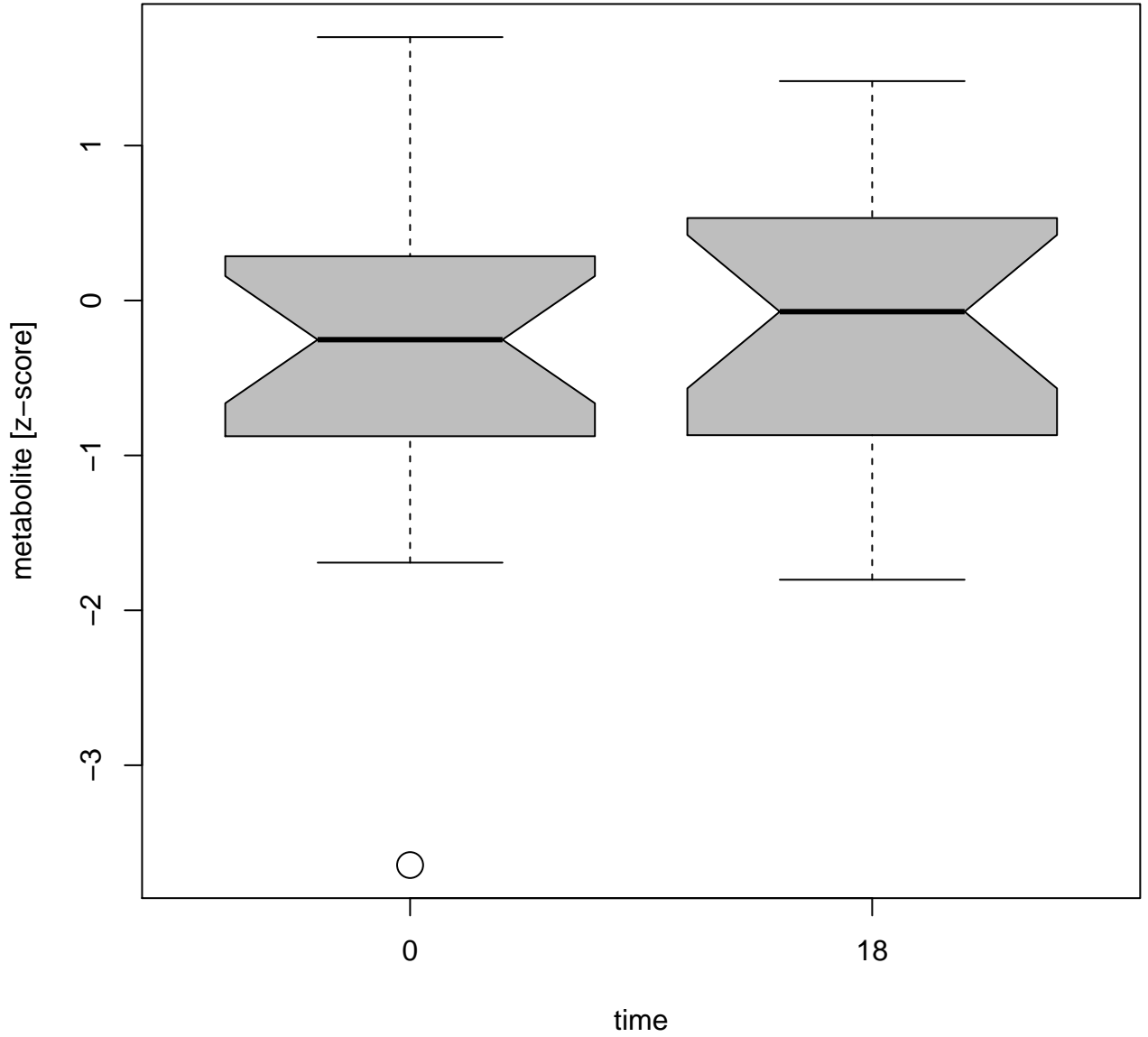
HCT15

leucylisoleucine

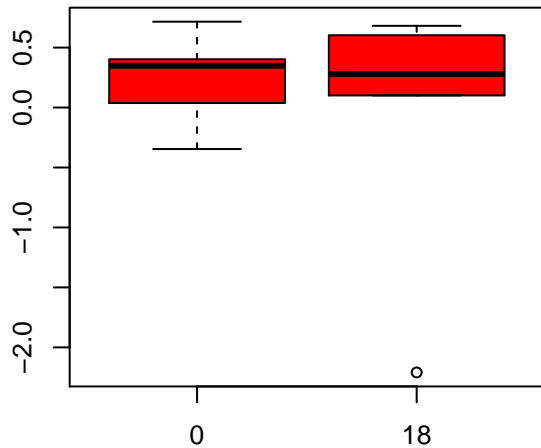


SKOV3

leucylisoleucine

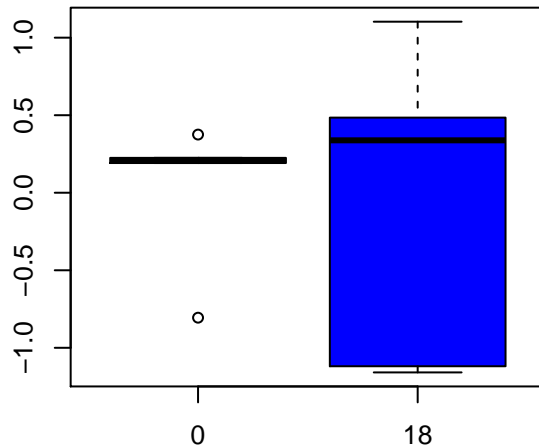


leucylleucine



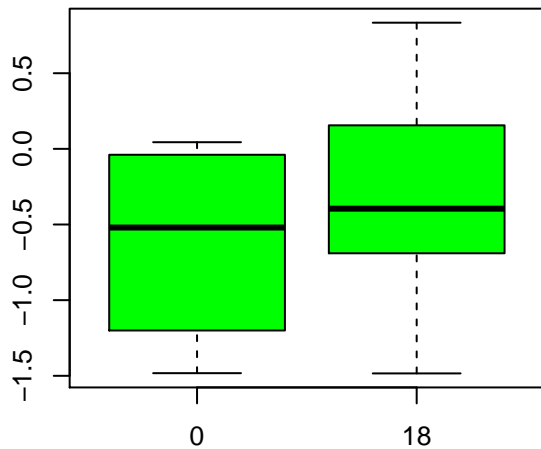
HCT116

leucylleucine



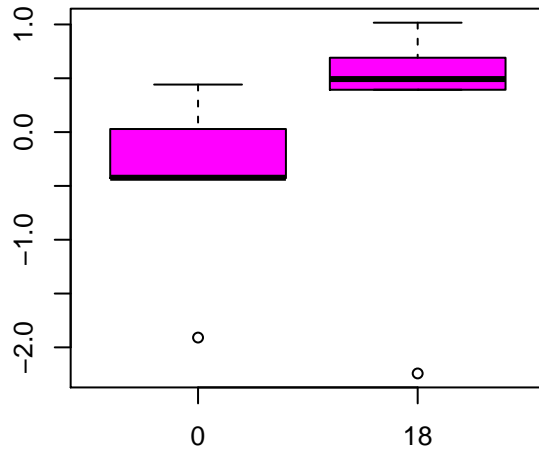
OVCAR

leucylleucine



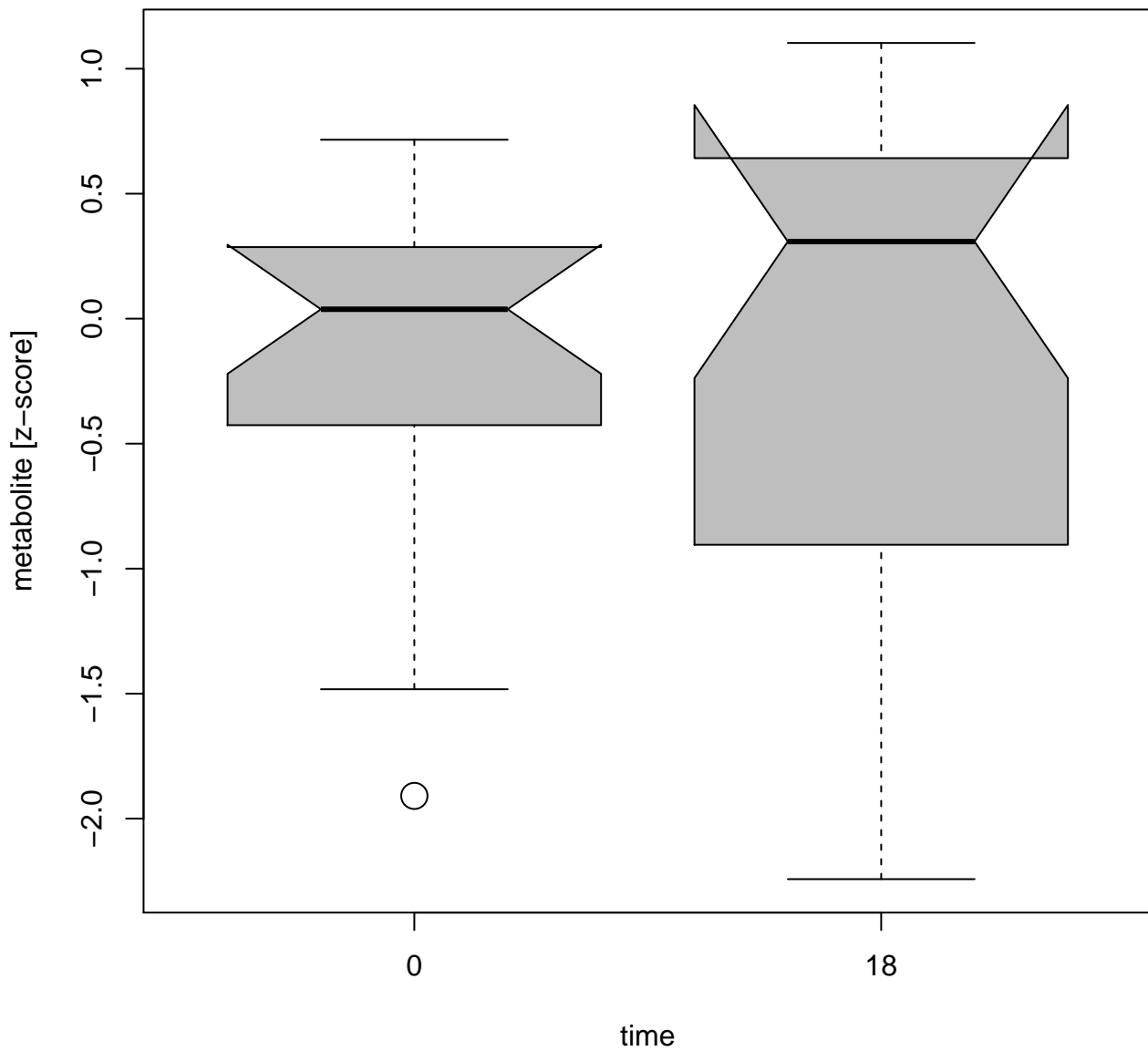
HCT15

leucylleucine

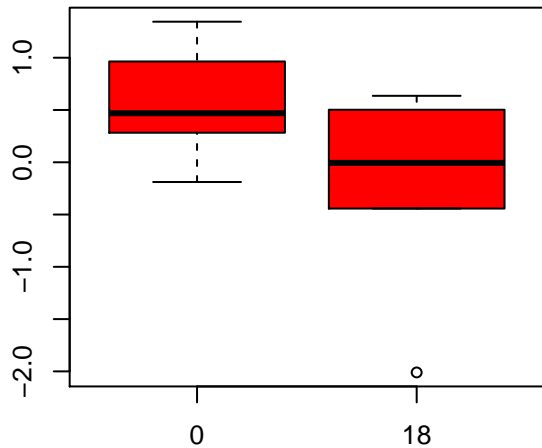


SKOV3

leucylleucine

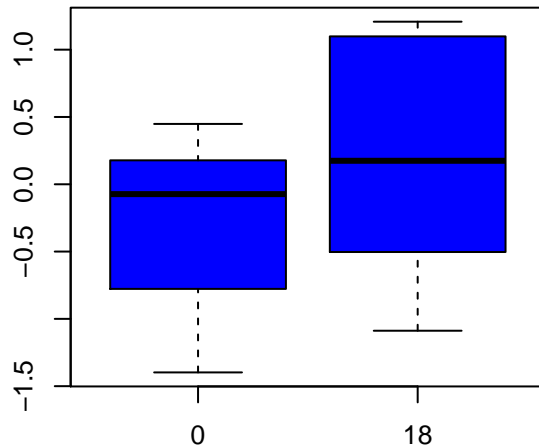


leucylphenylalanine



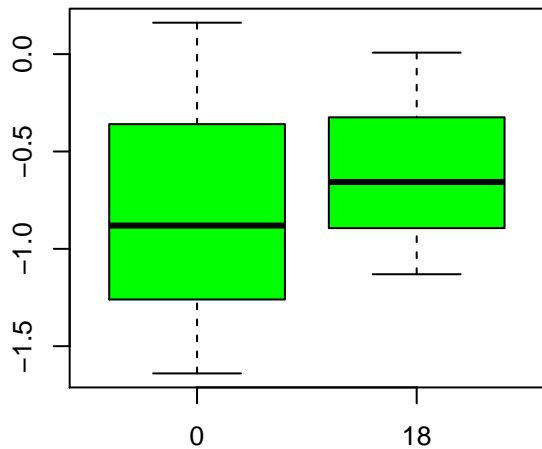
HCT116

leucylphenylalanine



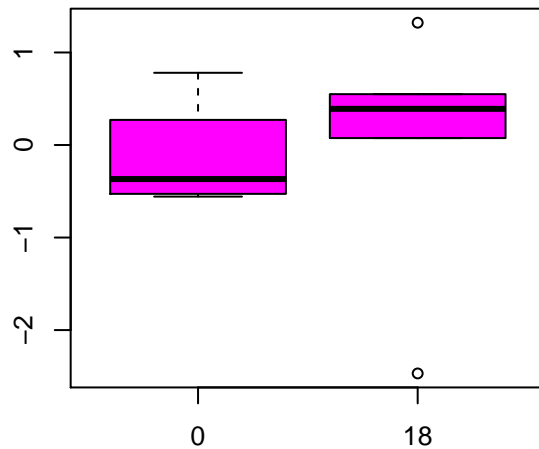
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leucylphenylalanine



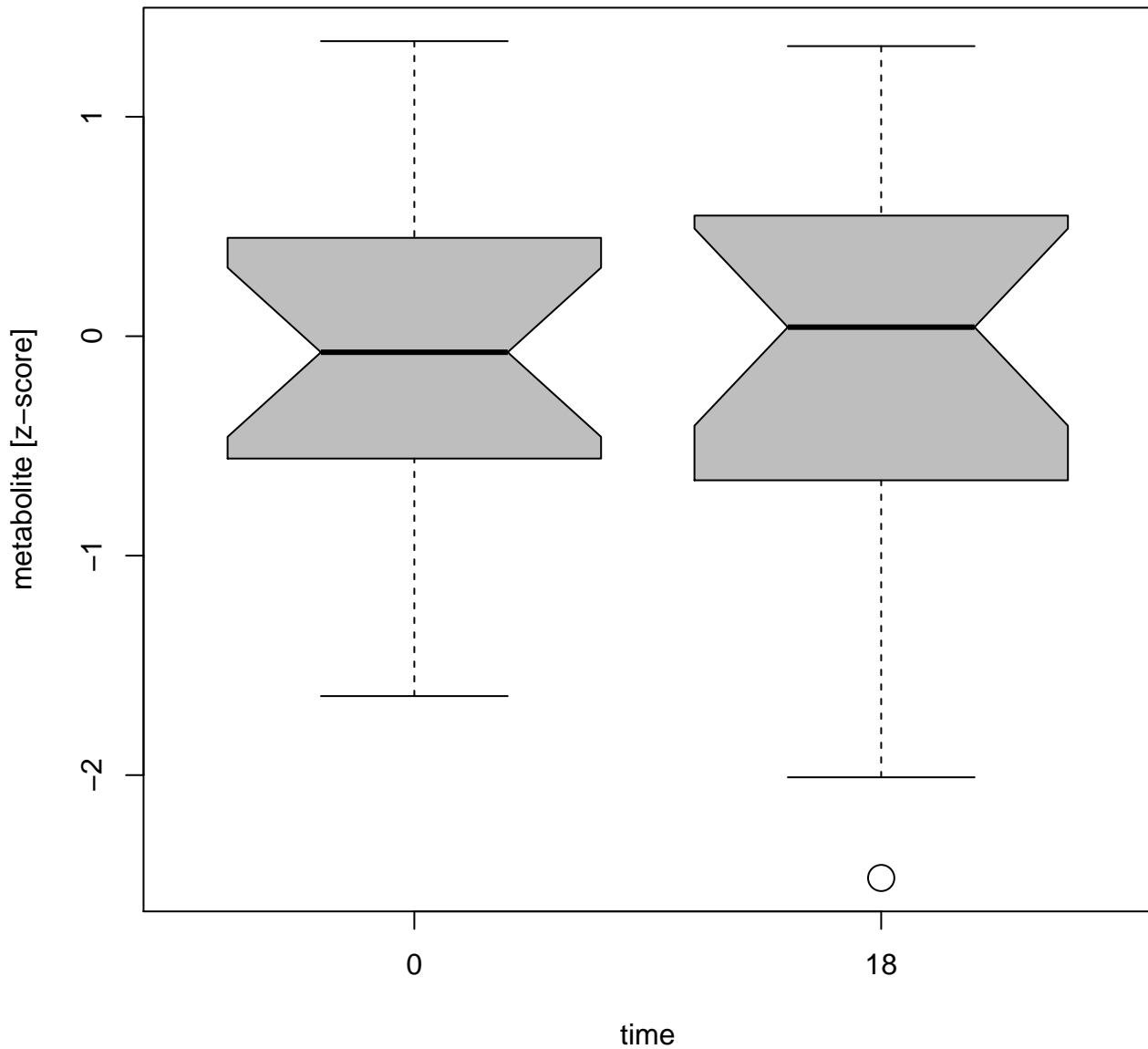
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leucylphenylalanine

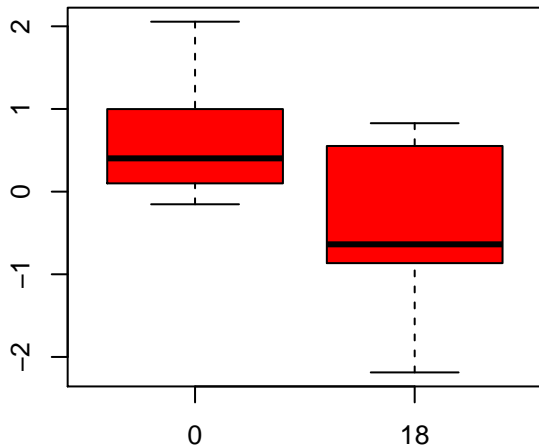


SKOV3

leucylphenylalanine

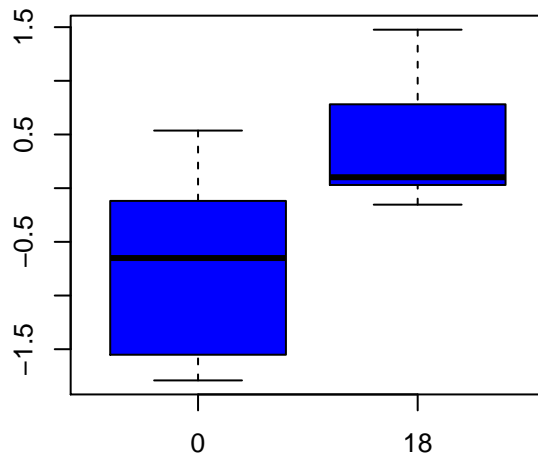


leucylserine



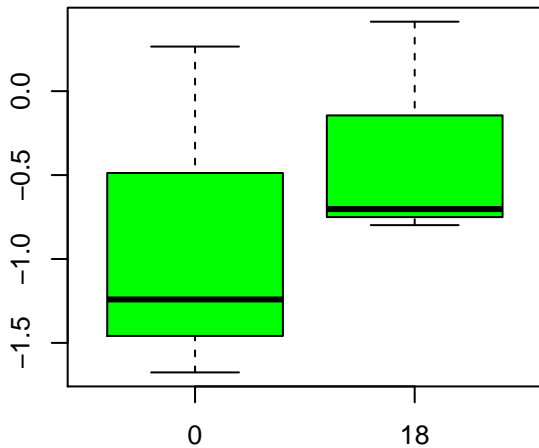
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leucylserine



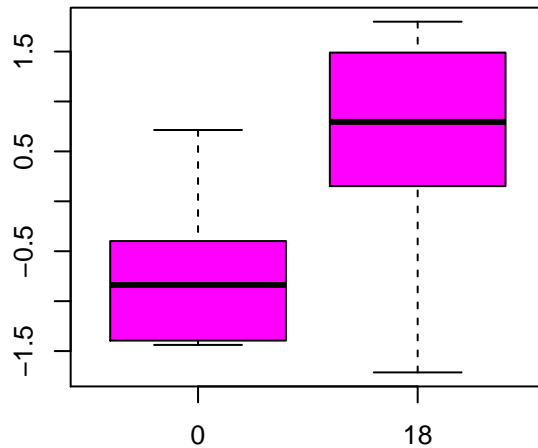
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leucylserine



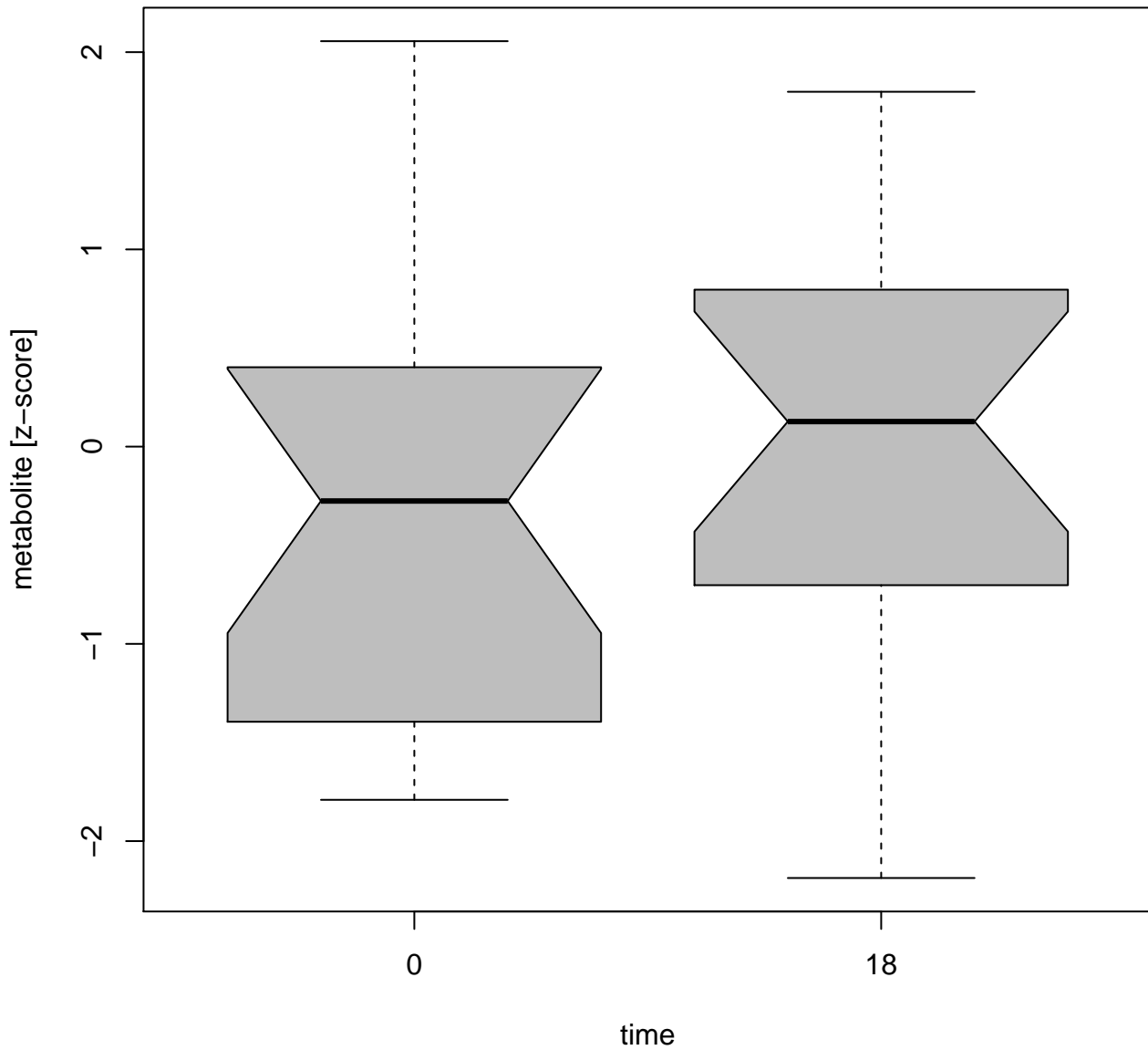
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leucylserine

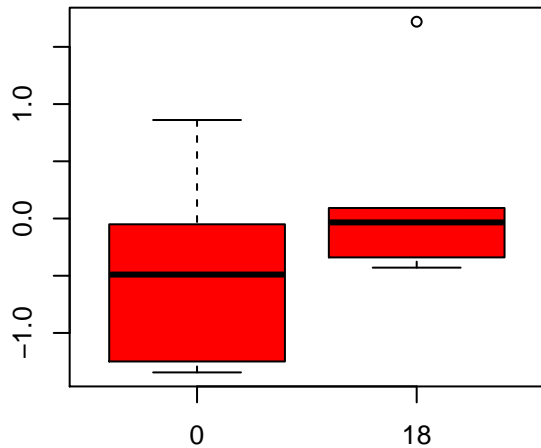


SKOV3

leucylserine

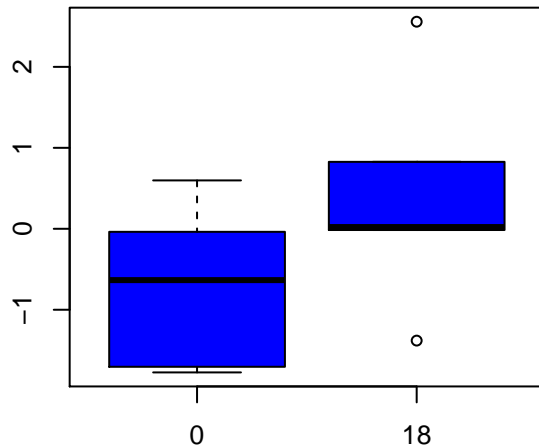


linoleate (18:2n6)



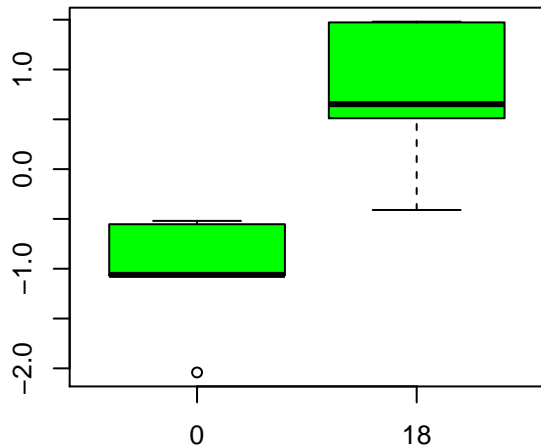
HCT116

linoleate (18:2n6)



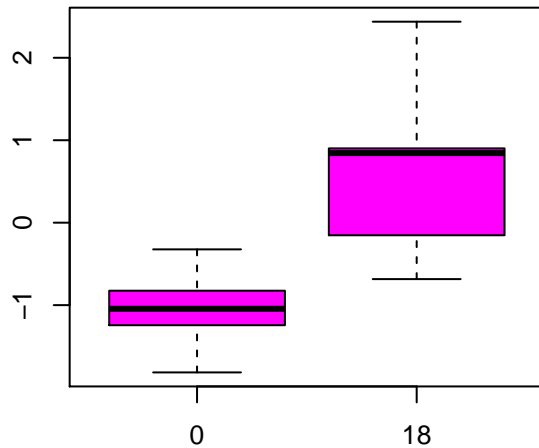
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linoleate (18:2n6)



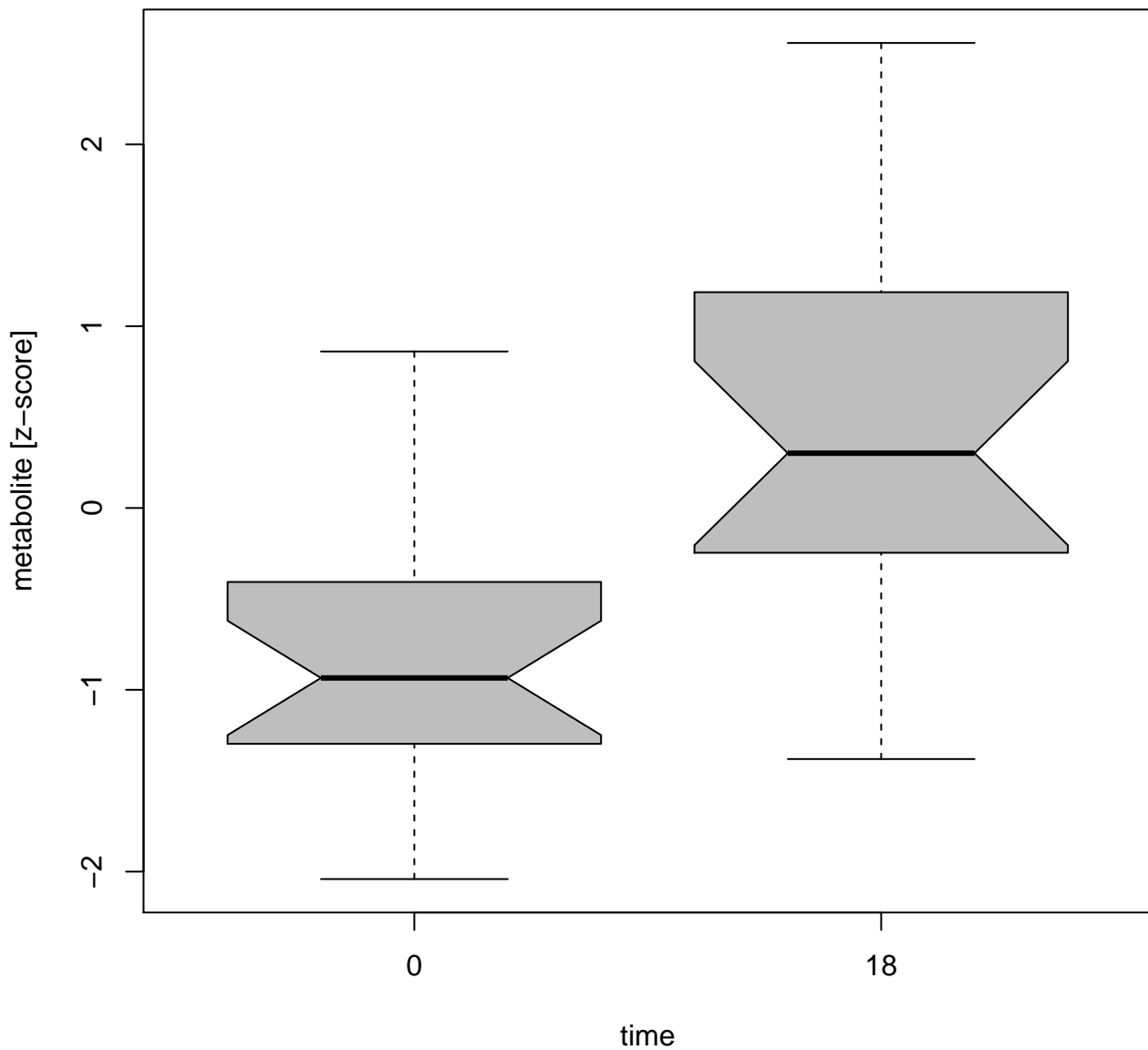
HCT15

linoleate (18:2n6)

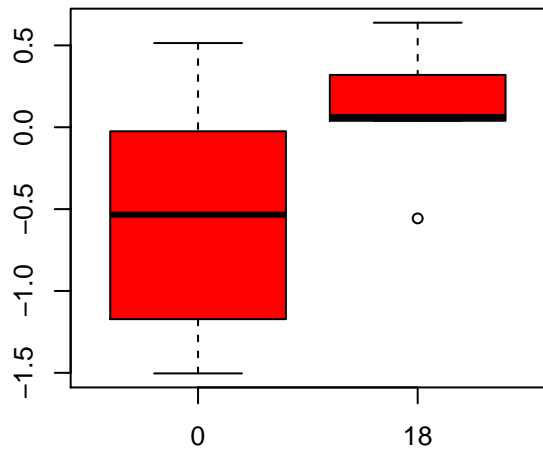


SKOV3

linoleate (18:2n6)

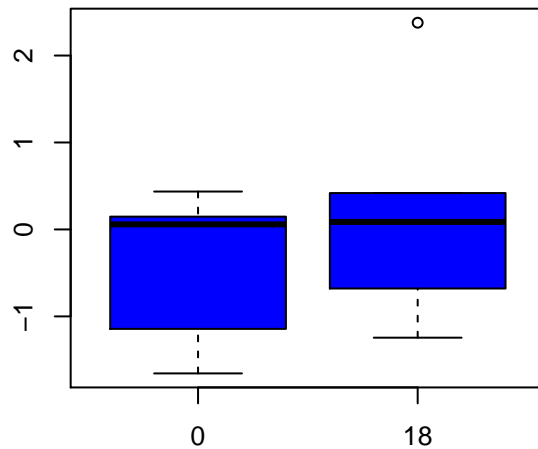


linolenate [alpha or gamma (18:3n3 or 6)]



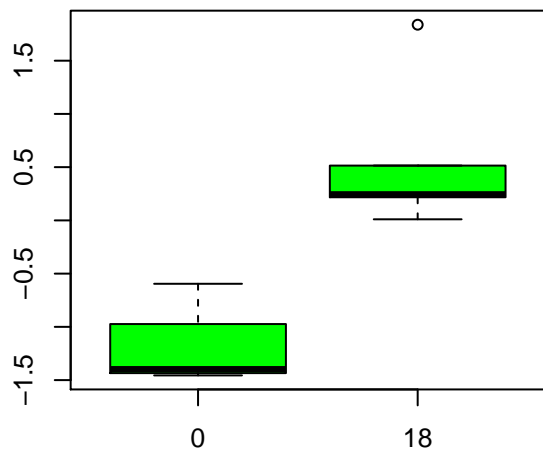
HCT116

linolenate [alpha or gamma (18:3n3 or 6)]



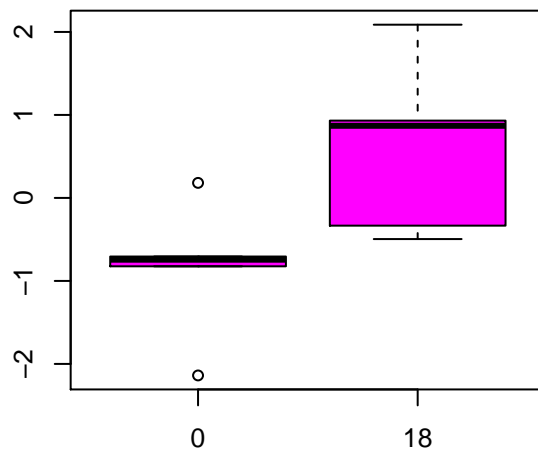
OVCAR

linolenate [alpha or gamma (18:3n3 or 6)]



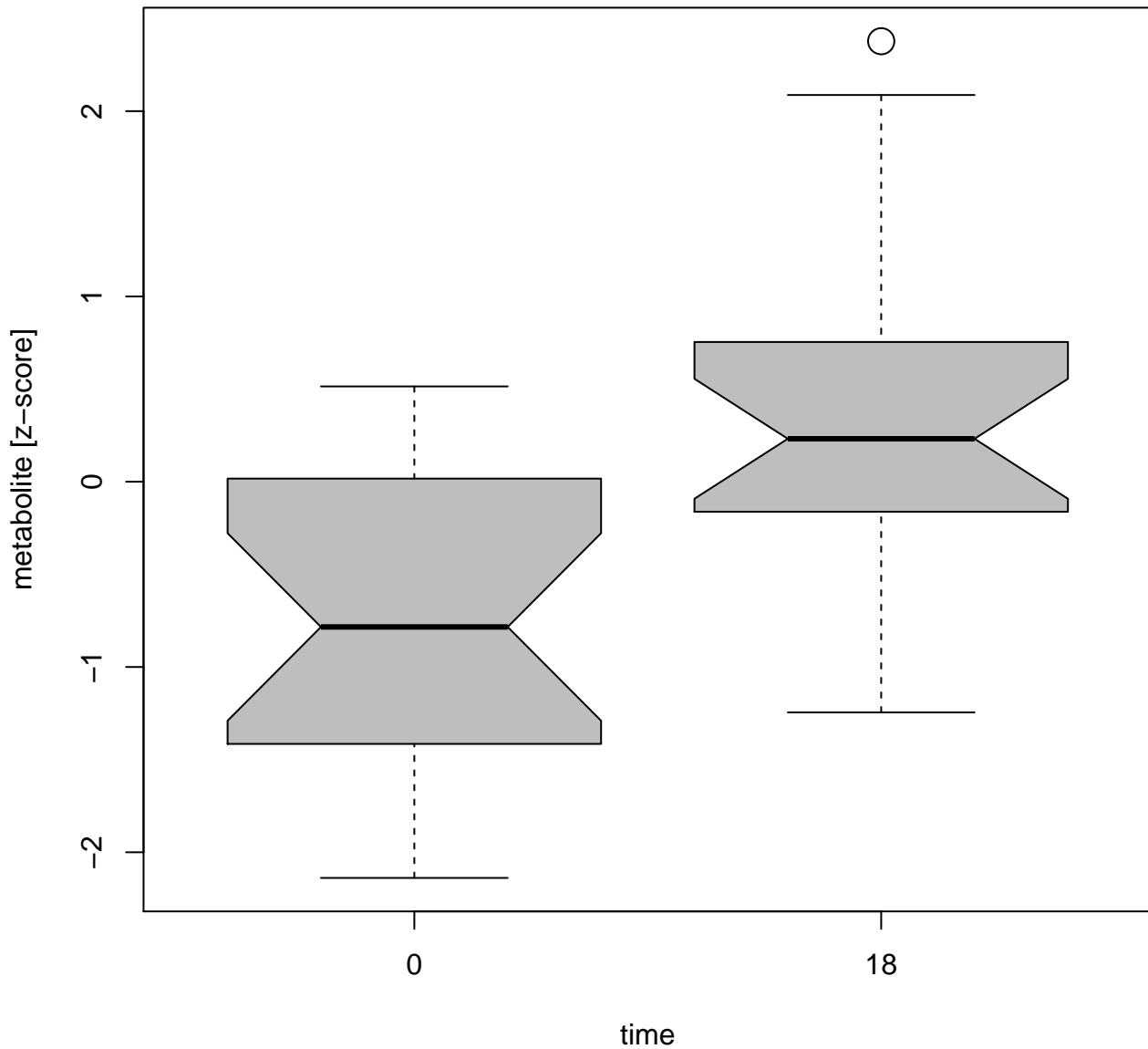
HCT15

linolenate [alpha or gamma (18:3n3 or 6)]

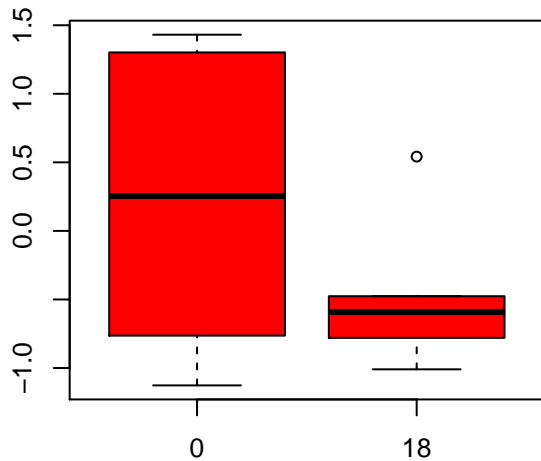


SKOV3

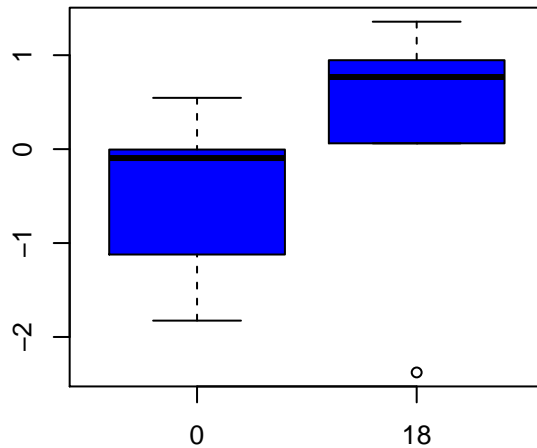
linolenate [alpha or gamma (18:3n3 or 6)]



