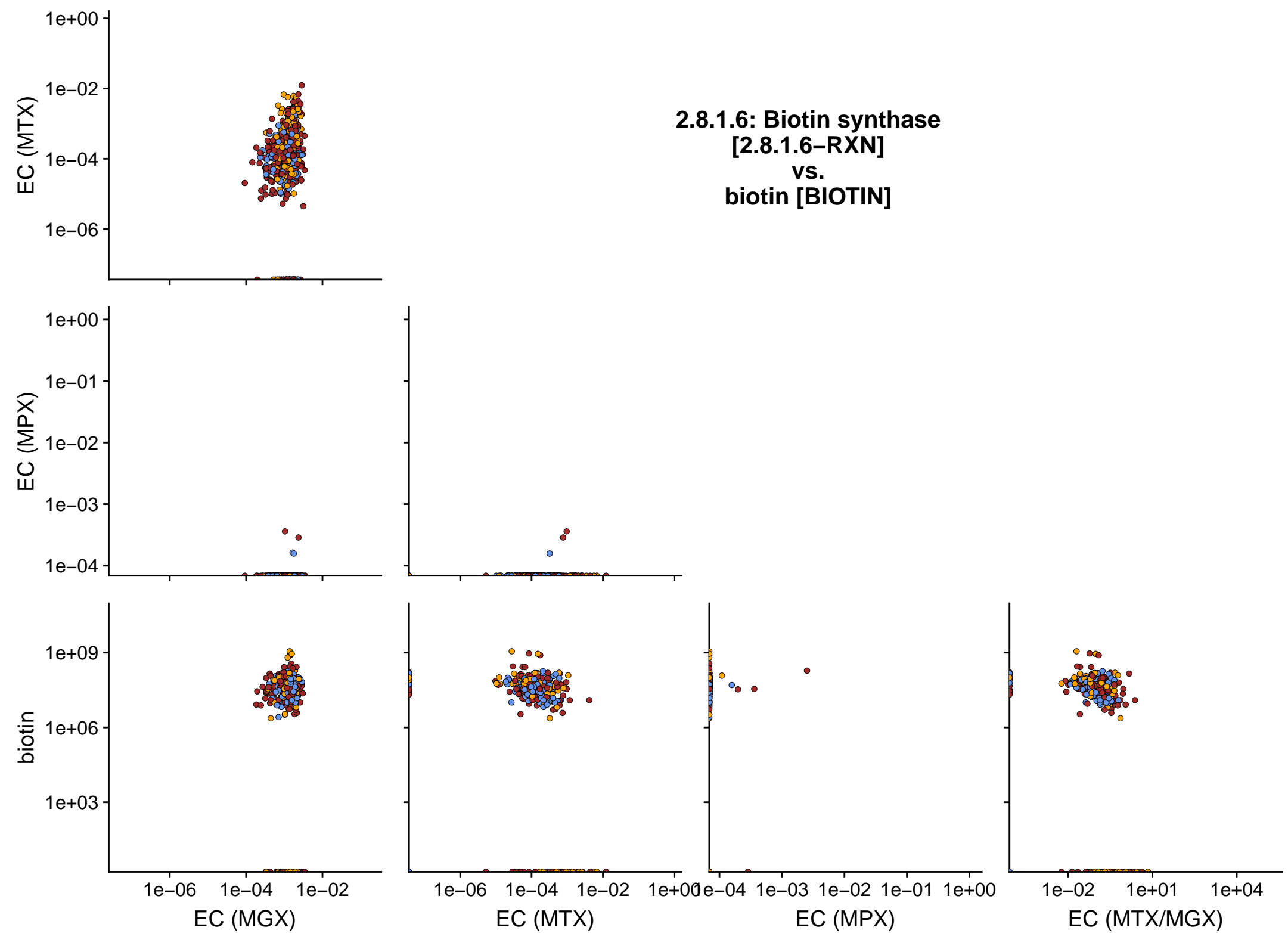