lysine

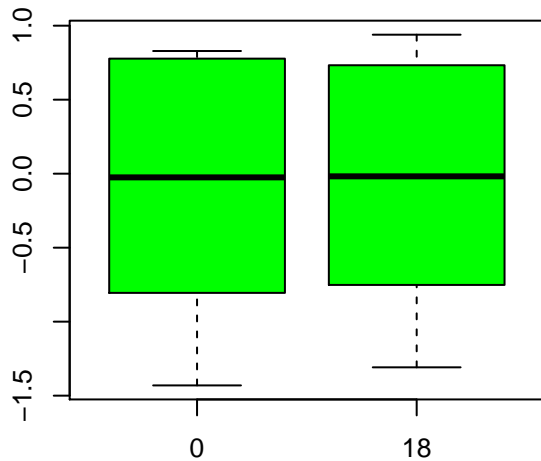


lysine



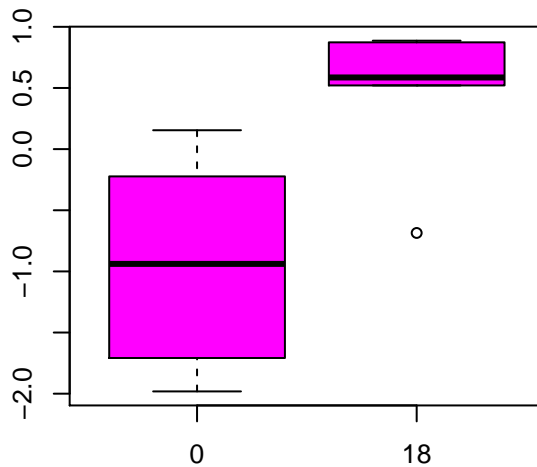
HCT116

lysine



OVCAR

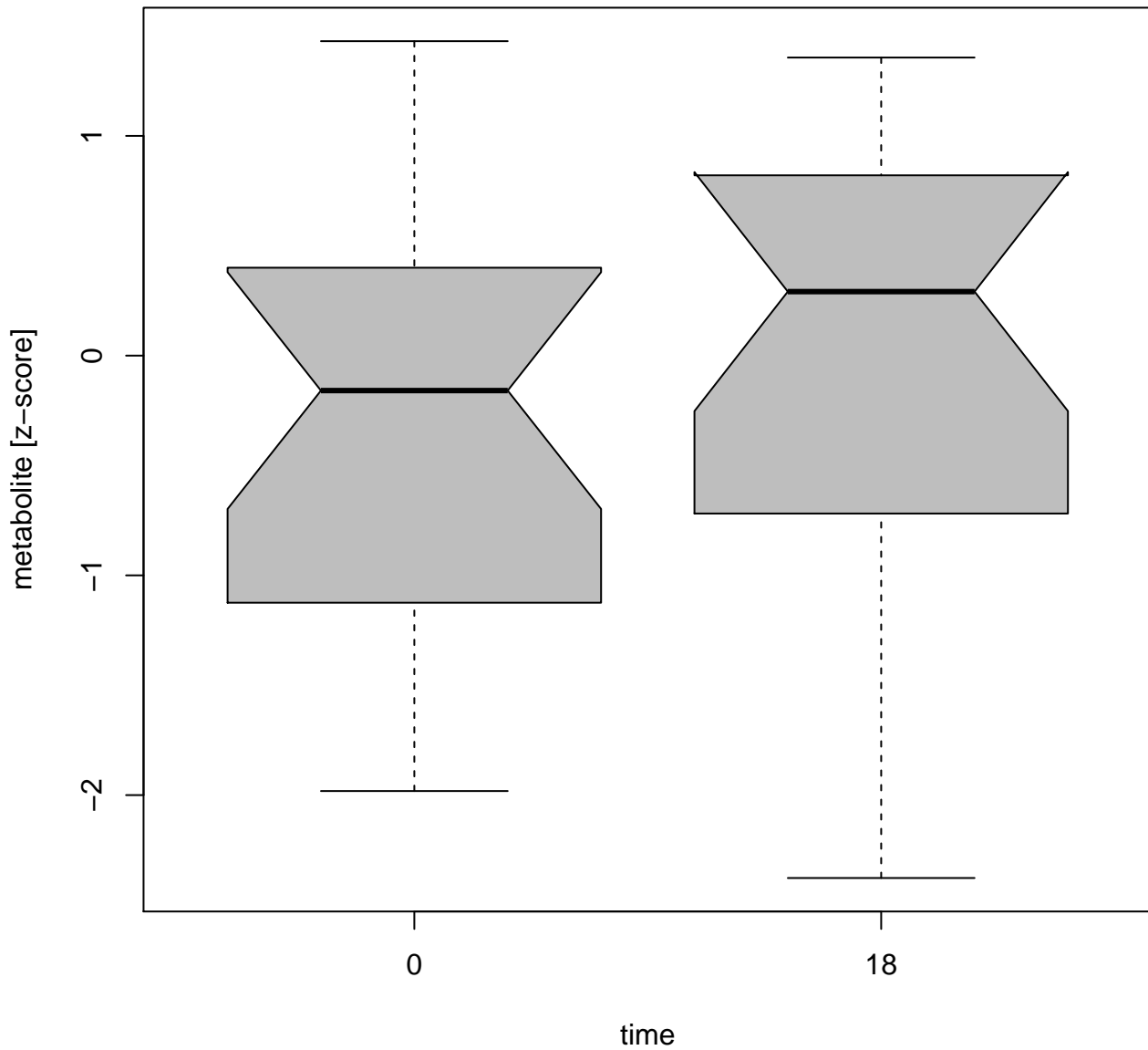
lysine



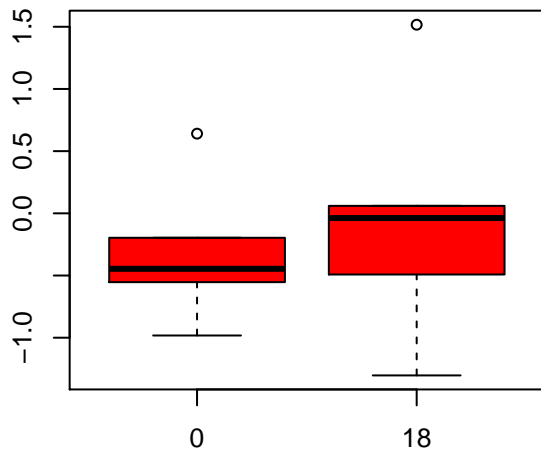
HCT15

SKOV3

lysine

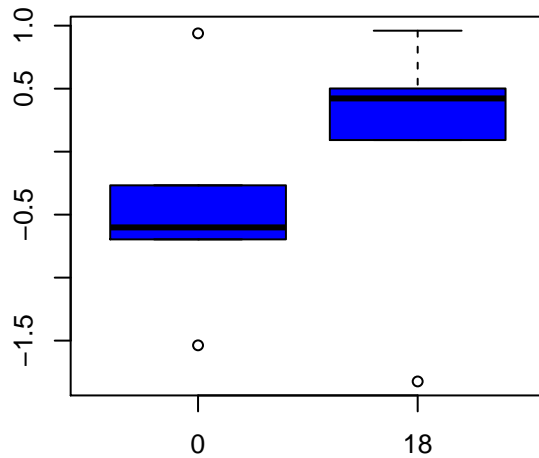


methionine



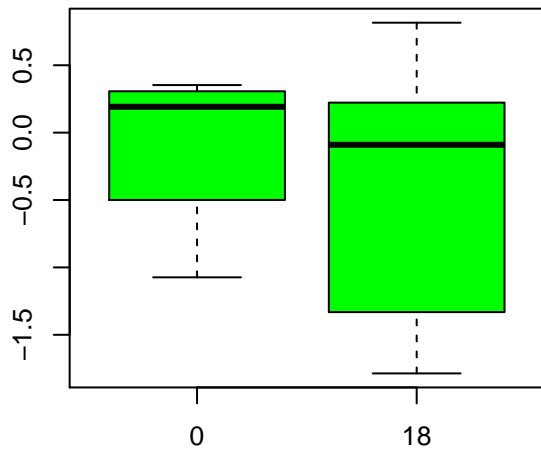
HCT116

methionine



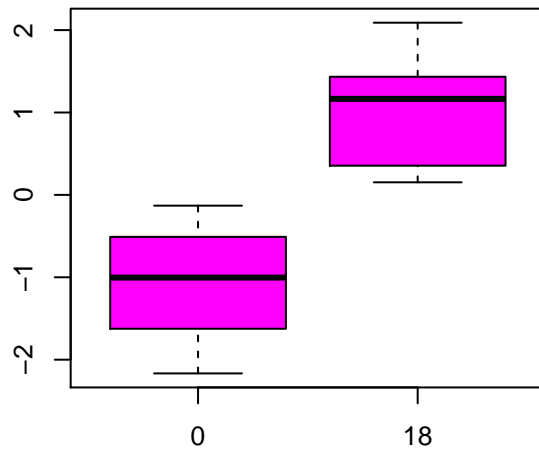
OVCAR

methionine



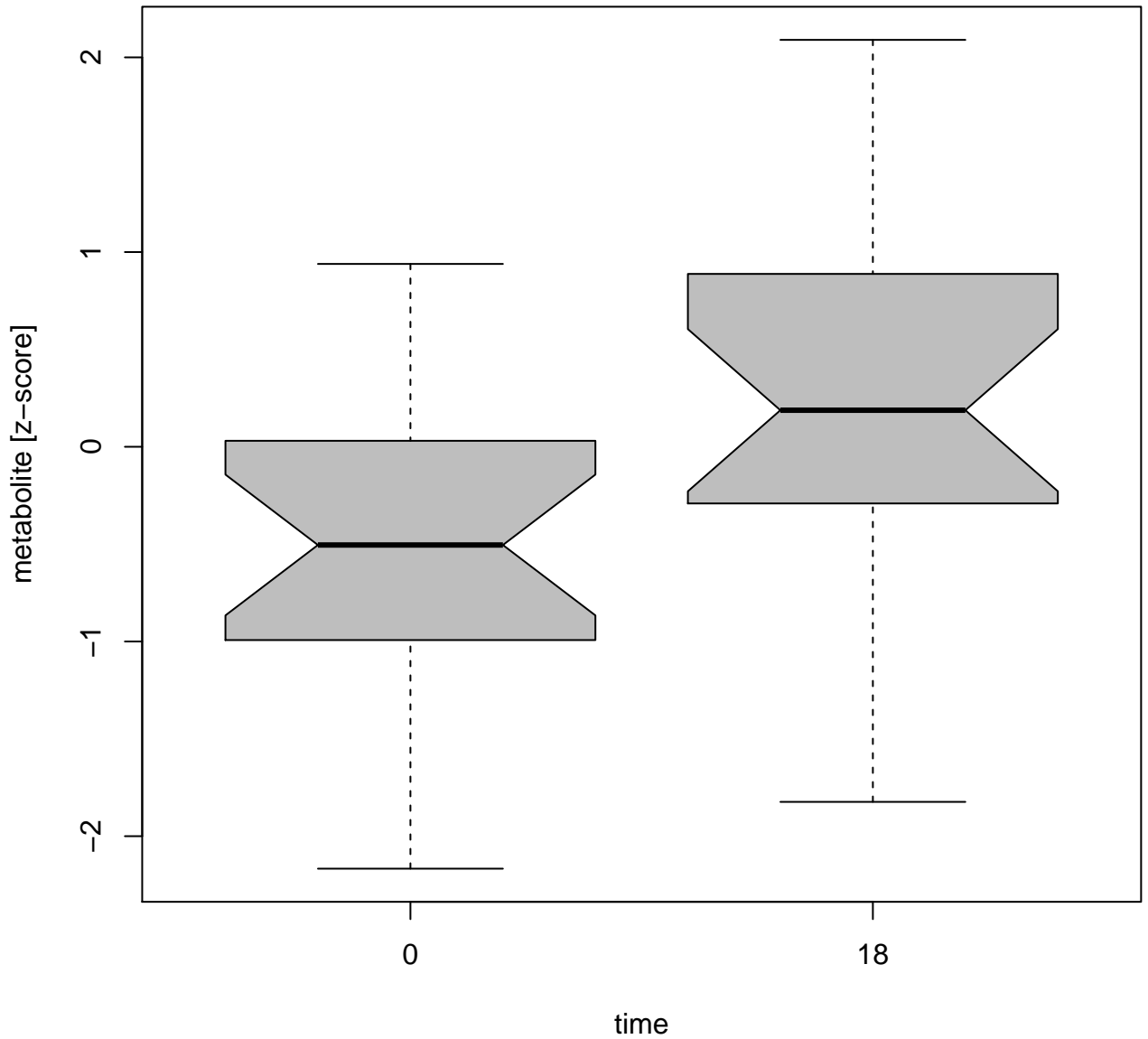
HCT15

methionine

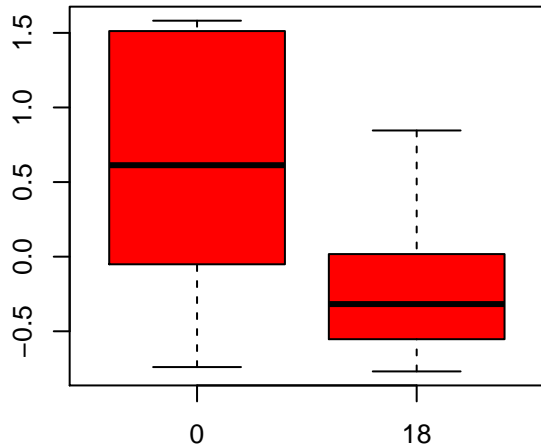


SKOV3

methionine

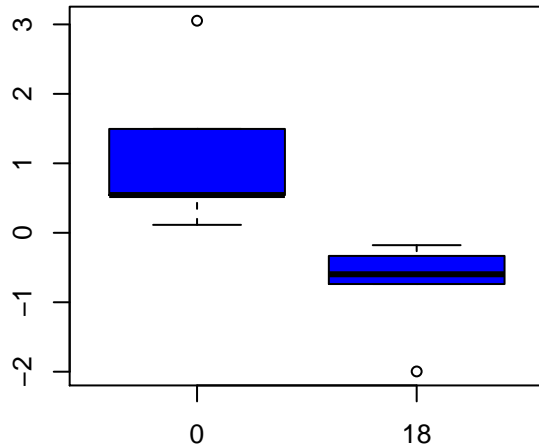


methionine sulfoxide



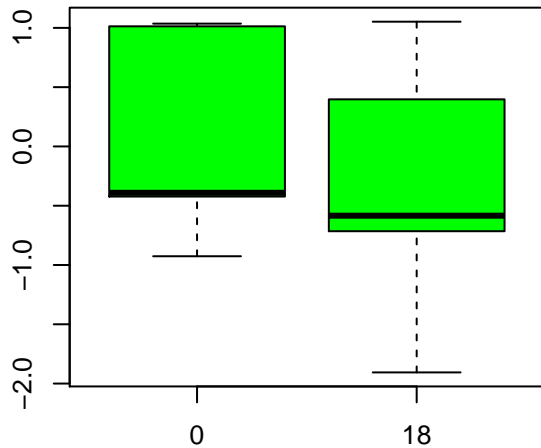
HCT116

methionine sulfoxide



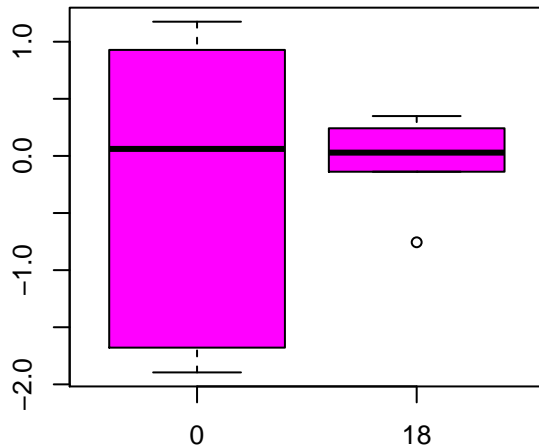
OVCAR

methionine sulfoxide



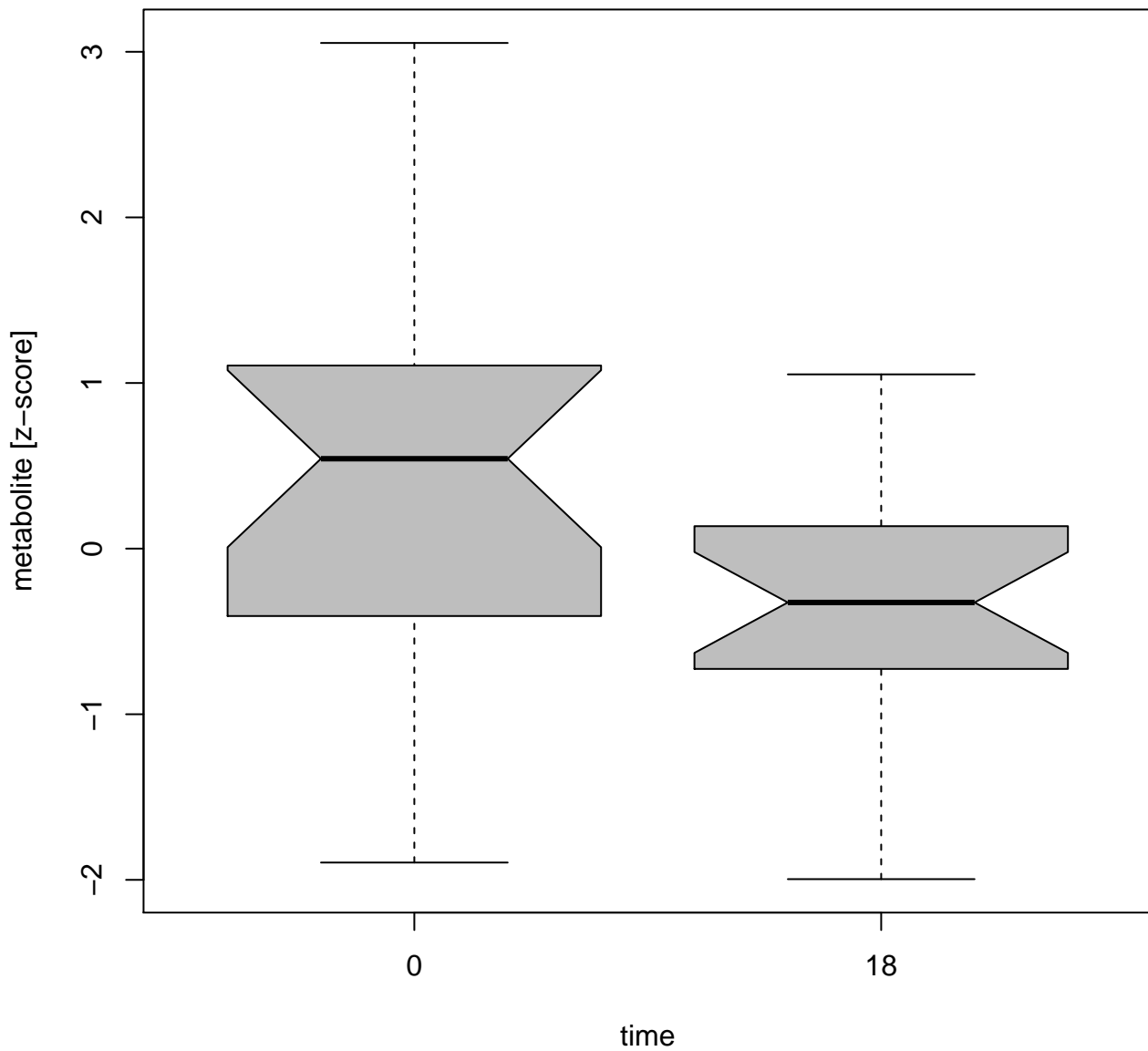
HCT15

methionine sulfoxide

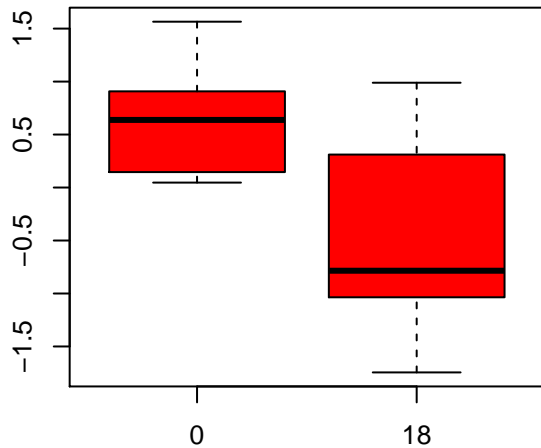


SKOV3

methionine sulfoxide

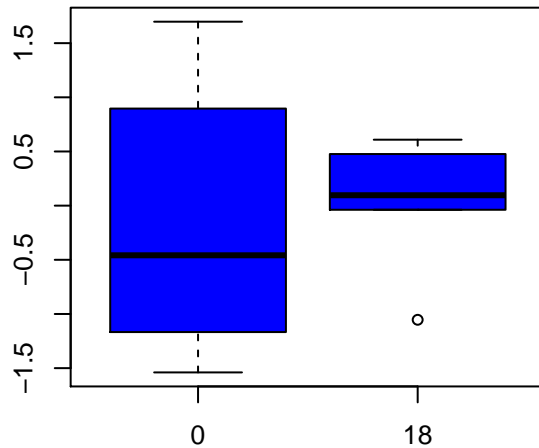


myo-inositol



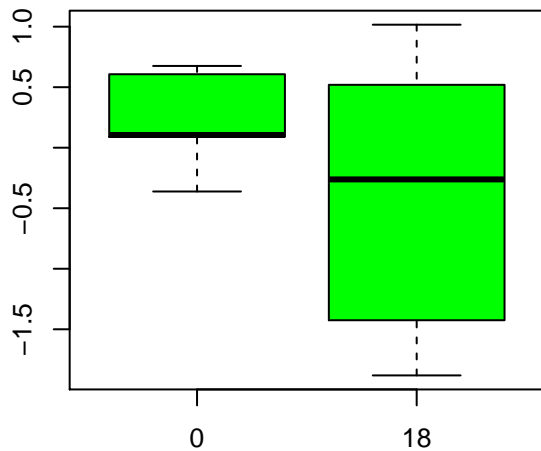
HCT116

myo-inositol



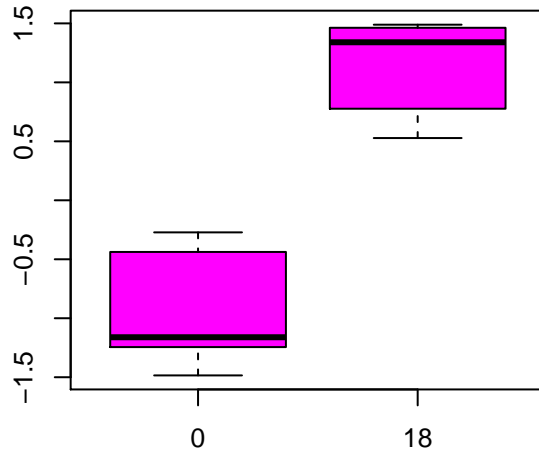
OVCAR

myo-inositol



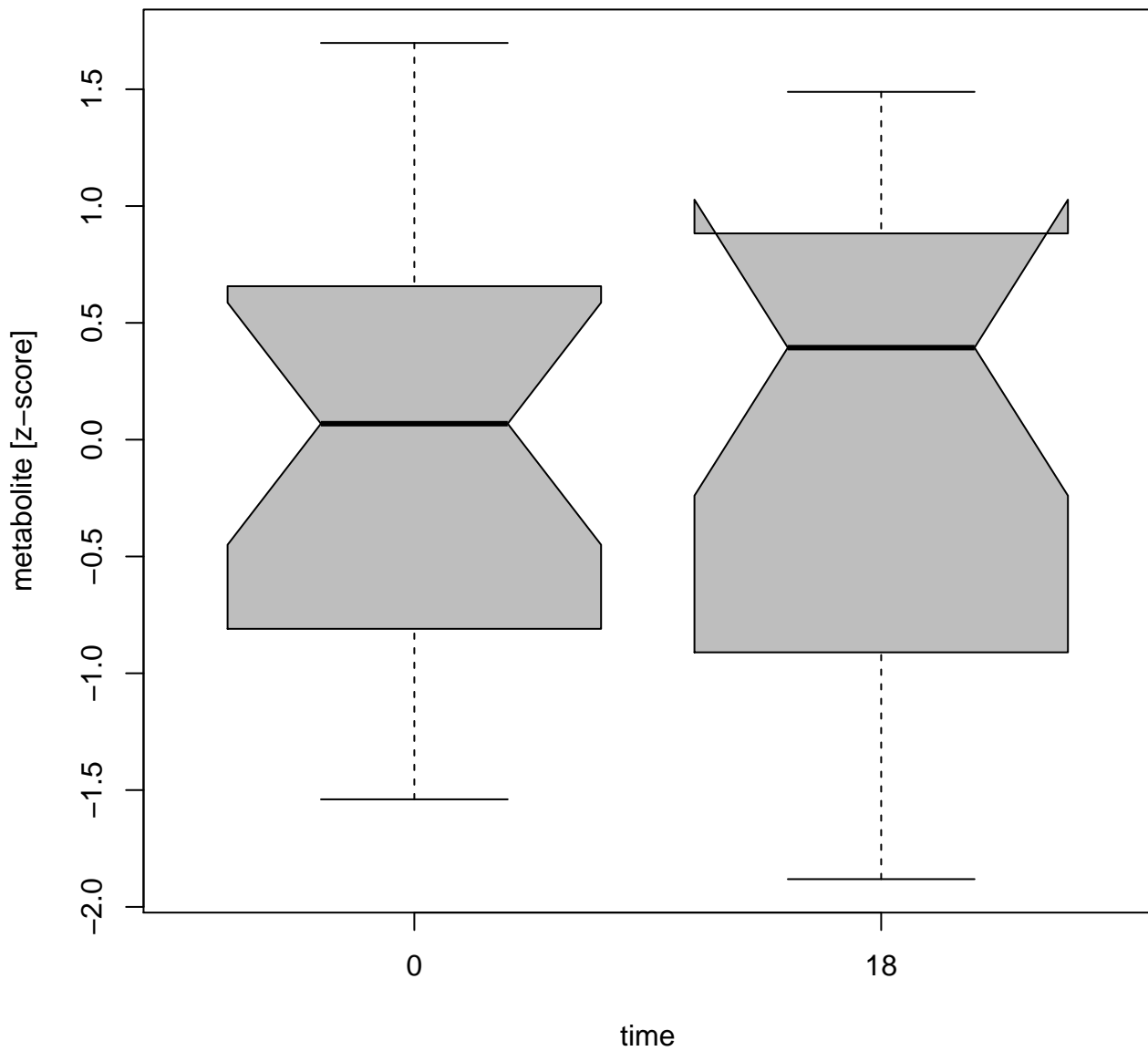
HCT15

myo-inositol

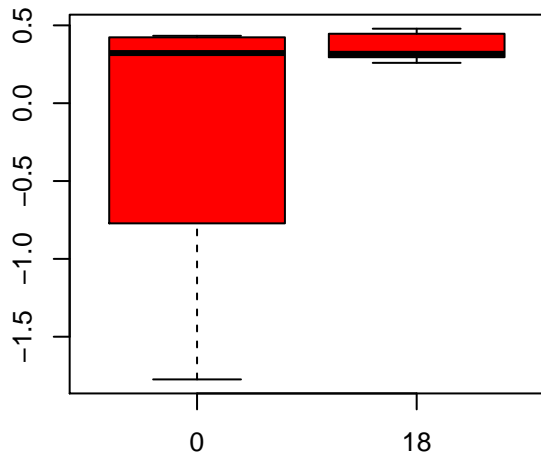


SKOV3

myo-inositol

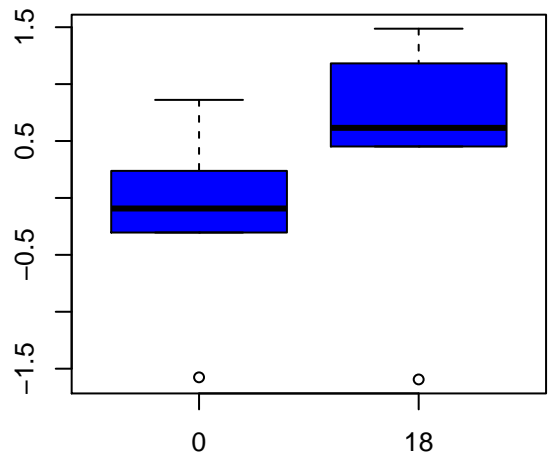


N-acetylaspartate (NAA)



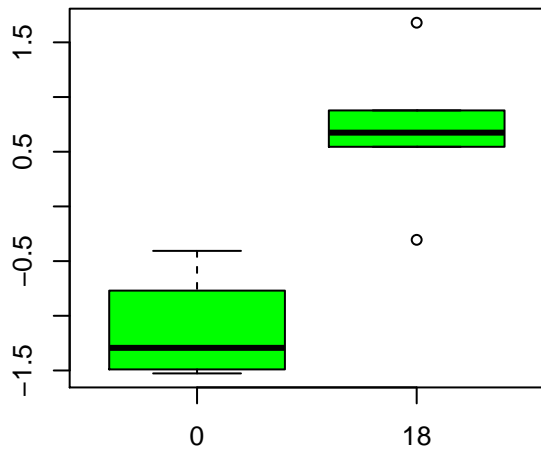
HCT116

N-acetylaspartate (NAA)



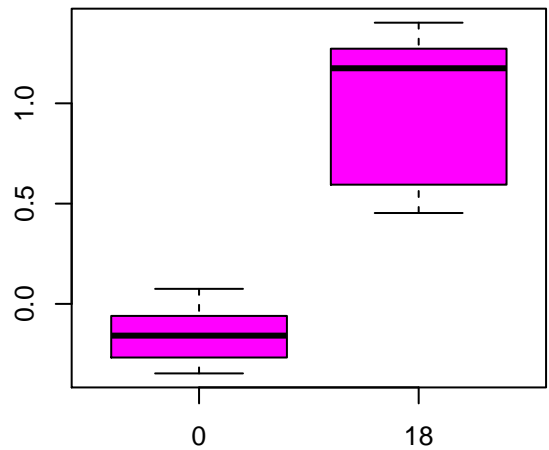
OVCAR

N-acetylaspartate (NAA)



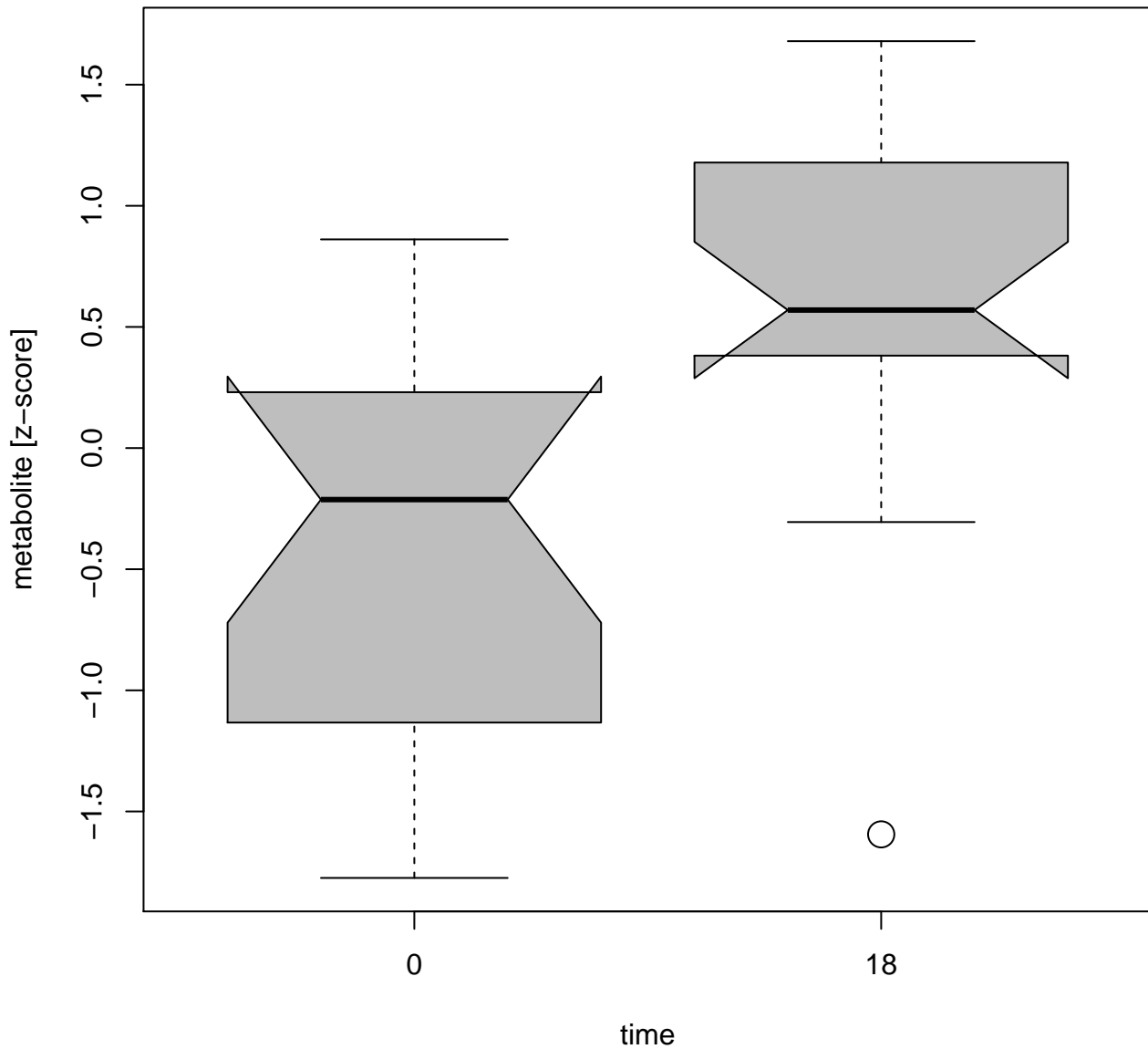
HCT15

N-acetylaspartate (NAA)

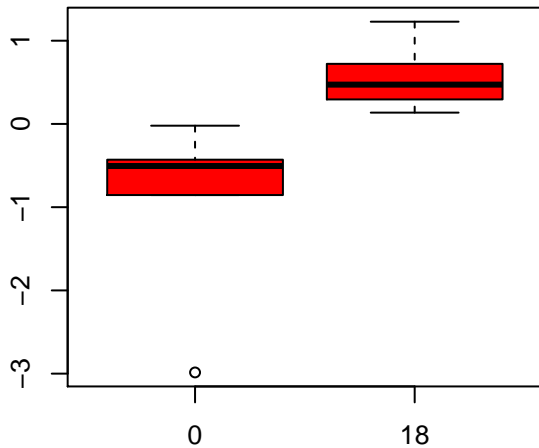


SKOV3

N-acetylaspartate (NAA)

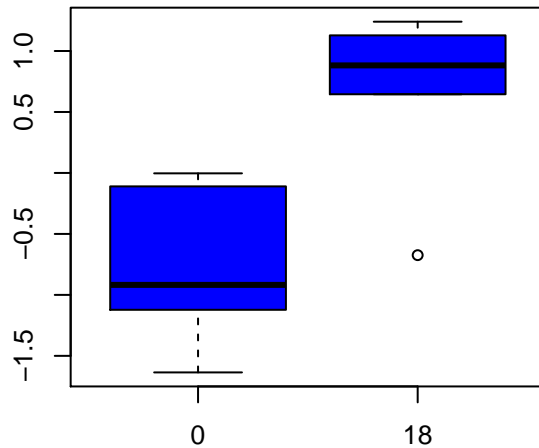


N-acetylglutamate



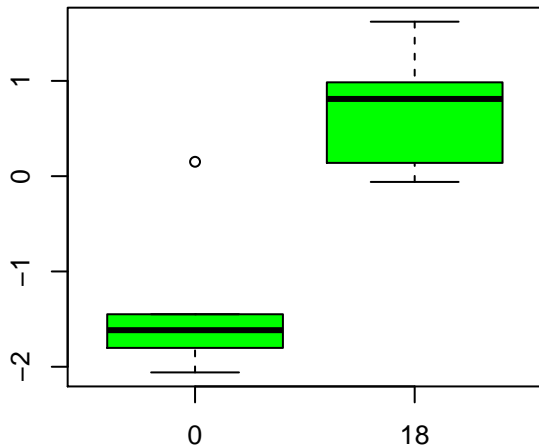
HCT116

N-acetylglutamate



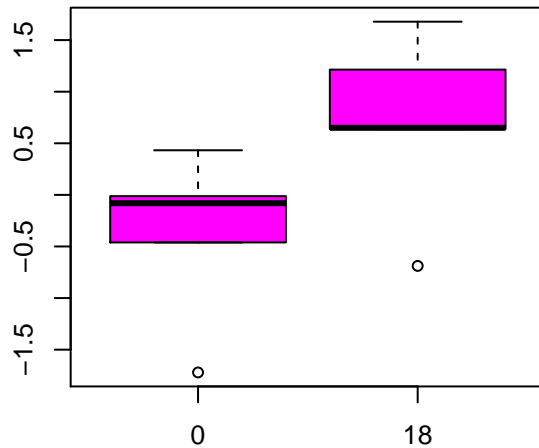
OVCAR

N-acetylglutamate



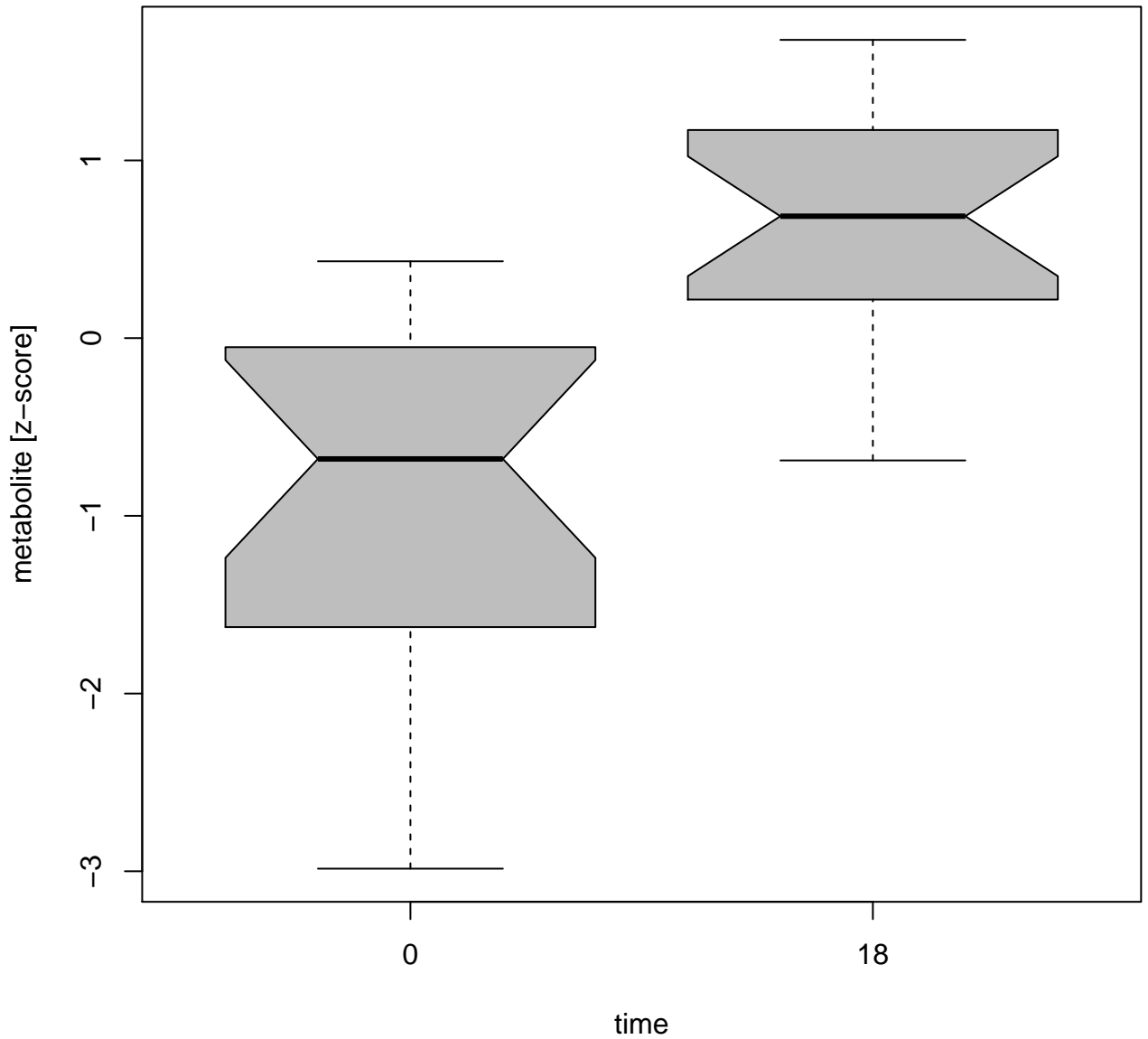
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N-acetylglutamate

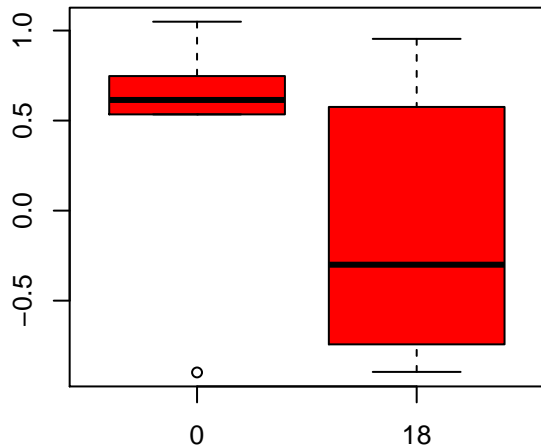


SKOV3

N-acetylglutamate

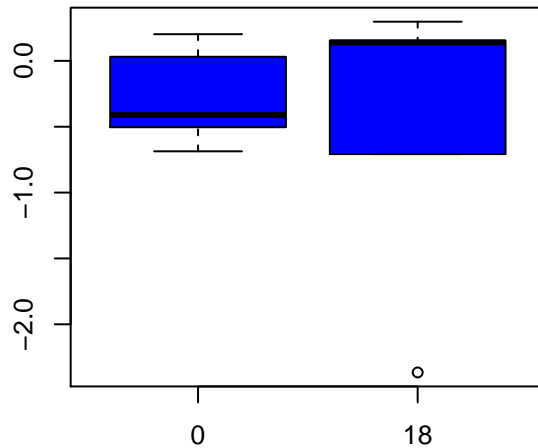


N-acetylneuraminate



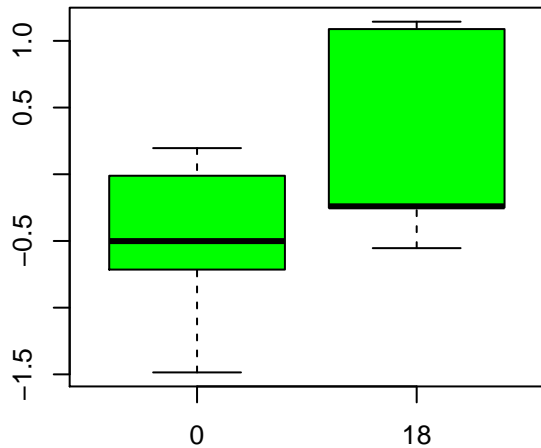
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N-acetylneuraminate



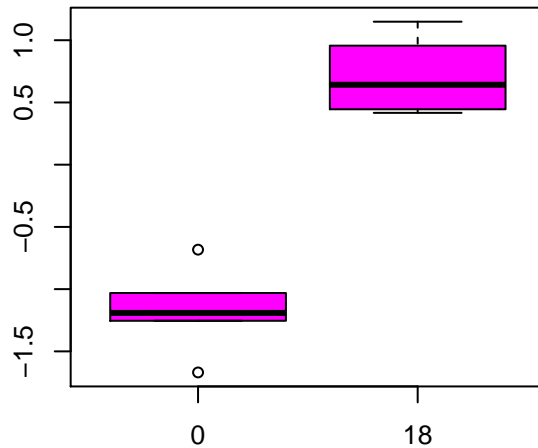
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N-acetylneuraminate



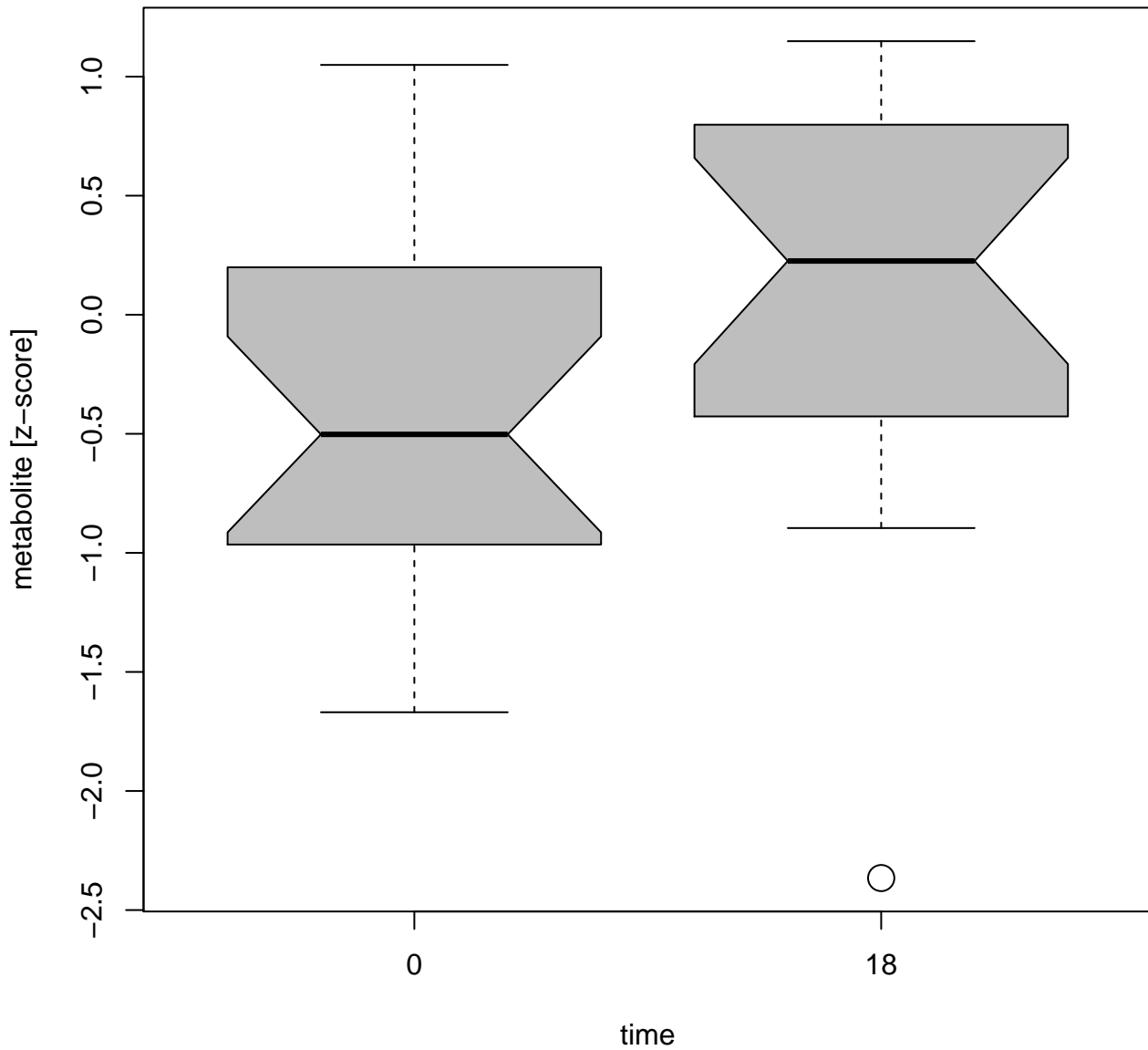
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N-acetylneuraminate

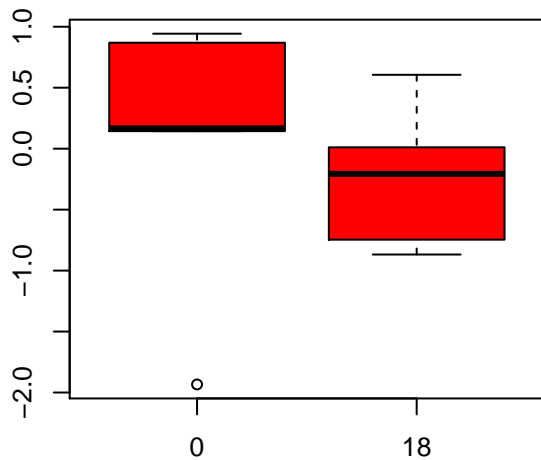


SKOV3

N-acetylneuraminate

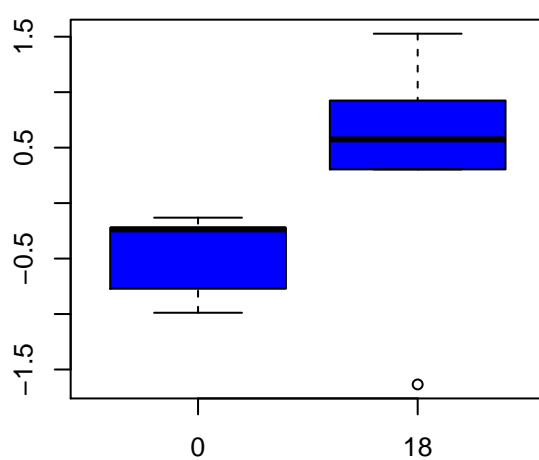


N-acetylserine



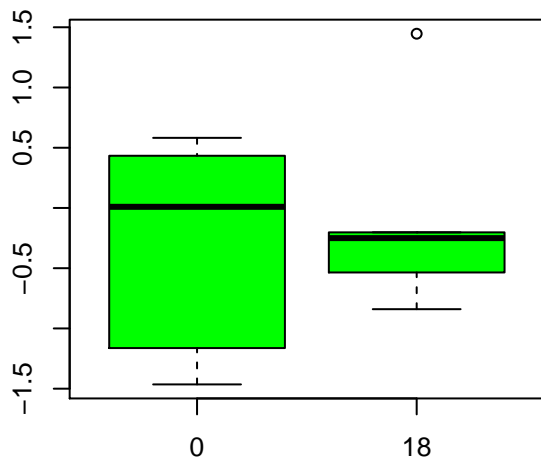
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N-acetylserine



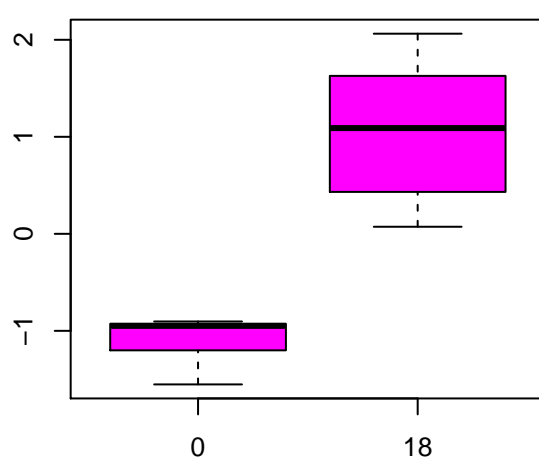
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N-acetylserine



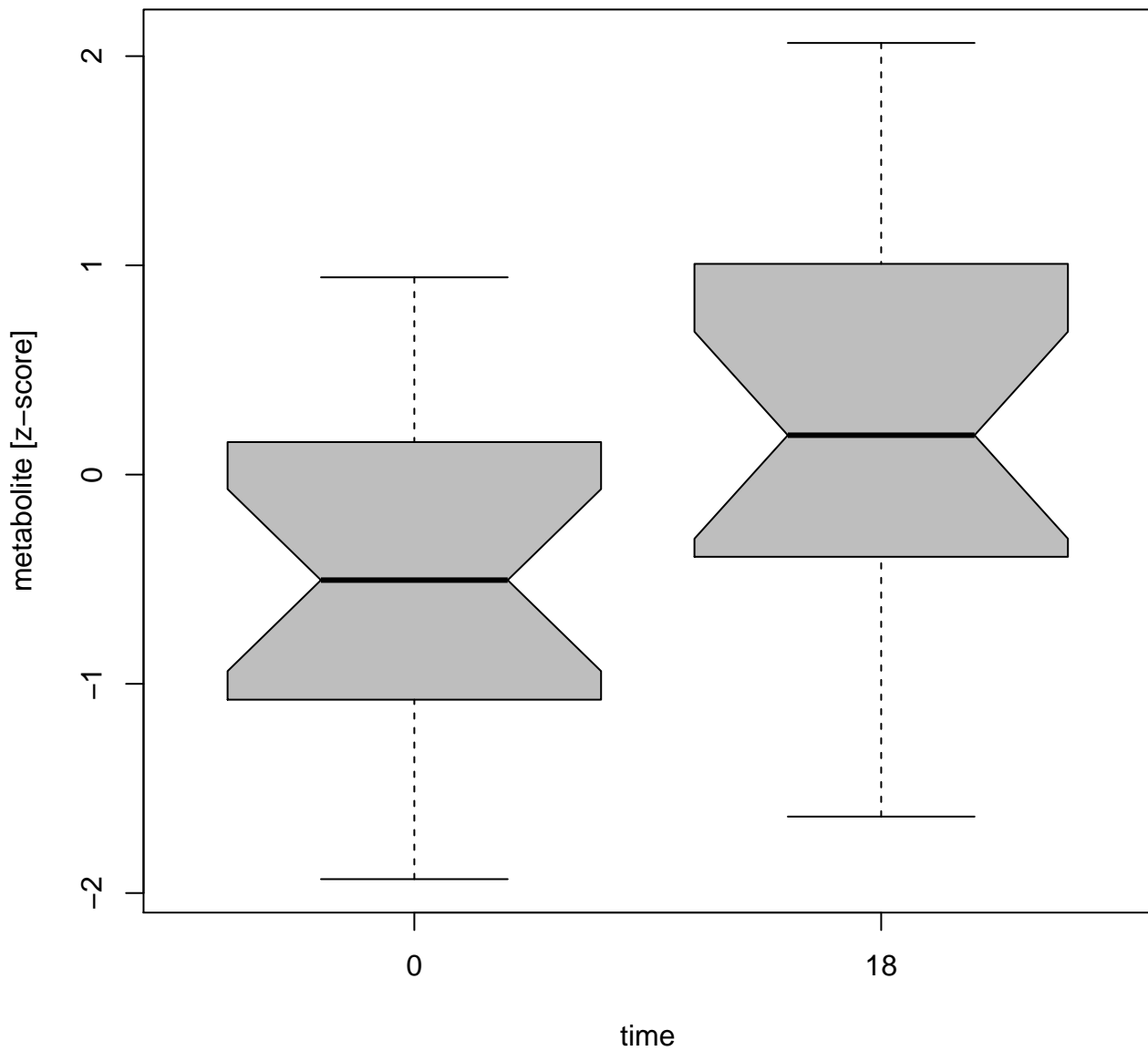
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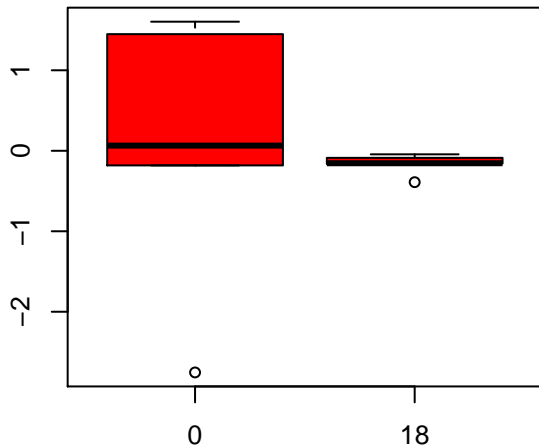


SKOV3

N-acetylserine

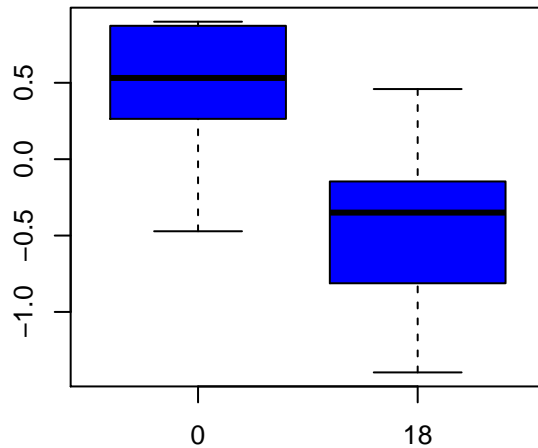


nicotinamide



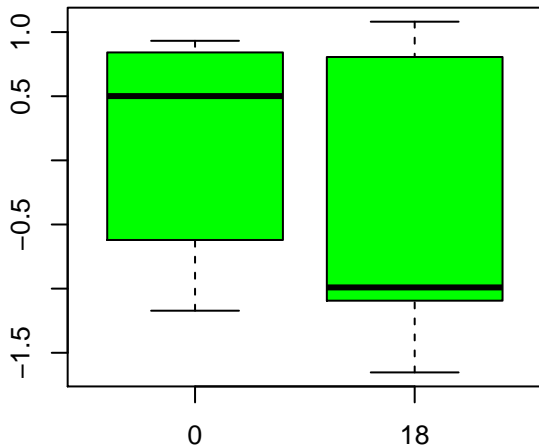
HCT116

nicotinamide



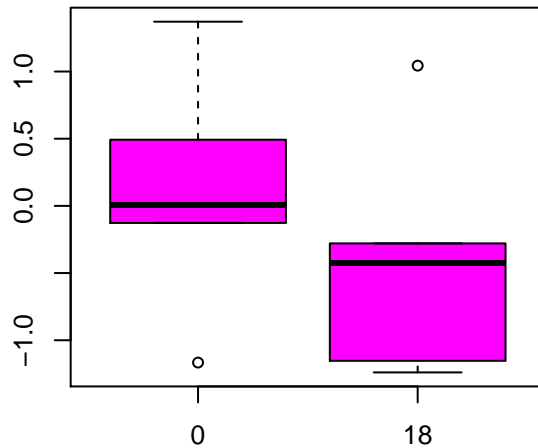
OVCAR

nicotinamide



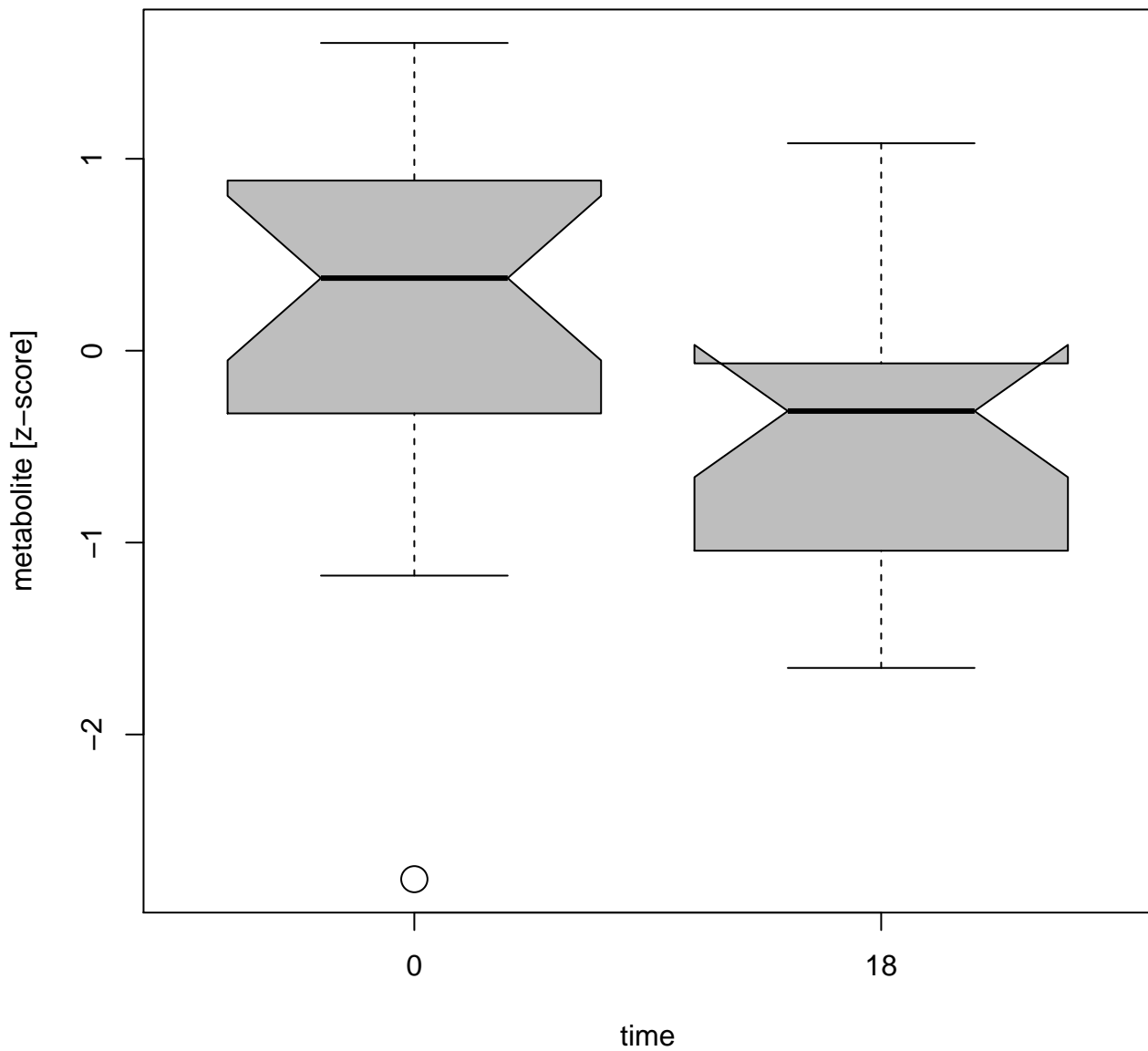
HCT15

nicotinamide

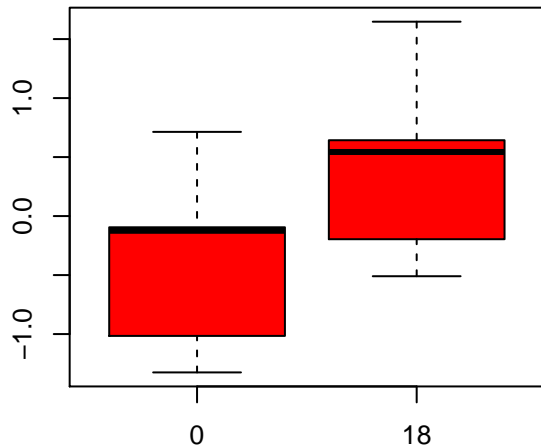


SKOV3

nicotinamide

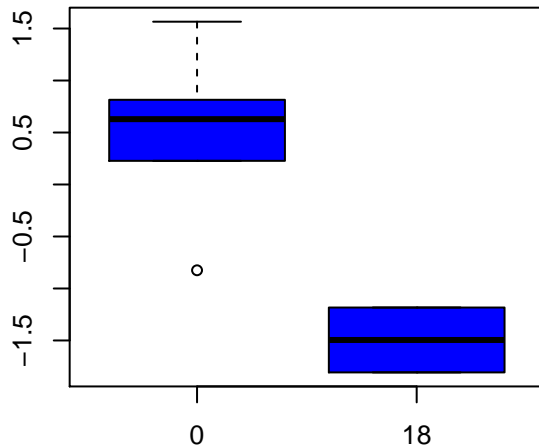


nicotinamide adenine dinucleotide (NAD⁺)



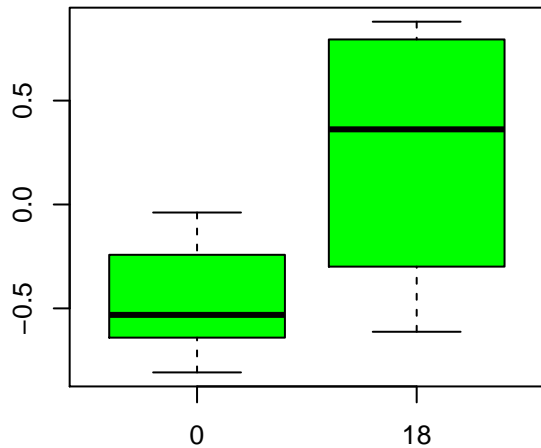
HCT116

nicotinamide adenine dinucleotide (NAD⁺)



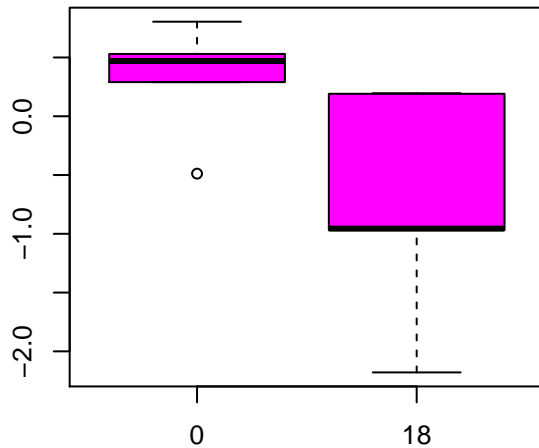
OVCAR

nicotinamide adenine dinucleotide (NAD⁺)



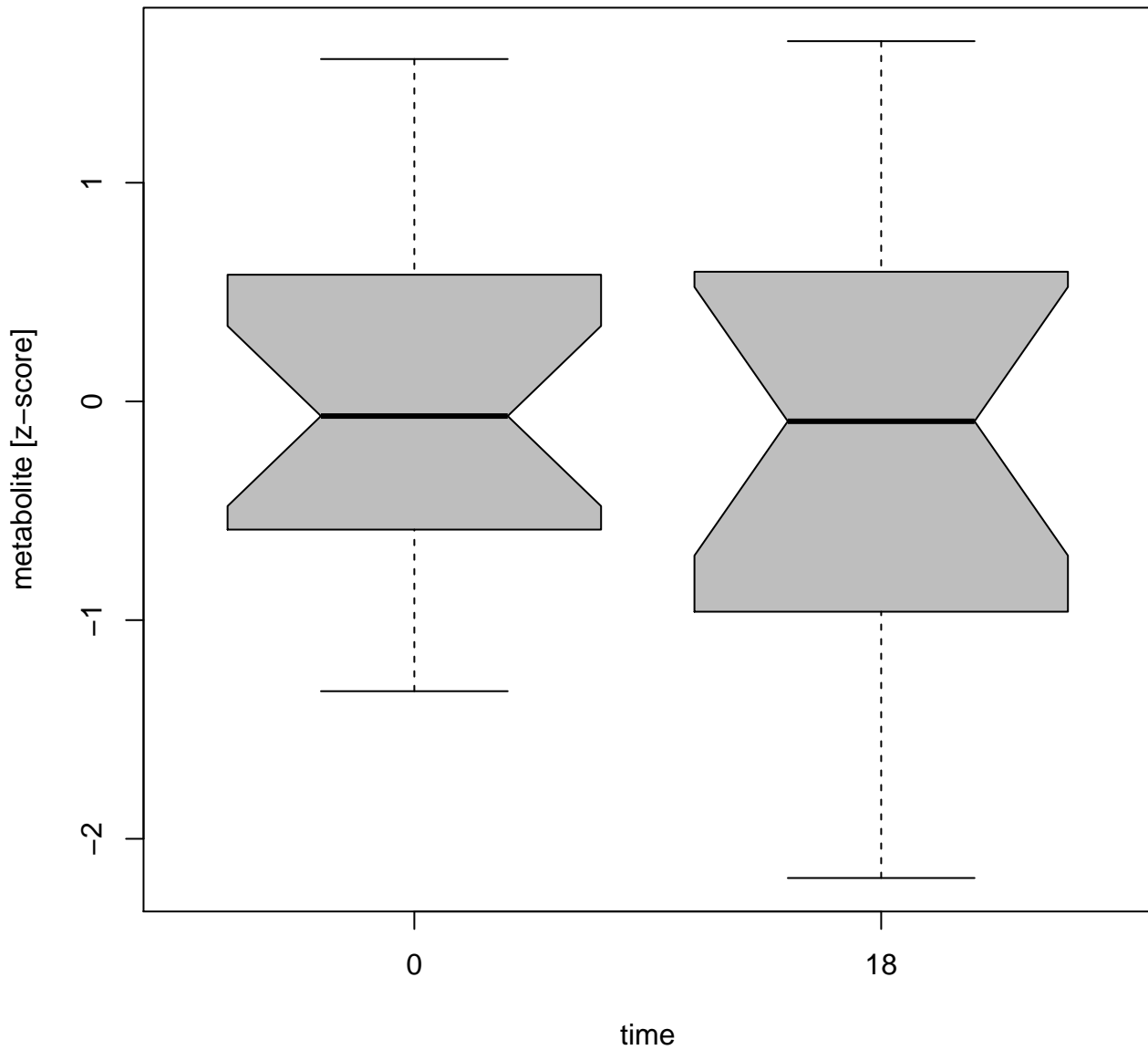
HCT15

nicotinamide adenine dinucleotide (NAD⁺)

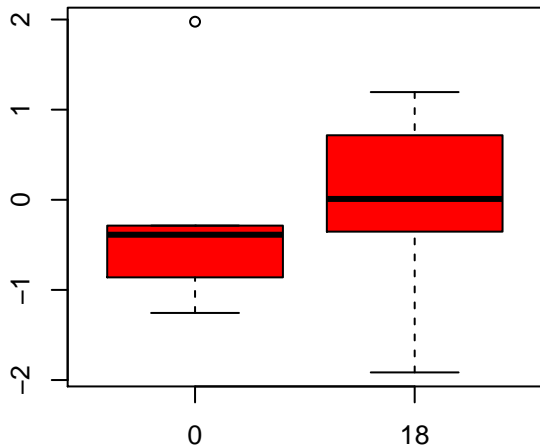


SKOV3

nicotinamide adenine dinucleotide (NAD⁺)

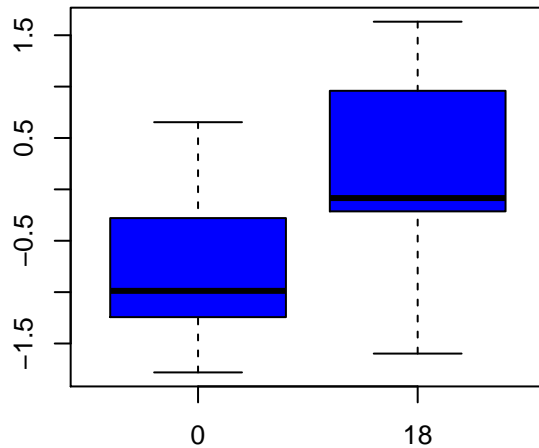


oleate (18:1n9)



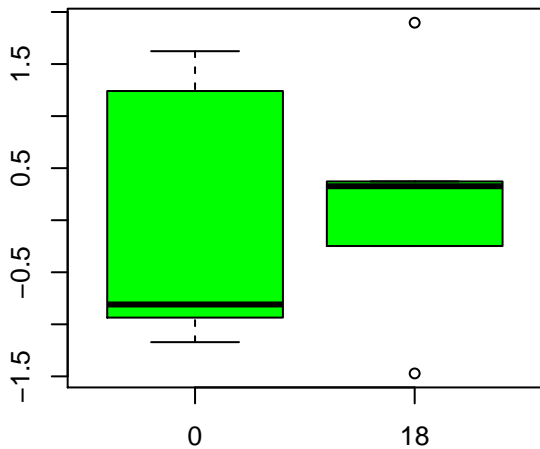
HCT116

oleate (18:1n9)



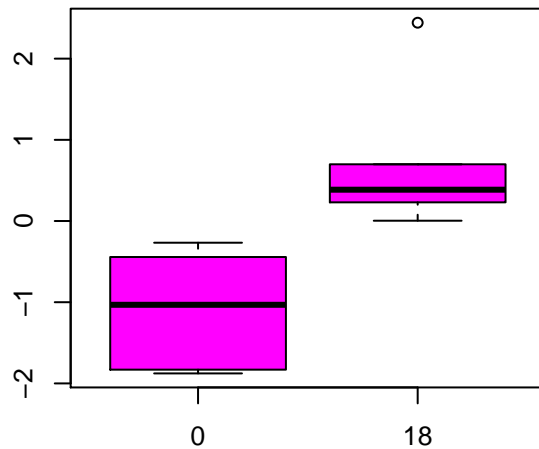
OVCAR

oleate (18:1n9)



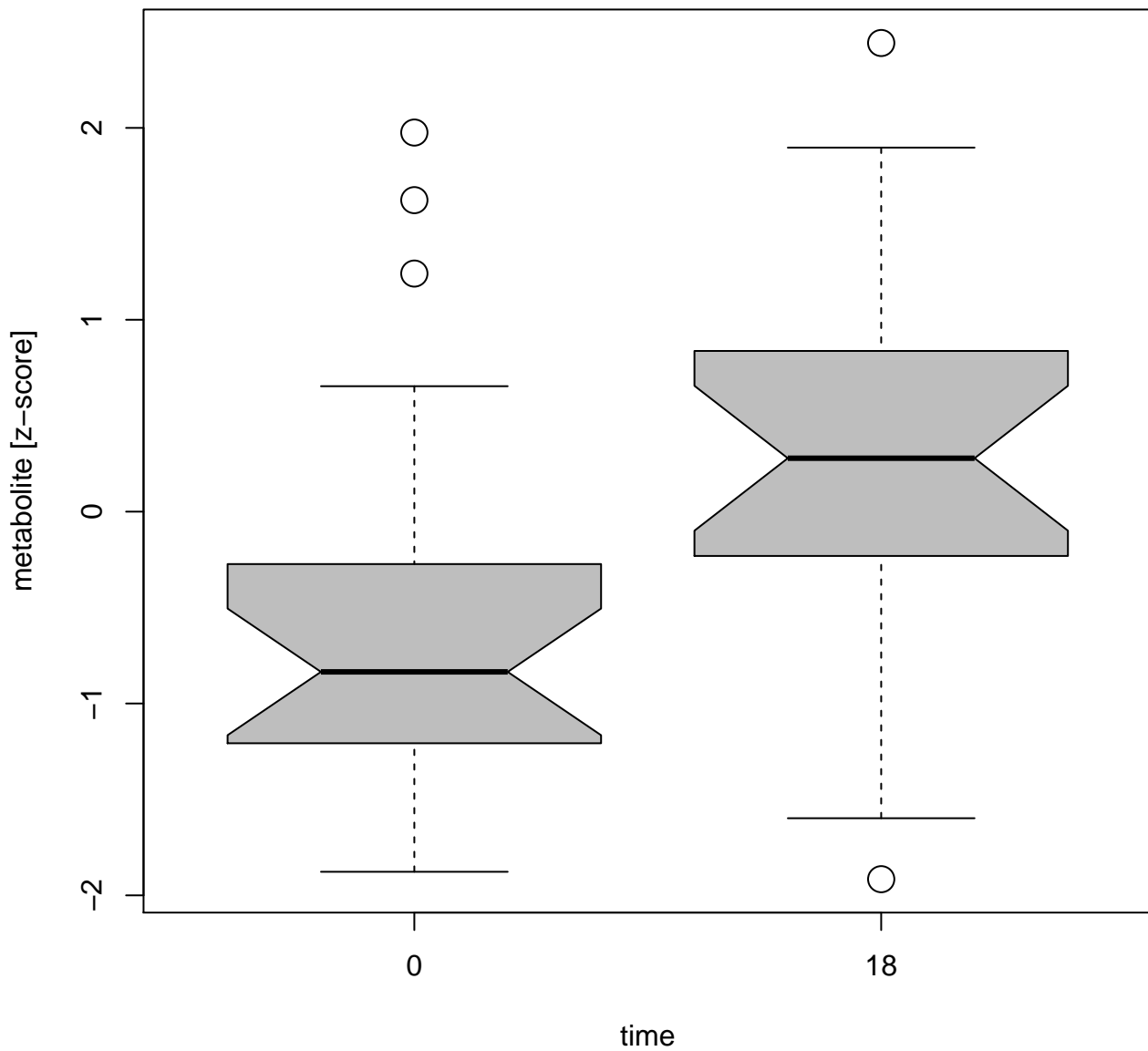
HCT15

oleate (18:1n9)

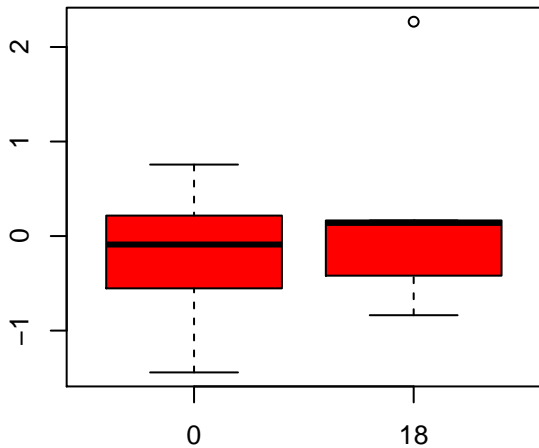


SKOV3

oleate (18:1n9)

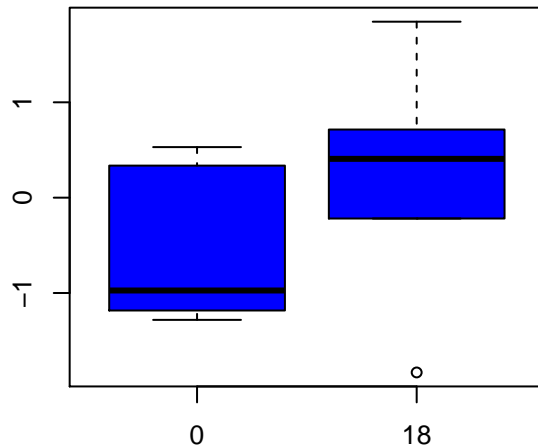


palmitoleate (16:1n7)



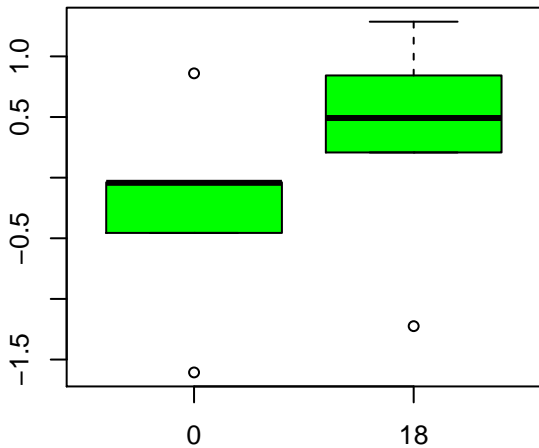
HCT116

palmitoleate (16:1n7)



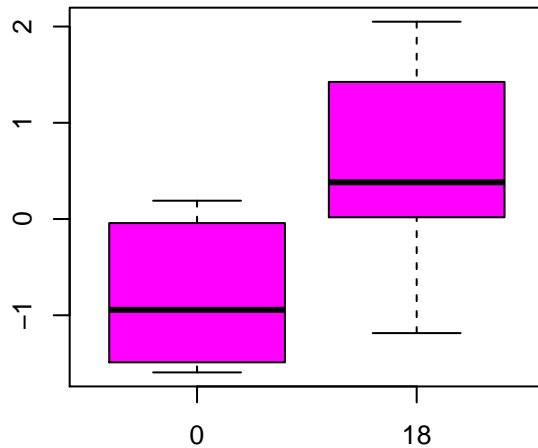
OVCAR

palmitoleate (16:1n7)



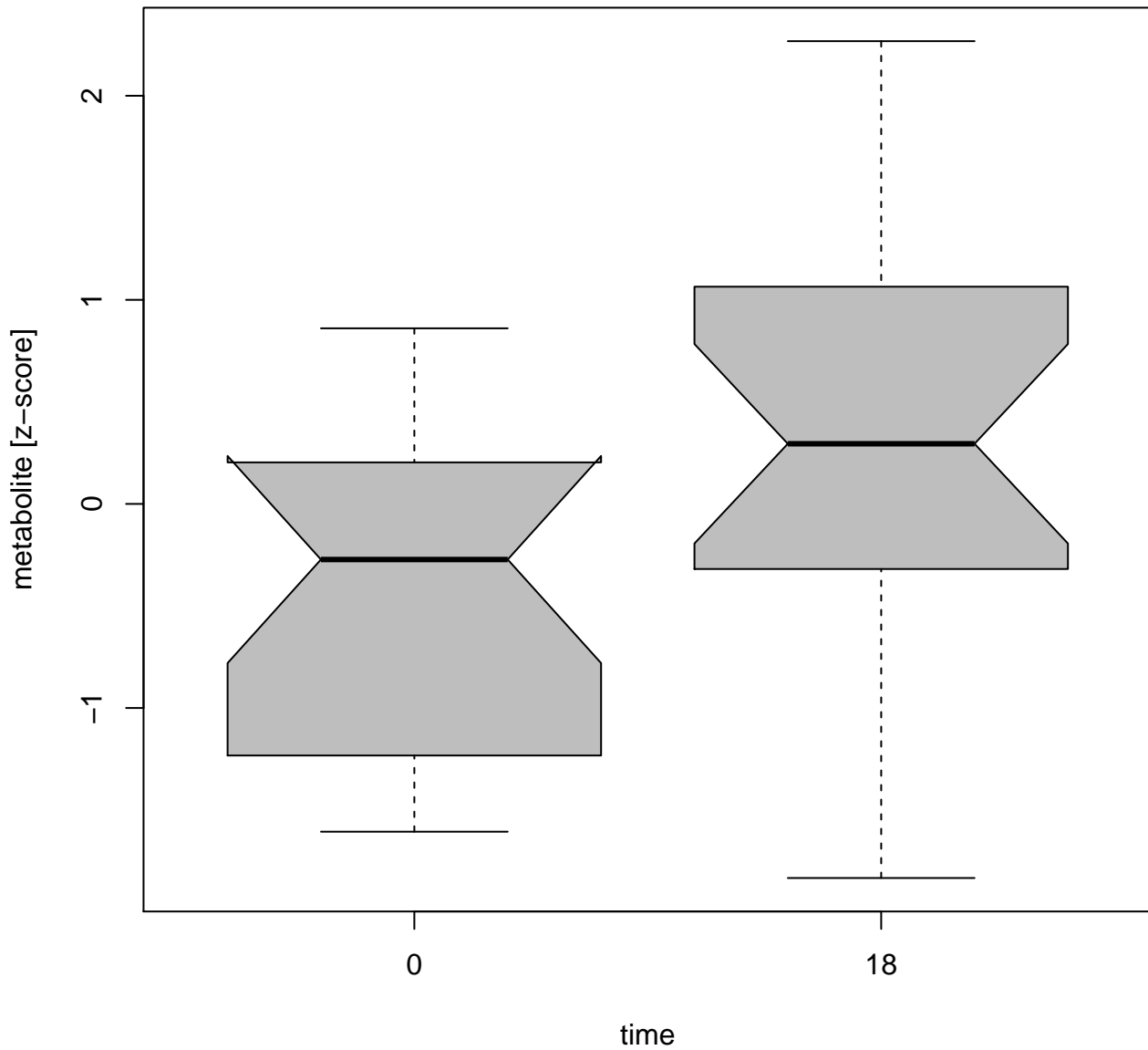
HCT15

palmitoleate (16:1n7)

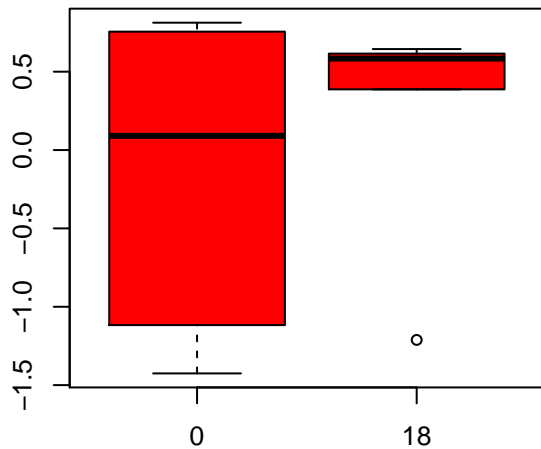


SKOV3

palmitoleate (16:1n7)

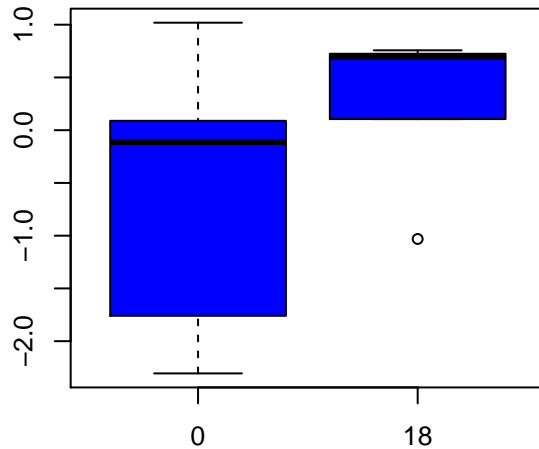


palmitoyl sphingomyelin



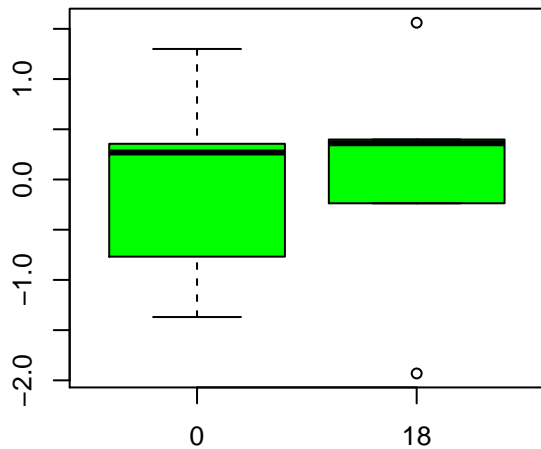
HCT116

palmitoyl sphingomyelin



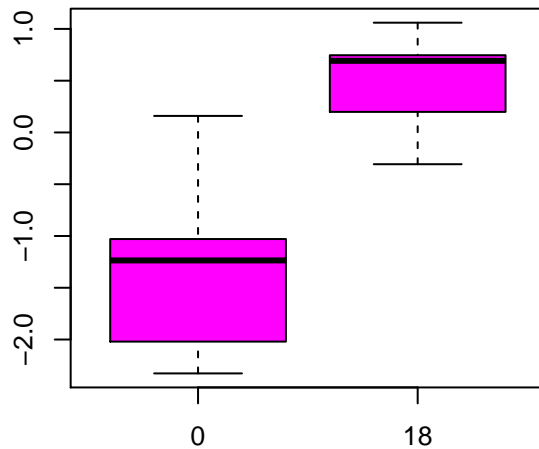
OVCAR

palmitoyl sphingomyelin



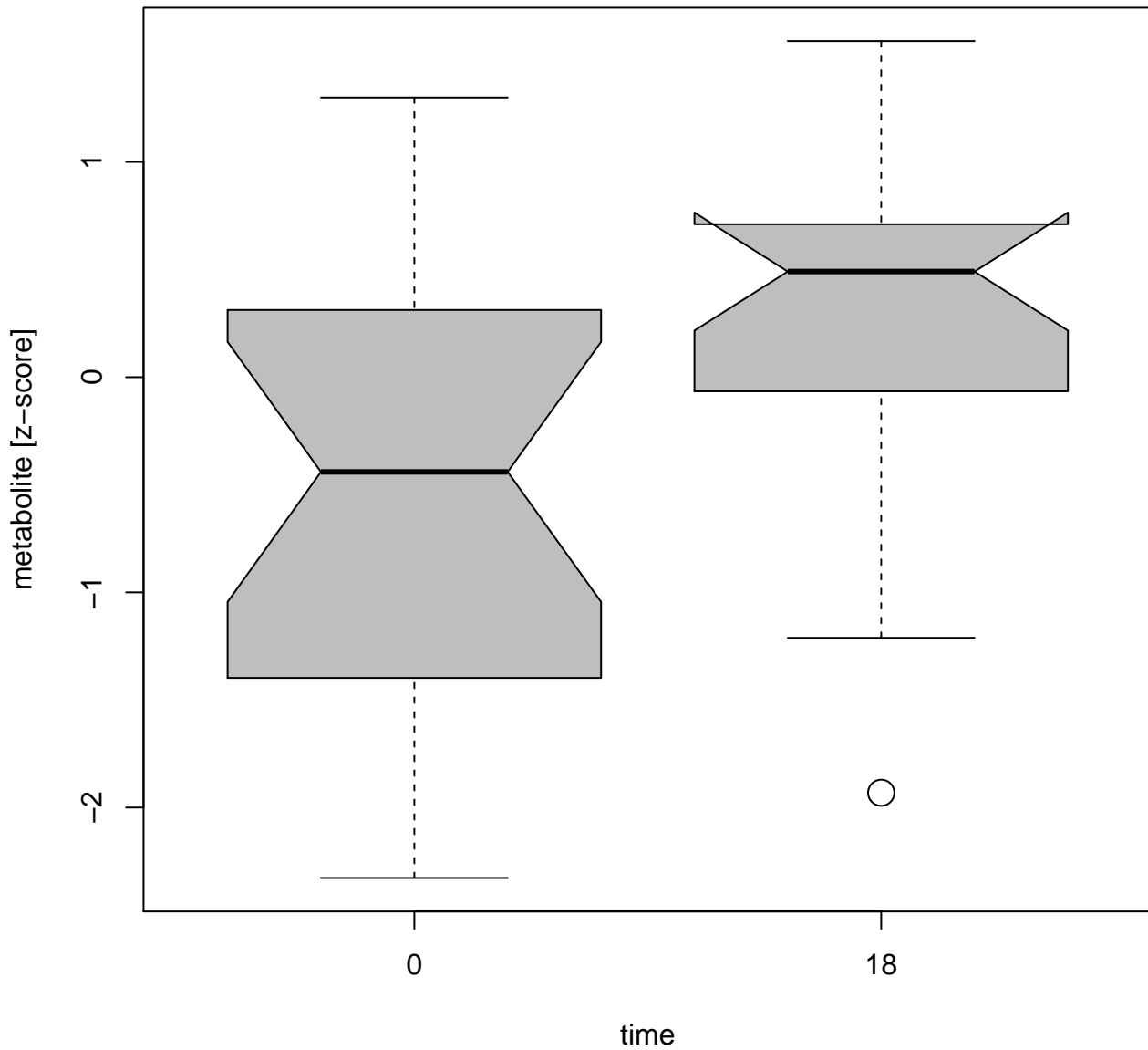
HCT15

palmitoyl sphingomyelin

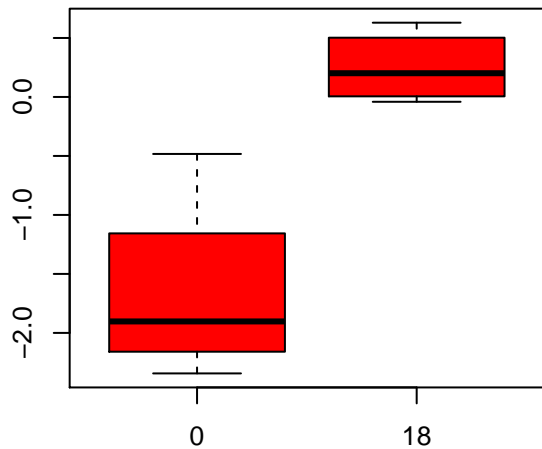


SKOV3

palmitoyl sphingomyelin

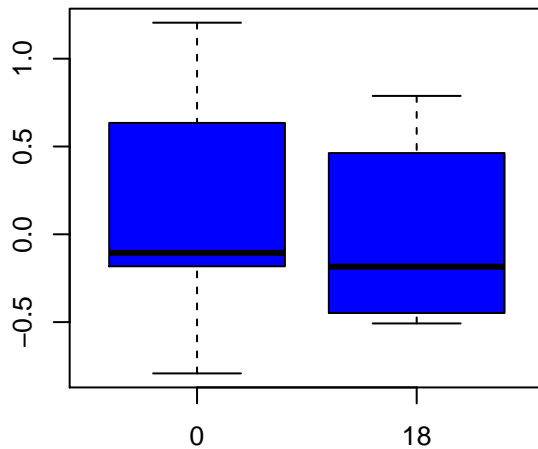


pantothenate



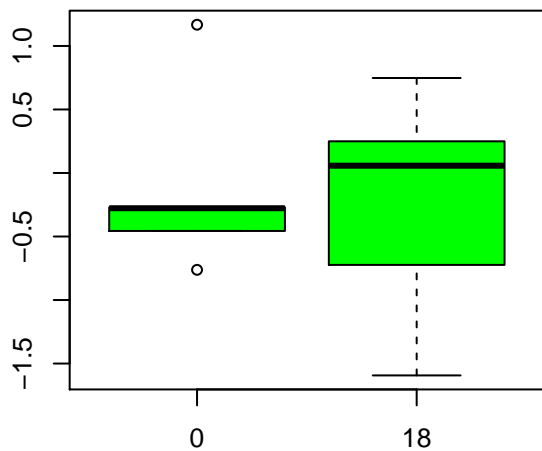
HCT116

pantothenate



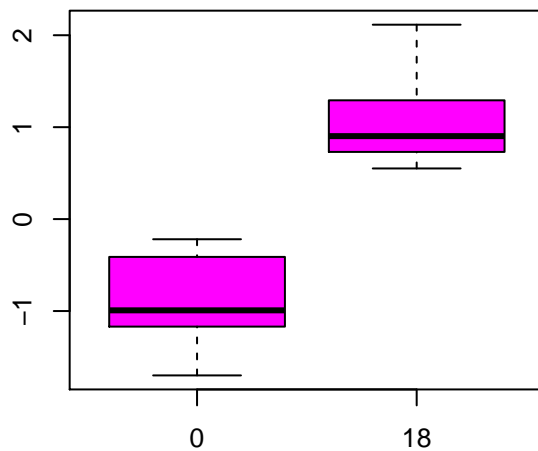
OVCAR

pantothenate



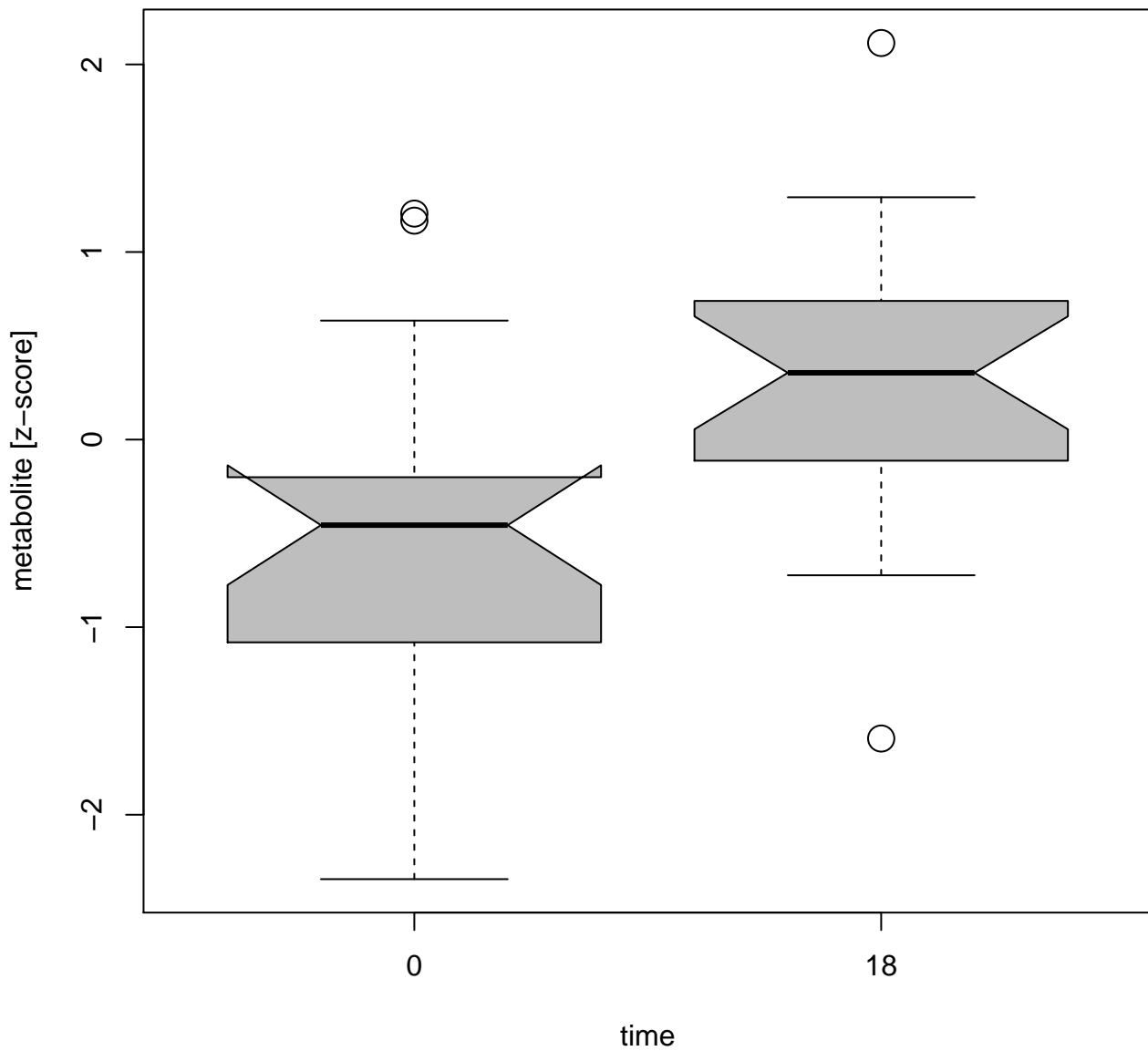
HCT15

pantothenate

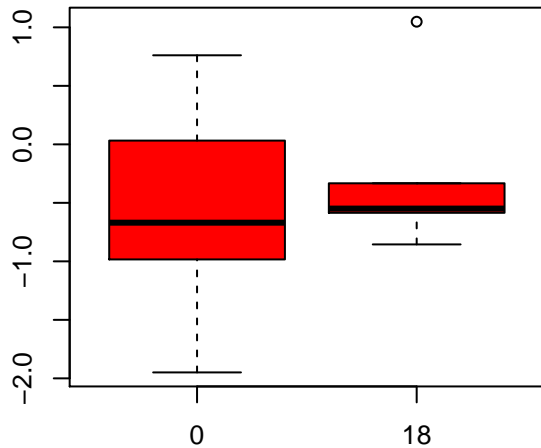


SKOV3

pantothenate

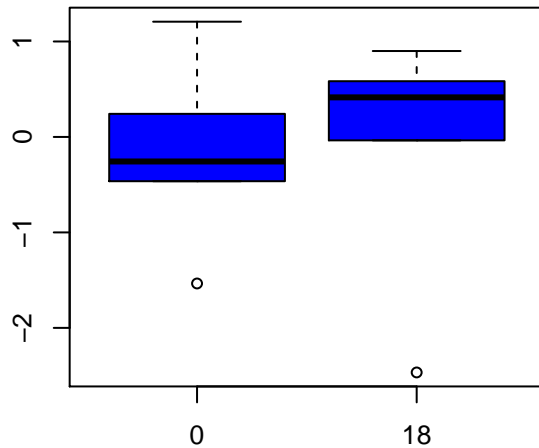


phenylalanine



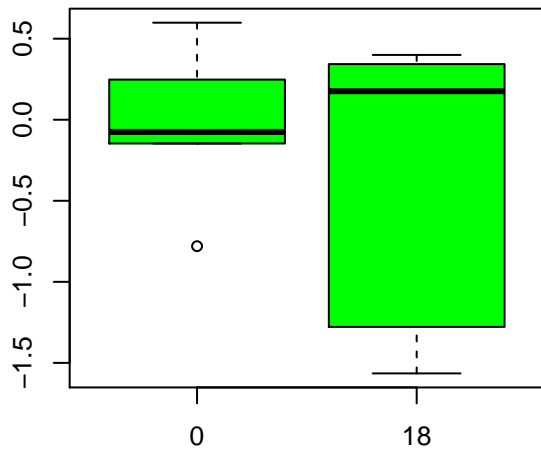
HCT116

phenylalanine



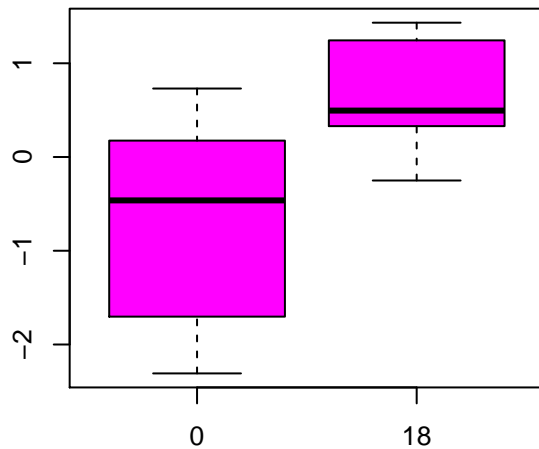
OVCAR

phenylalanine



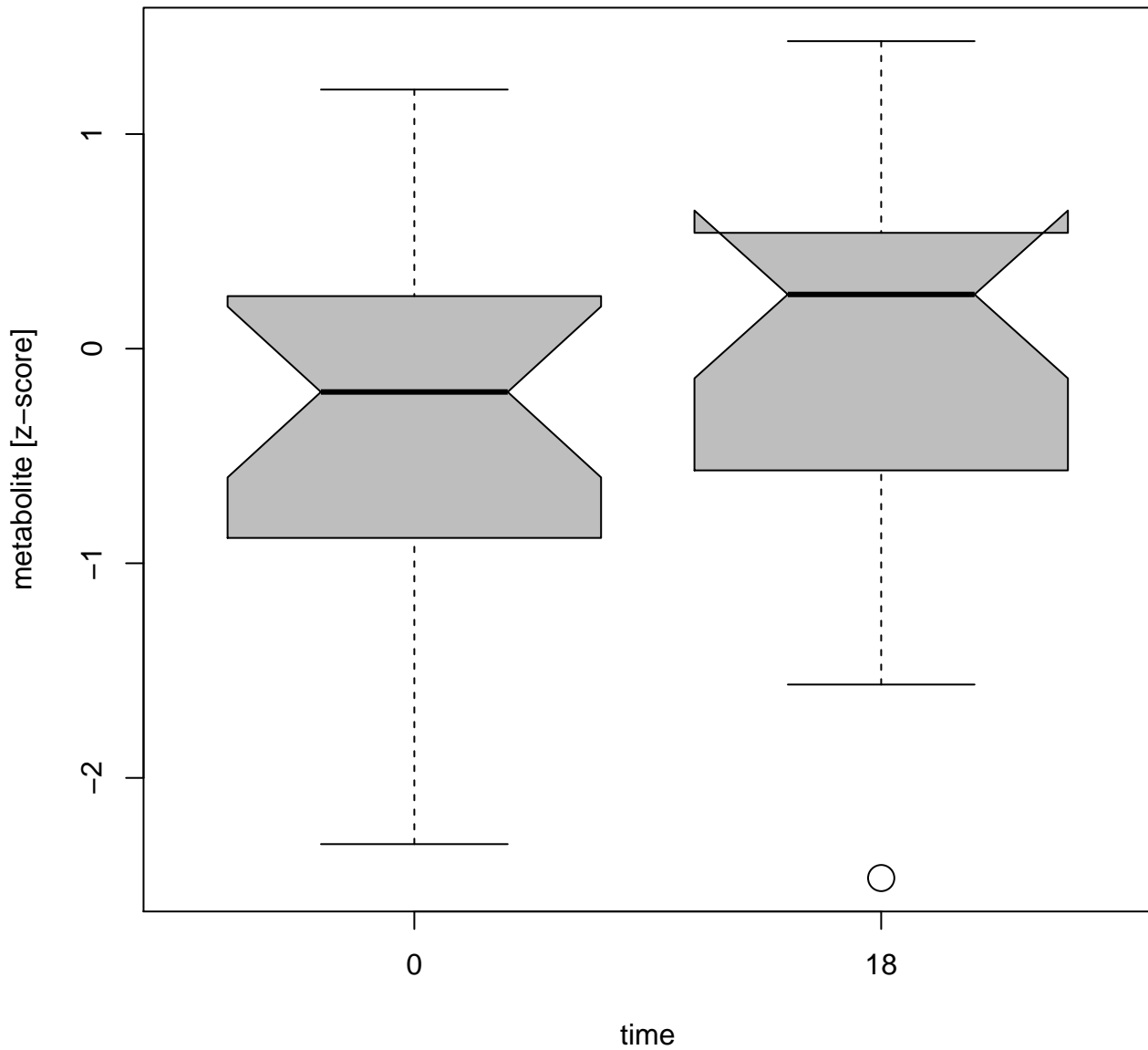
HCT15

phenylalanine

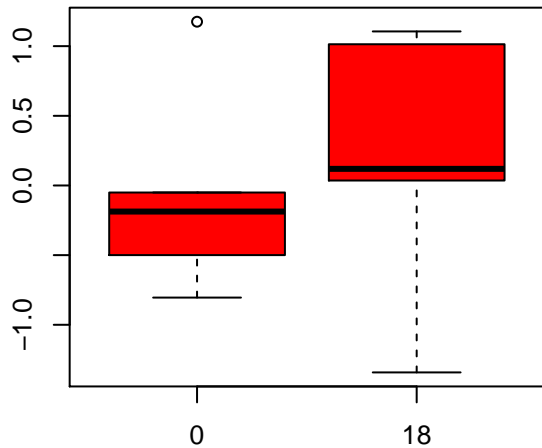


SKOV3

phenylalanine

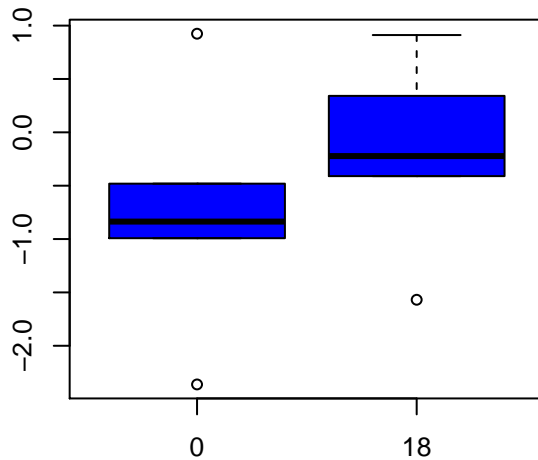


phenylalanylglutamate



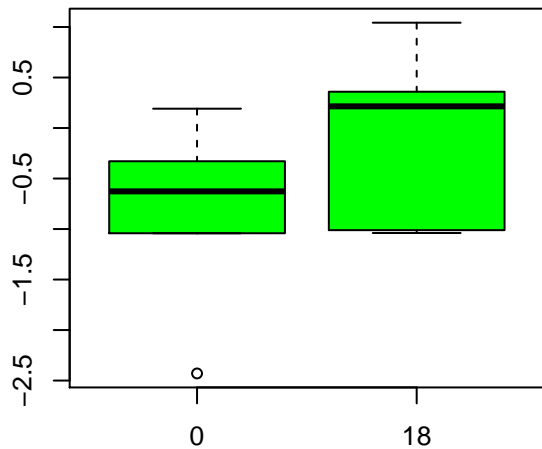
HCT116

phenylalanylglutamate



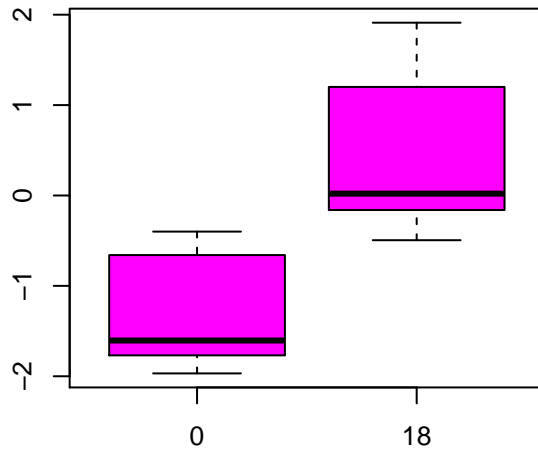
OVCAR

phenylalanylglutamate



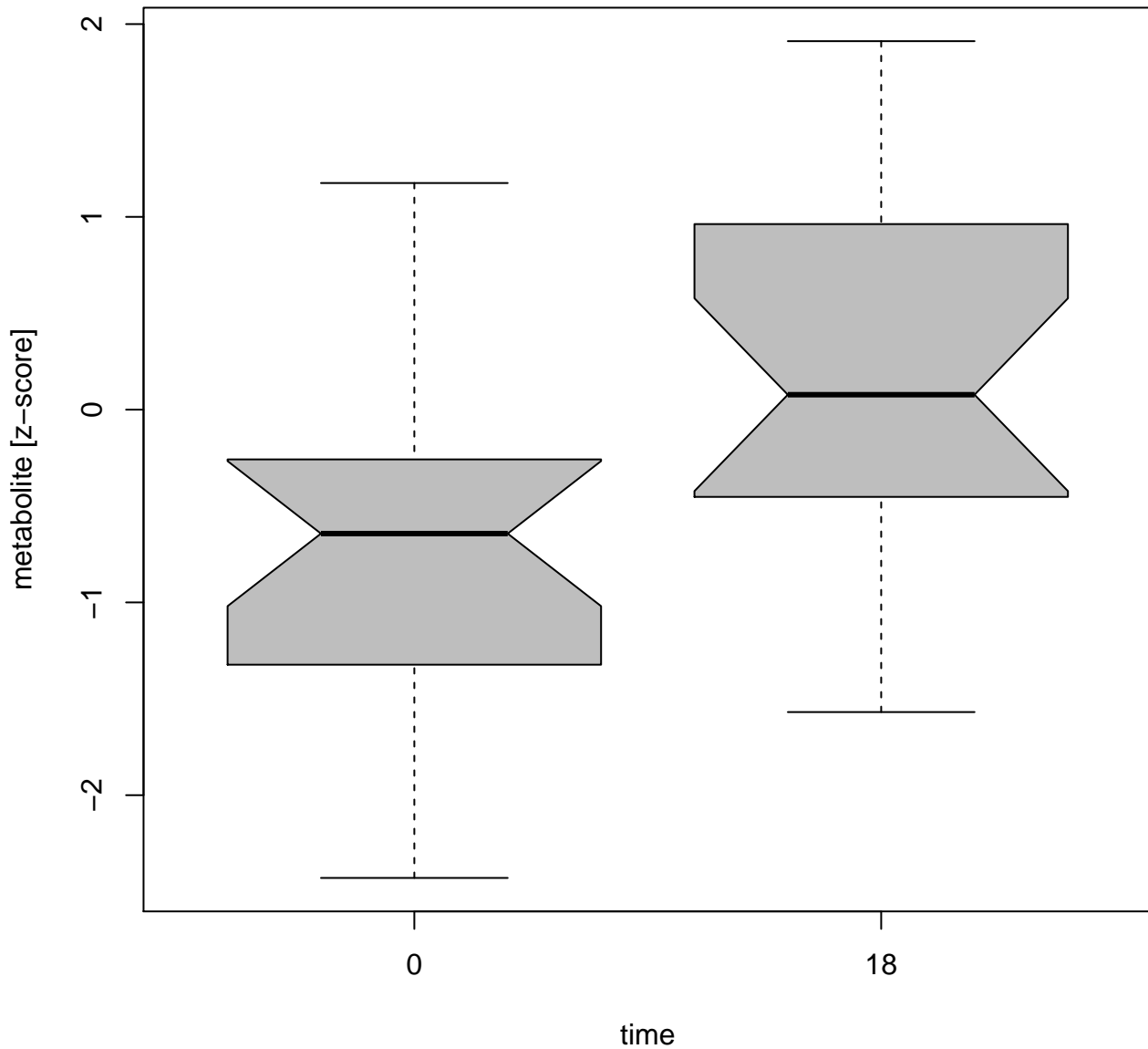
HCT15

phenylalanylglutamate

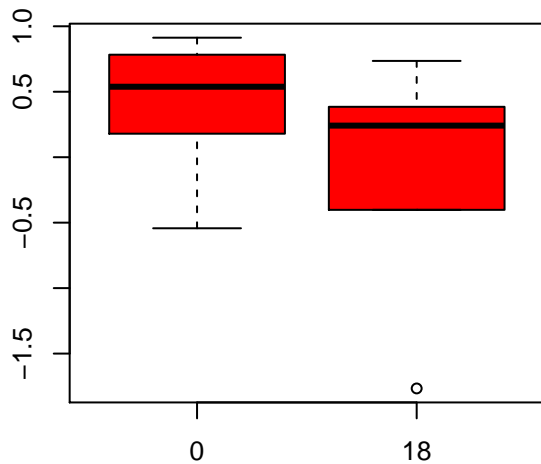


SKOV3

phenylalanylglutamate

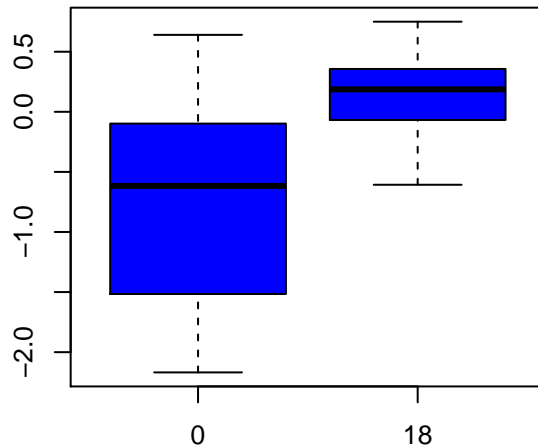


phenylalanylglycine



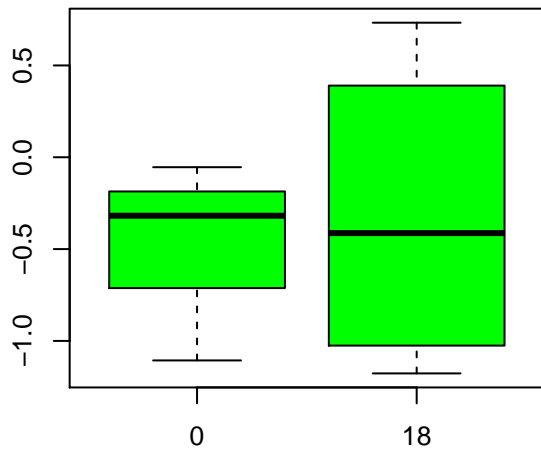
HCT116

phenylalanylglycine



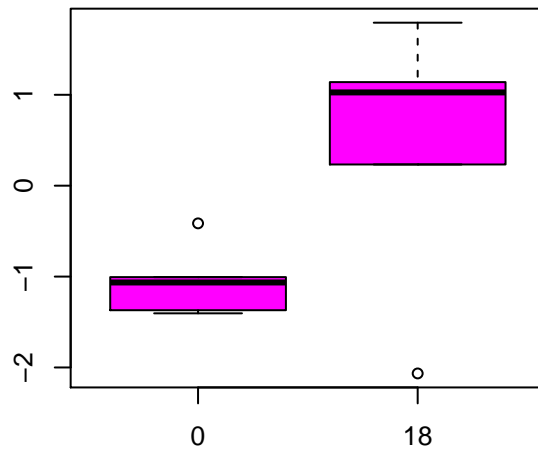
OVCAR

phenylalanylglycine



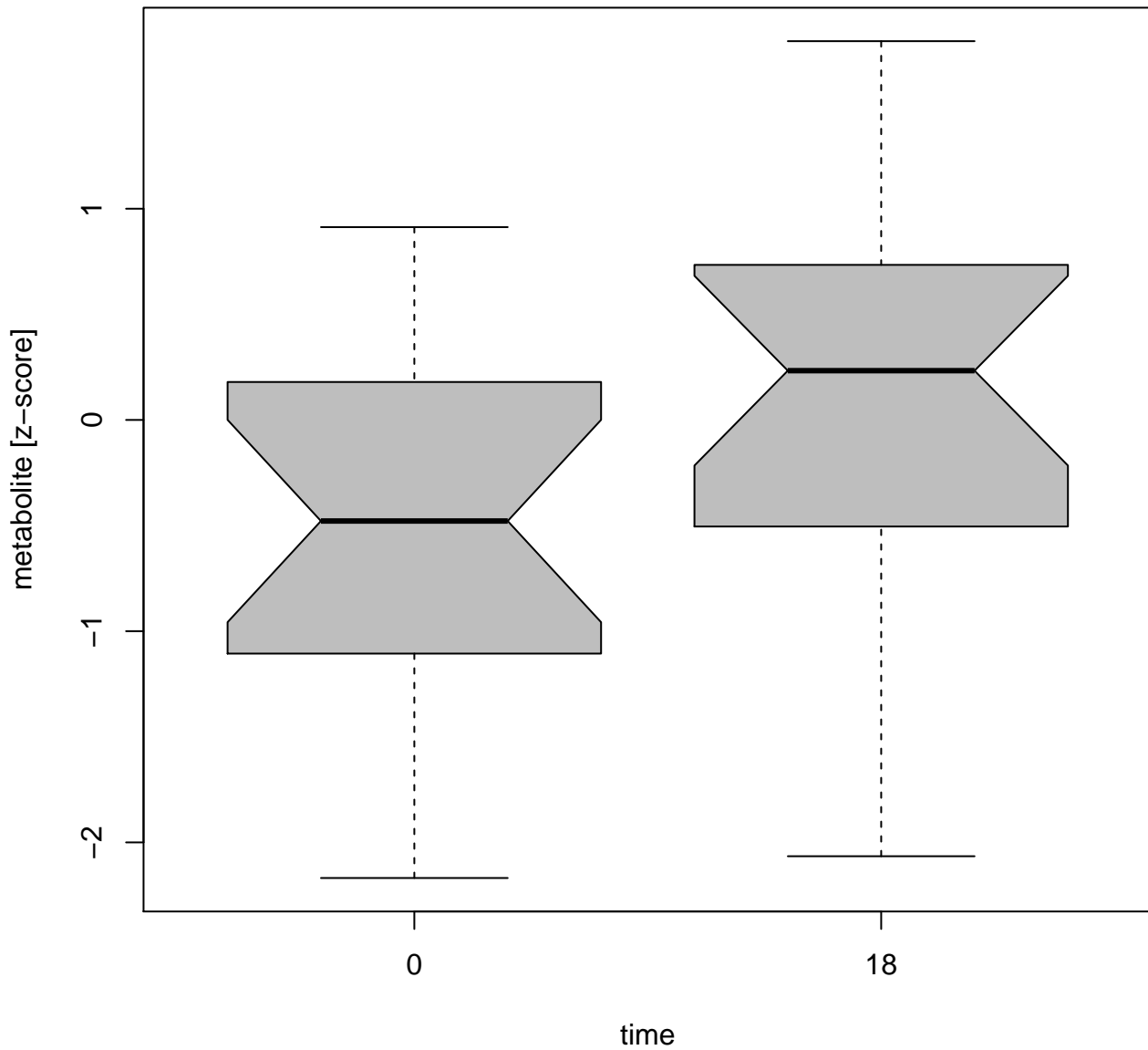
HCT15

phenylalanylglycine

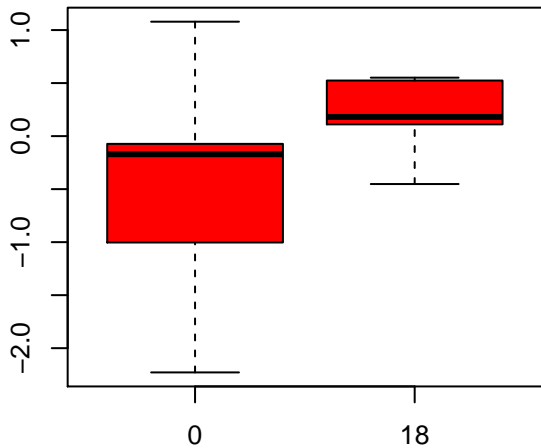


SKOV3

phenylalanylglycine

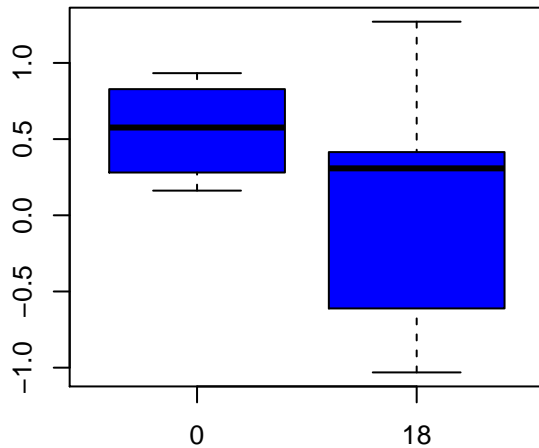


phosphate



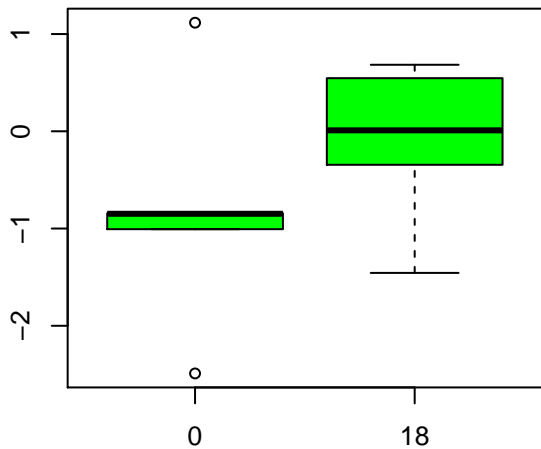
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phosphate



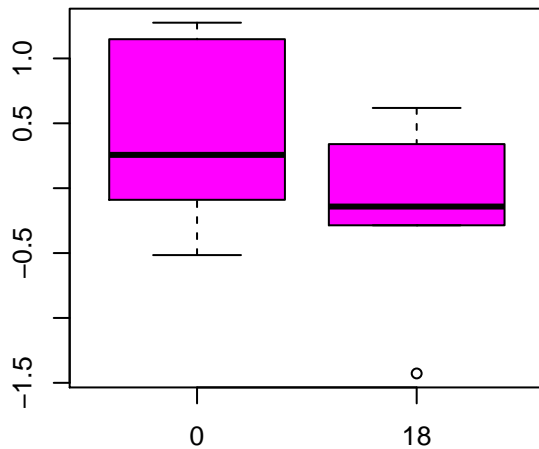
OVCAR

phosphate



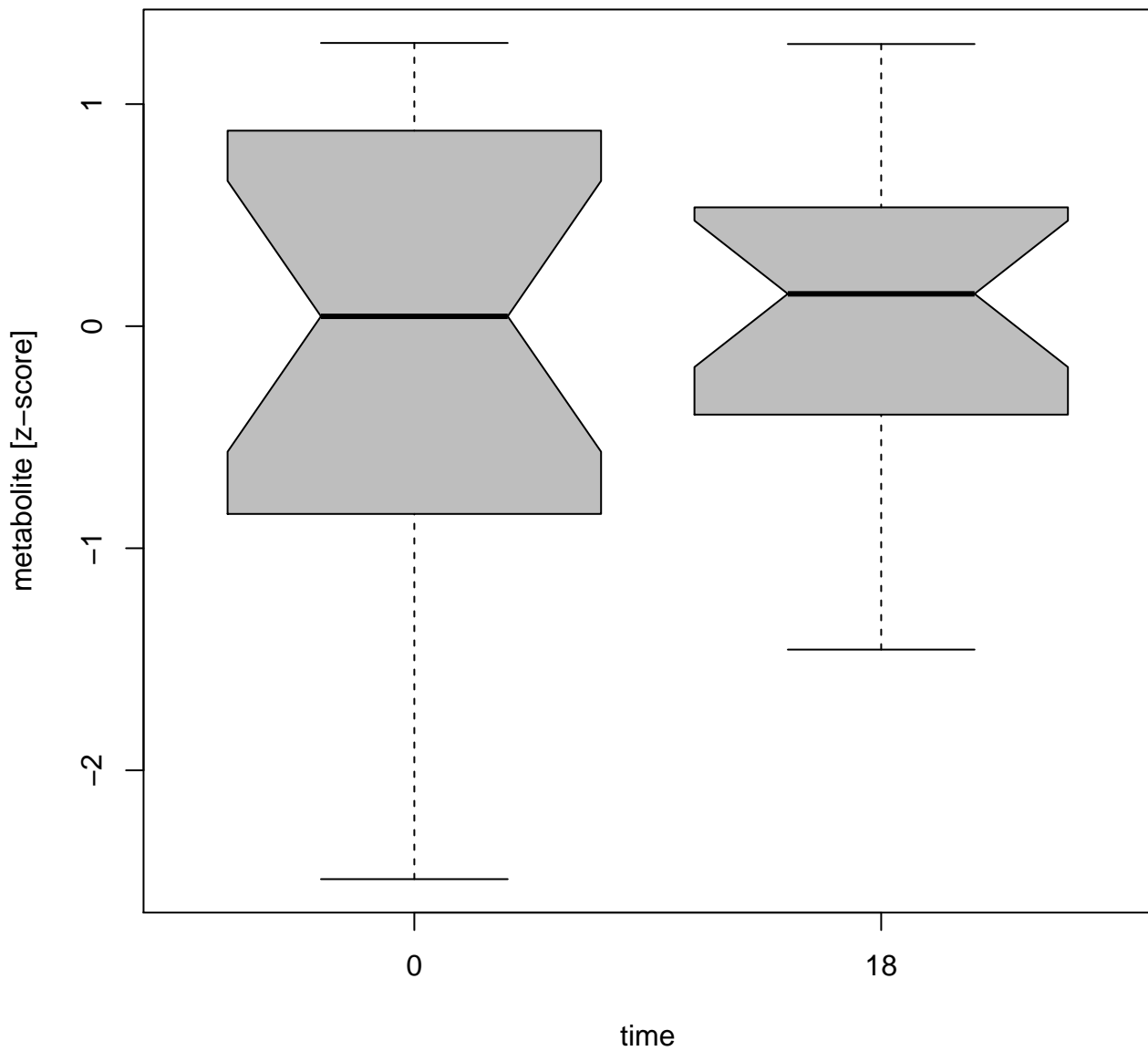
HCT15

phosphate

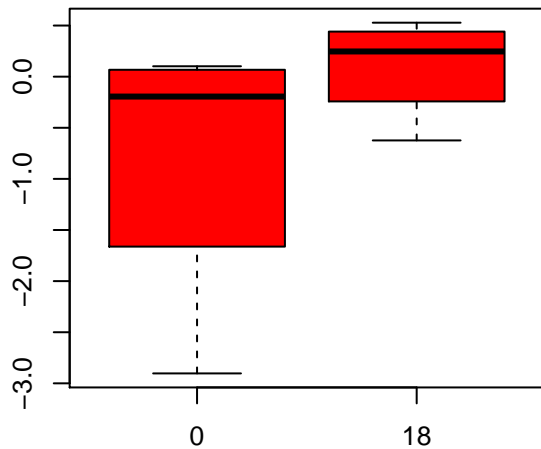


SKOV3

phosphate

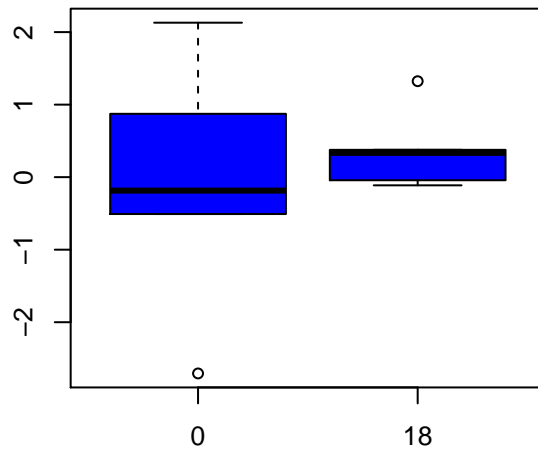


pipecolate



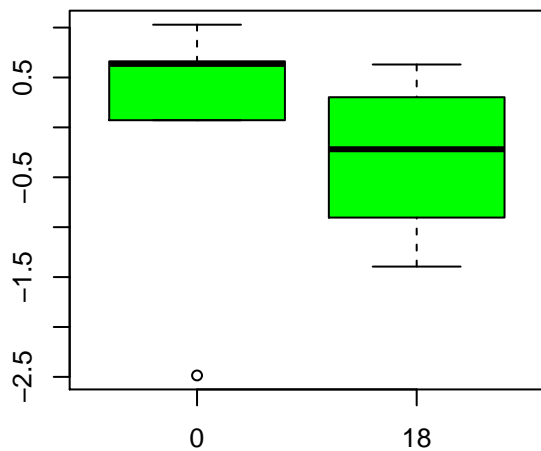
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pipecolate



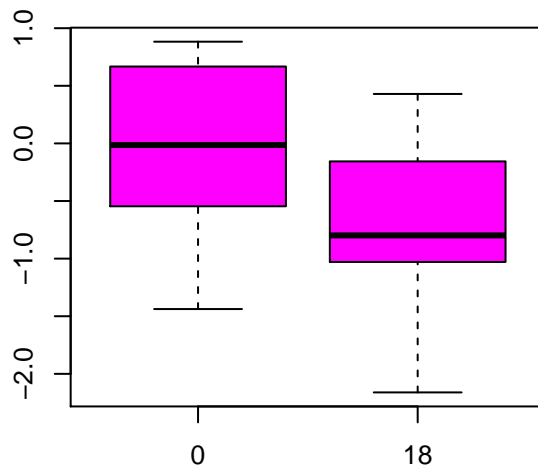
OVCAR

pipecolate



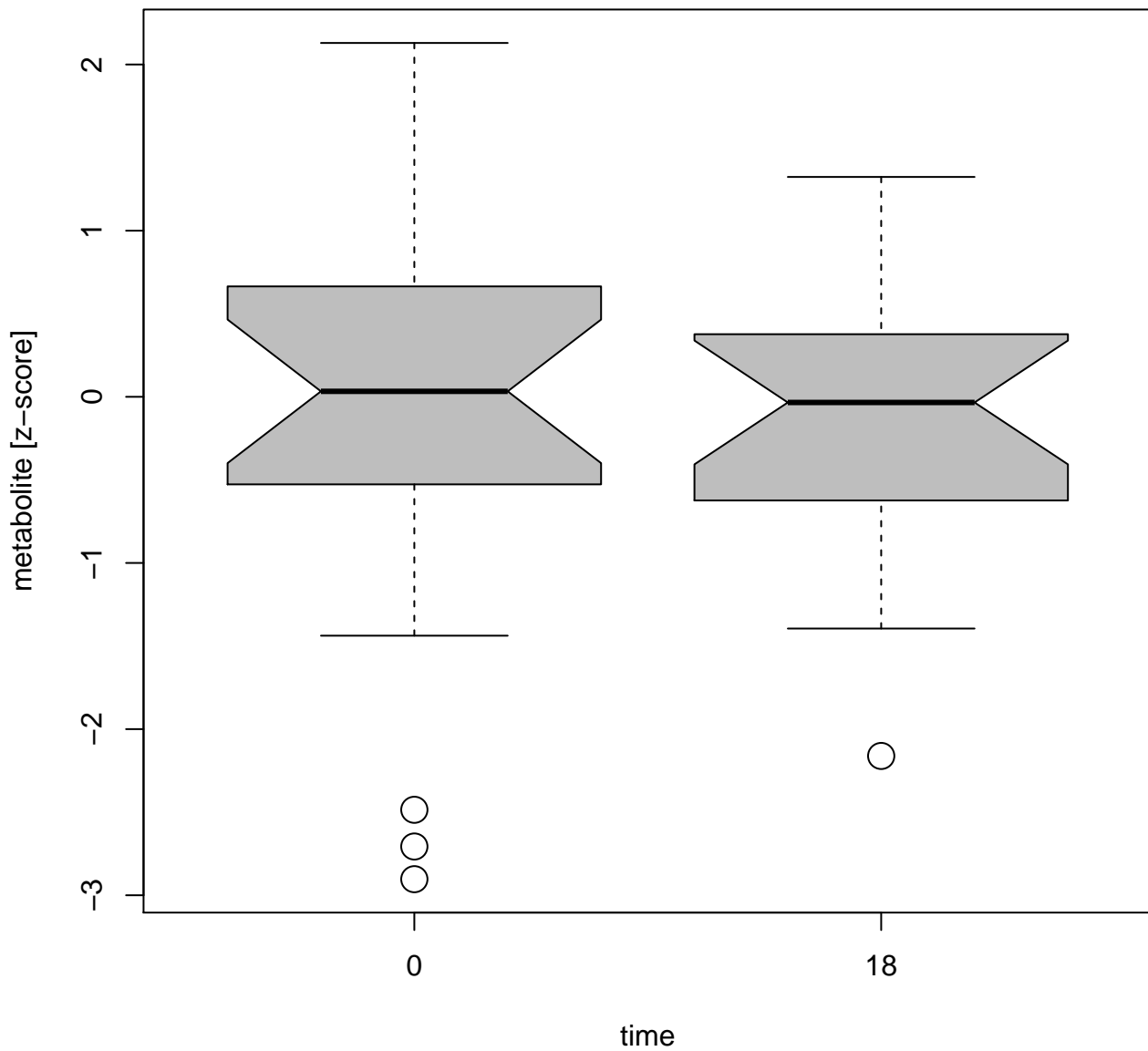
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pipecolate

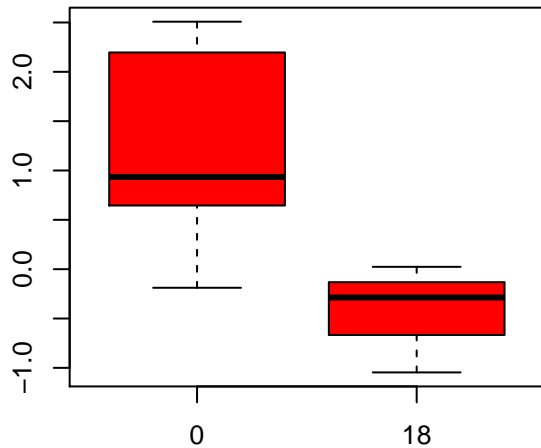


SKOV3

pipecolate

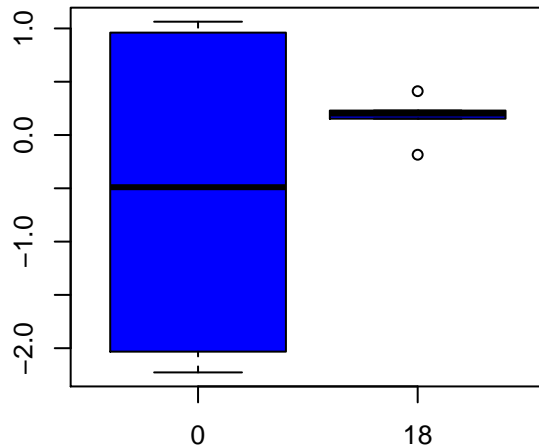


pro-hydroxy-pro



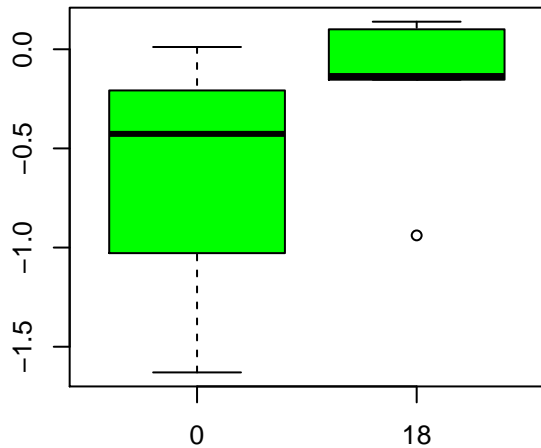
HCT116

pro-hydroxy-pro



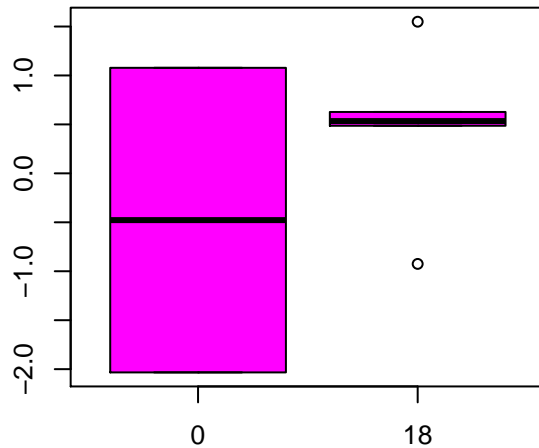
OVCAR

pro-hydroxy-pro



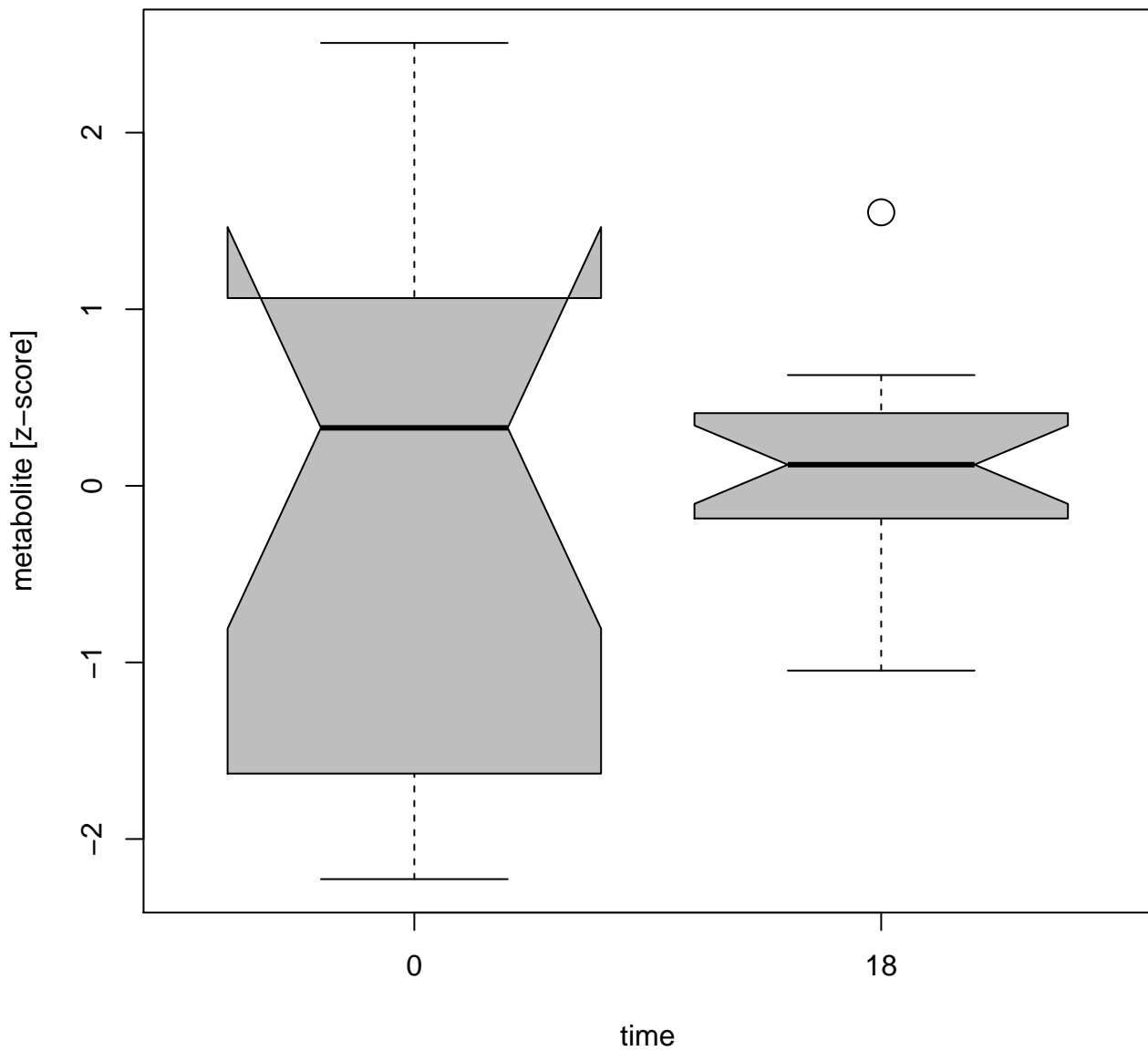
HCT15

pro-hydroxy-pro

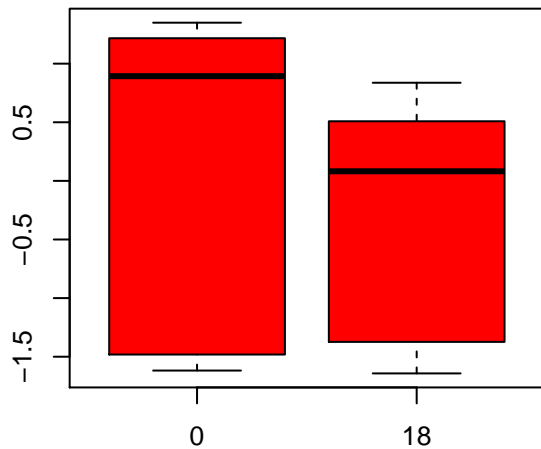


SKOV3

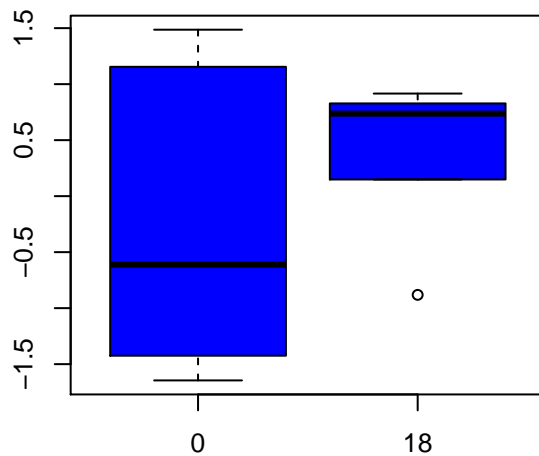
pro-hydroxy-pro



proline



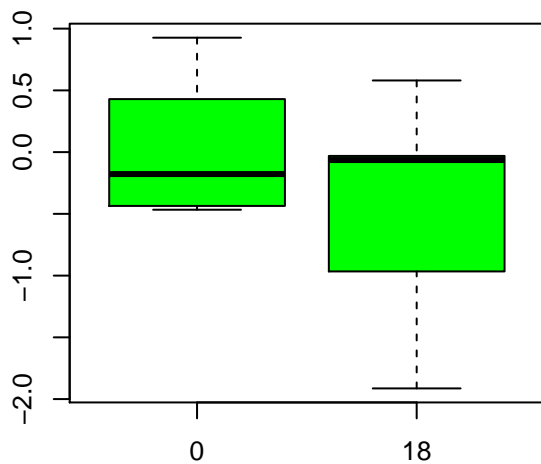
proline



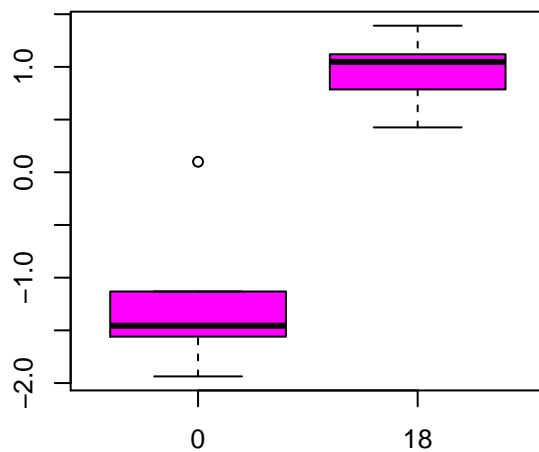
HCT116

OVCAR

proline



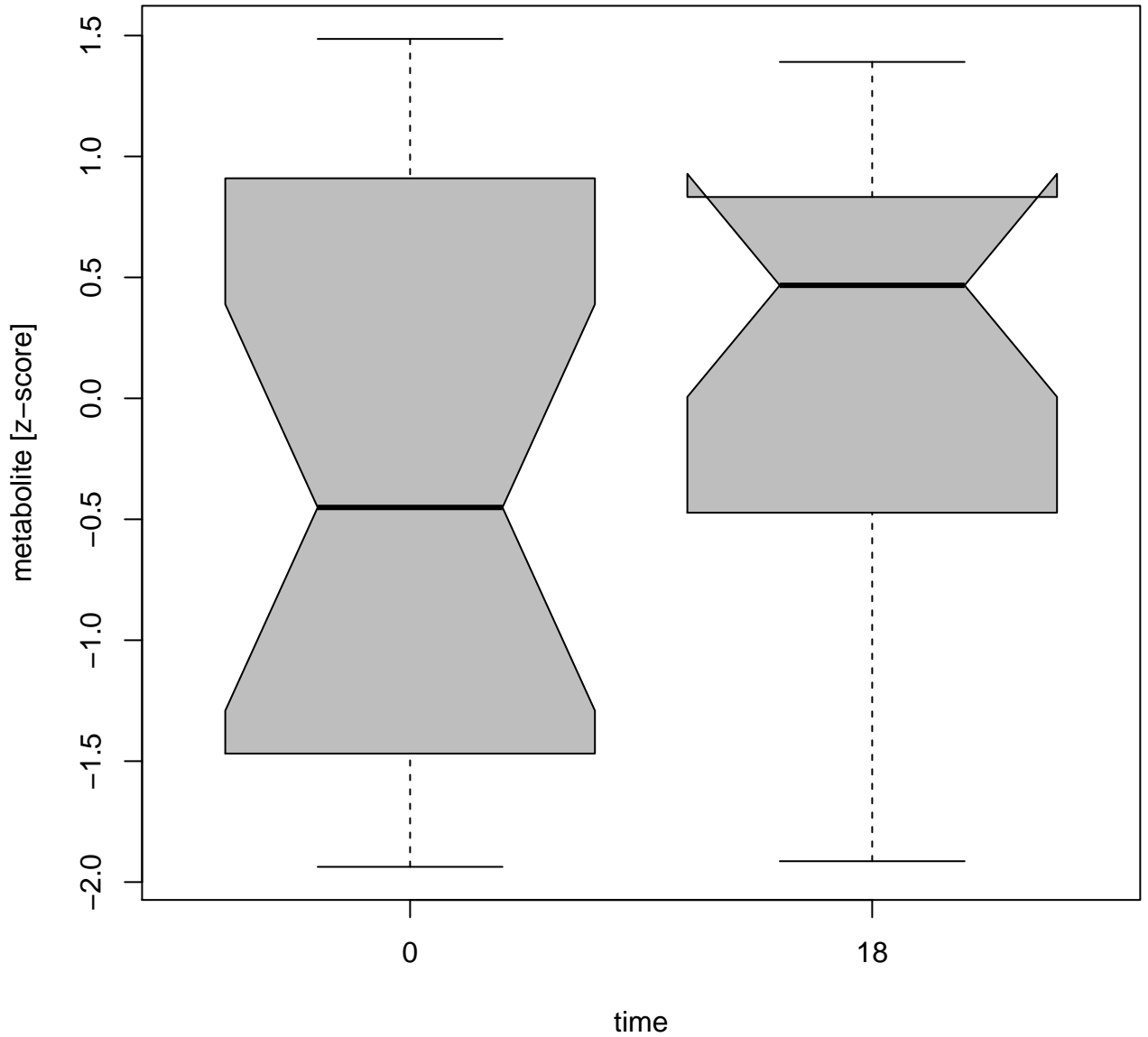
proline



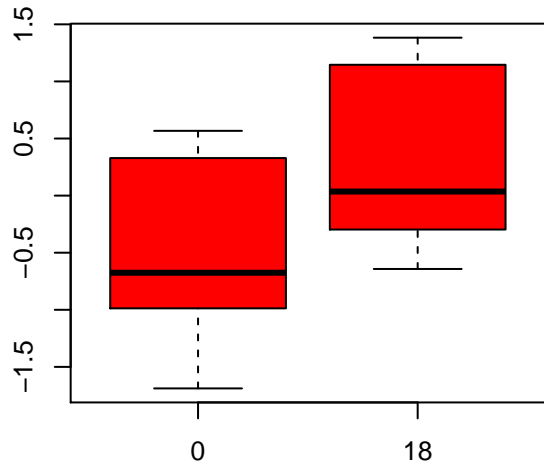
HCT15

SKOV3

proline

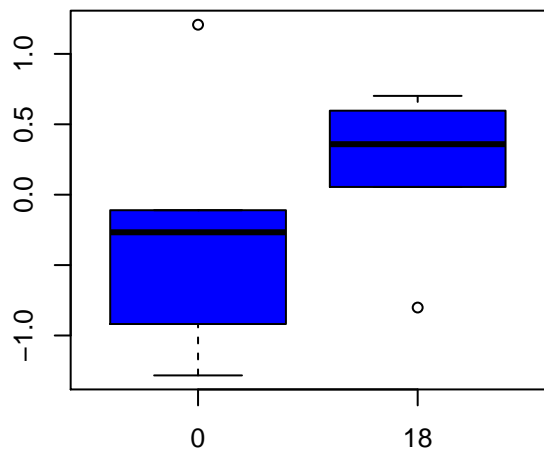


polyglutamate



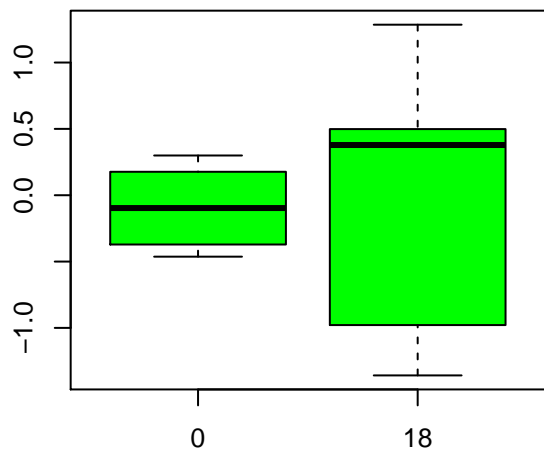
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polyglutamate



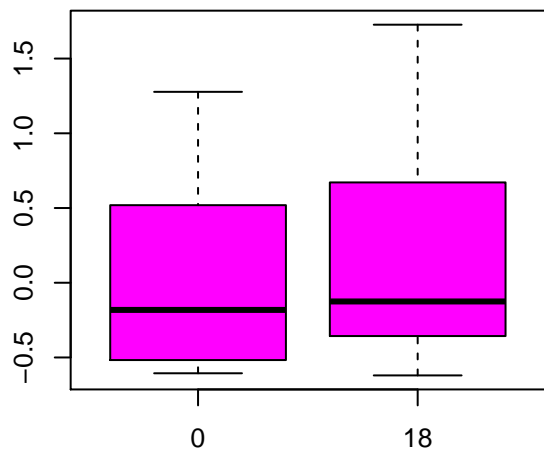
OVCAR

polyglutamate



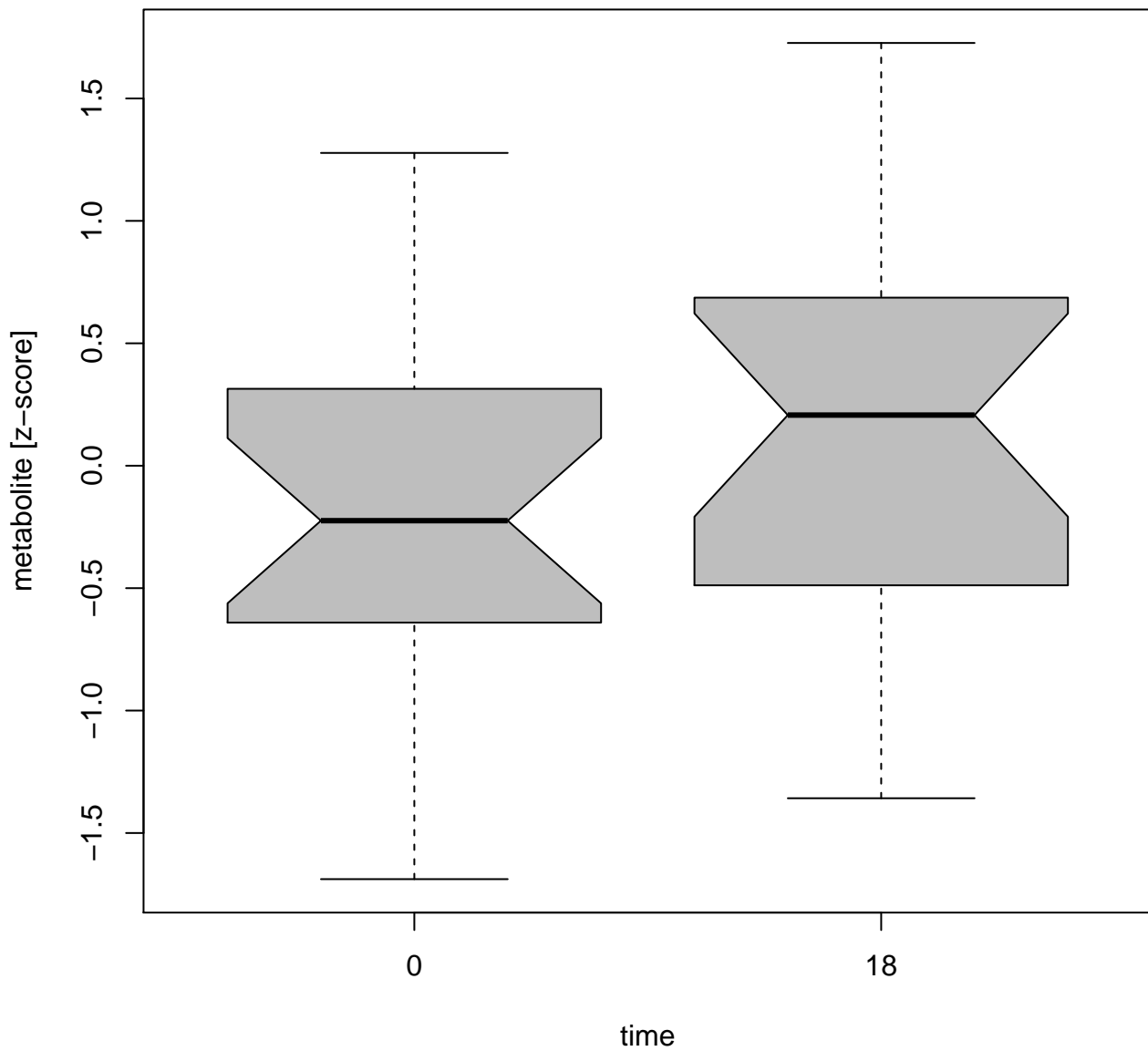
HCT15

polyglutamate

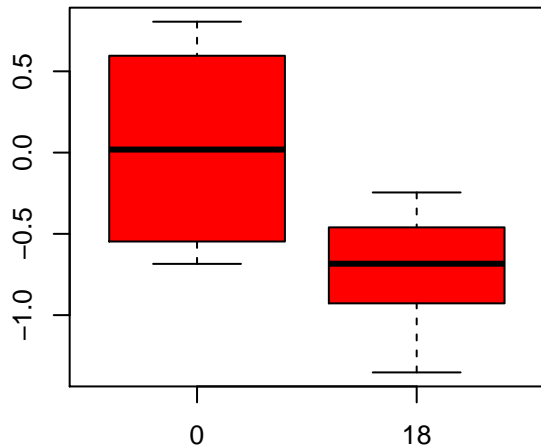


SKOV3

prolylglutamate

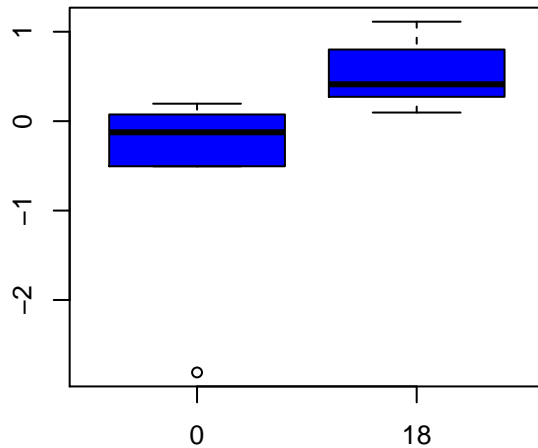


propionylcarnitine



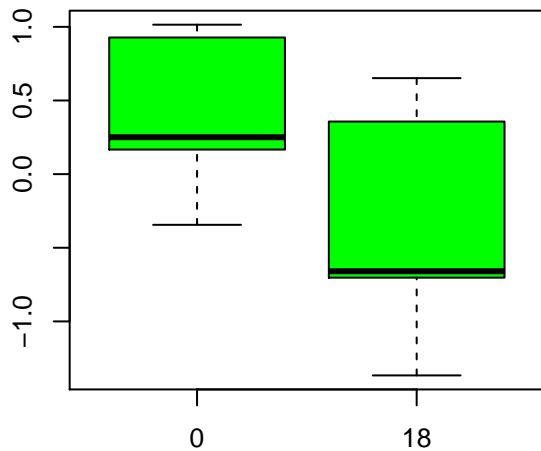
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propionylcarnitine



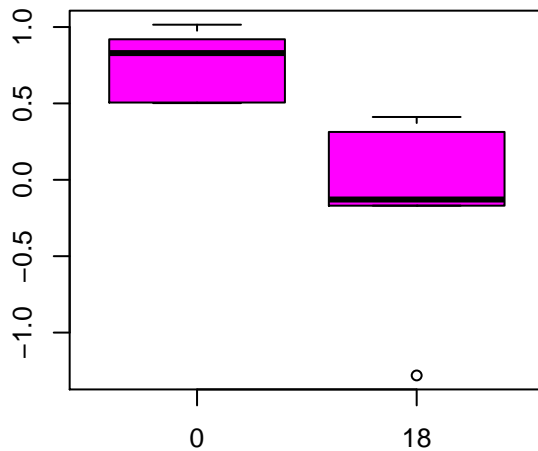
OVCAR

propionylcarnitine



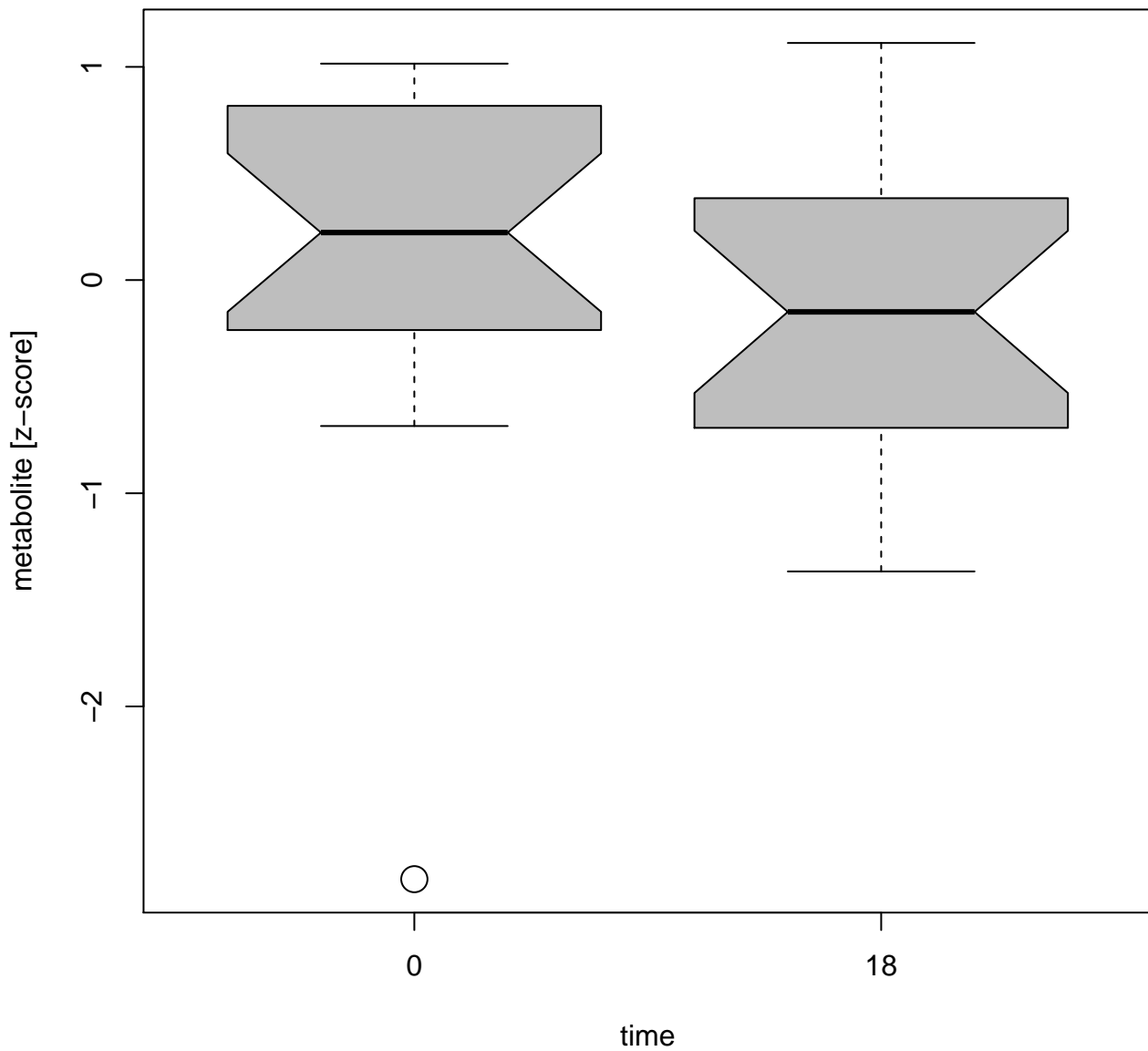
HCT15

propionylcarnitine

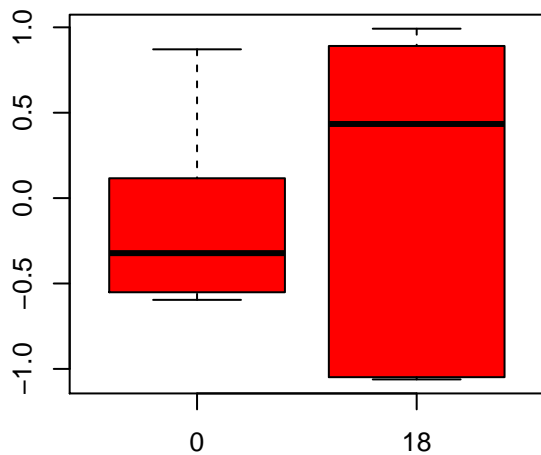


SKOV3

propionylcarnitine

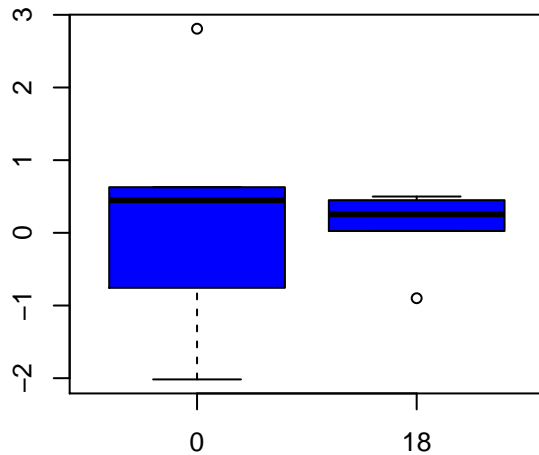


putrescine



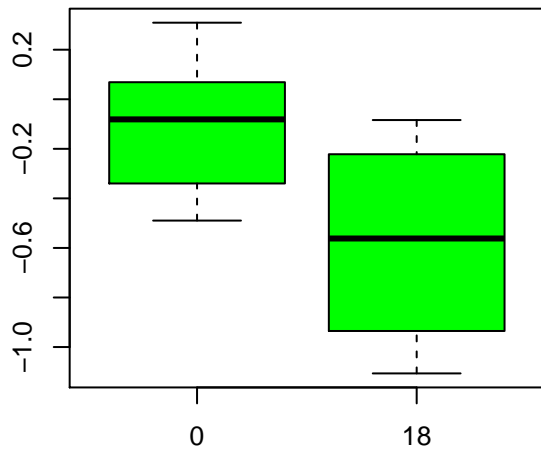
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putrescine



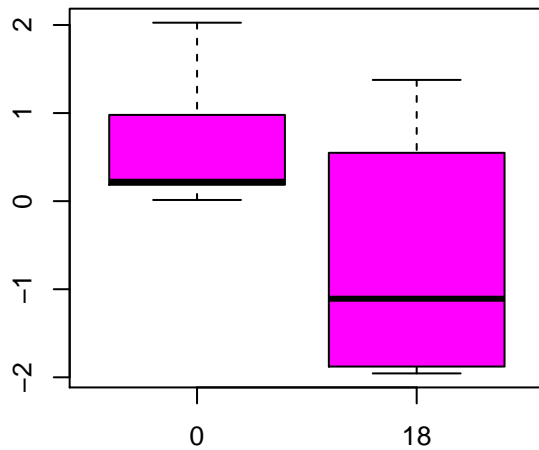
OVCAR

putrescine



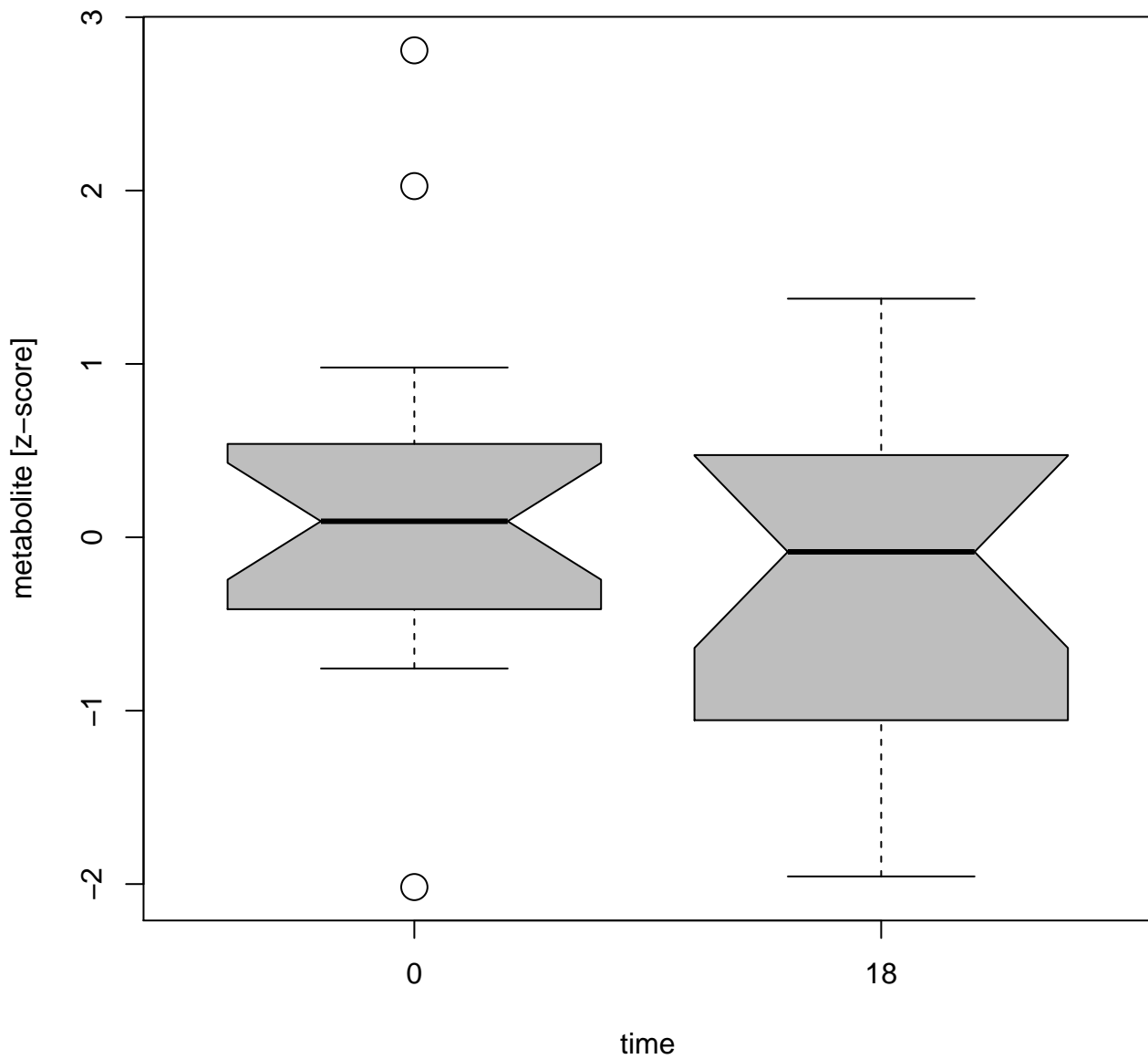
HCT15

putrescine

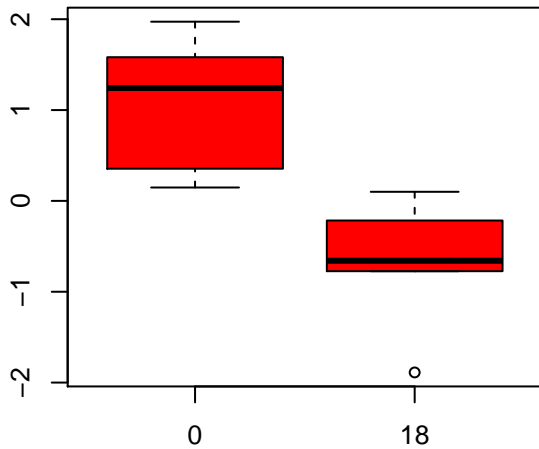


SKOV3

putrescine

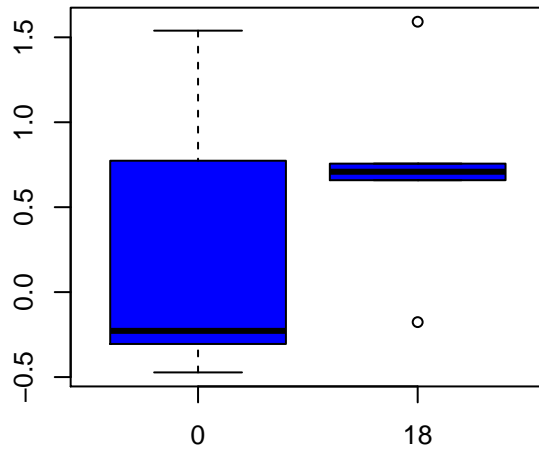


pyroglutamine*



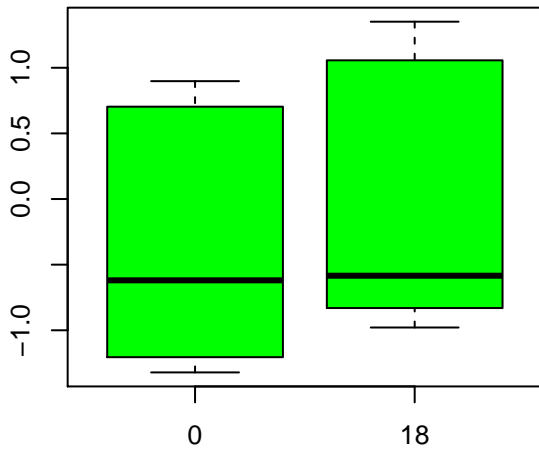
HCT116

pyroglutamine*



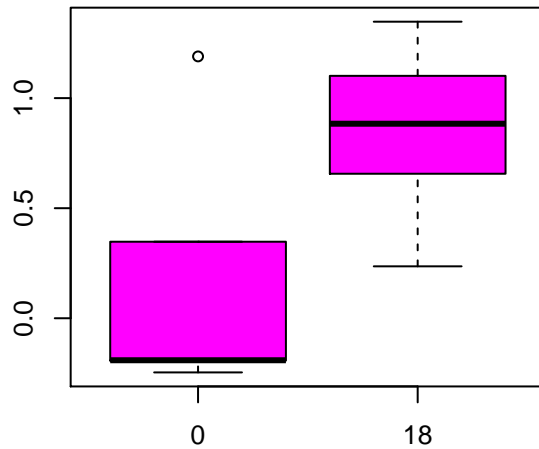
OVCAR

pyroglutamine*



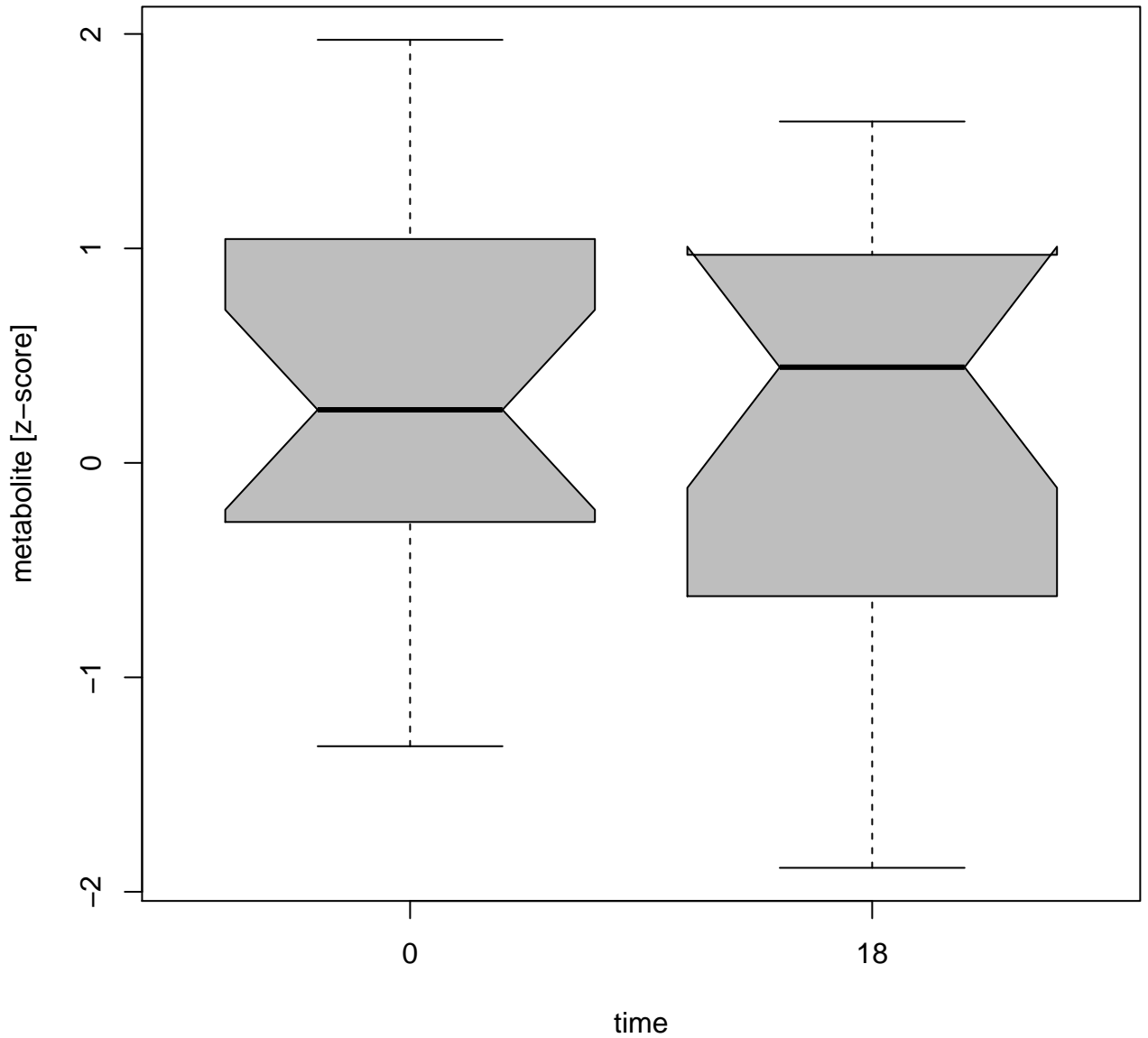
HCT15

pyroglutamine*

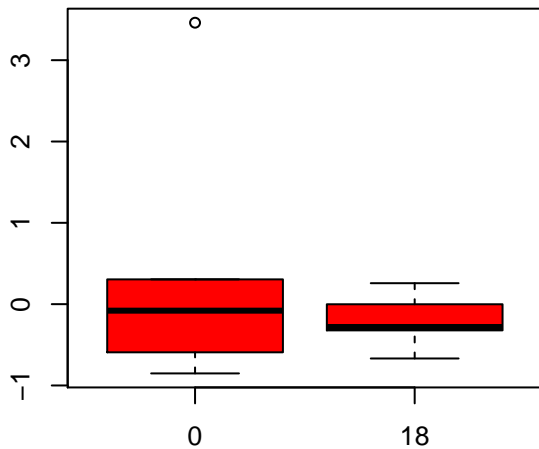


SKOV3

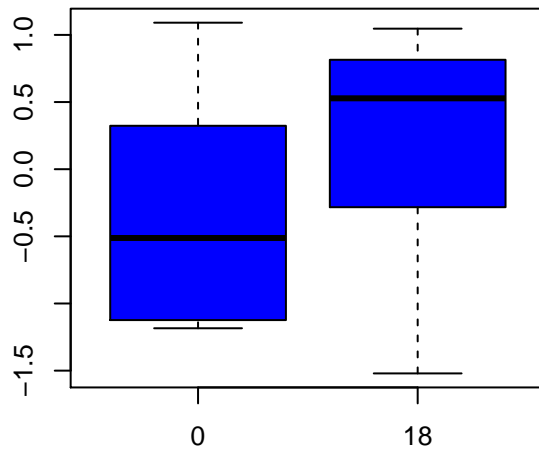
pyroglutamine*



serine



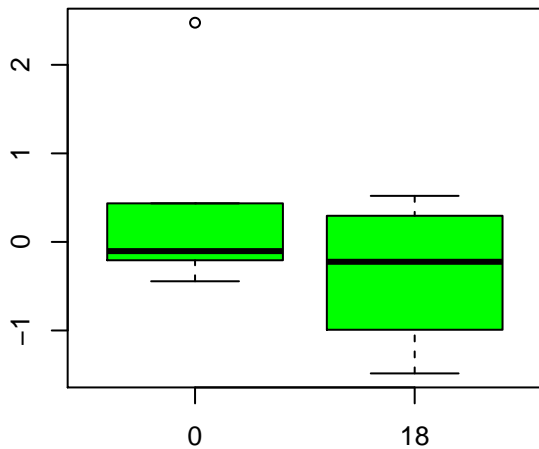
serine



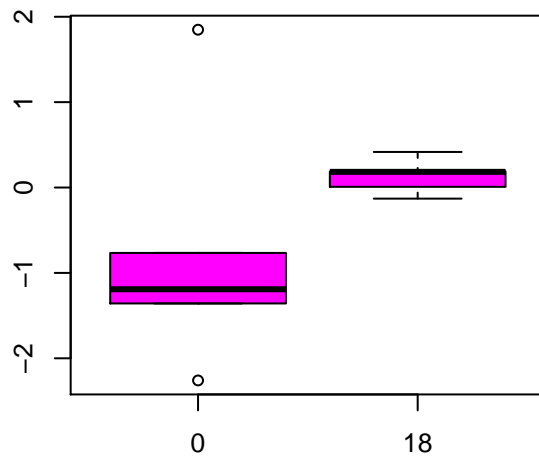
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OVCAR

serine



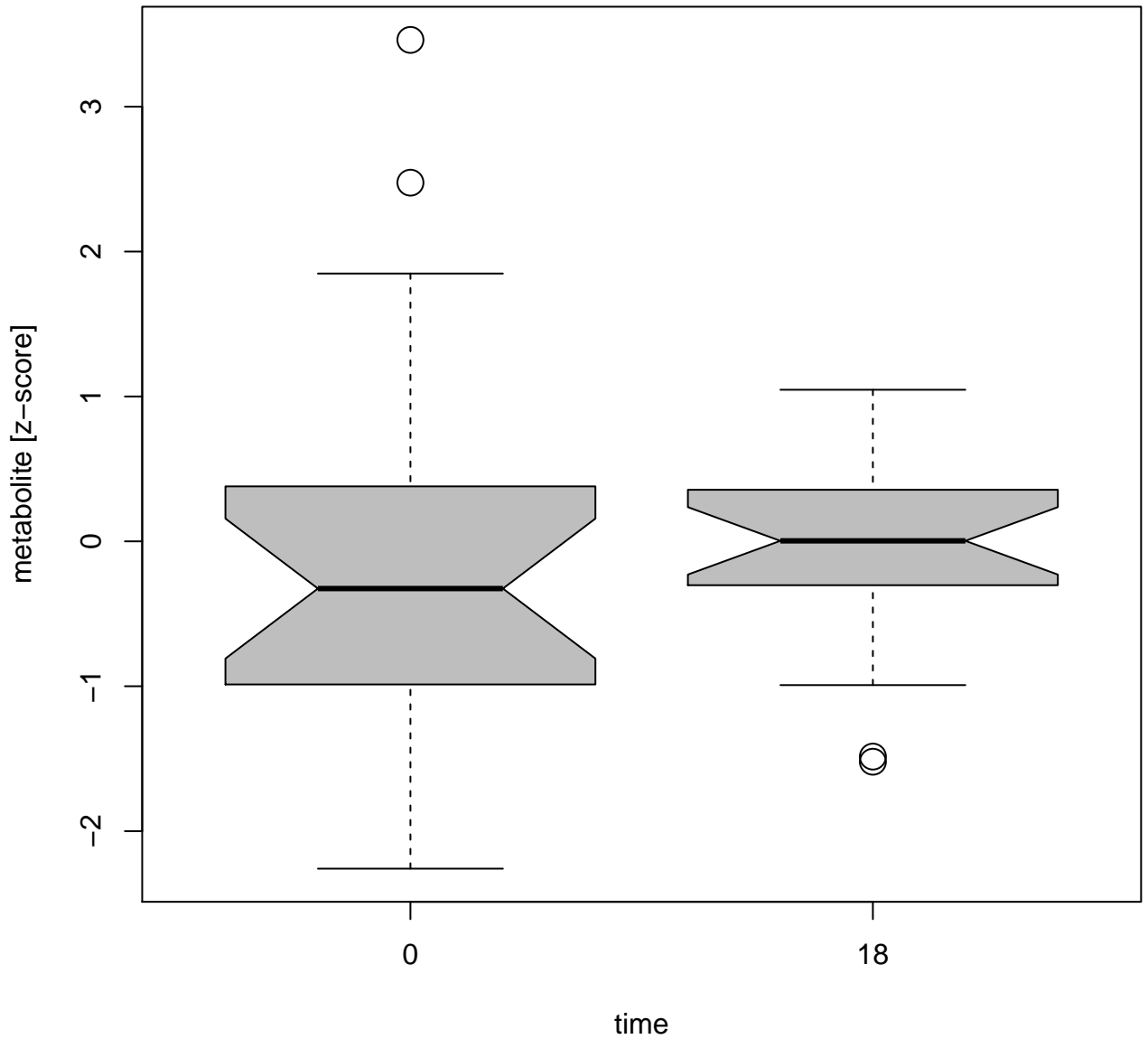
serine



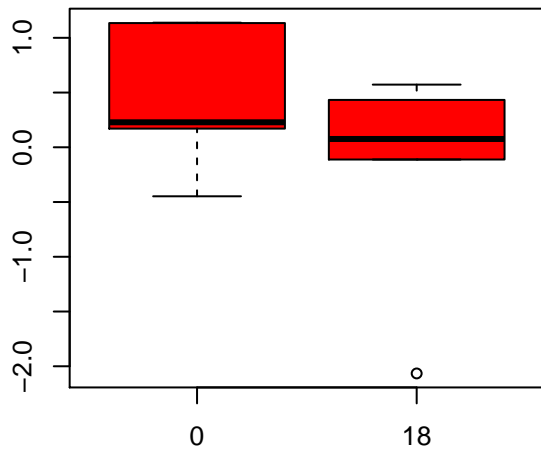
HCT15

SKOV3

serine

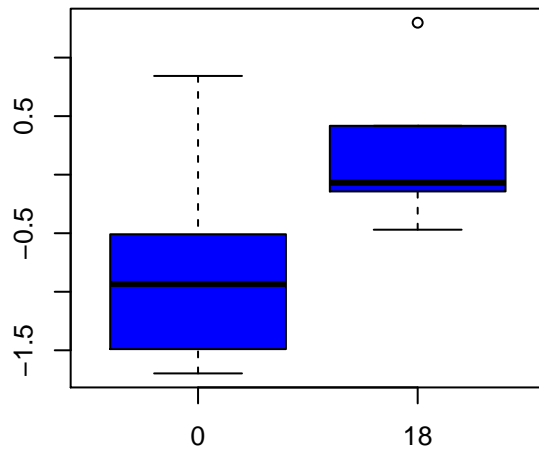


serylleucine



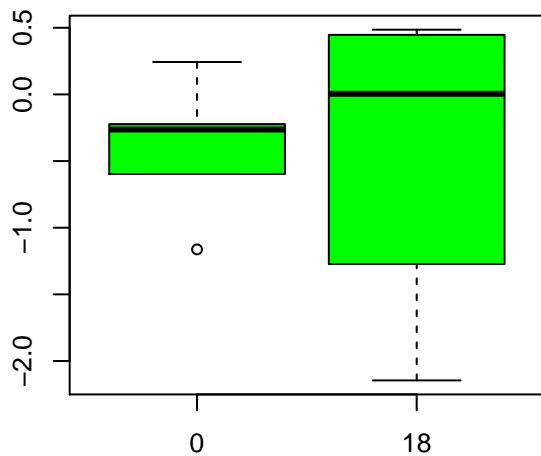
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serylleucine



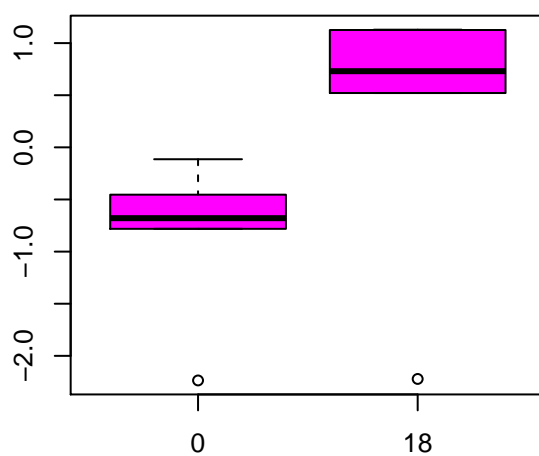
OVCAR

serylleucine



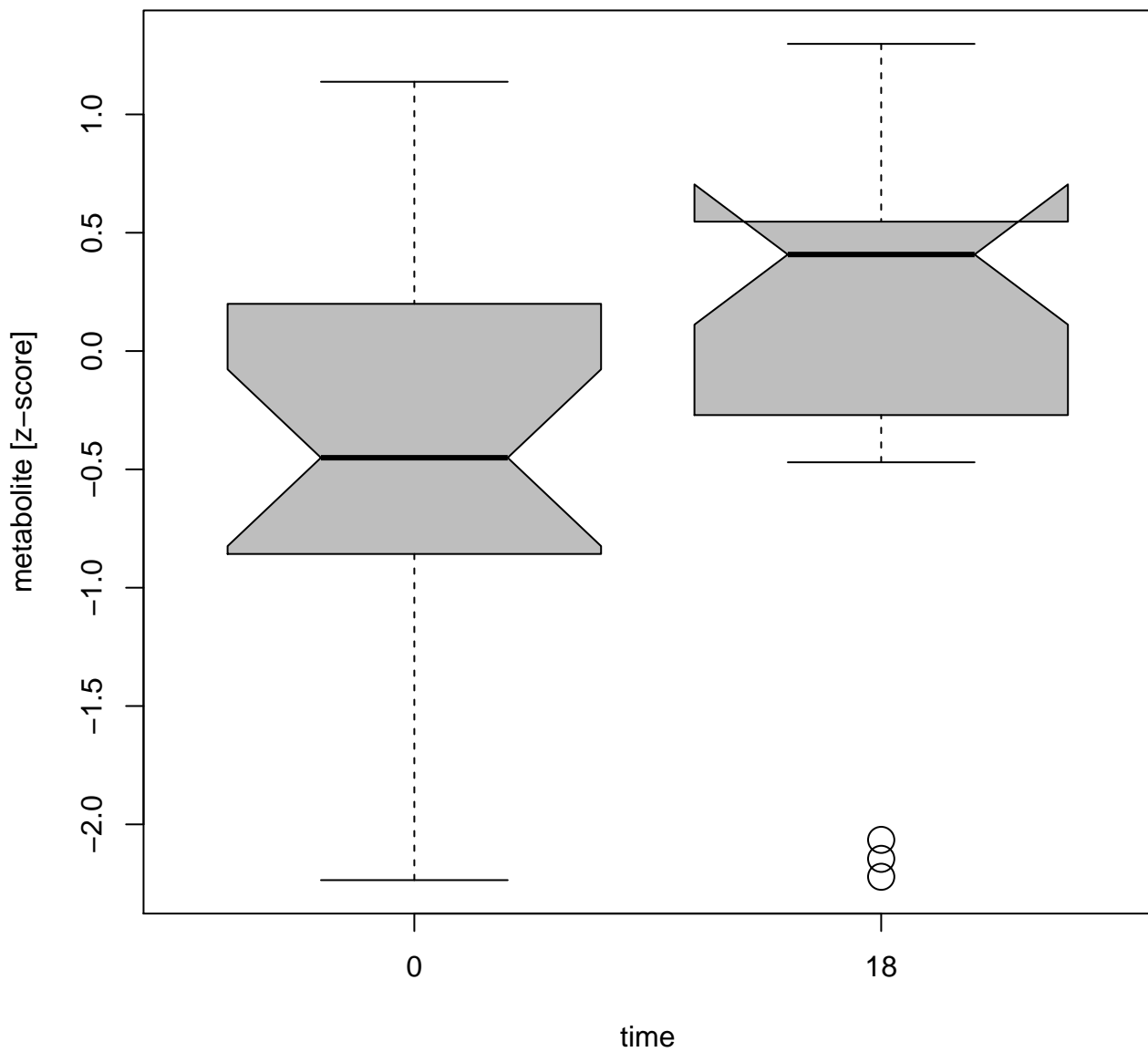
HCT15

serylleucine

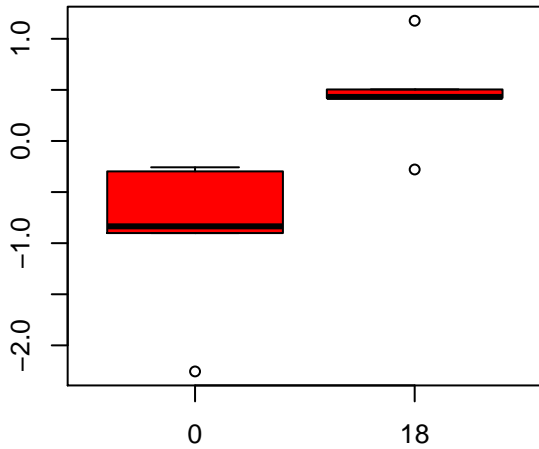


SKOV3

serylleucine

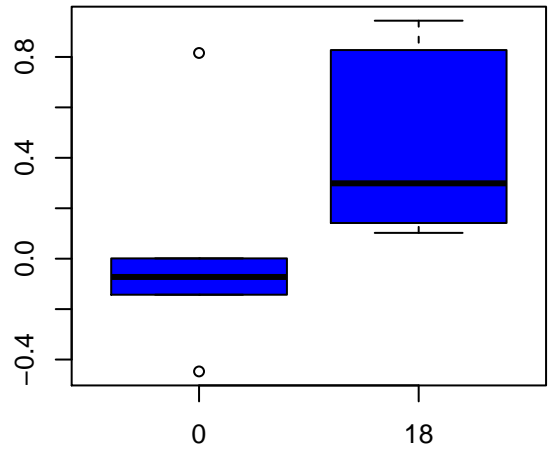


spermidine



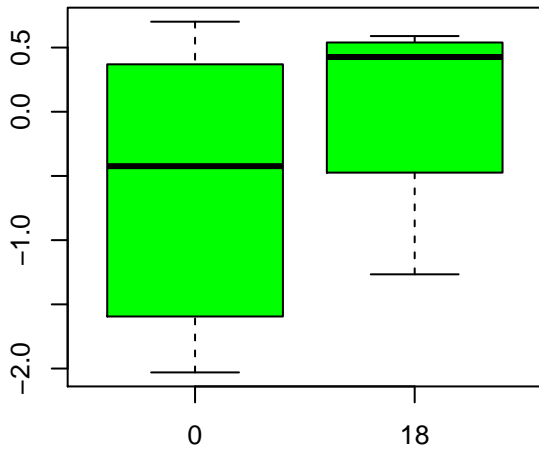
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spermidine



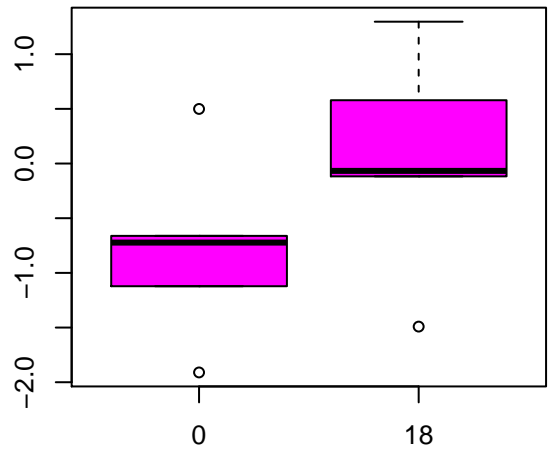
OVCAR

spermidine



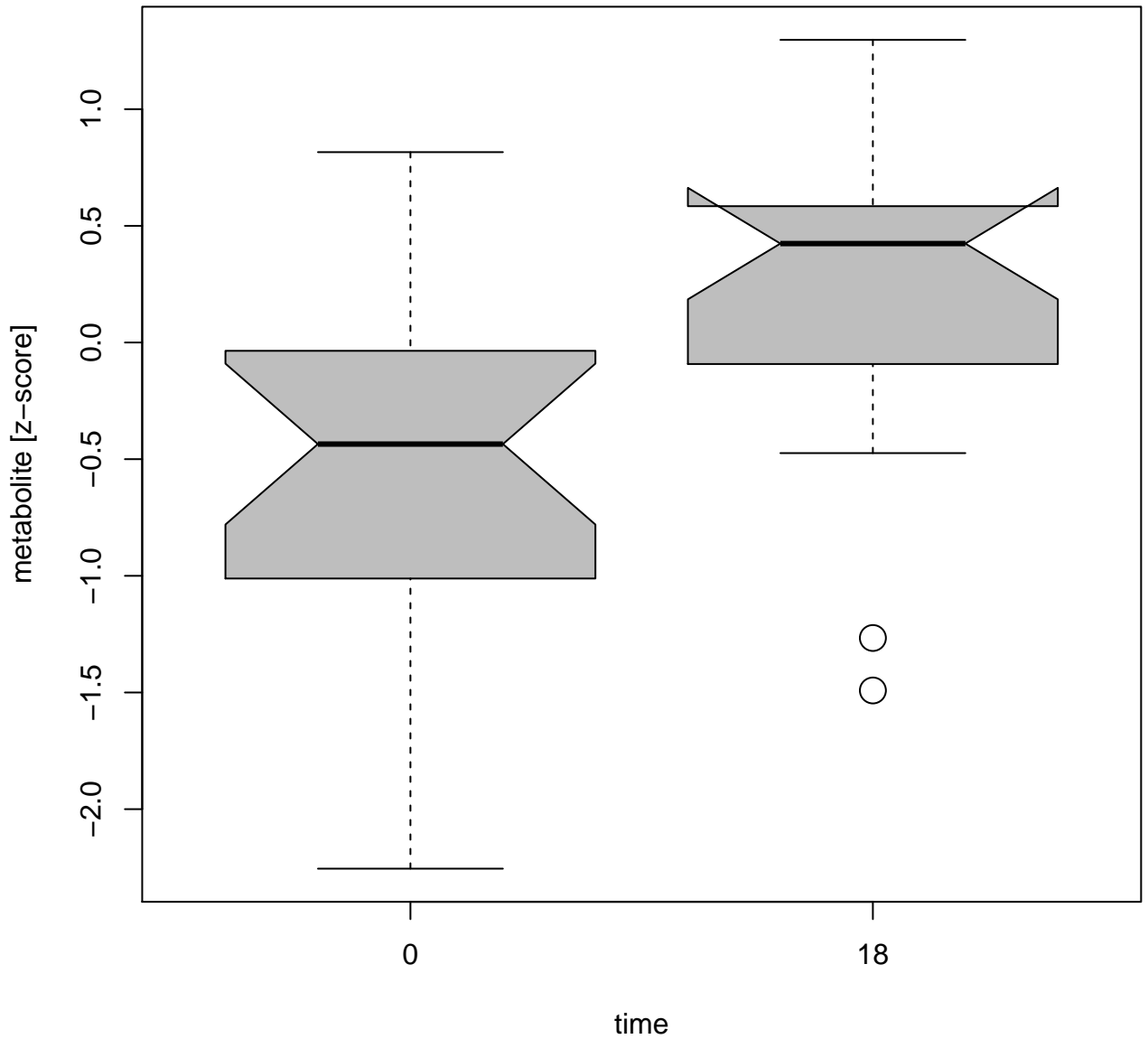
HCT15

spermidine

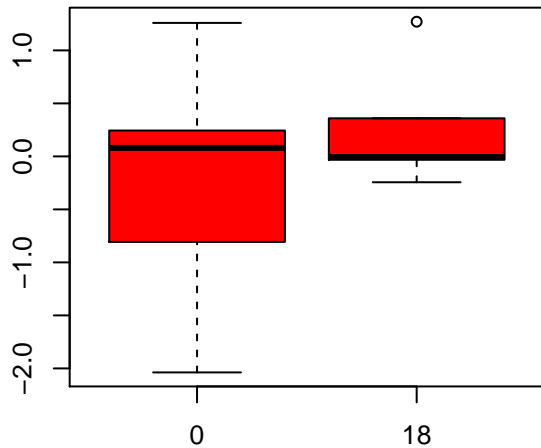


SKOV3

spermidine

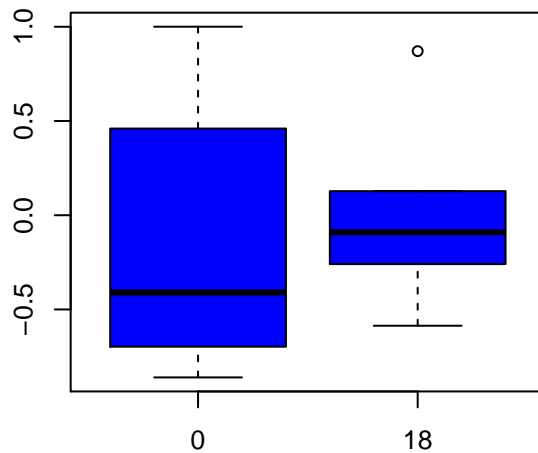


spermine



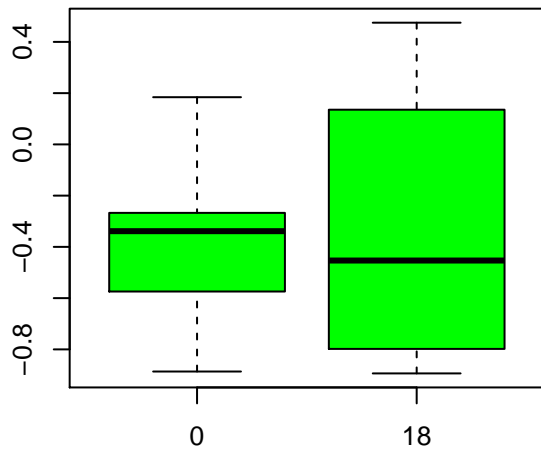
HCT116

spermine



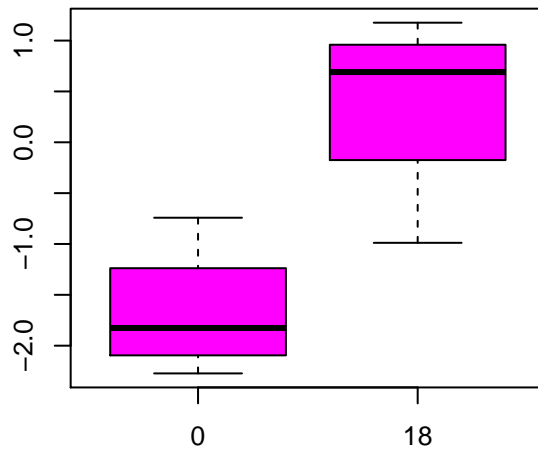
OVCAR

spermine



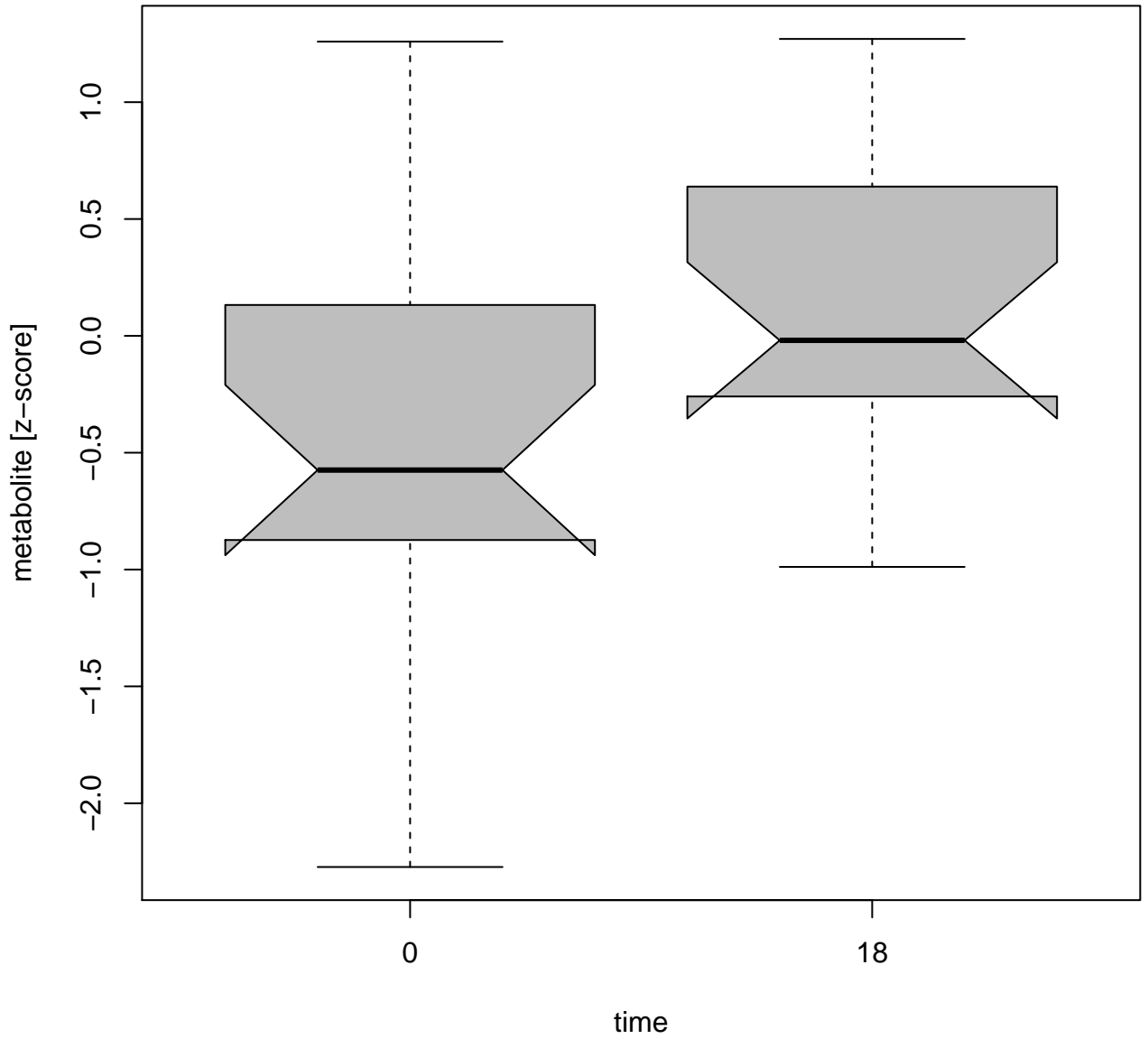
HCT15

spermine

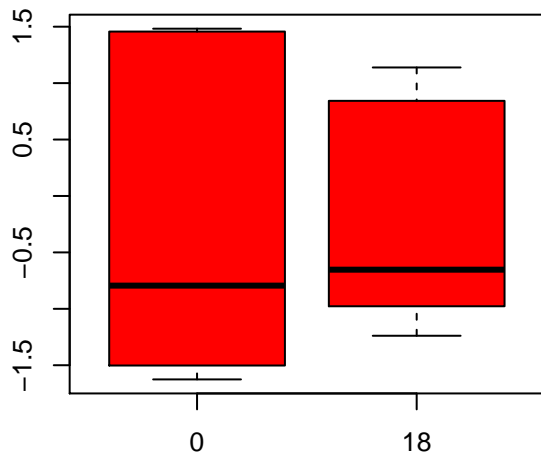


SKOV3

spermine

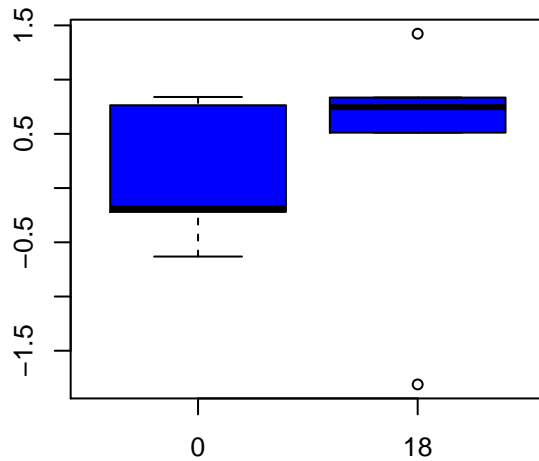


threonine



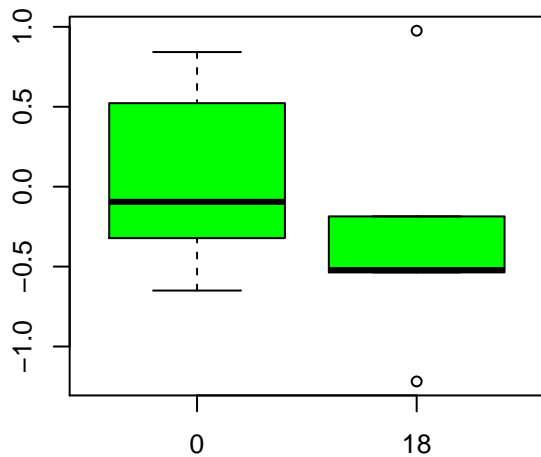
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threonine



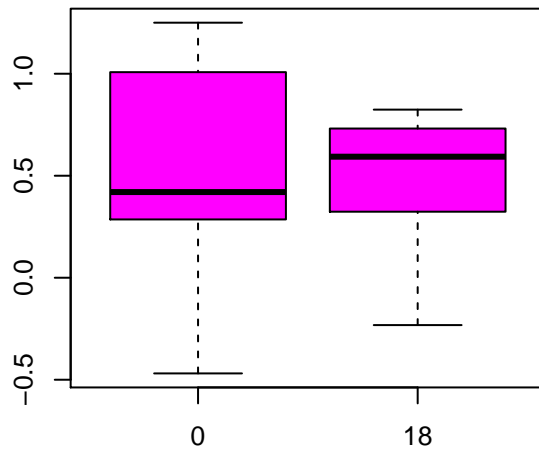
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threonine



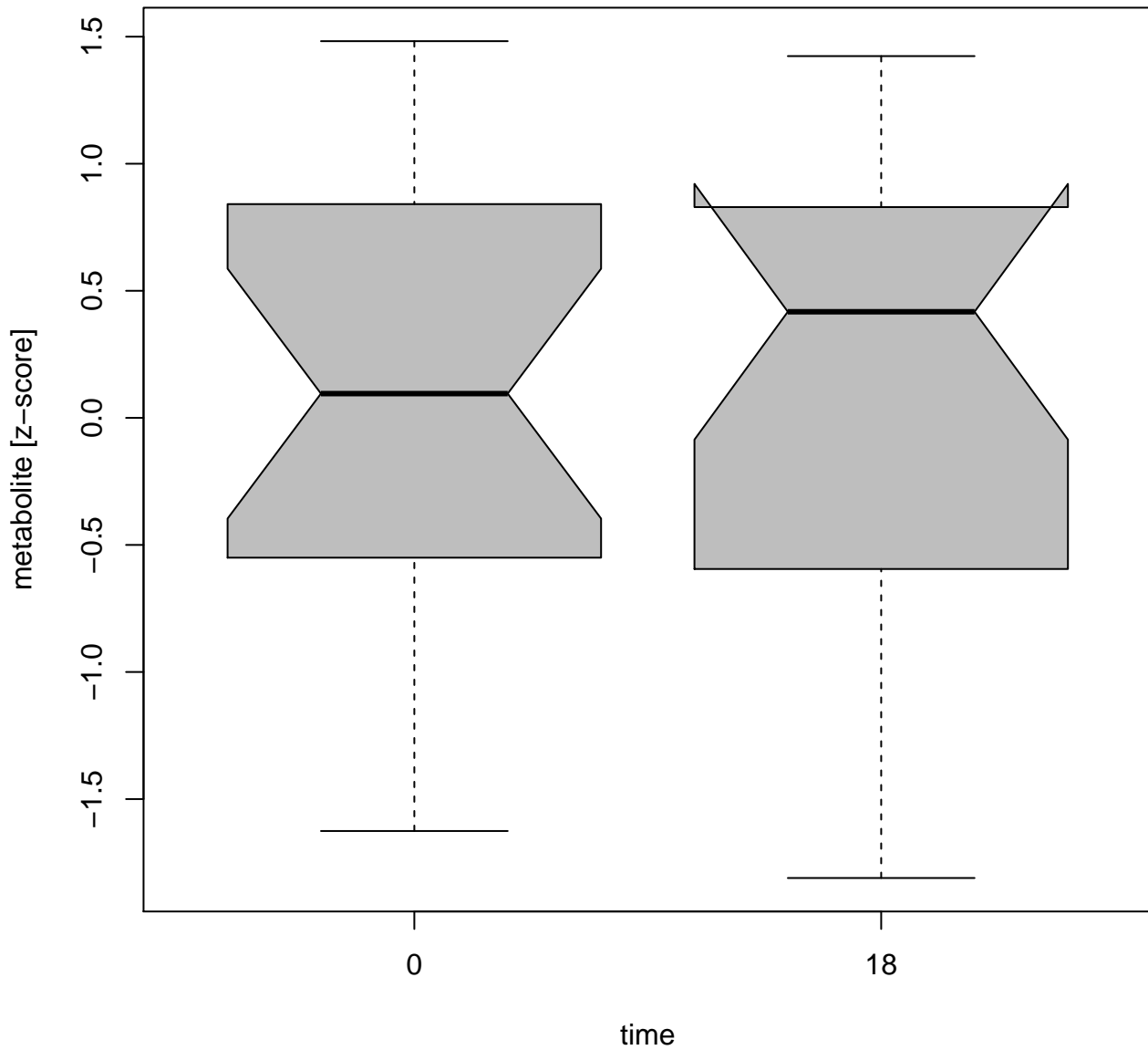
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threonine

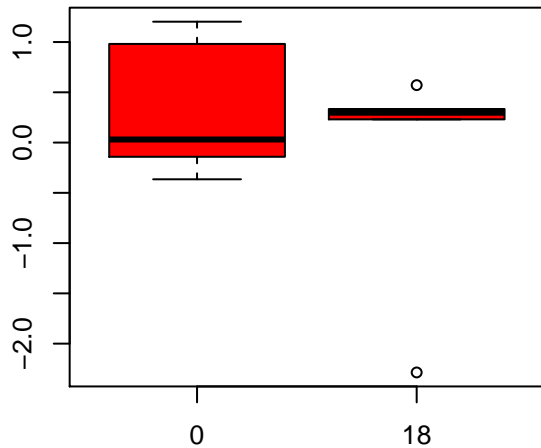


SKOV3

threonine

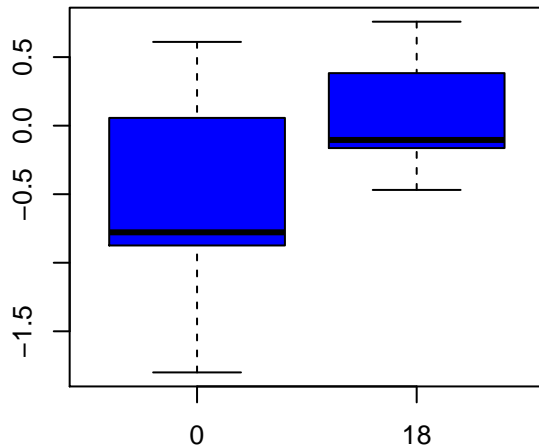


threonylleucine



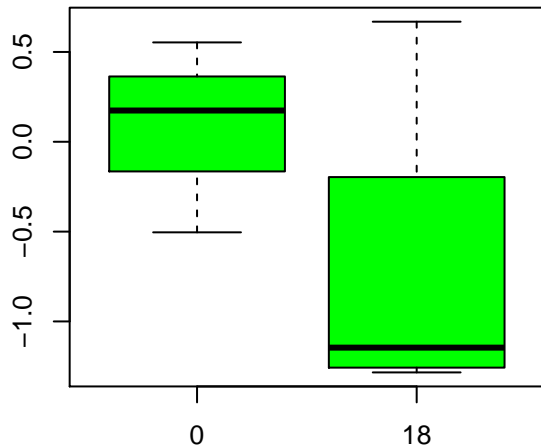
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threonylleucine



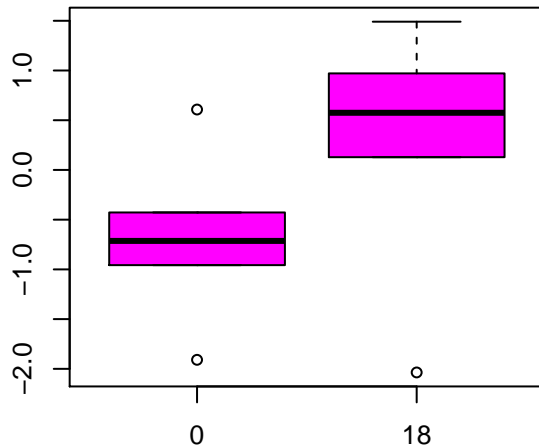
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threonylleucine



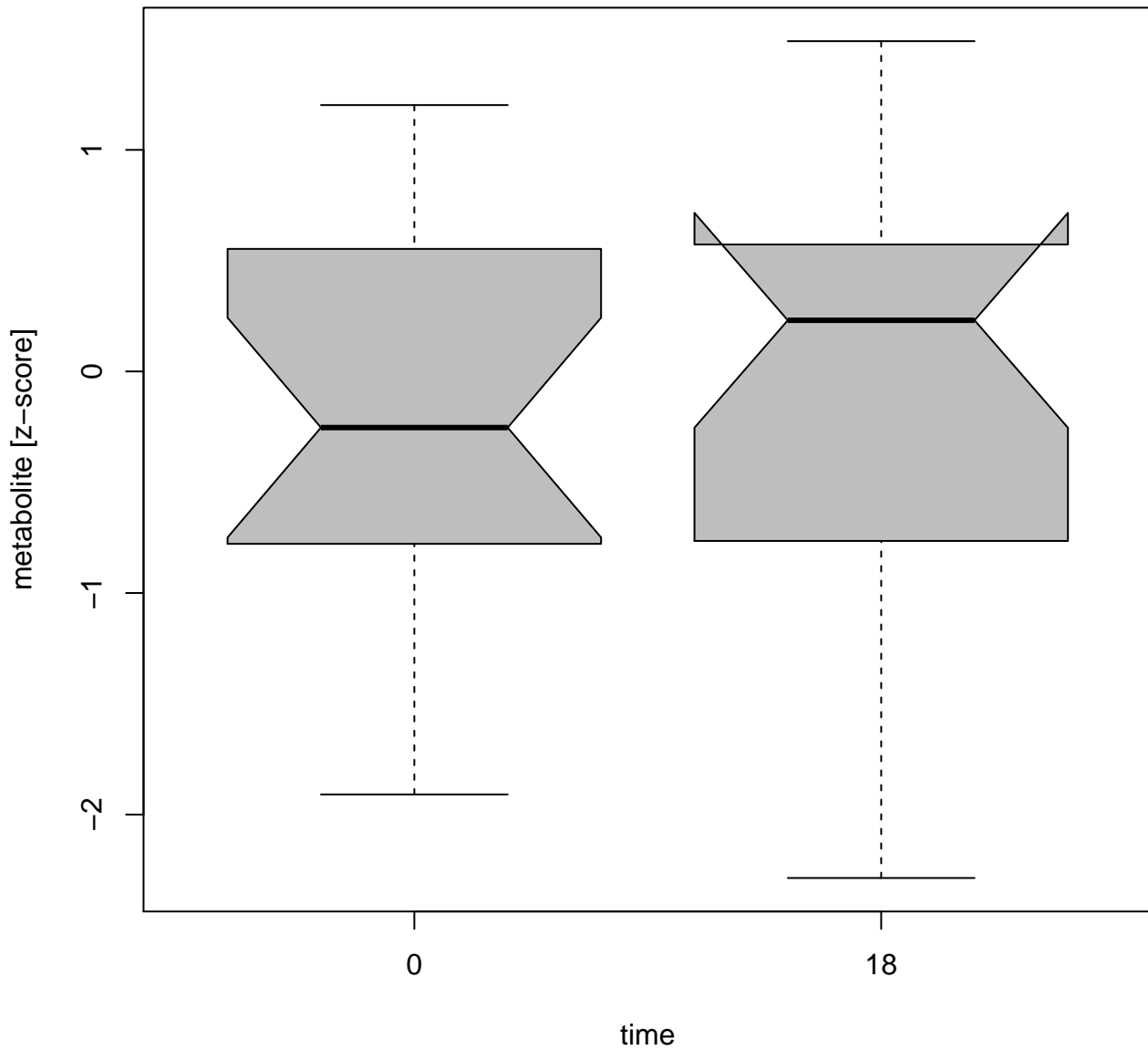
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threonylleucine

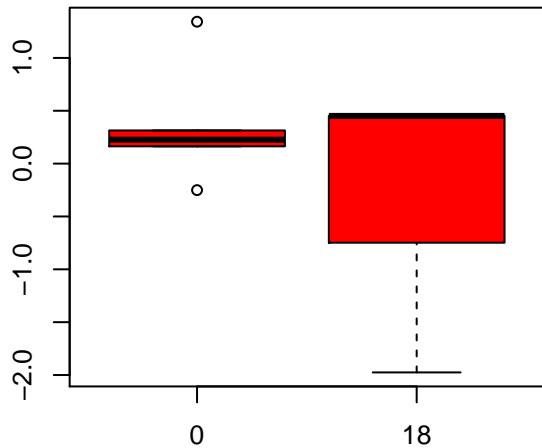


SKOV3

threonylleucine

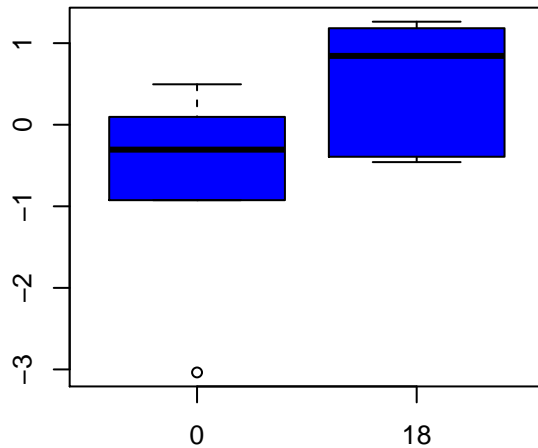


threonylphenylalanine



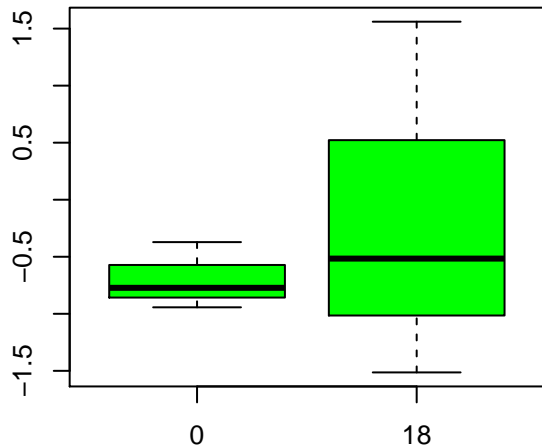
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threonylphenylalanine



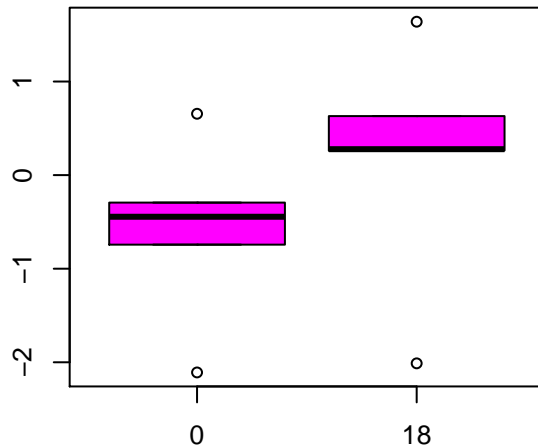
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threonylphenylalanine



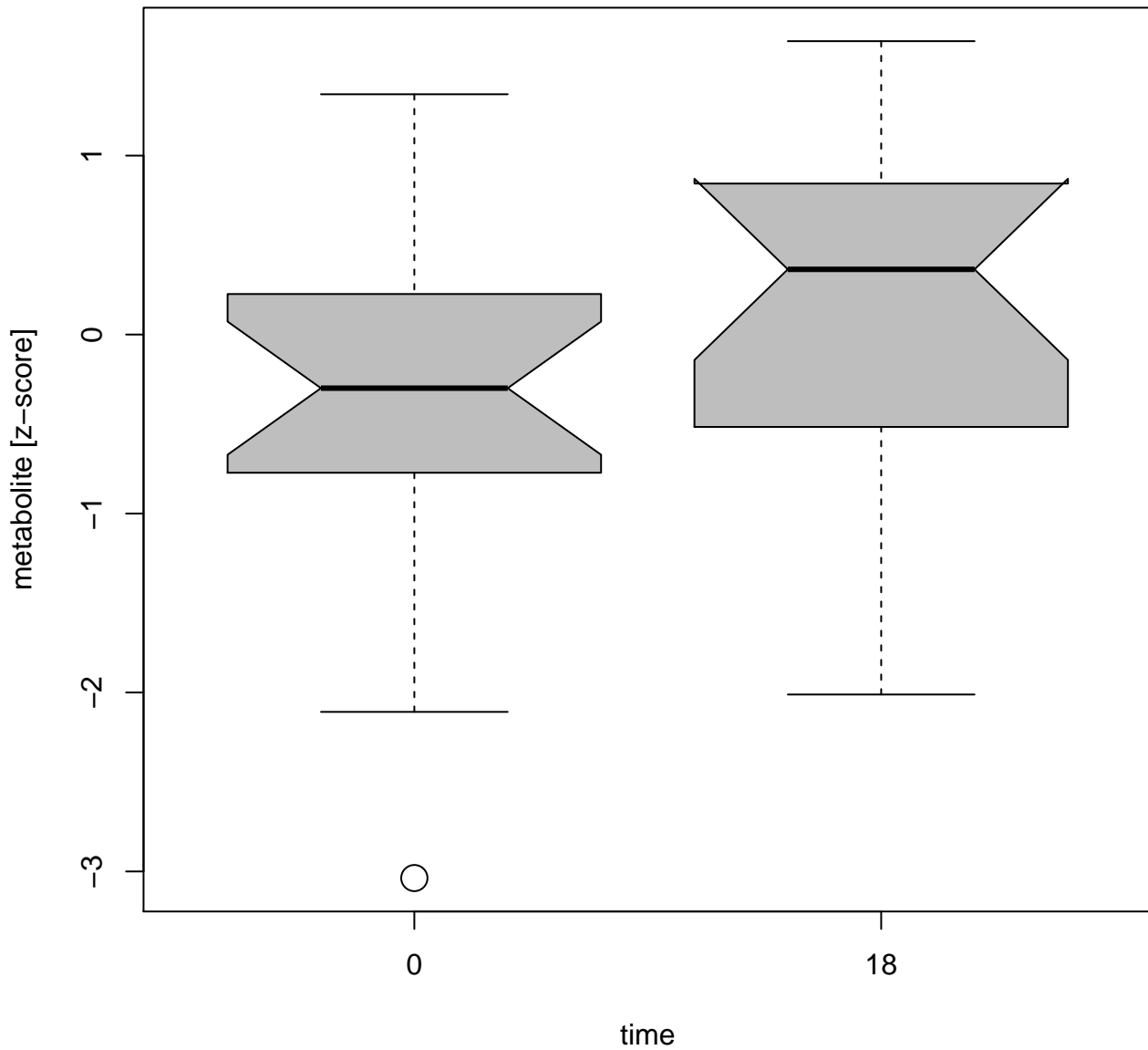
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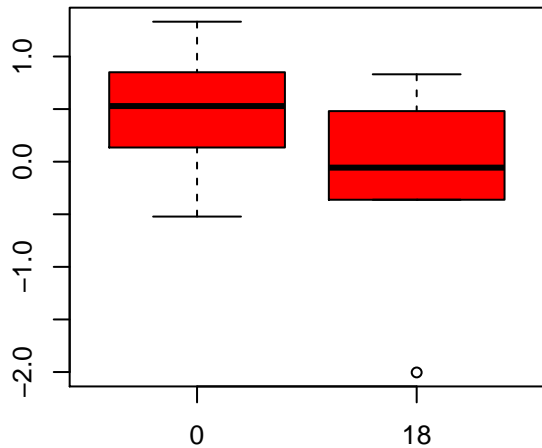


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threonylphenylalanine

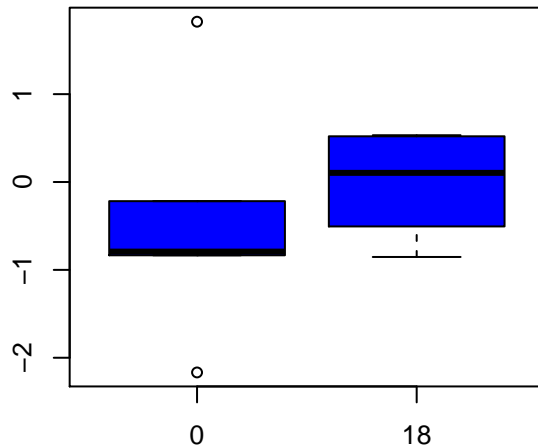


threonylvaline



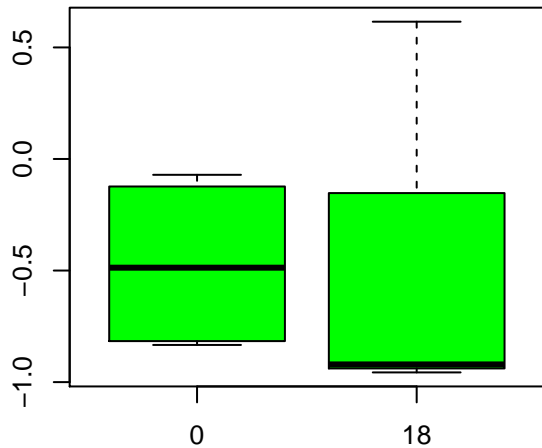
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threonylvaline



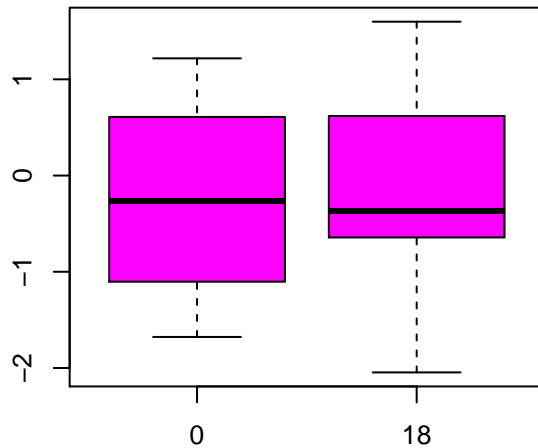
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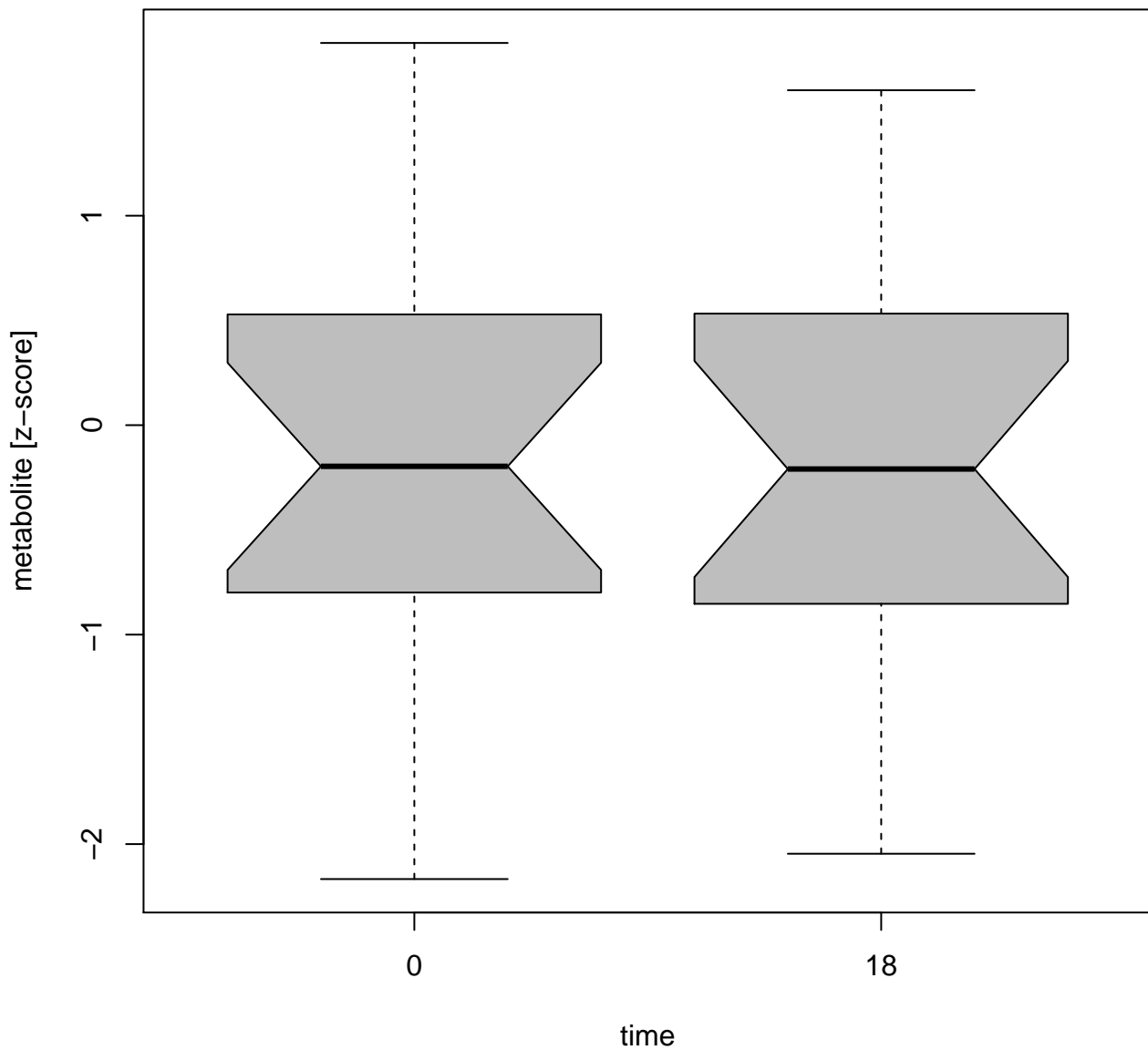
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threonylvaline

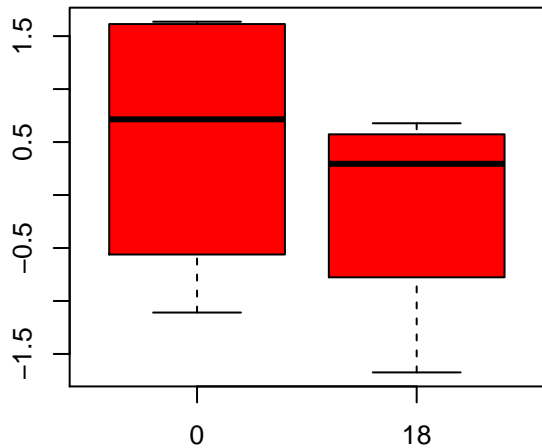


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threonylvaline

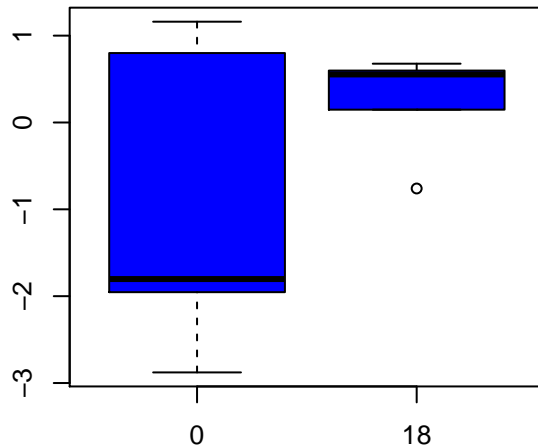


trans-4-hydroxyproline



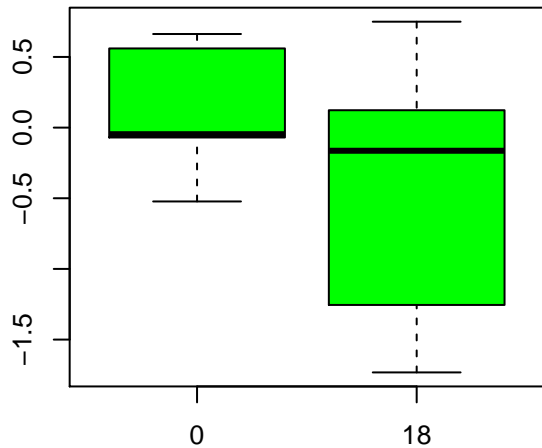
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trans-4-hydroxyproline



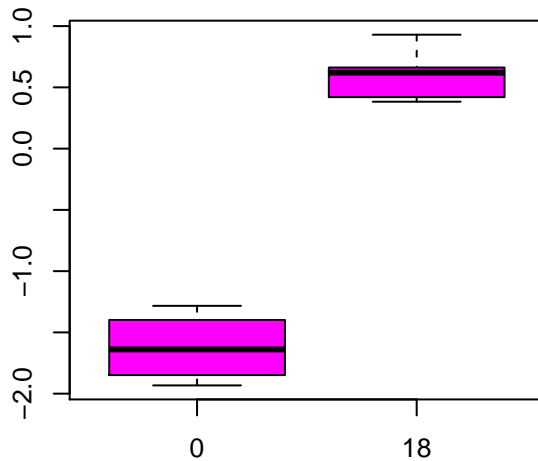
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trans-4-hydroxyproline



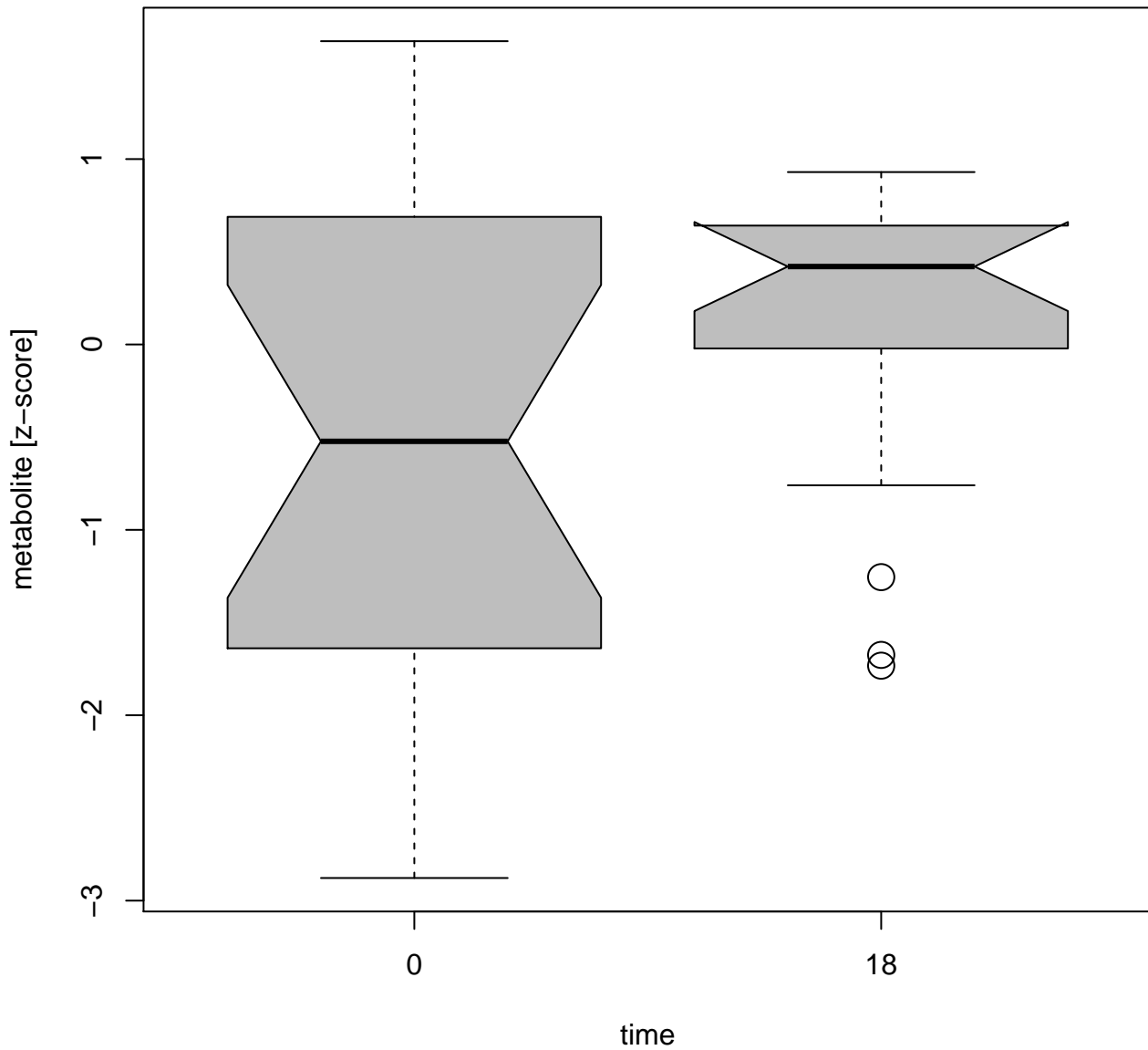
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trans-4-hydroxyproline

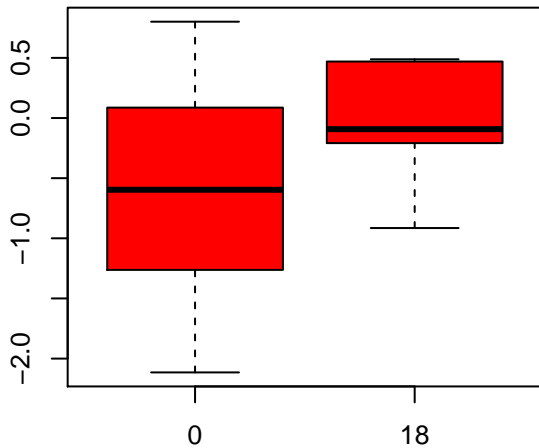


SKOV3

trans-4-hydroxyproline

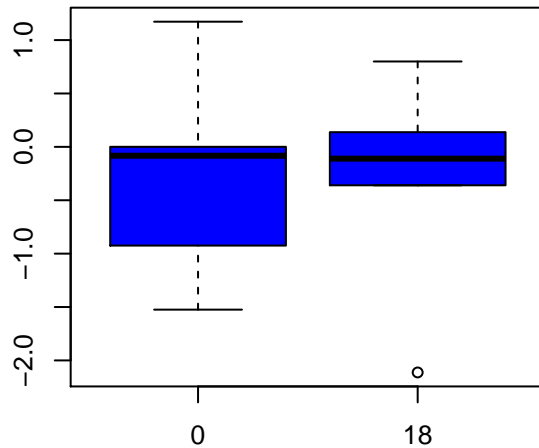


tyrosine



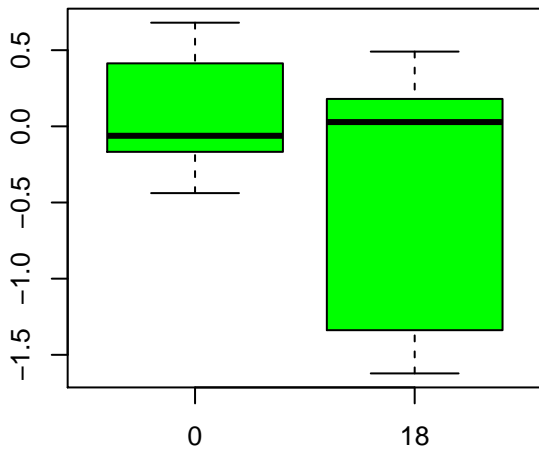
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tyrosine



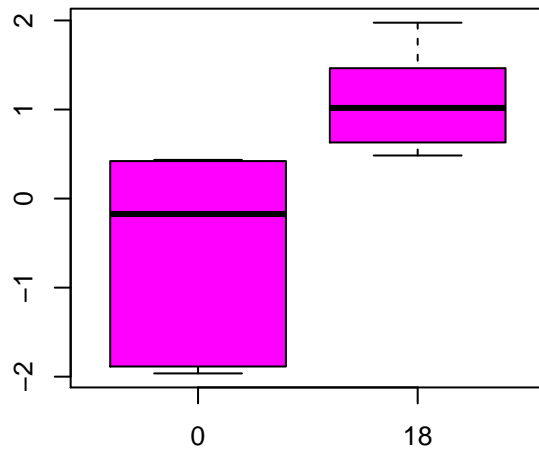
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tyrosine



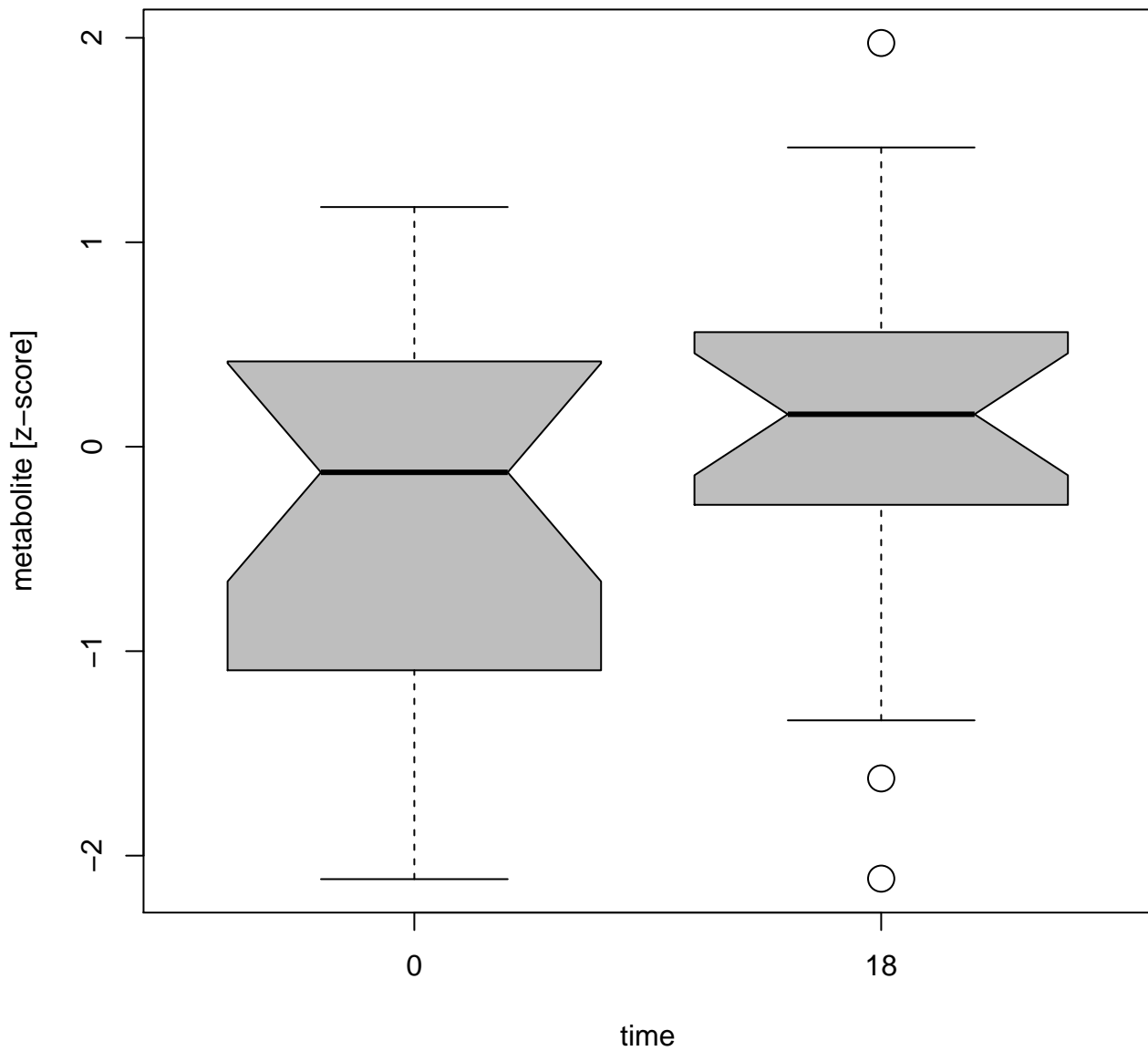
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tyrosine

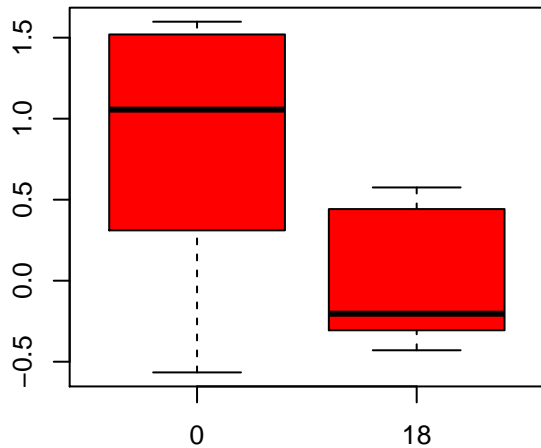


SKOV3

tyrosine

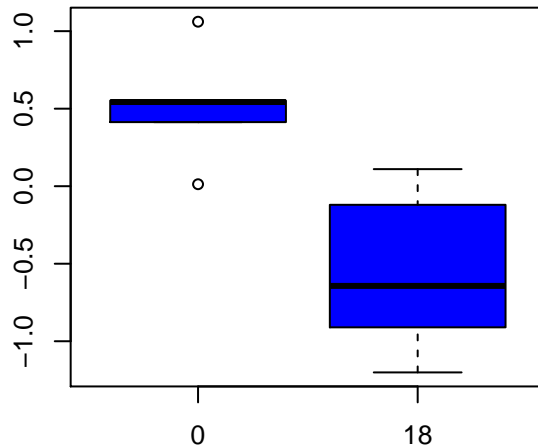


UDP-glucuronate



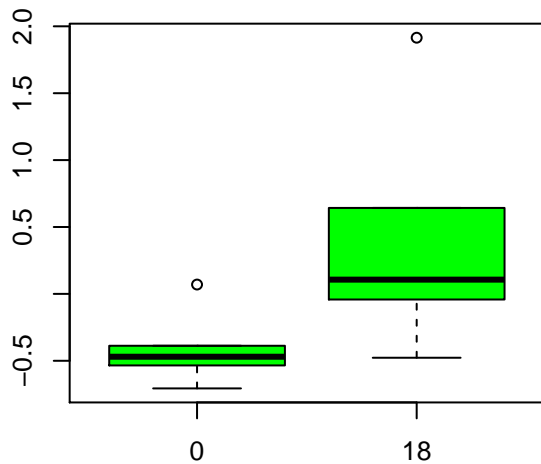
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UDP-glucuronate



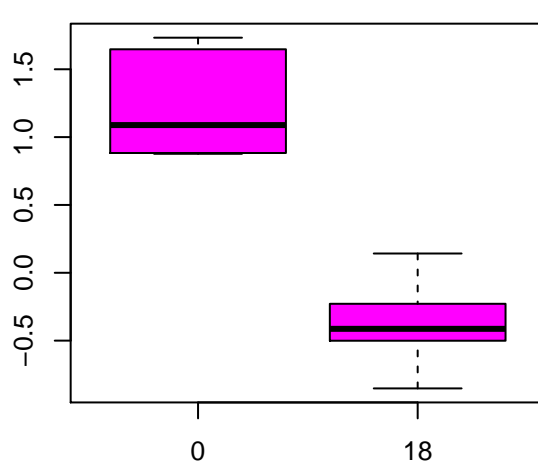
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UDP-glucuronate



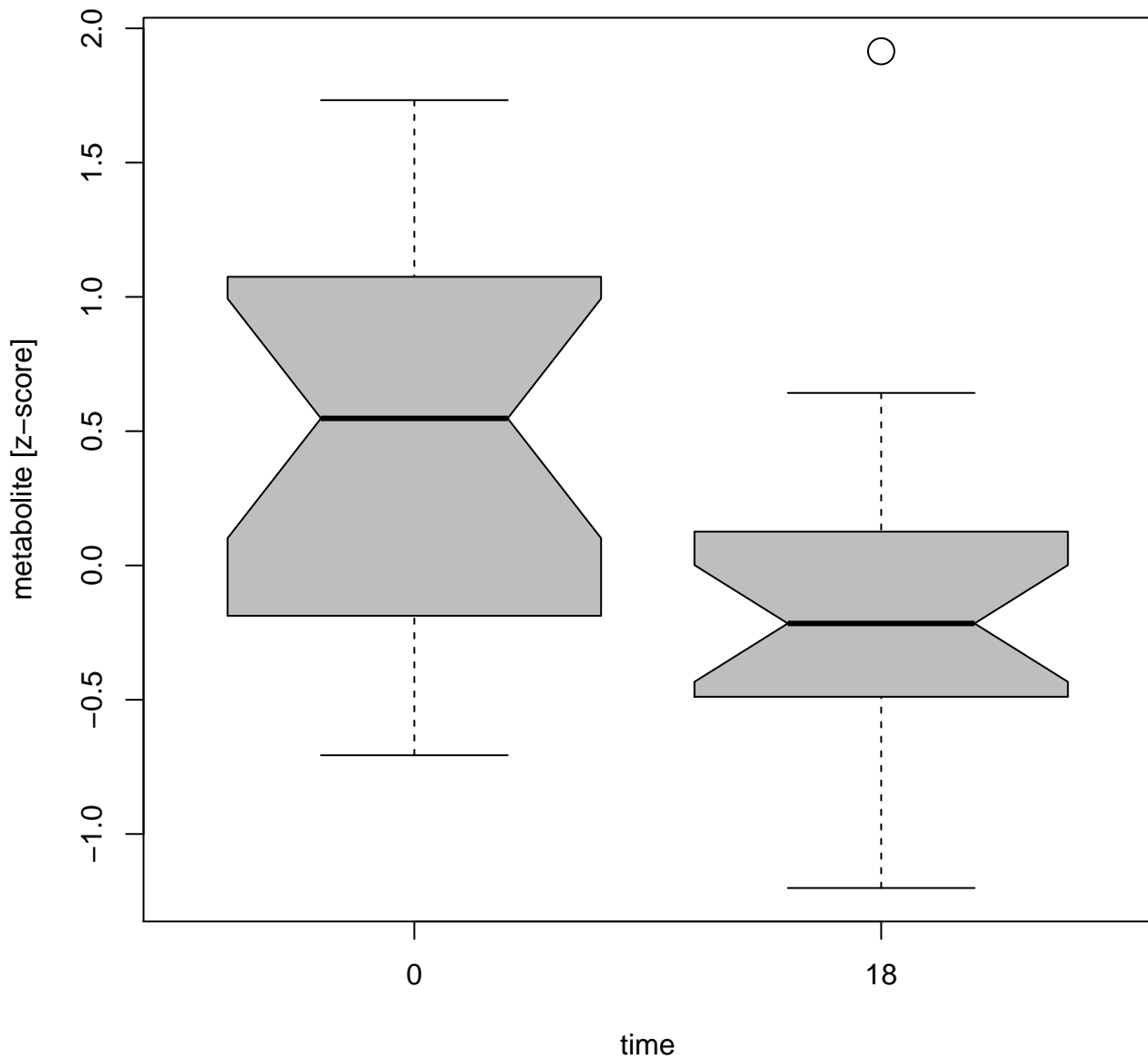
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UDP-glucuronate

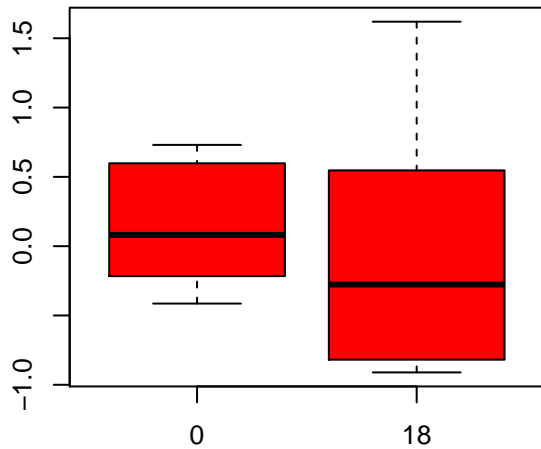


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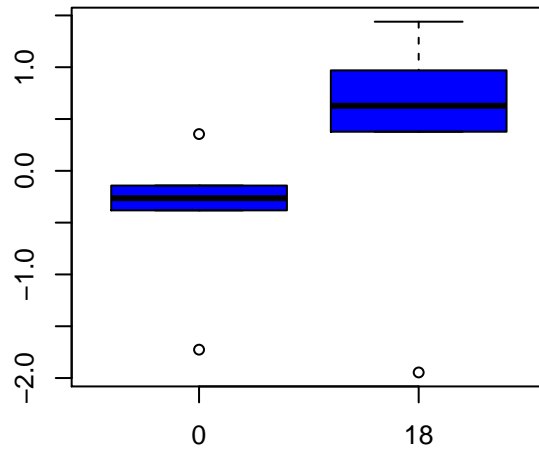
UDP-glucuronate



uracil

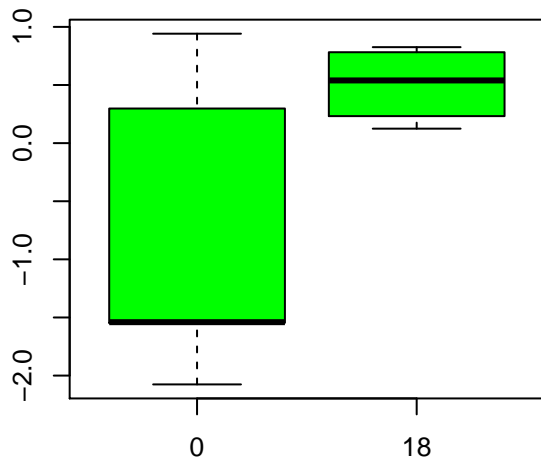


uracil



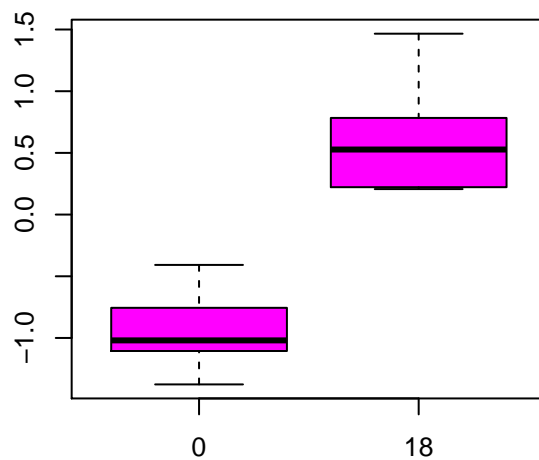
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uracil



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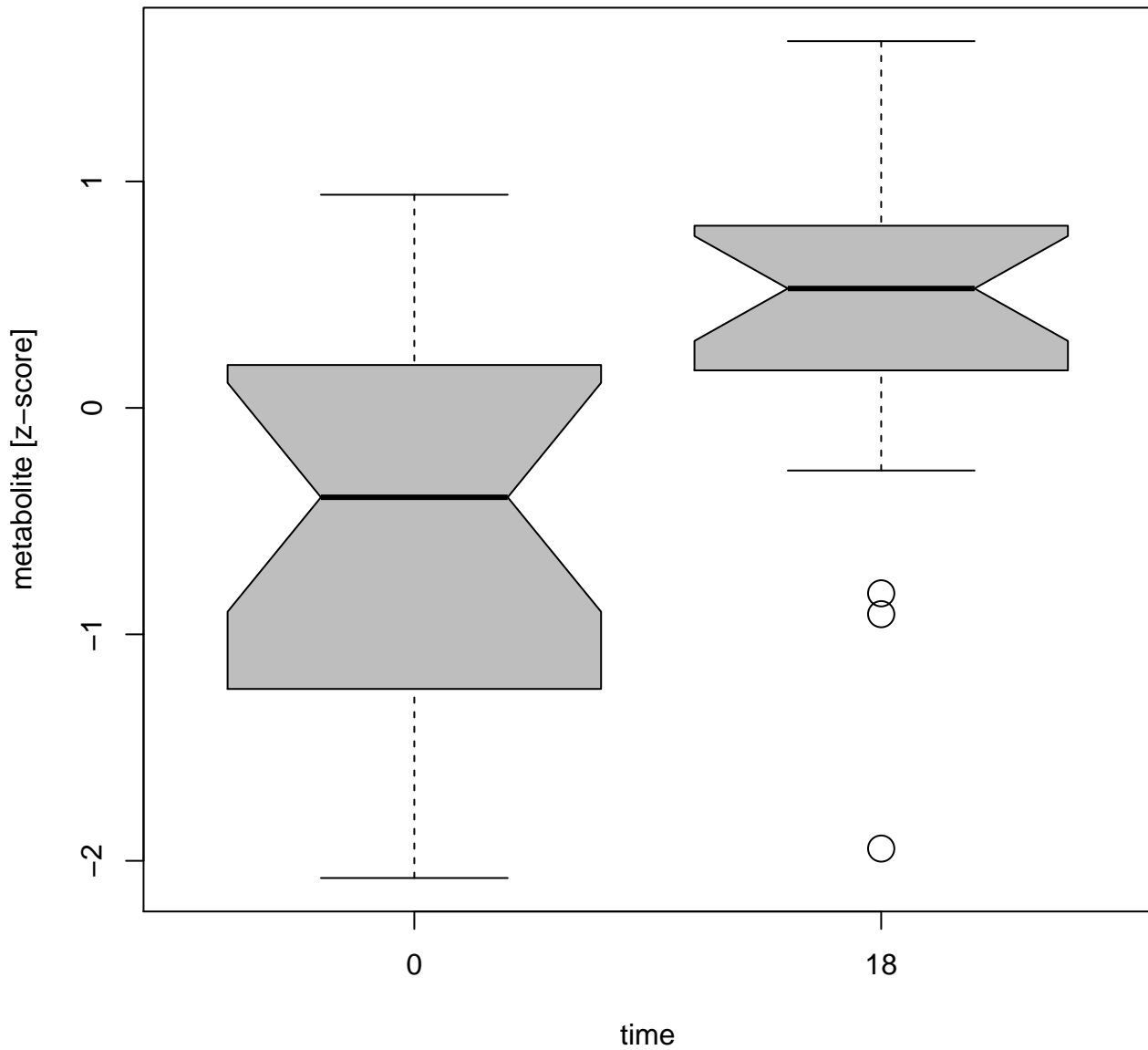
uracil



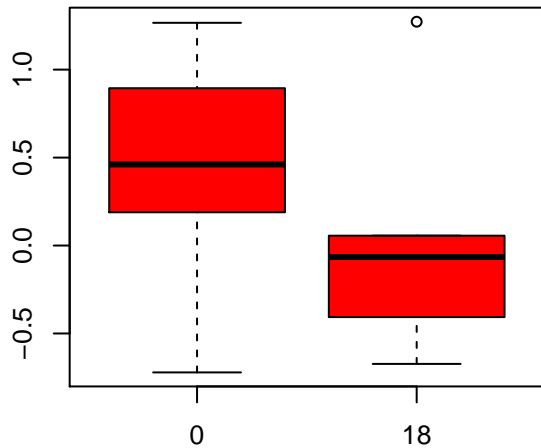
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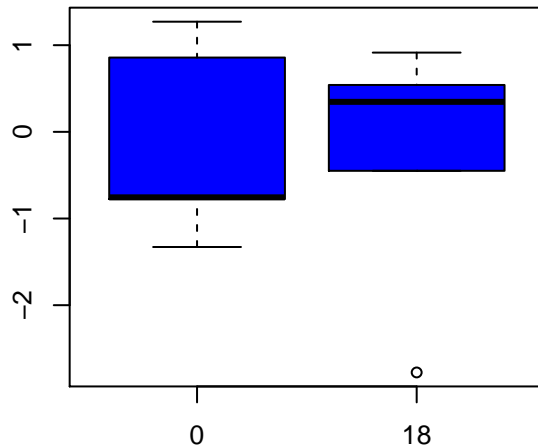


uridine



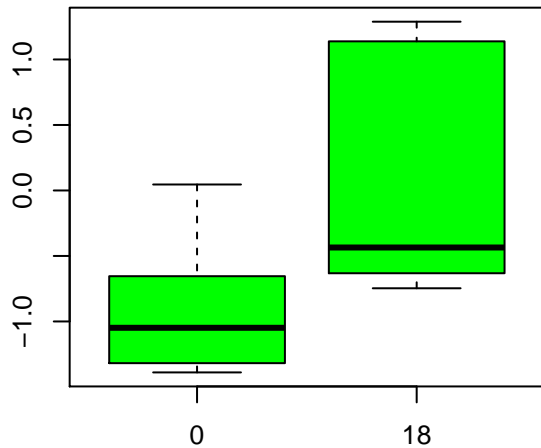
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uridine



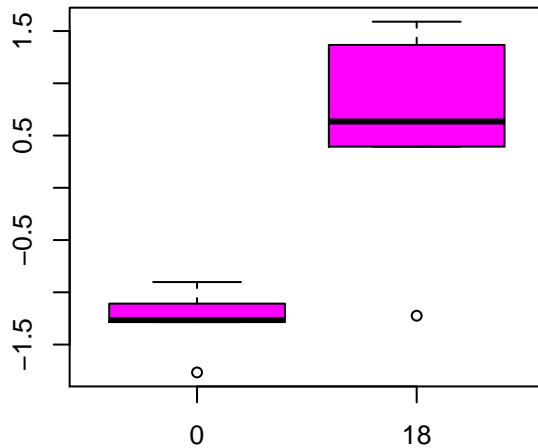
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uridine



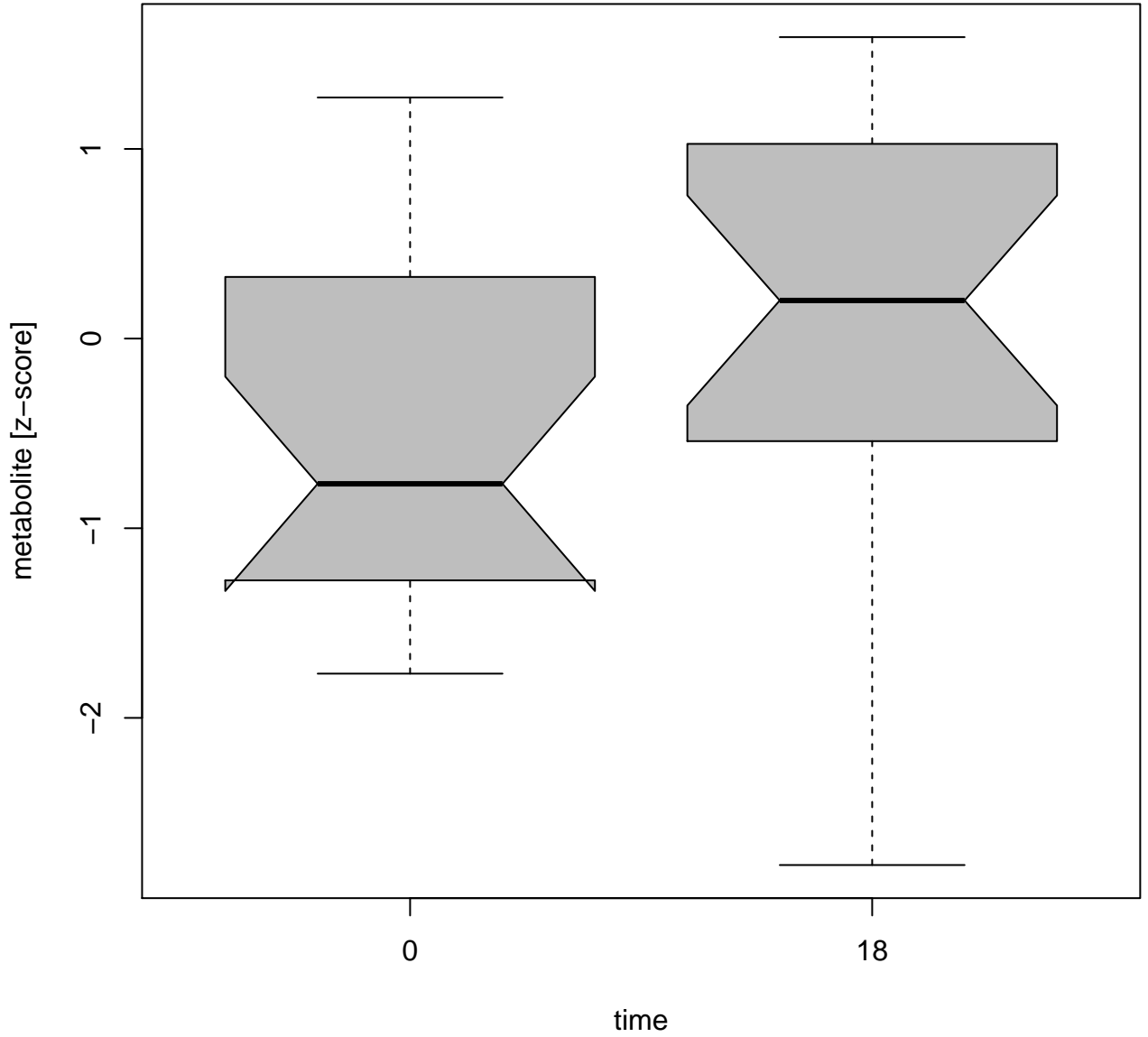
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uridine

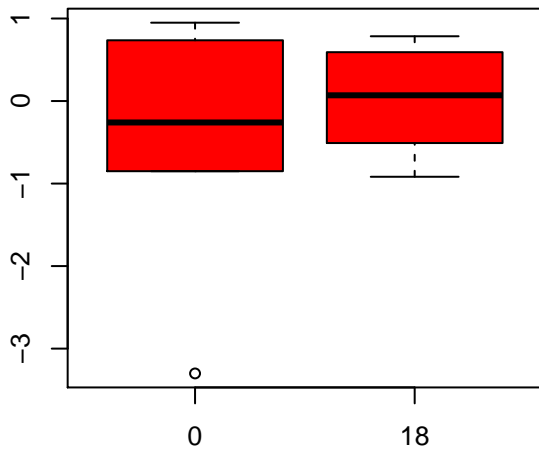


SKOV3

uridine

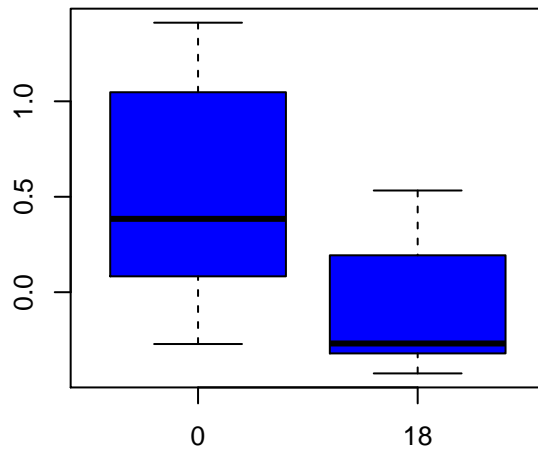


uridine 5'-diphosphate (UDP)



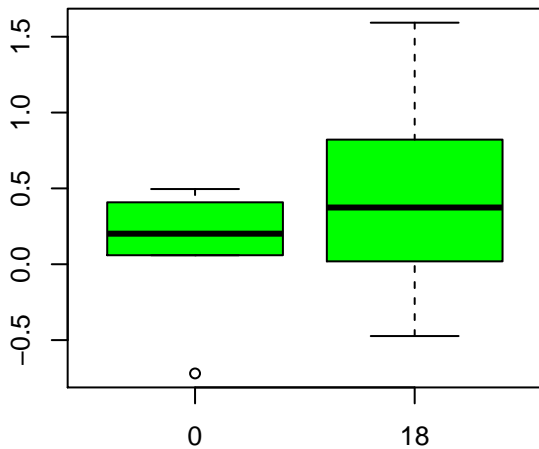
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uridine 5'-diphosphate (UDP)



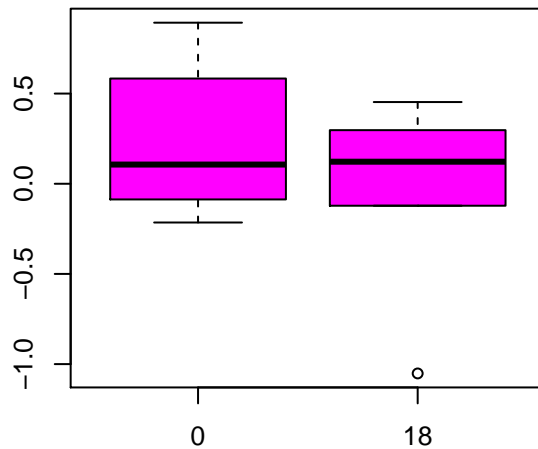
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uridine 5'-diphosphate (UDP)



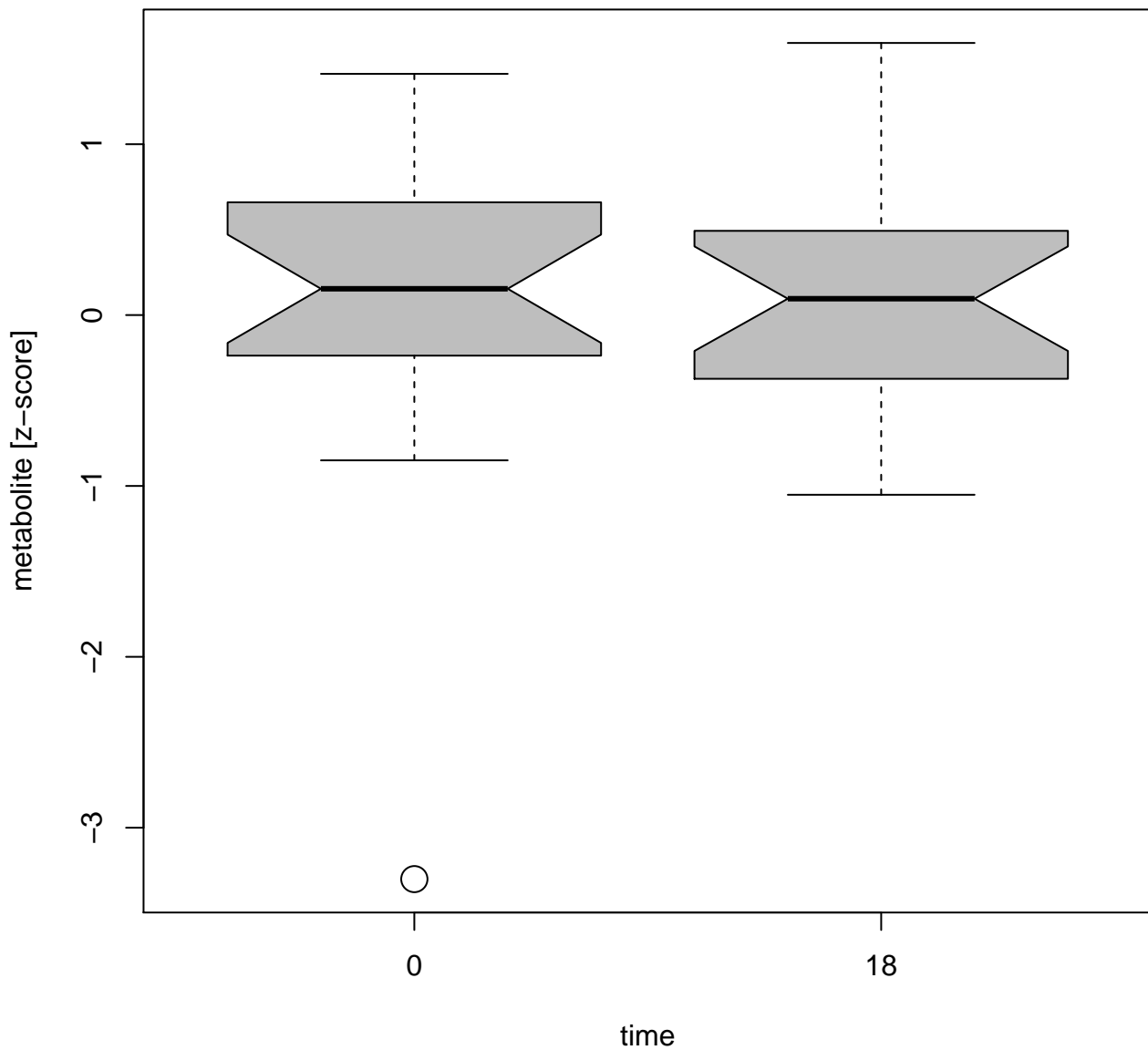
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uridine 5'-diphosphate (UDP)

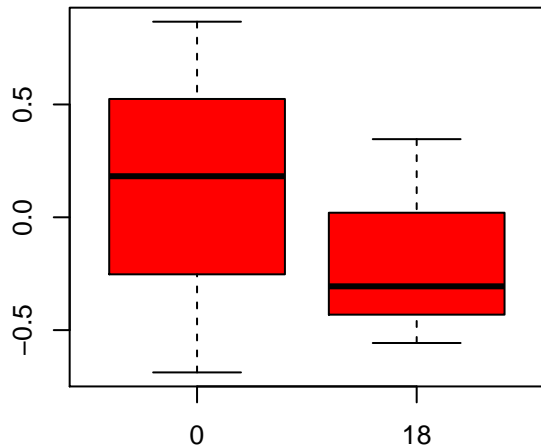


SKOV3

uridine 5'-diphosphate (UDP)

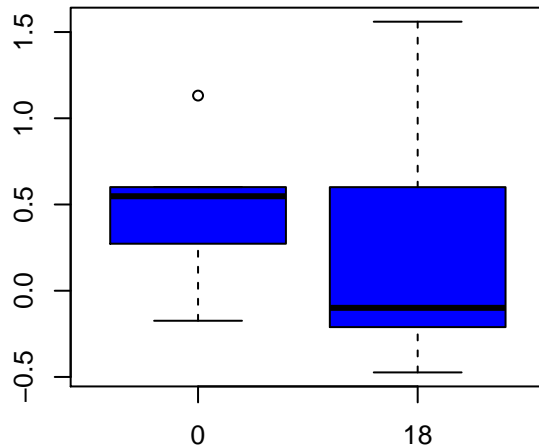


uridine 5'-triphosphate (UTP)



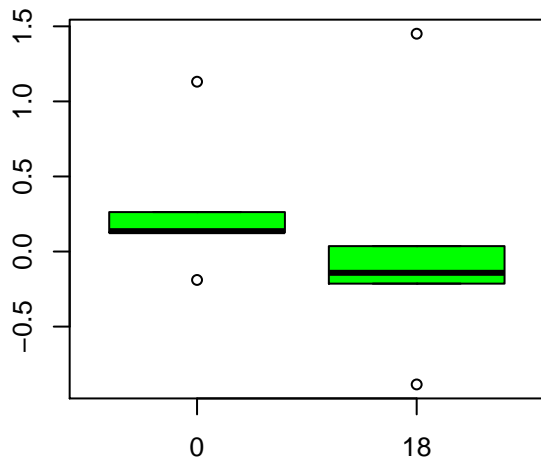
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uridine 5'-triphosphate (UTP)



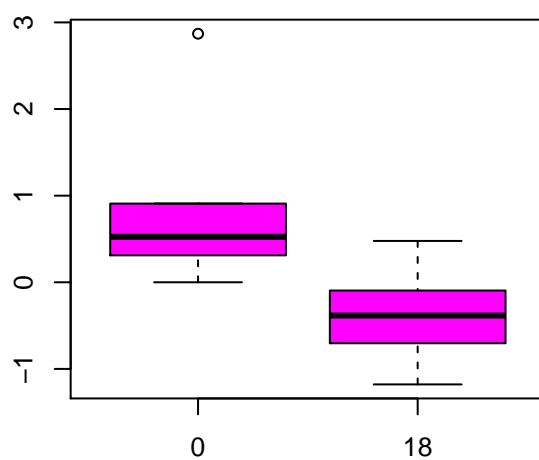
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uridine 5'-triphosphate (UTP)



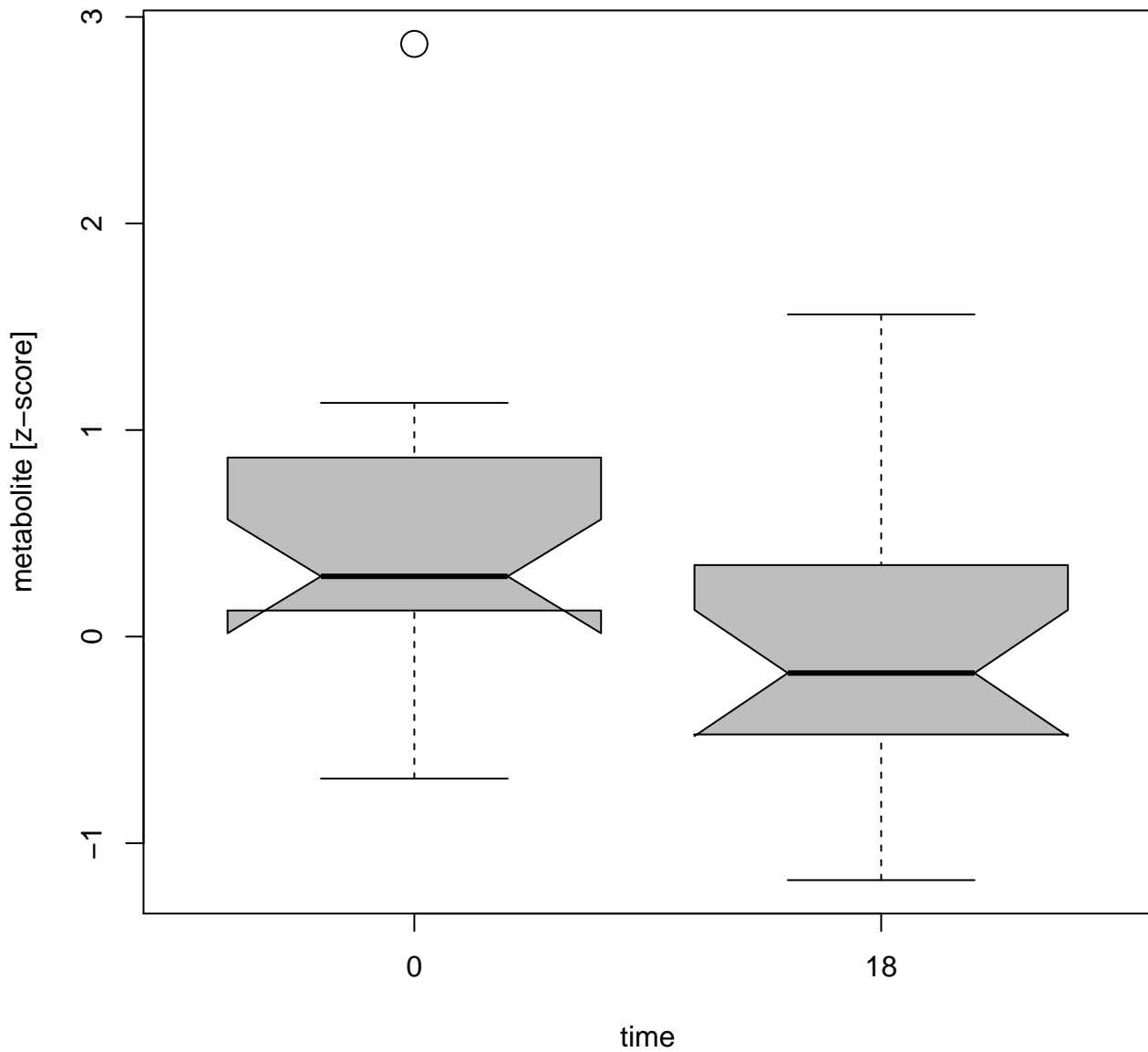
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uridine 5'-triphosphate (UTP)

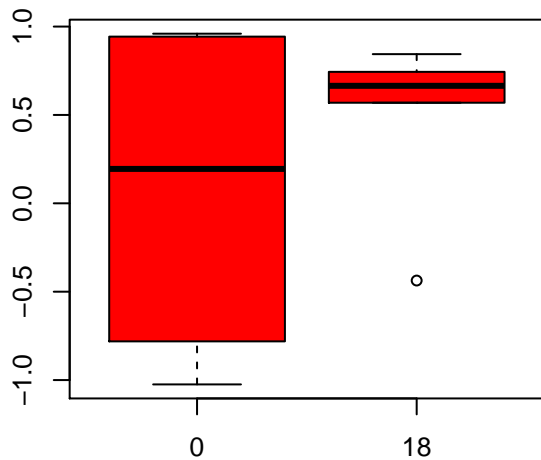


SKOV3

uridine 5'-triphosphate (UTP)

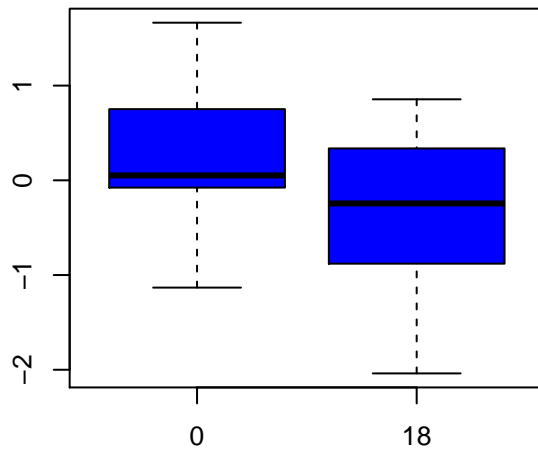


uridine monophosphate (5' or 3')



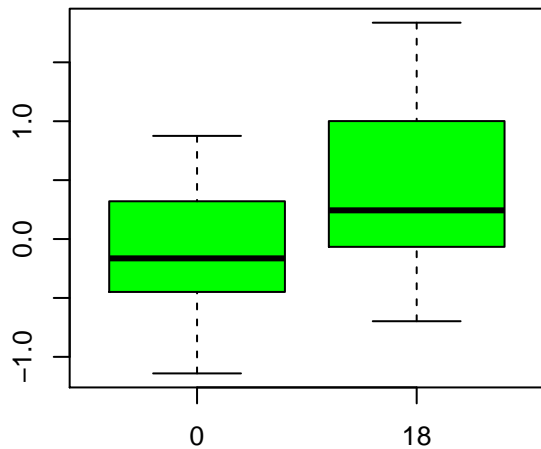
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uridine monophosphate (5' or 3')



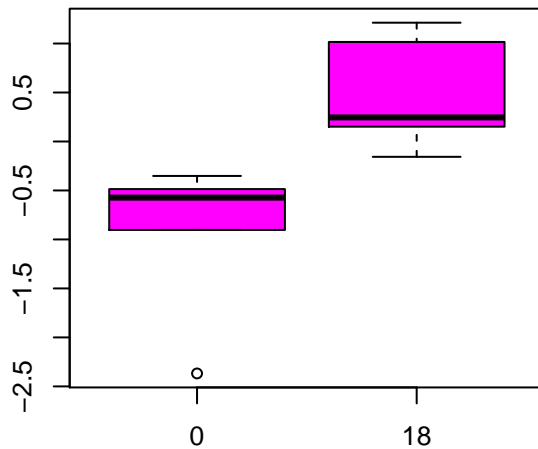
OVCAR

uridine monophosphate (5' or 3')



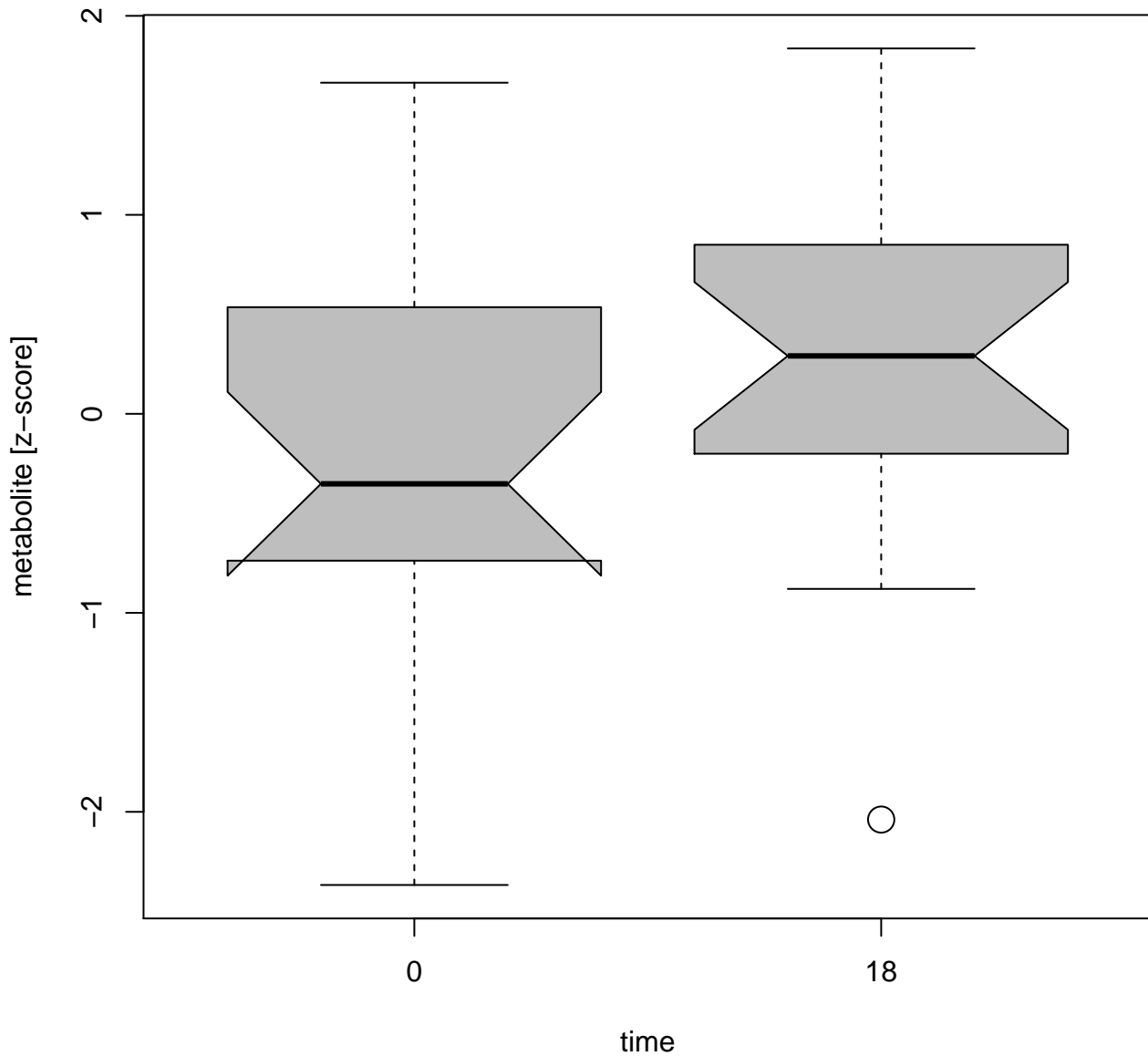
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uridine monophosphate (5' or 3')

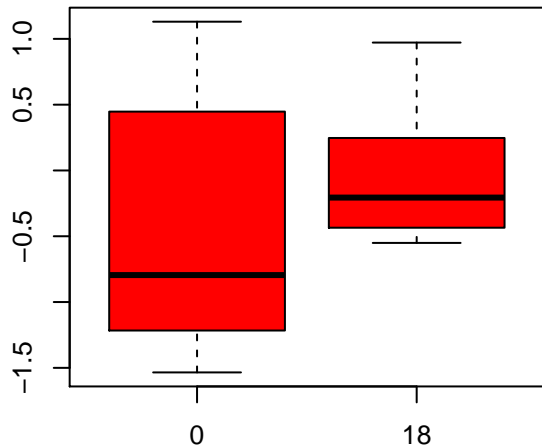


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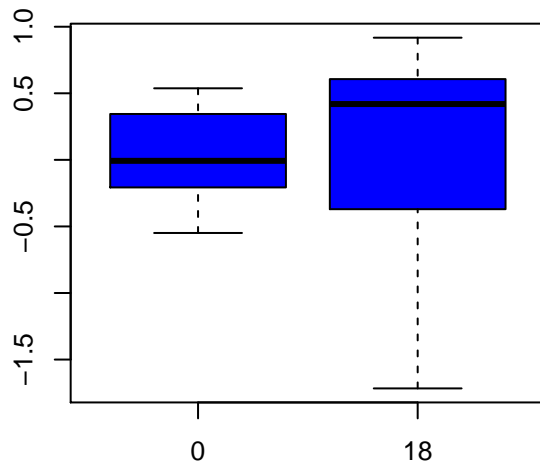
uridine monophosphate (5' or 3')



valine

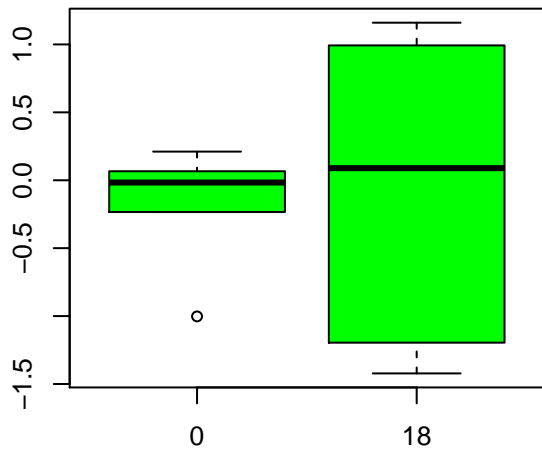


valine



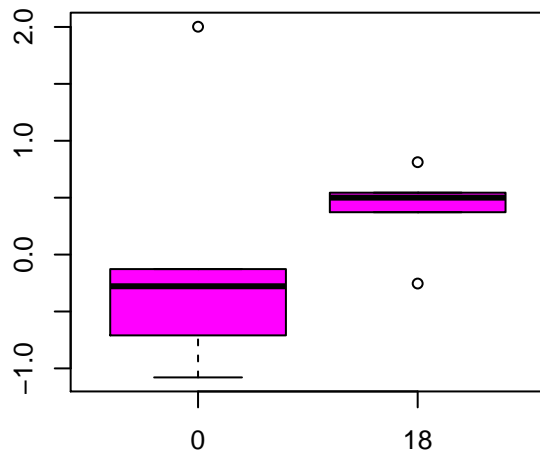
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valine



OVCAR

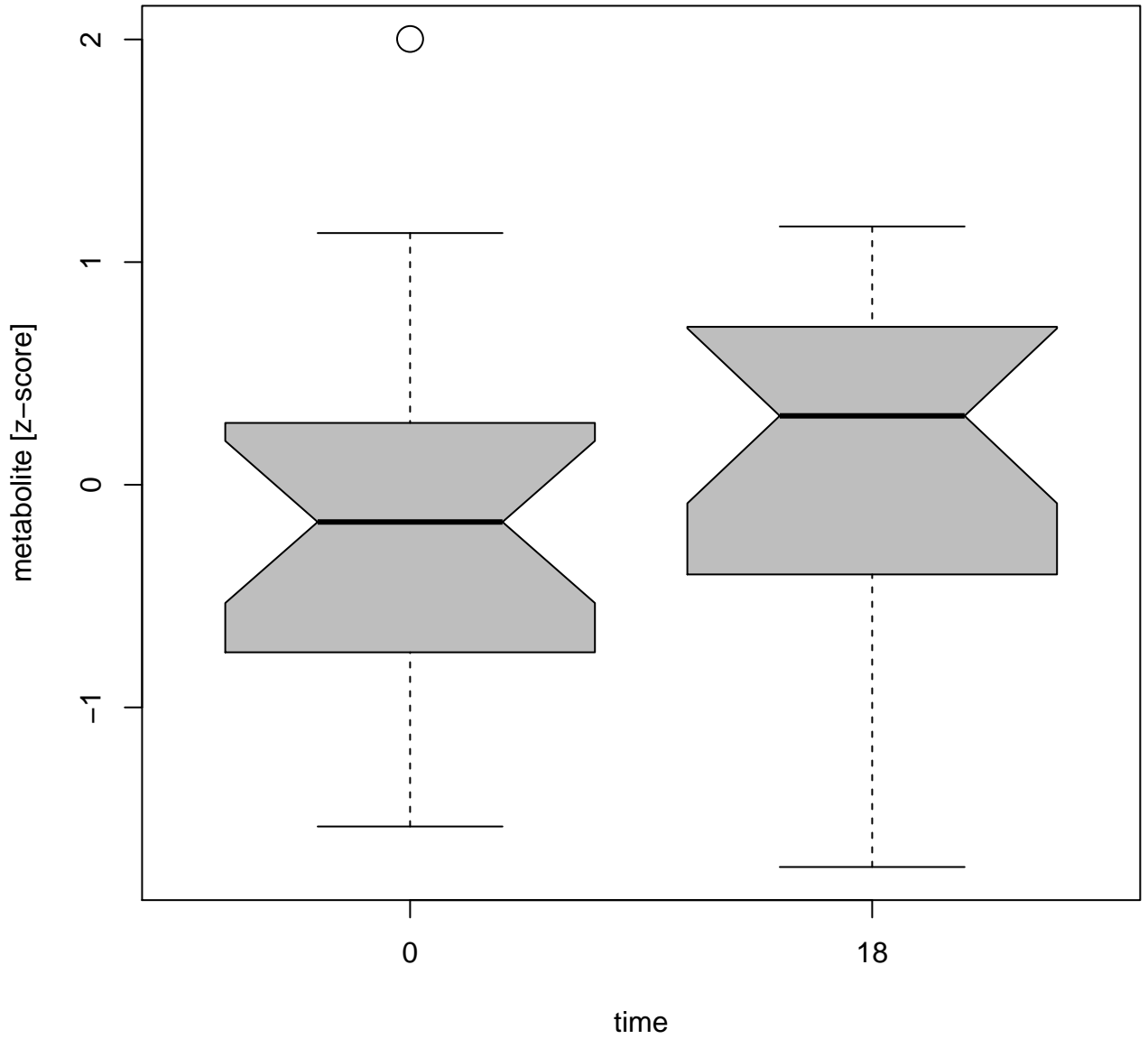
valine



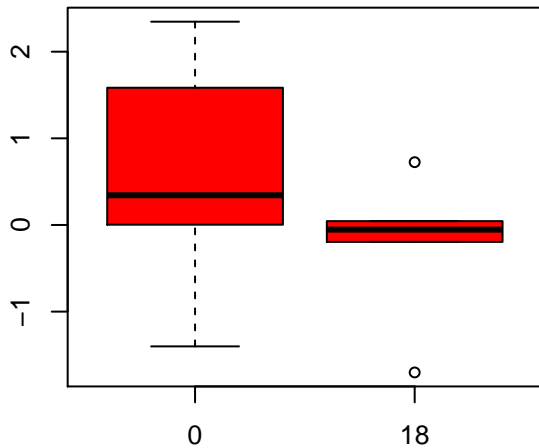
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SKOV3

valine

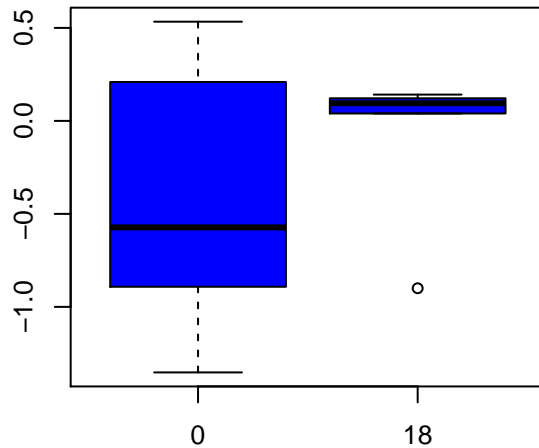


valylaspartate



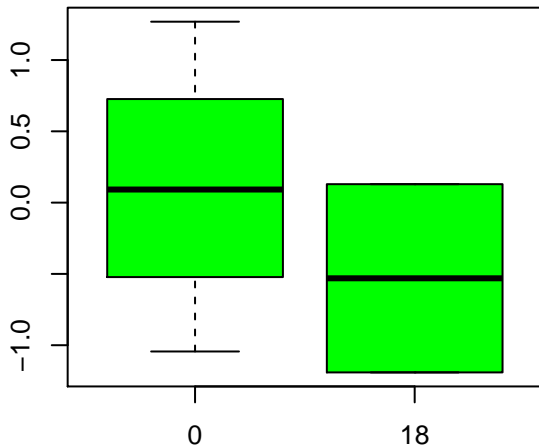
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valylaspartate



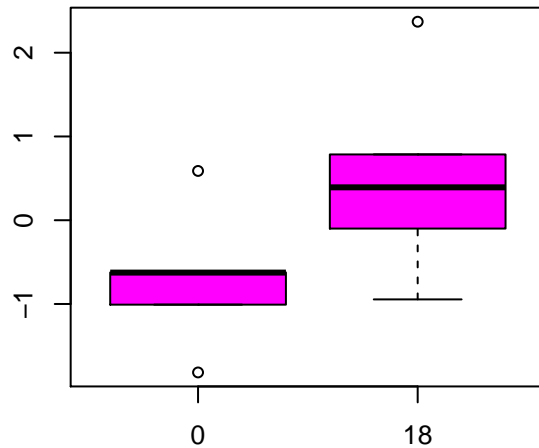
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valylaspartate



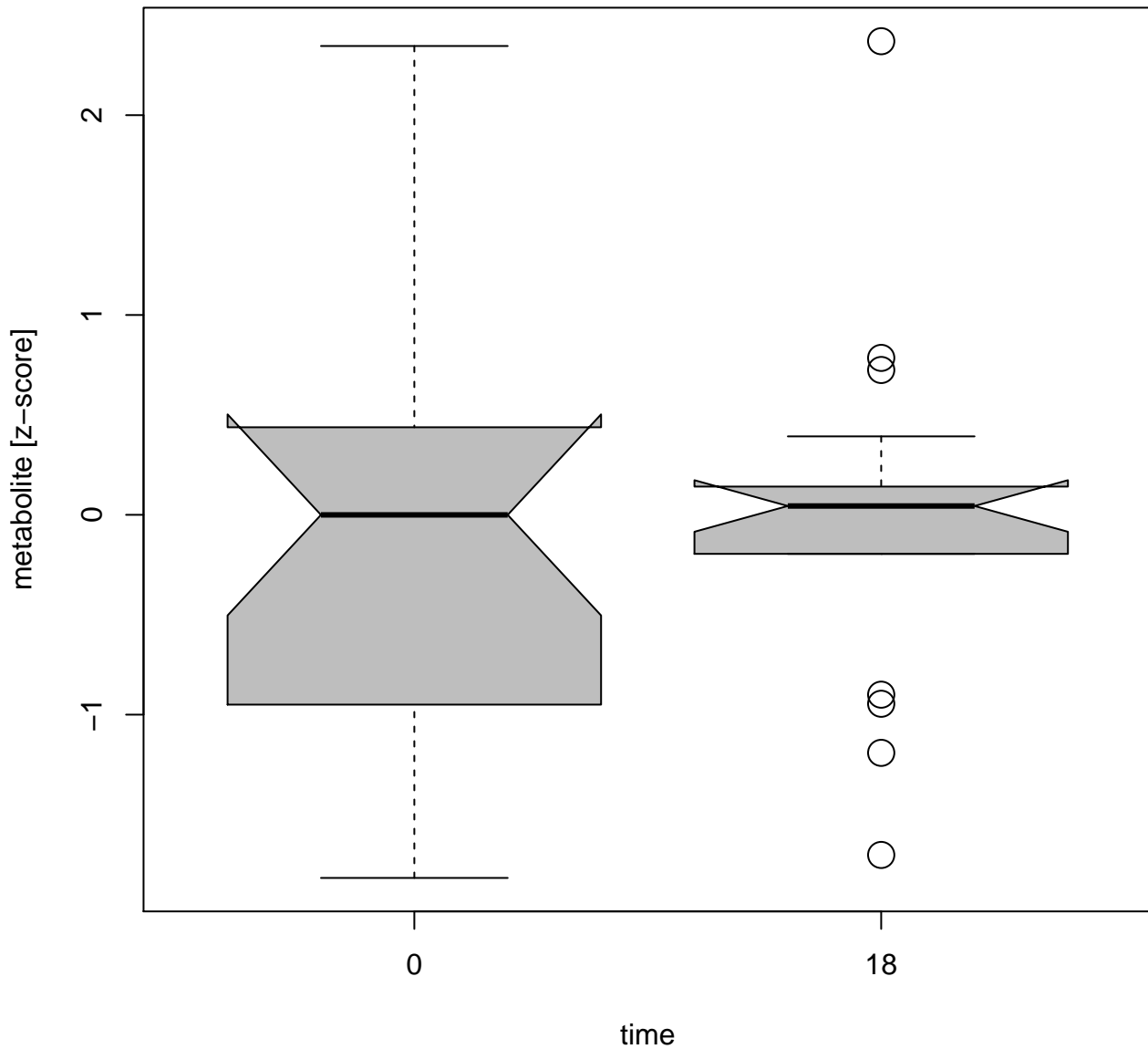
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valylaspartate

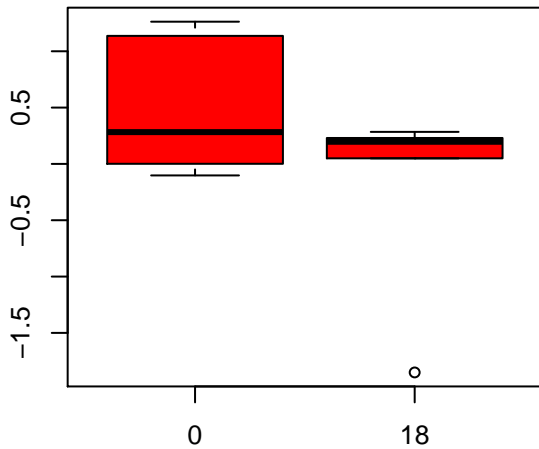


SKOV3

valylaspartate

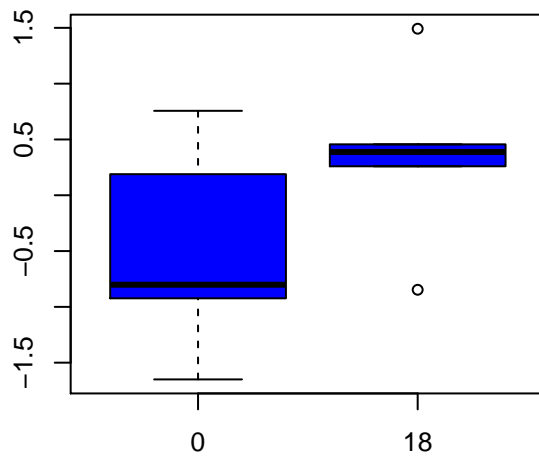


valylleucine



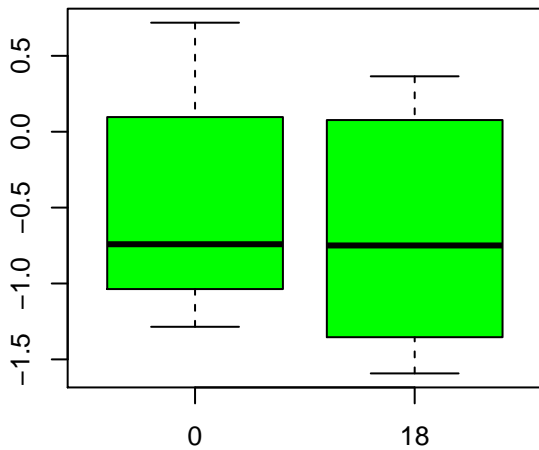
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valylleucine



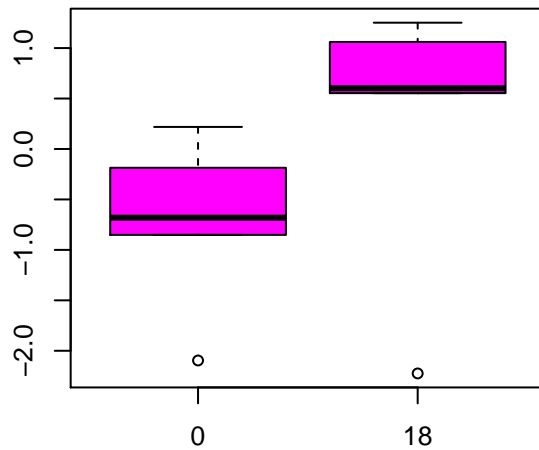
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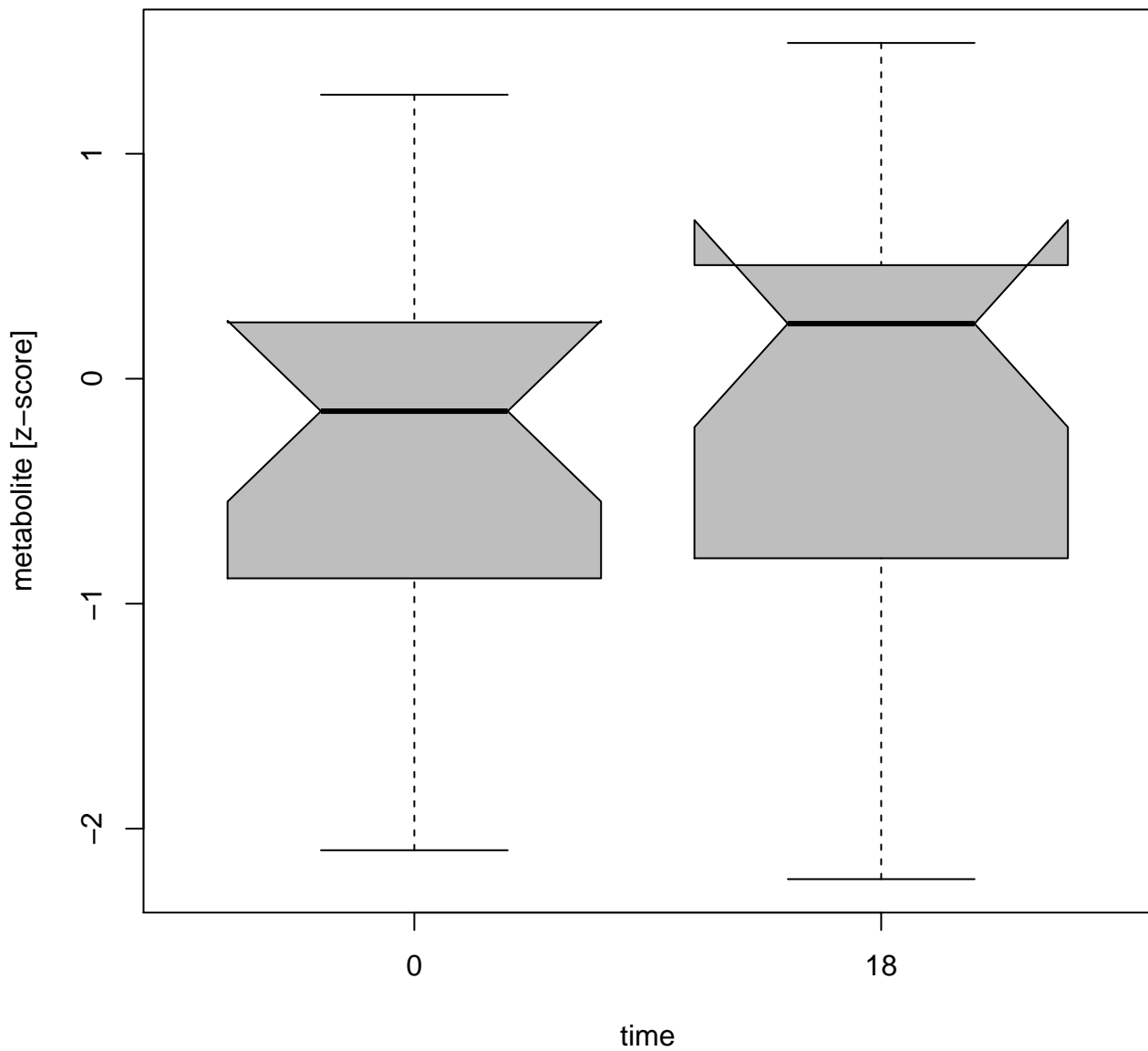
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valylleucine

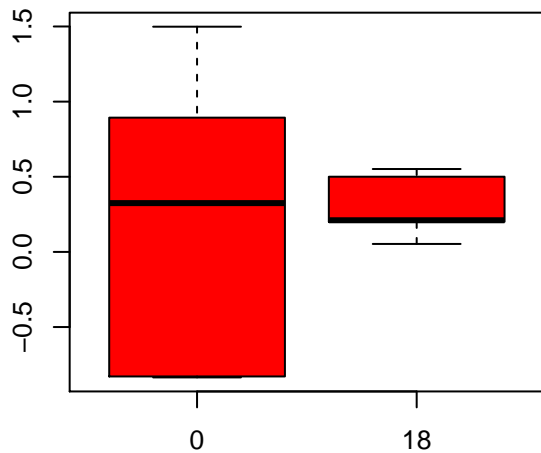


SKOV3

valylleucine

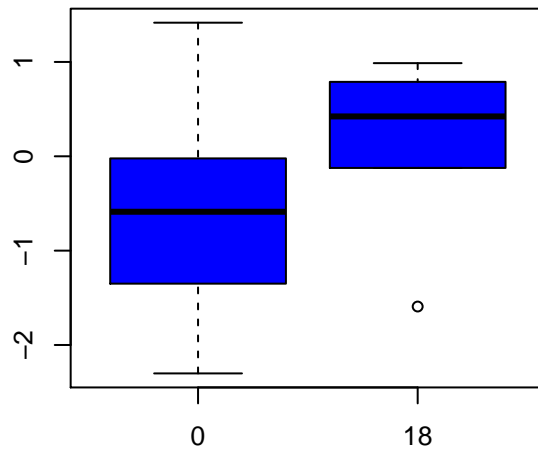


xanthine



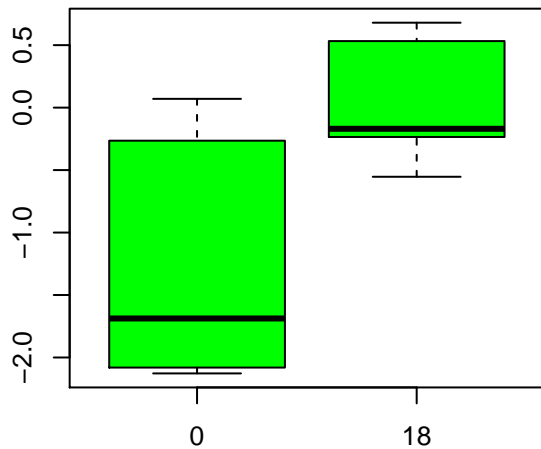
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xanthine



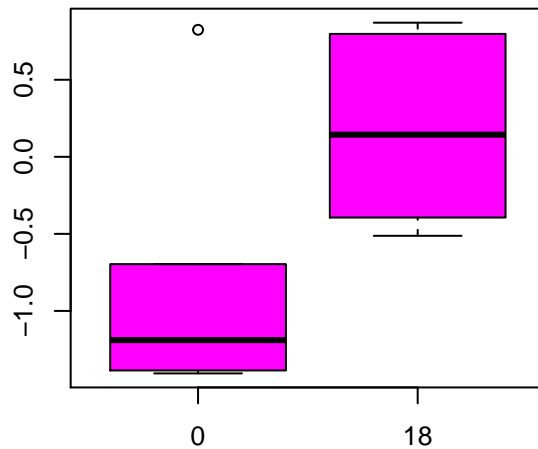
OVCAR

xanthine



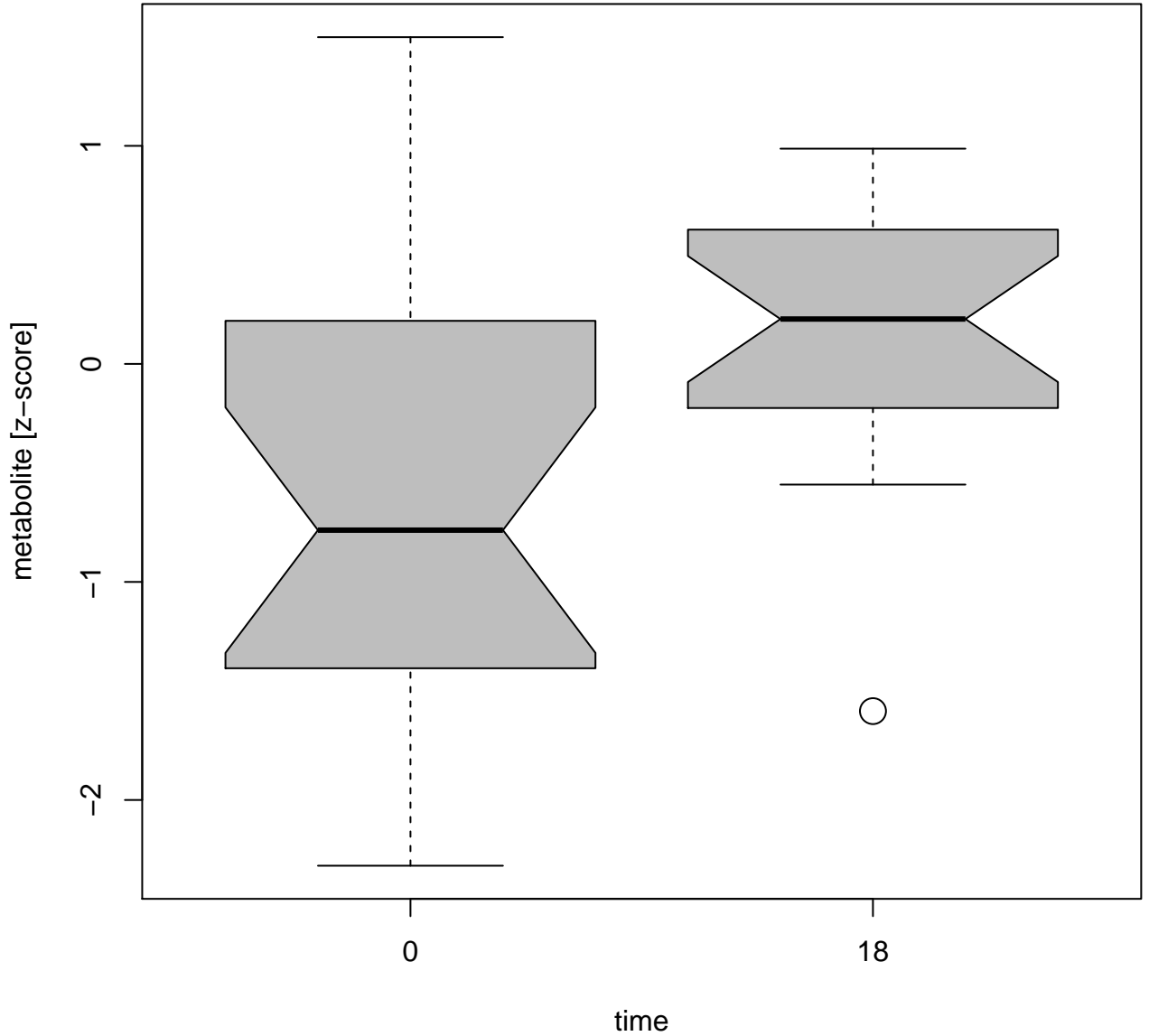
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xanthine

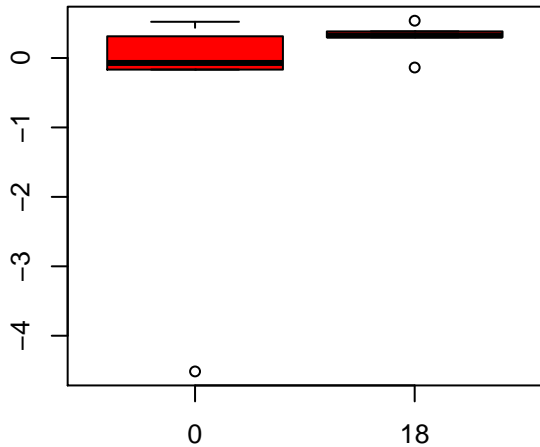


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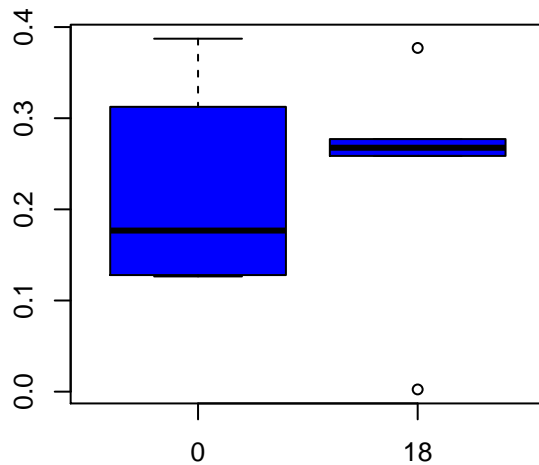
xanthine



X - 11304



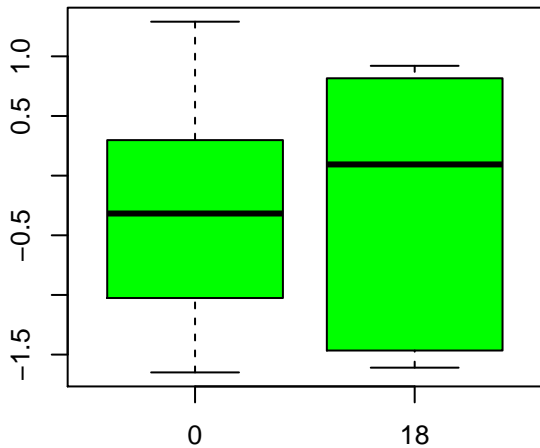
X - 11304



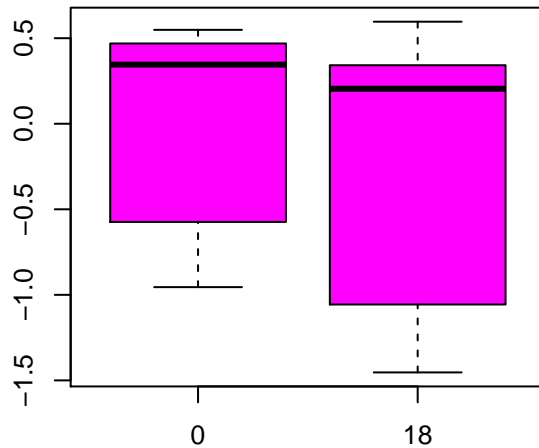
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OVCAR

X - 11304



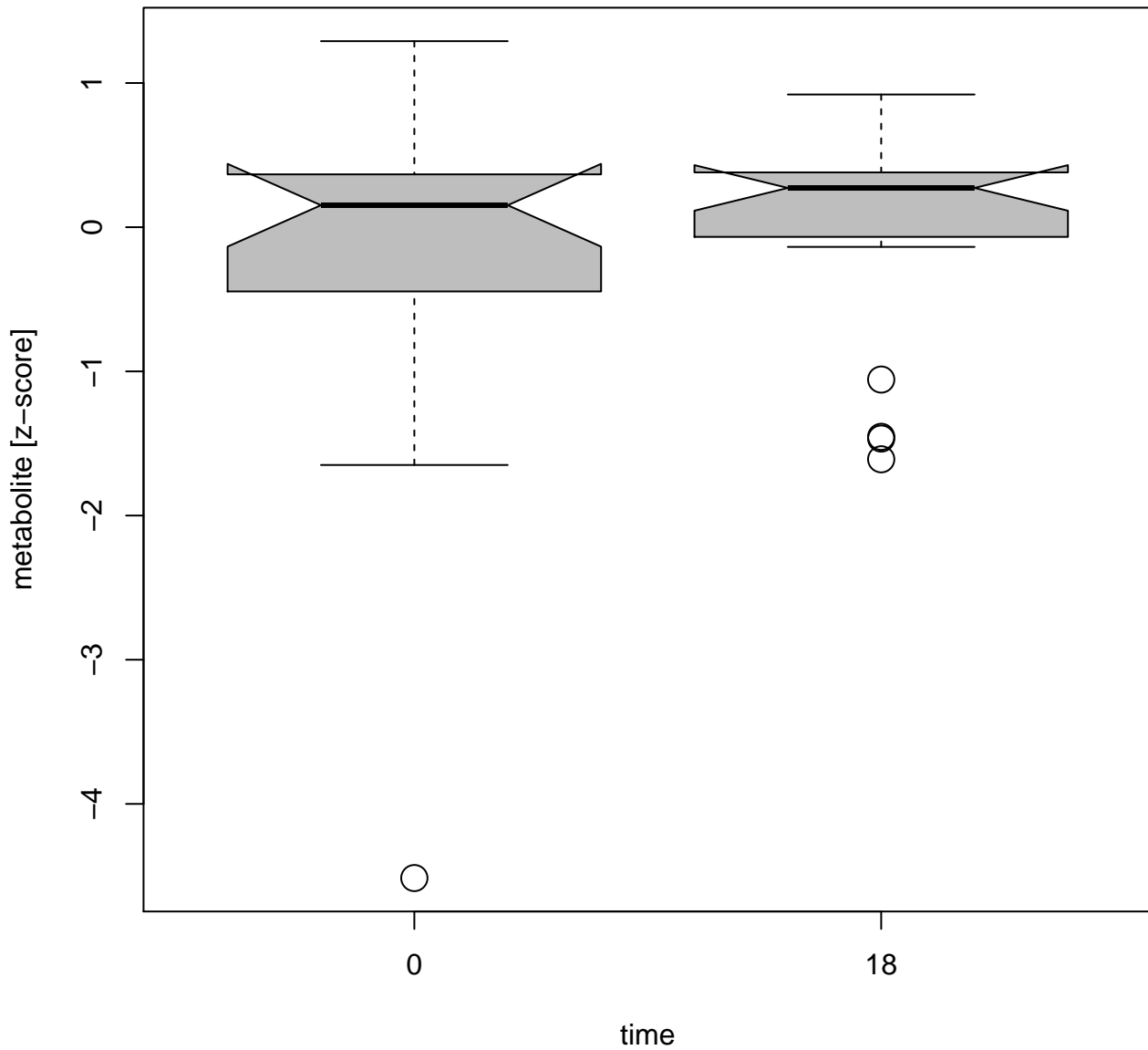
X - 11304



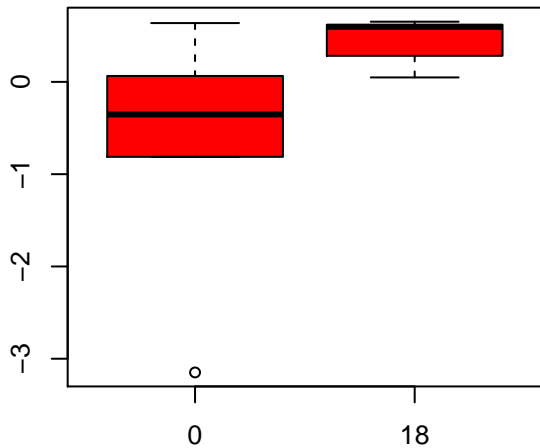
HCT15

SKOV3

X - 11304

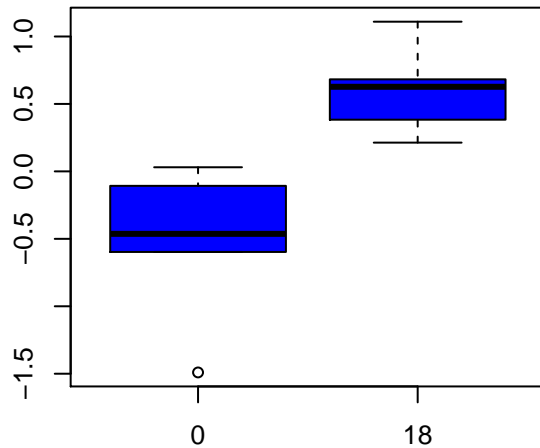


X - 11583



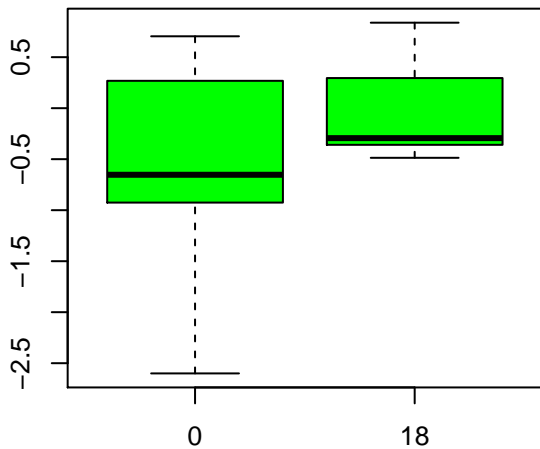
HCT116

X - 11583



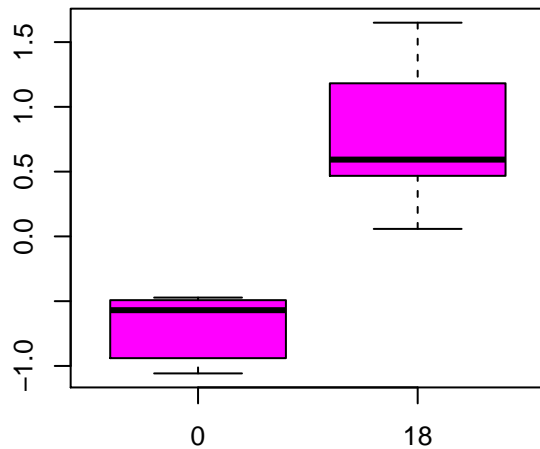
OVCAR

X - 11583



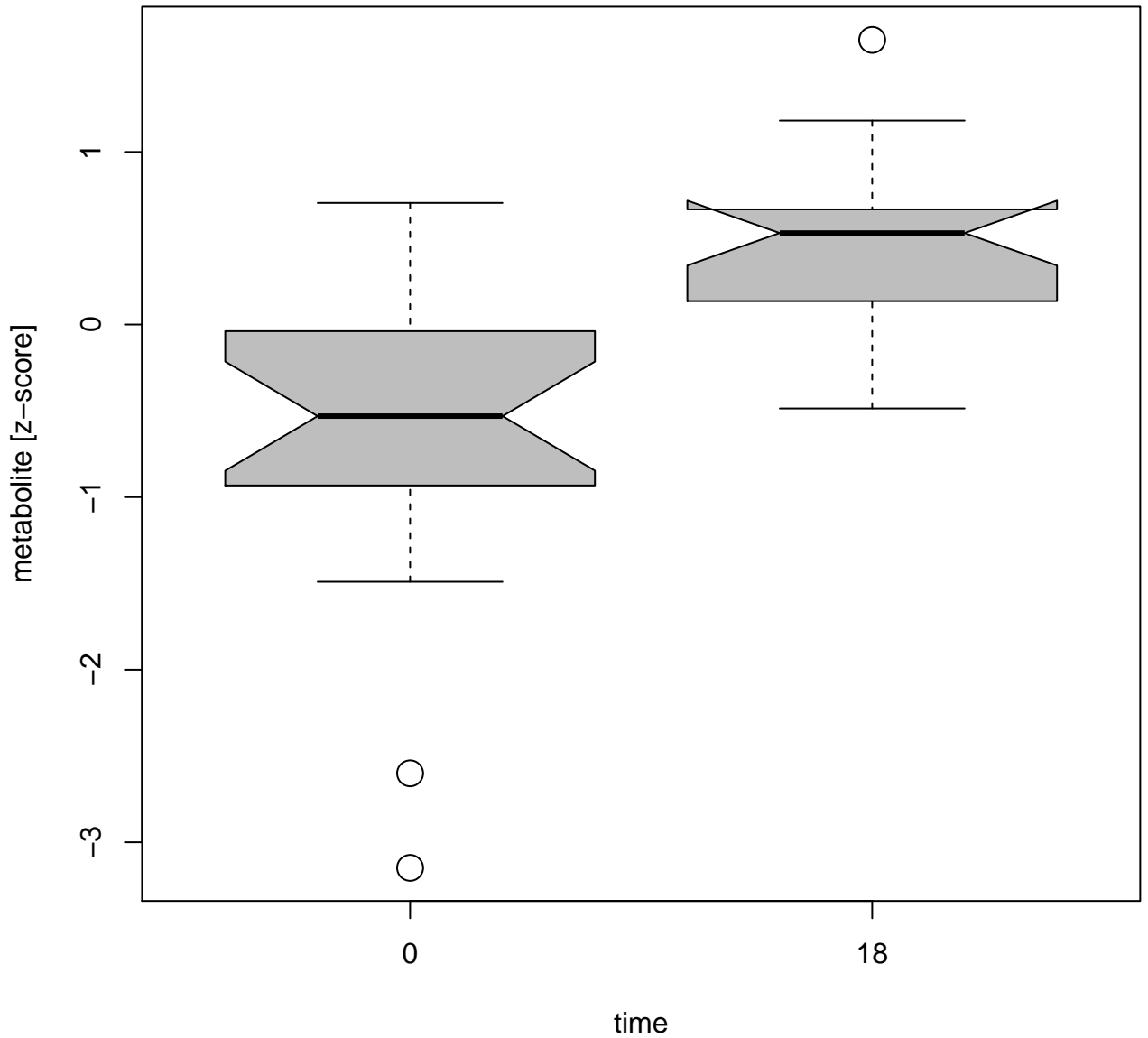
HCT15

X - 11583

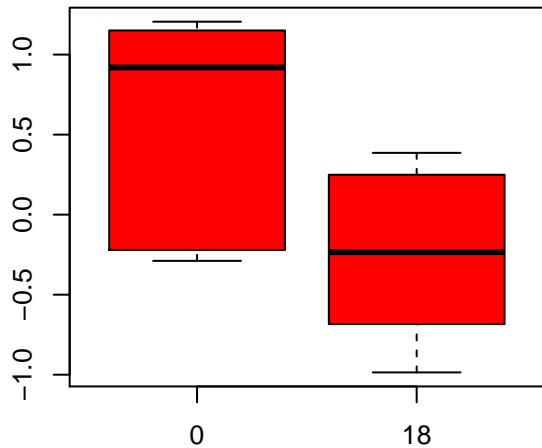


SKOV3

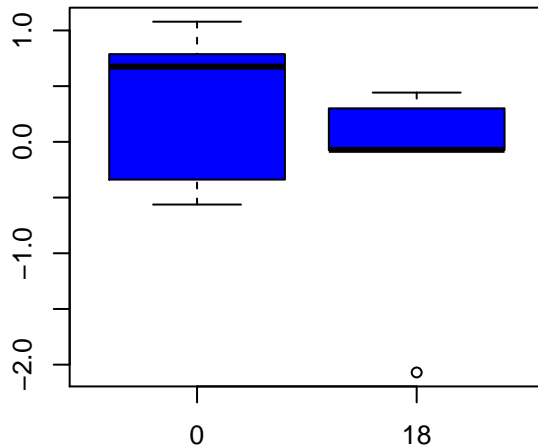
X - 11583



X - 11677



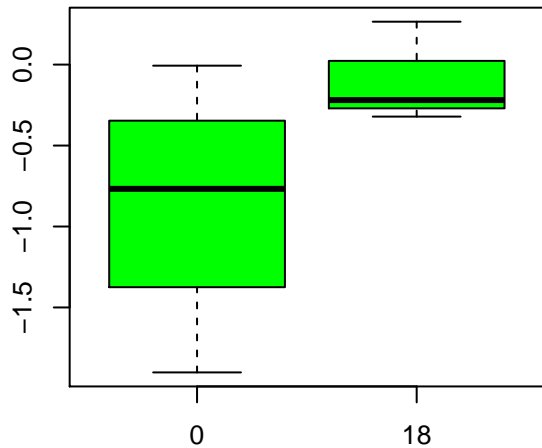
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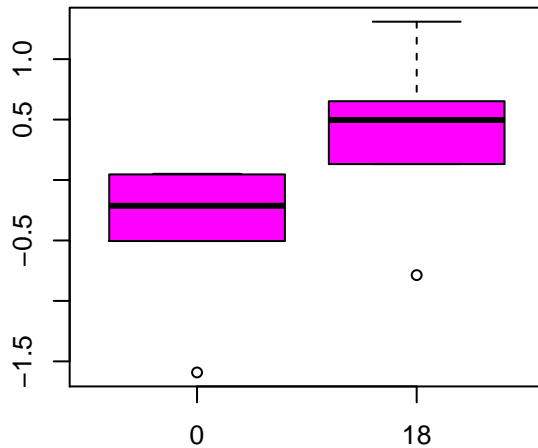
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OVCAR

X - 11677



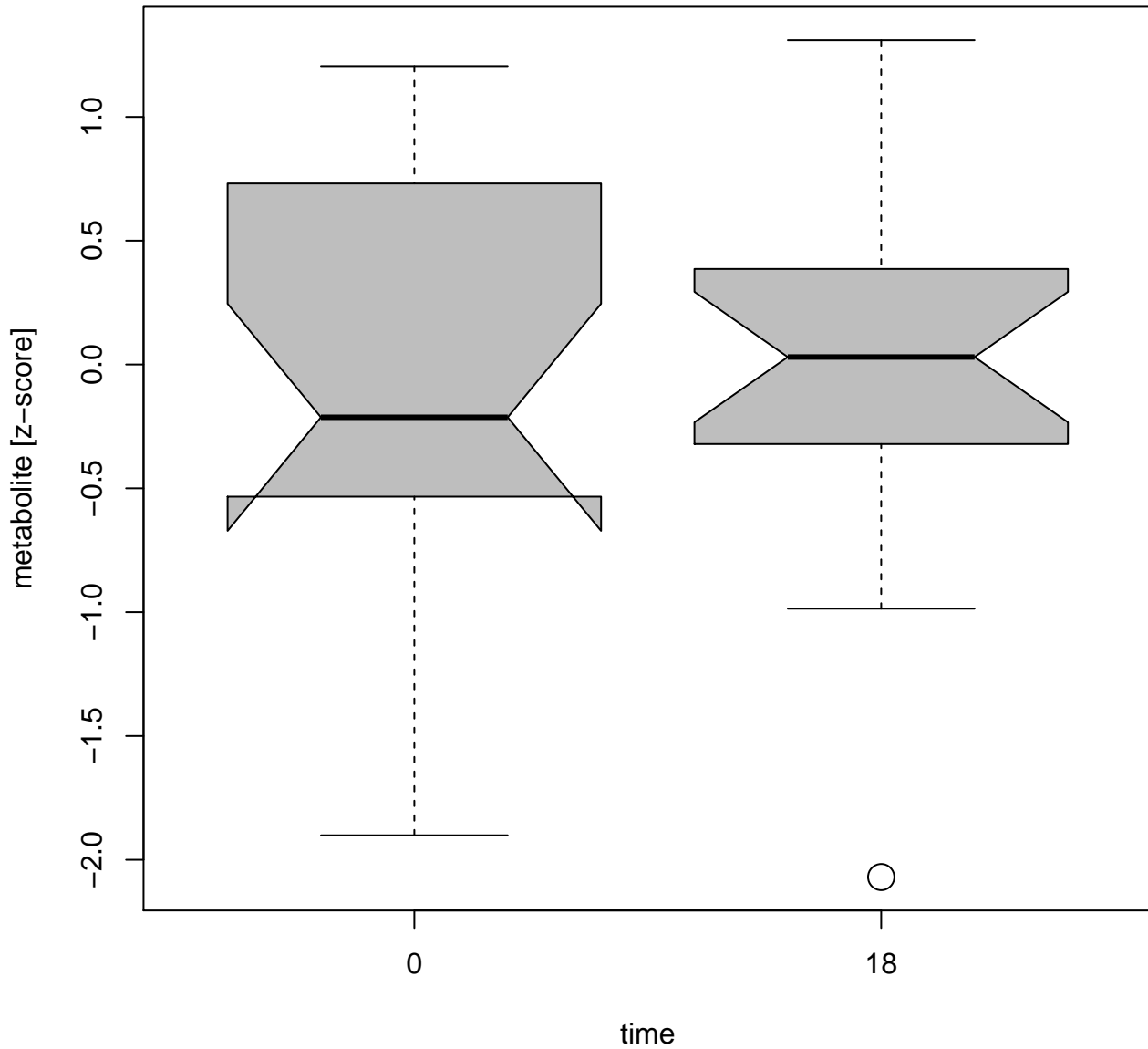
X - 11677



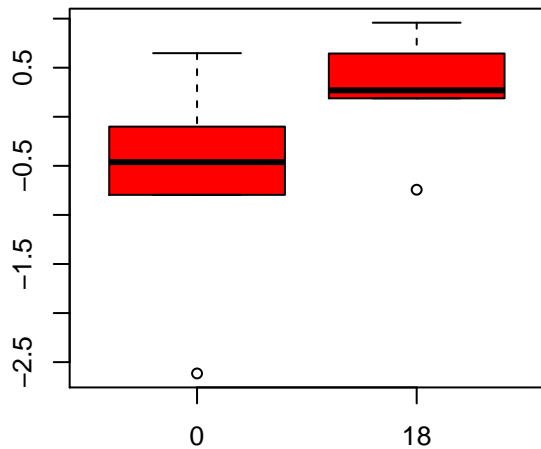
HCT15

SKOV3

X - 11677

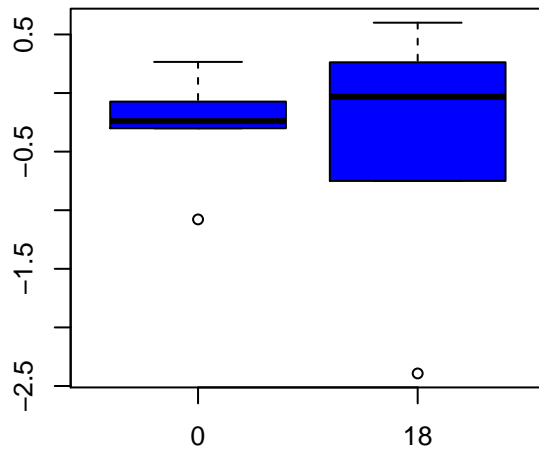


X - 12792



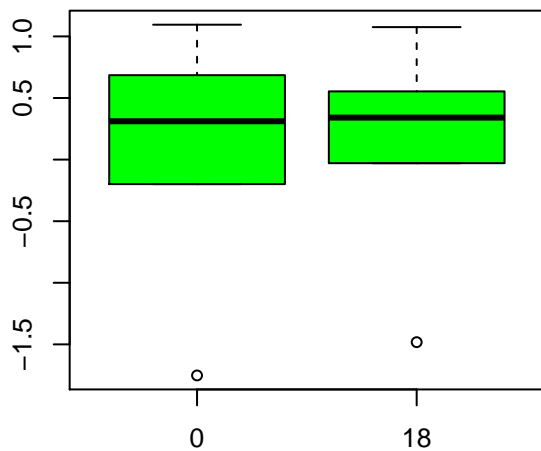
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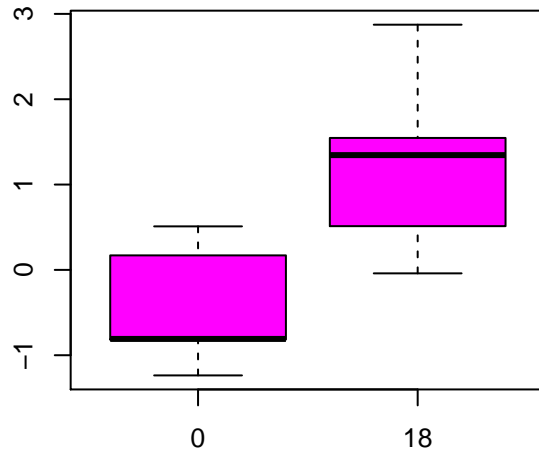
OVCAR

X - 12792



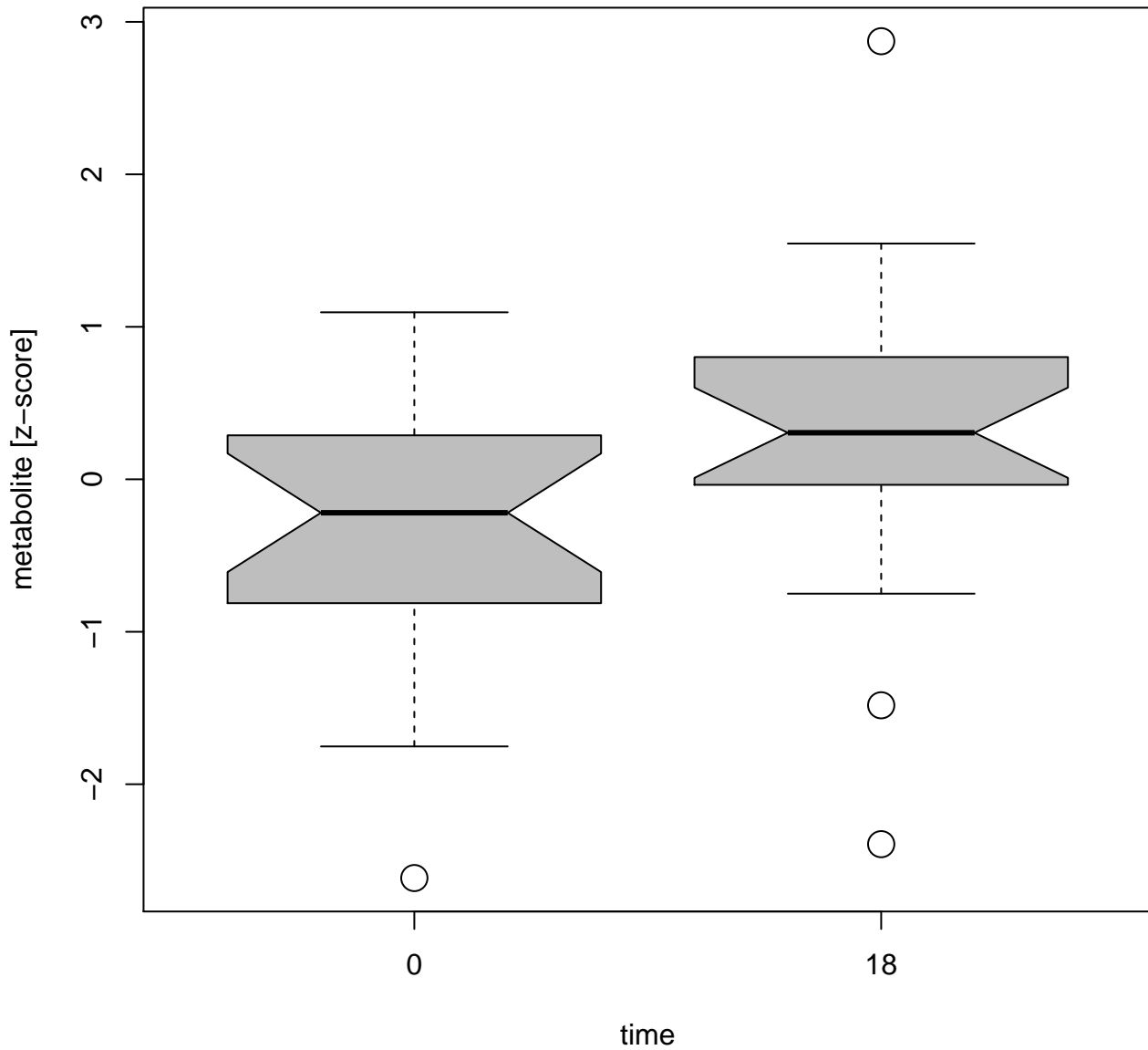
HCT15

X - 12792

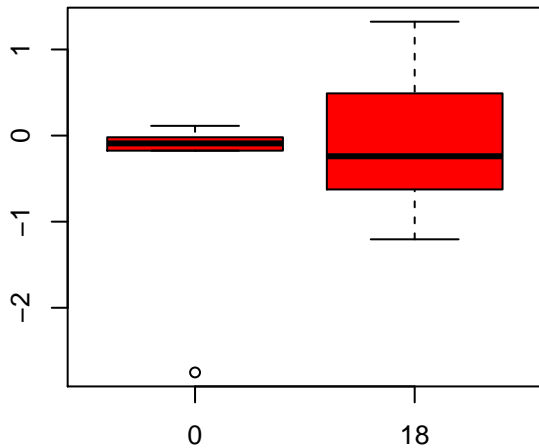


SKOV3

X - 12792

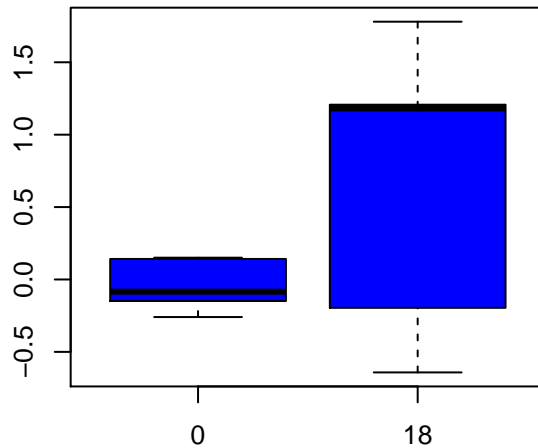


X - 13230



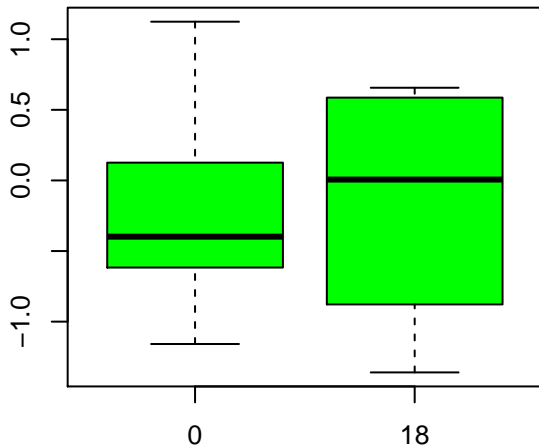
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X - 13230



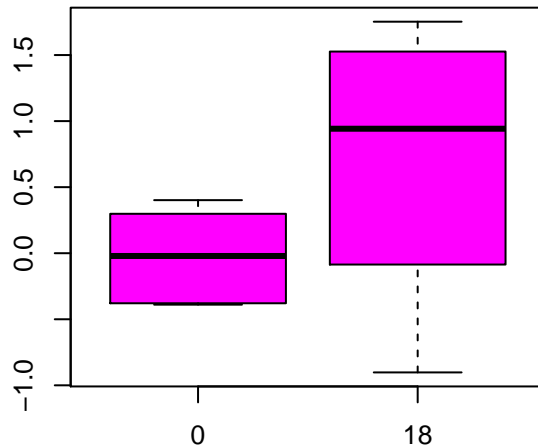
OVCAR

X - 13230



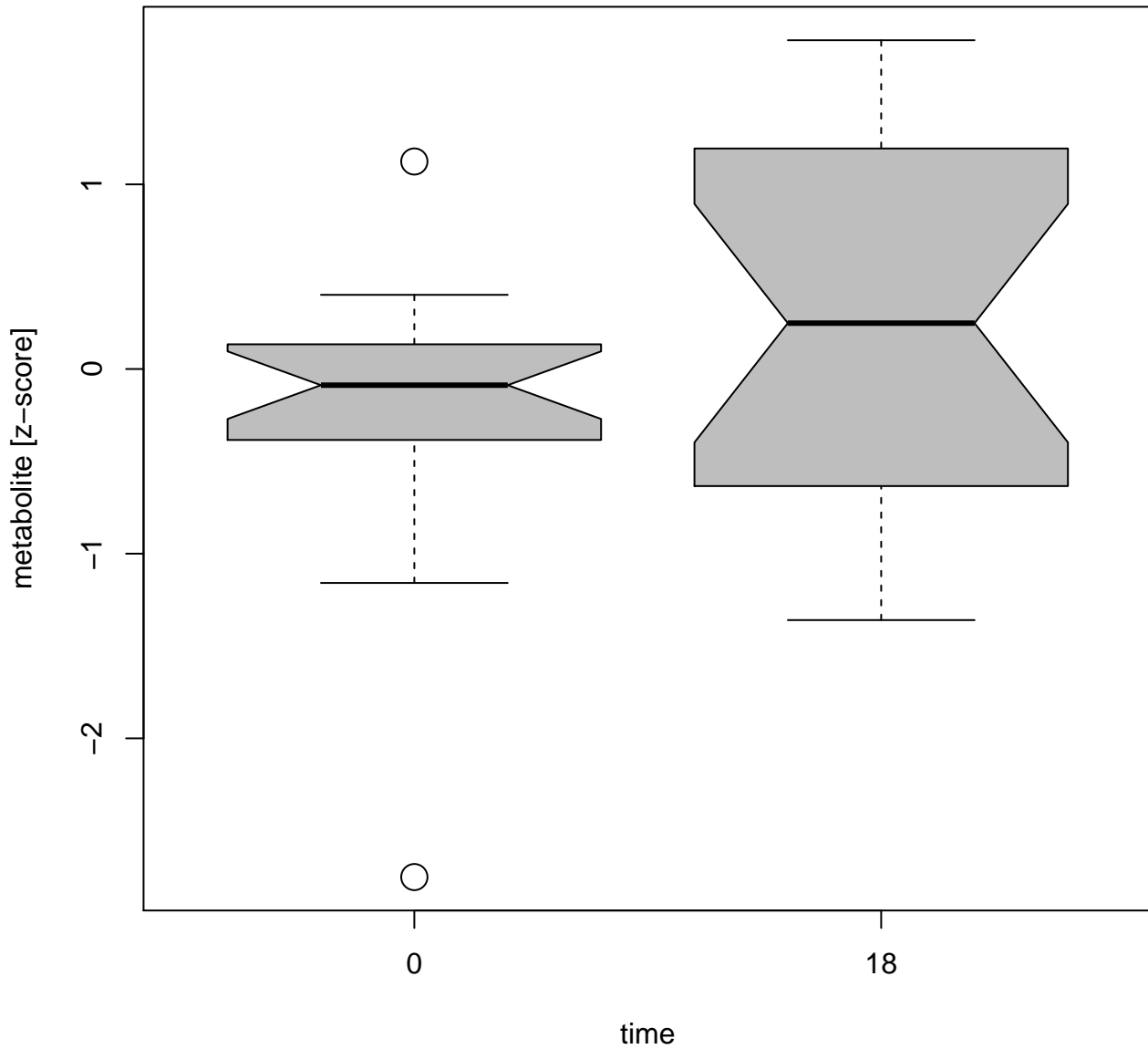
HCT15

X - 13230

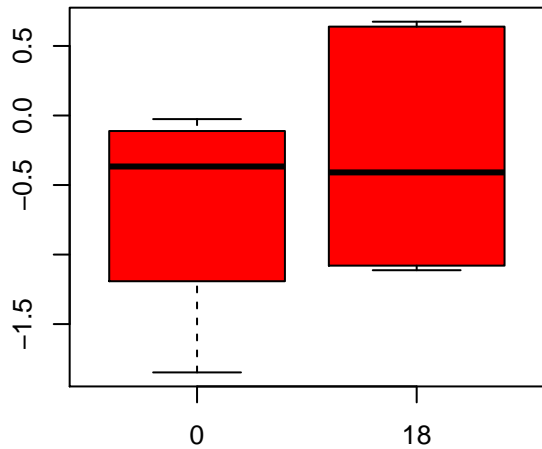


SKOV3

X - 13230

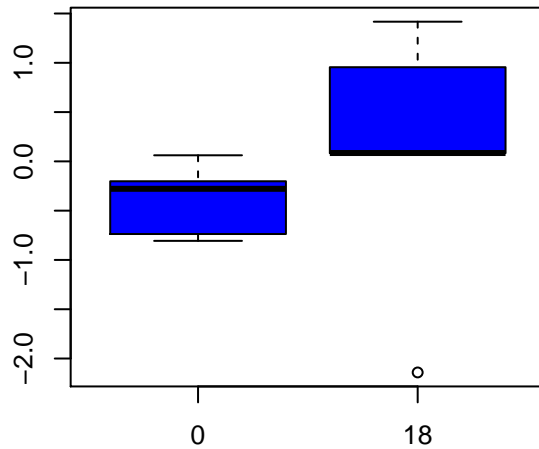


X - 13396



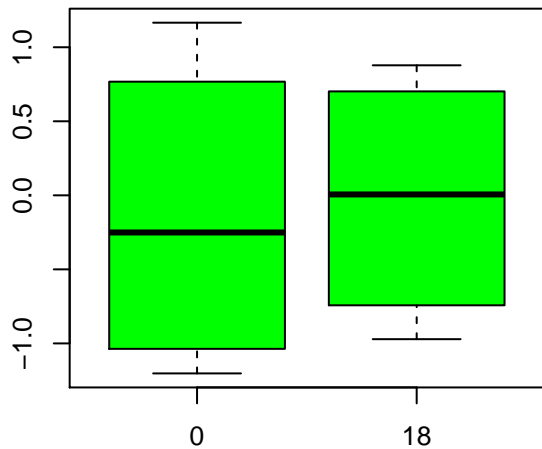
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X - 13396



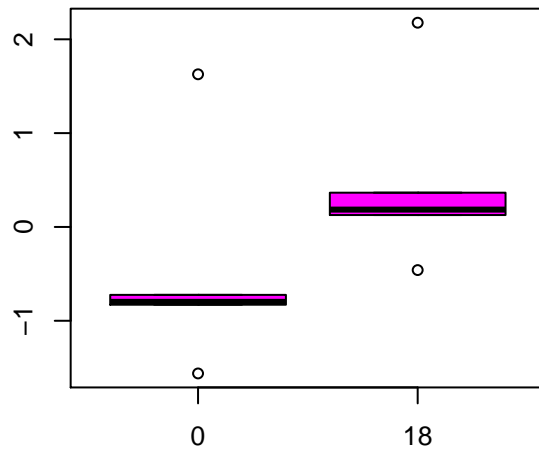
OVCAR

X - 13396



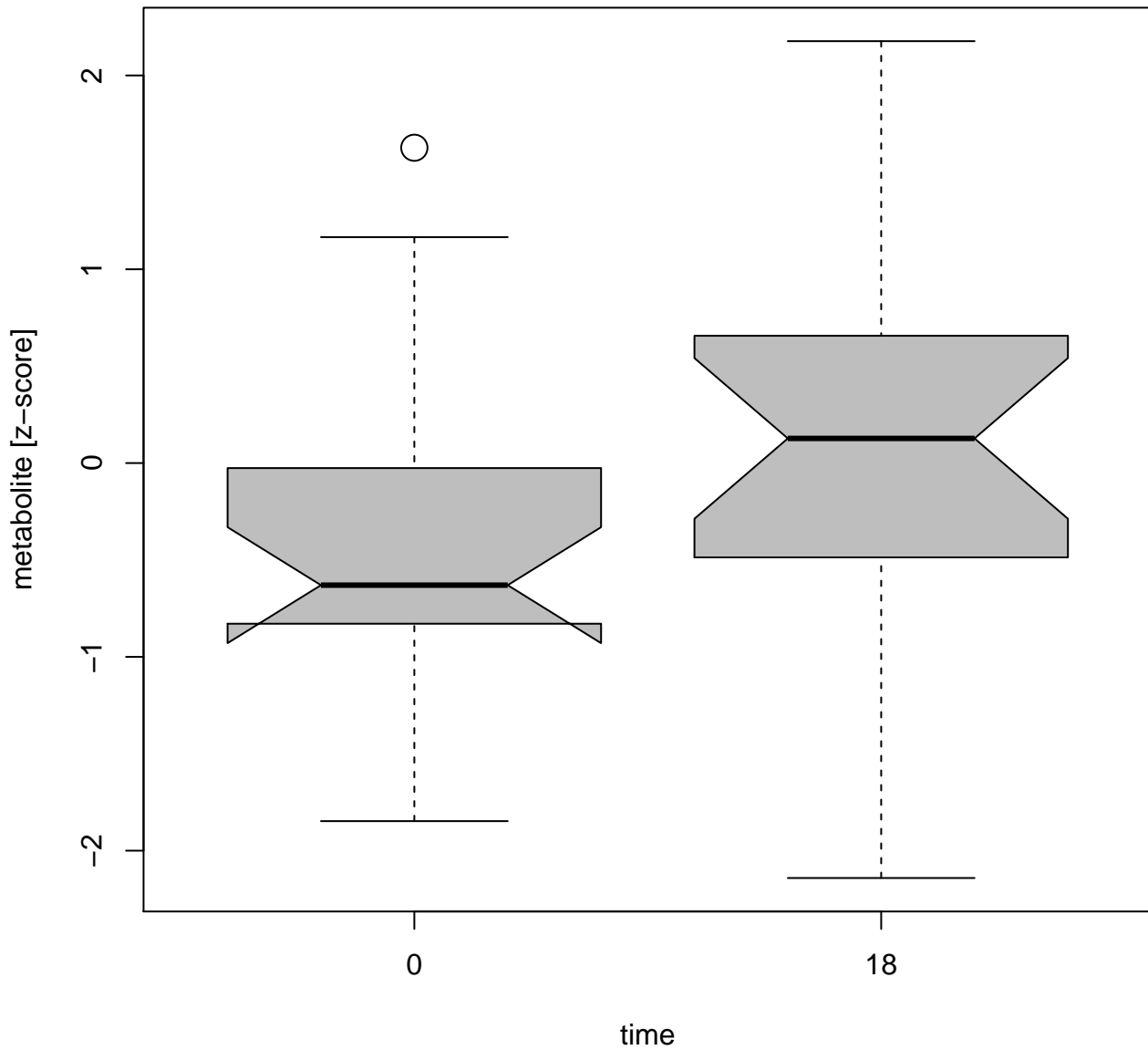
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X - 13396

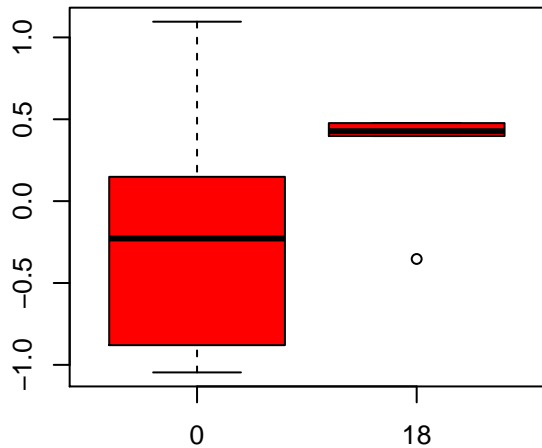


SKOV3

X - 13396

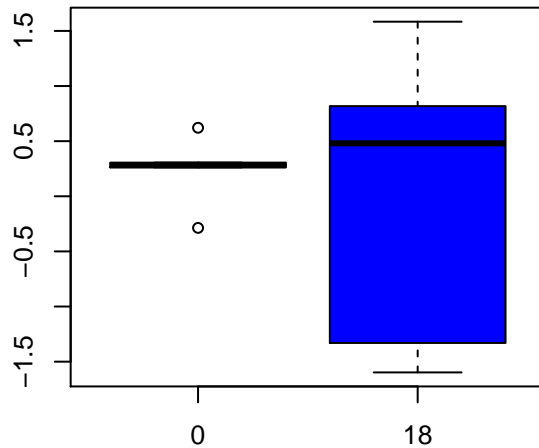


X - 14568



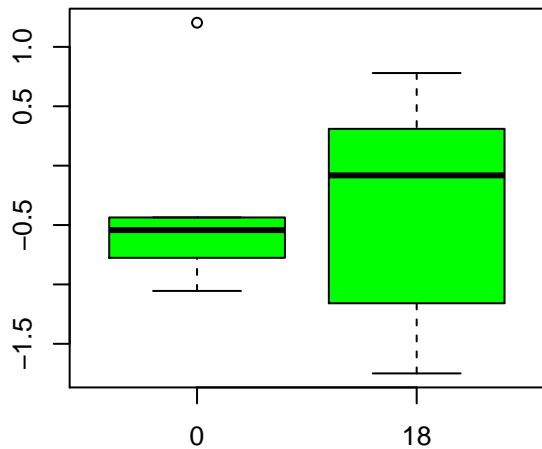
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X - 14568



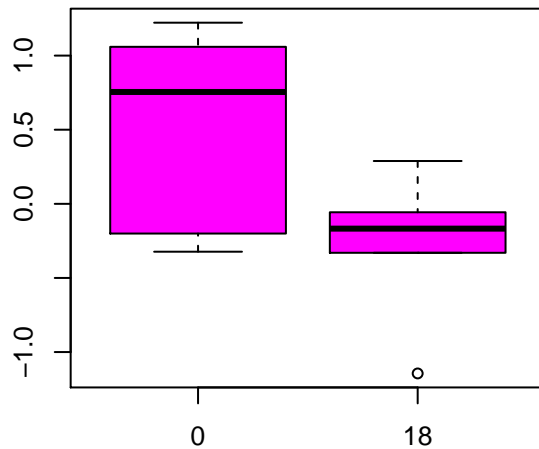
OVCAR

X - 14568



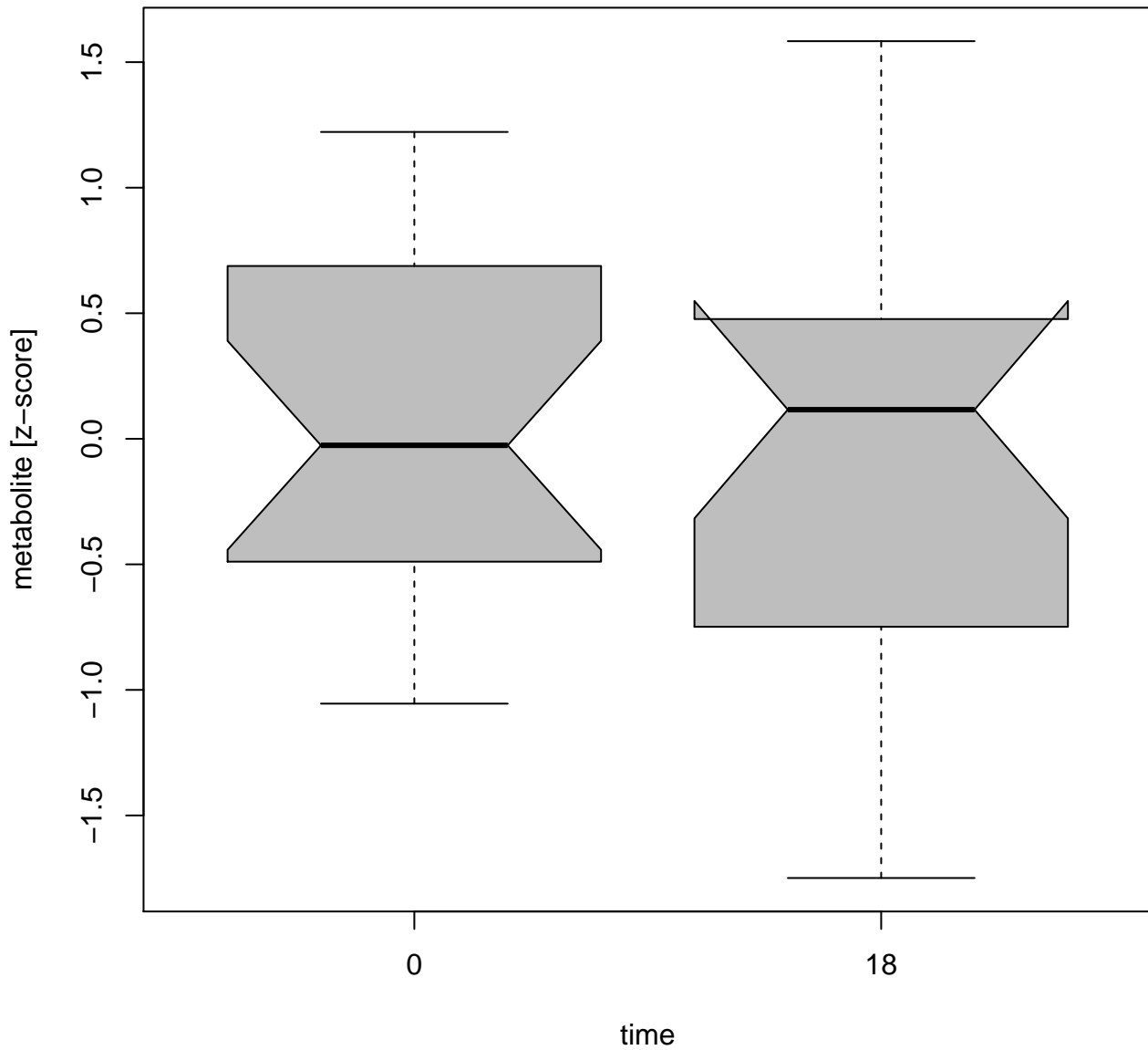
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X - 14568

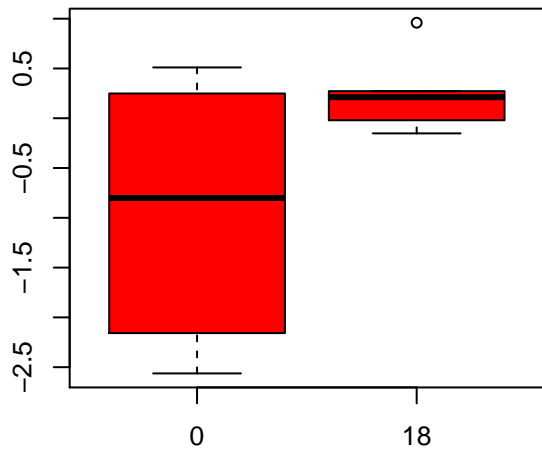


SKOV3

X - 14568

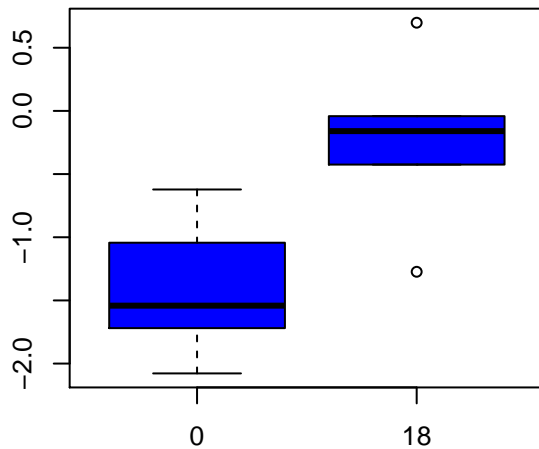


X - 14577



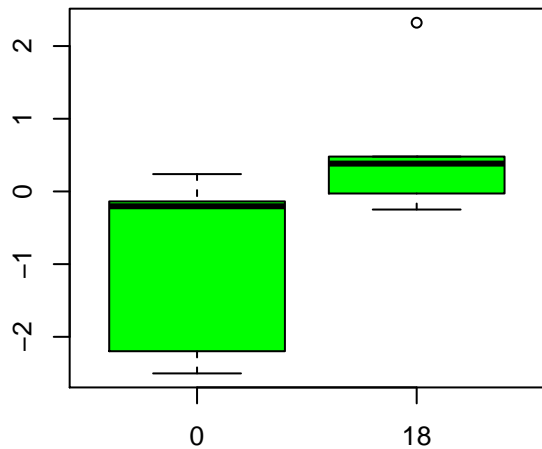
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X - 14577



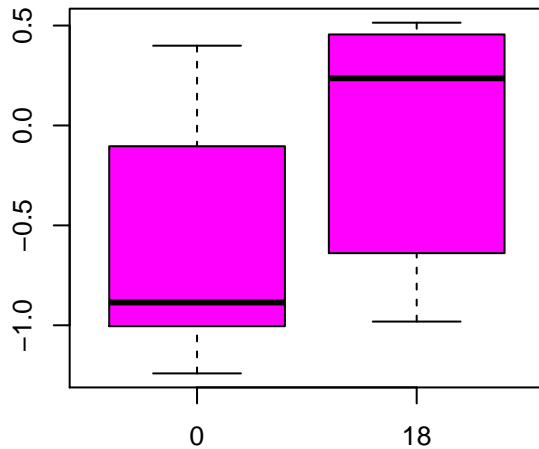
OVCAR

X - 14577



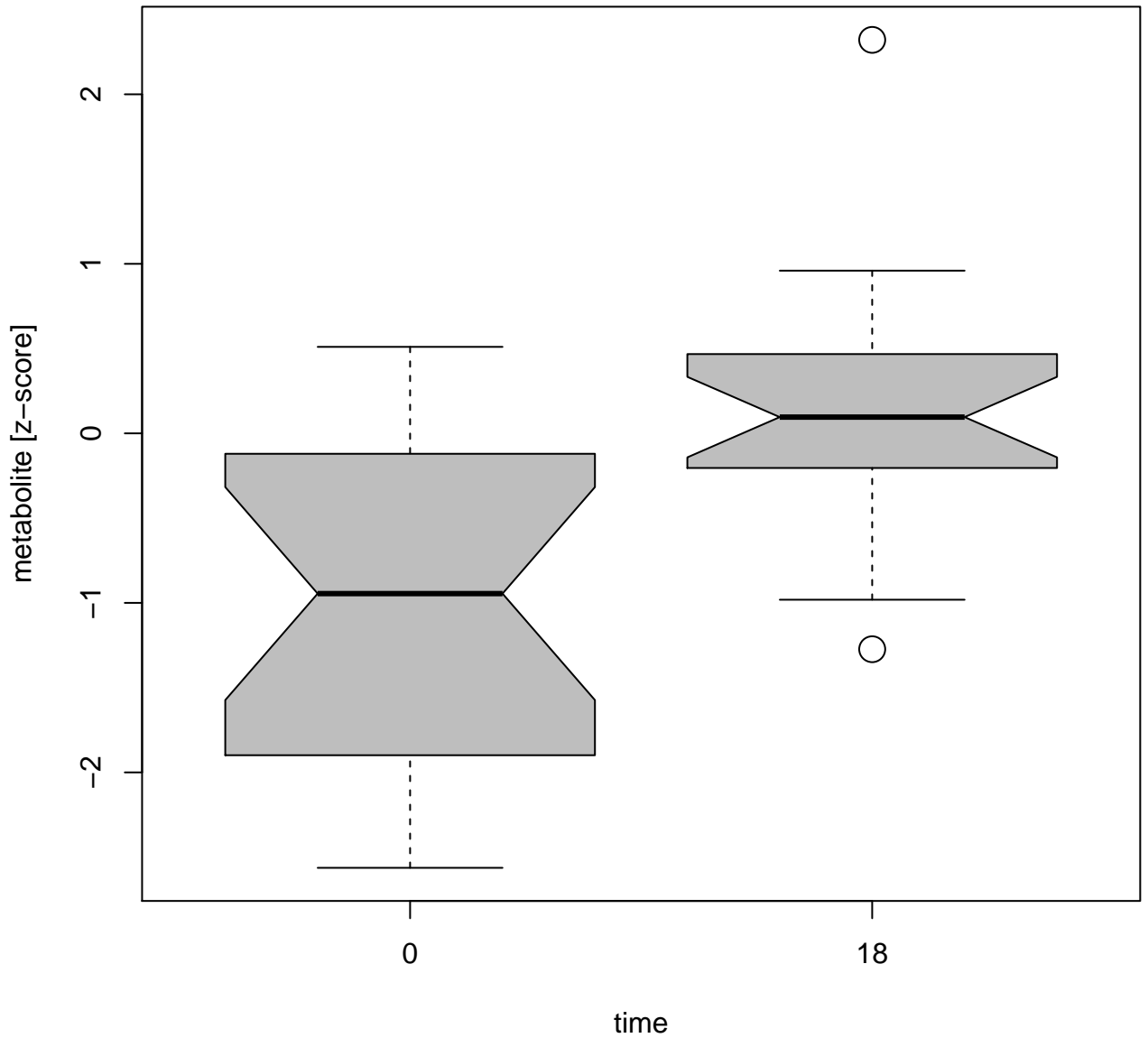
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X - 14577

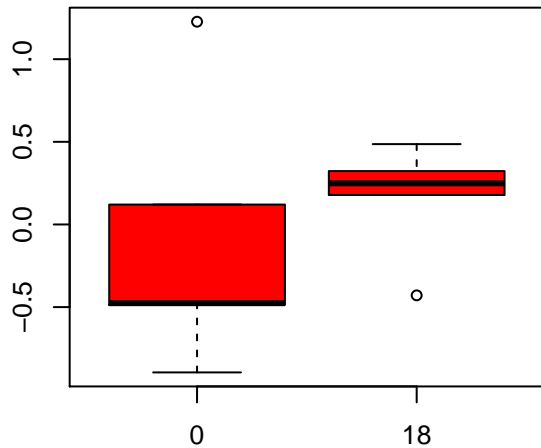


SKOV3

X - 14577

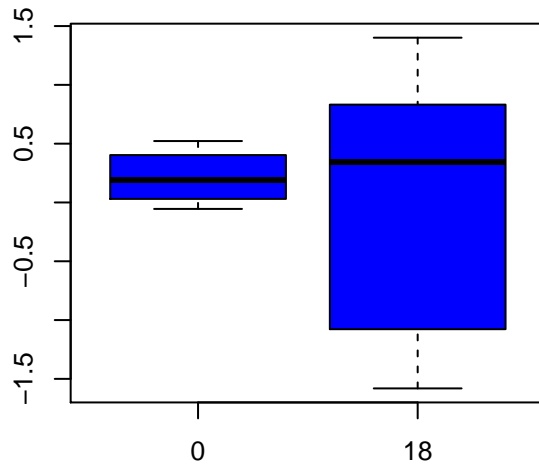


X - 14588



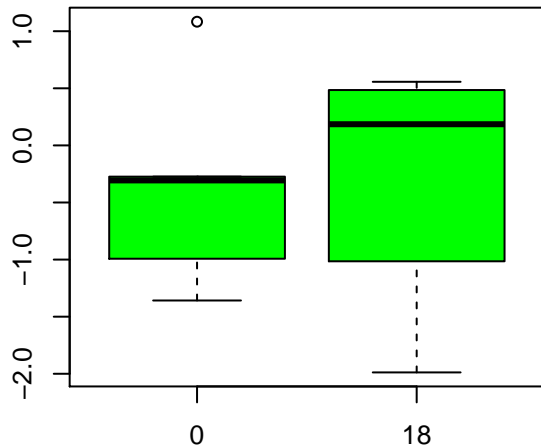
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X - 14588



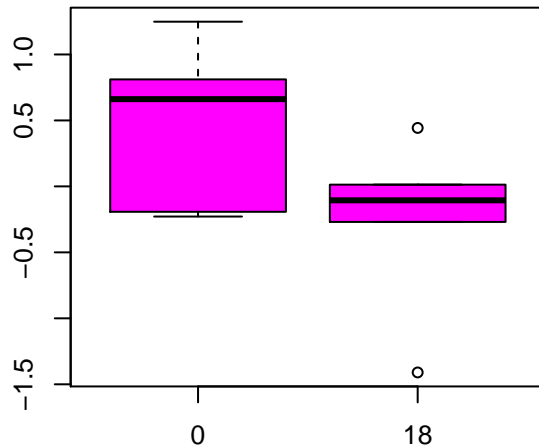
OVCAR

X - 14588



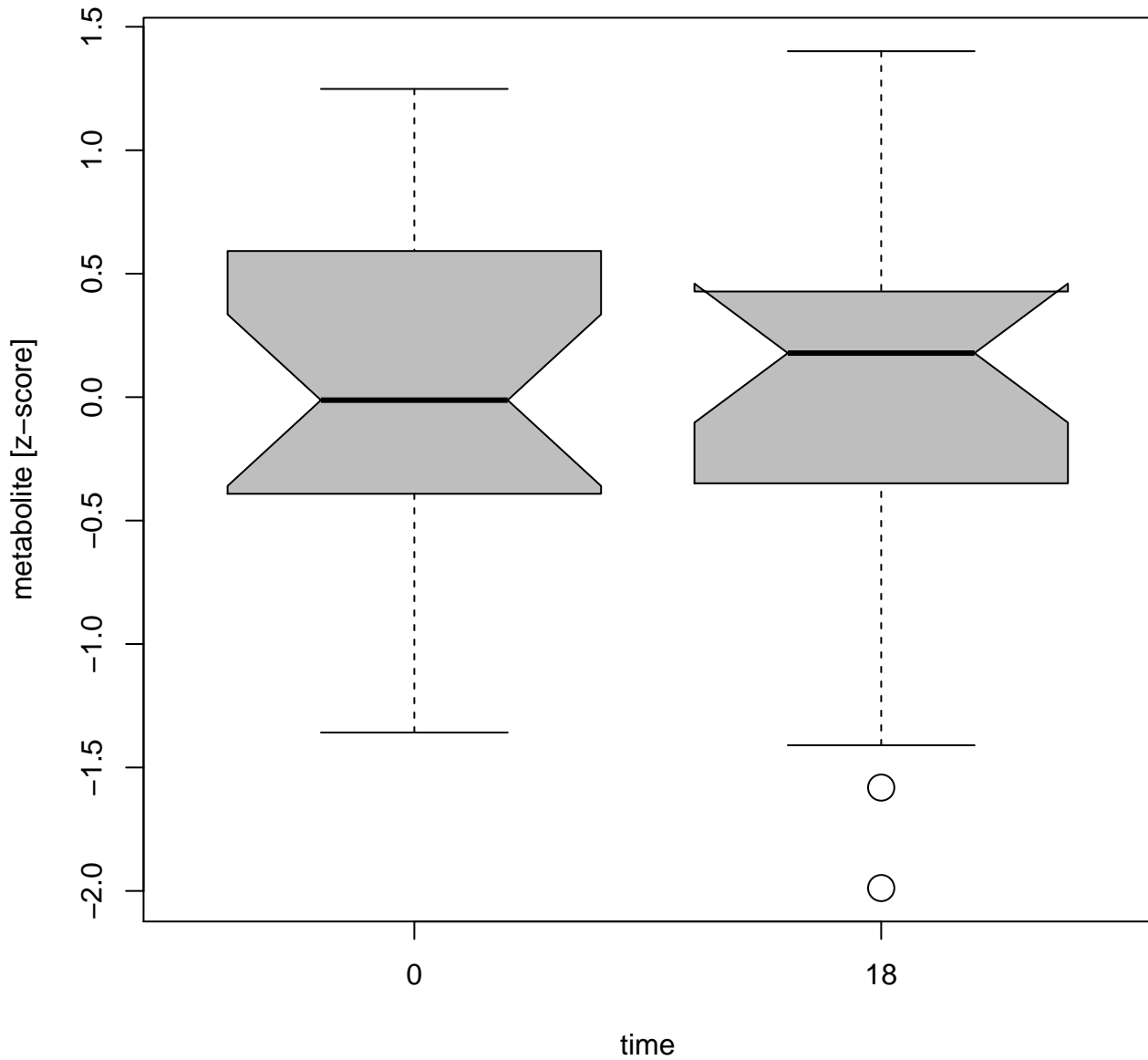
HCT15

X - 14588

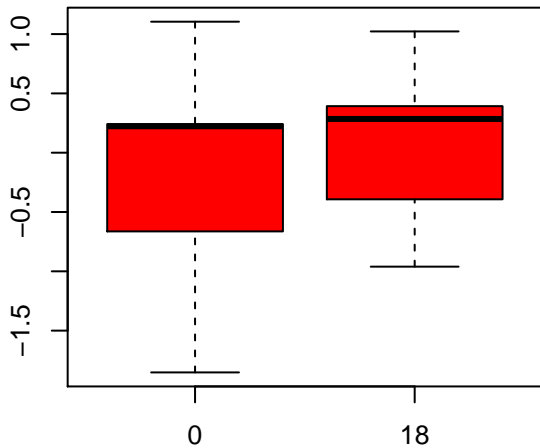


SKOV3

X - 14588

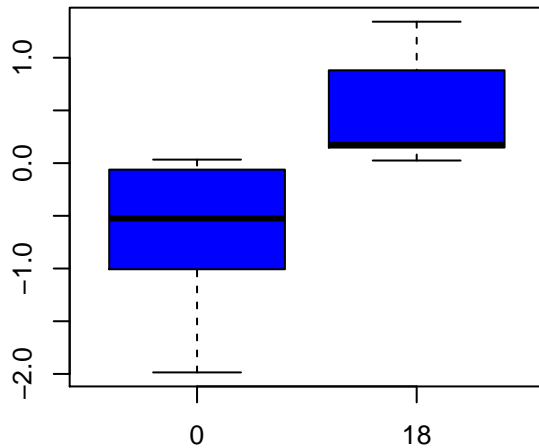


X - 15375



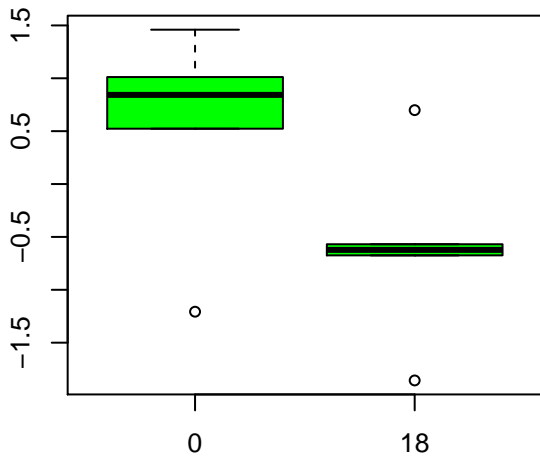
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X - 15375



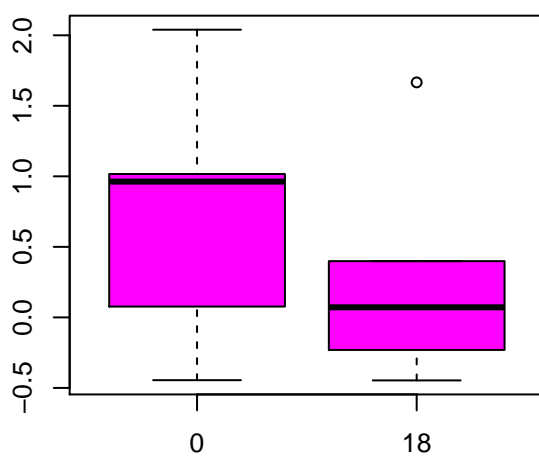
OVCAR

X - 15375



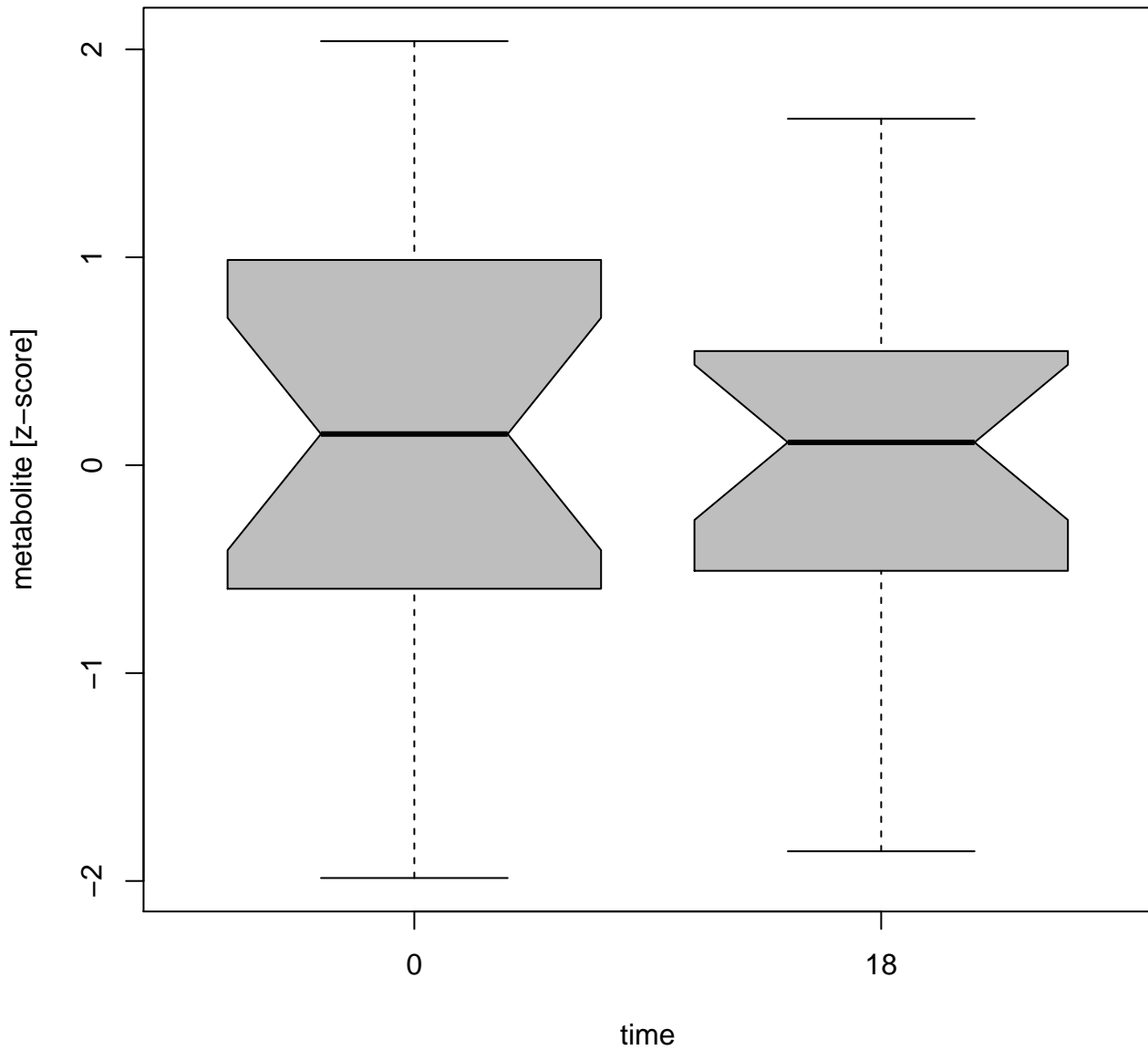
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X - 15375

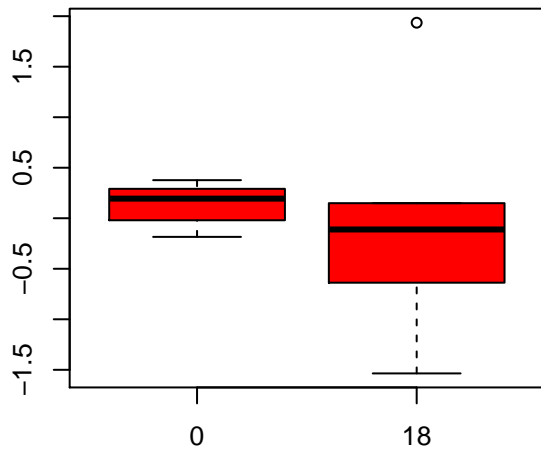


SKOV3

X - 15375

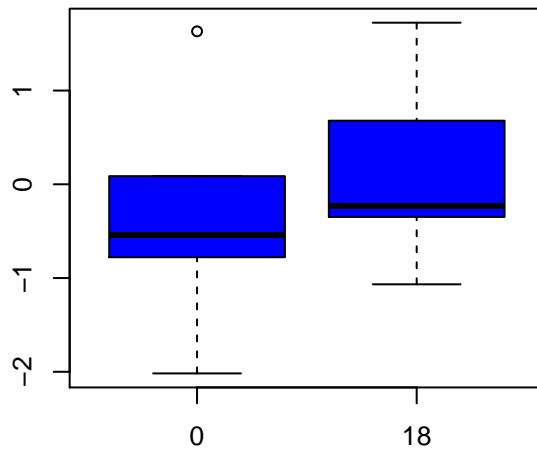


X - 15564



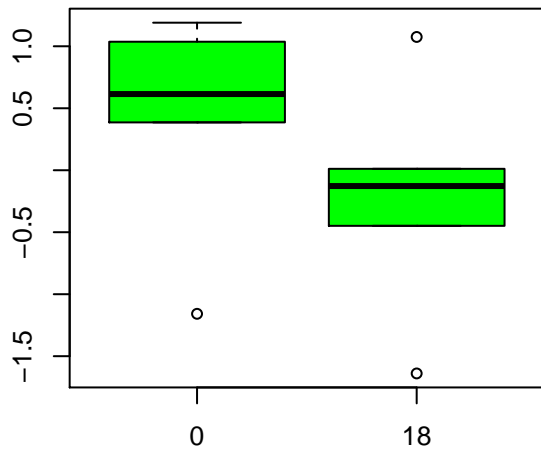
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X - 15564



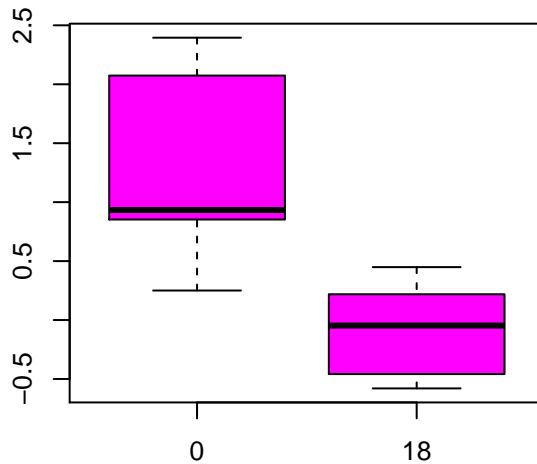
OVCAR

X - 15564



HCT15

X - 15564



SKOV3

X - 15564

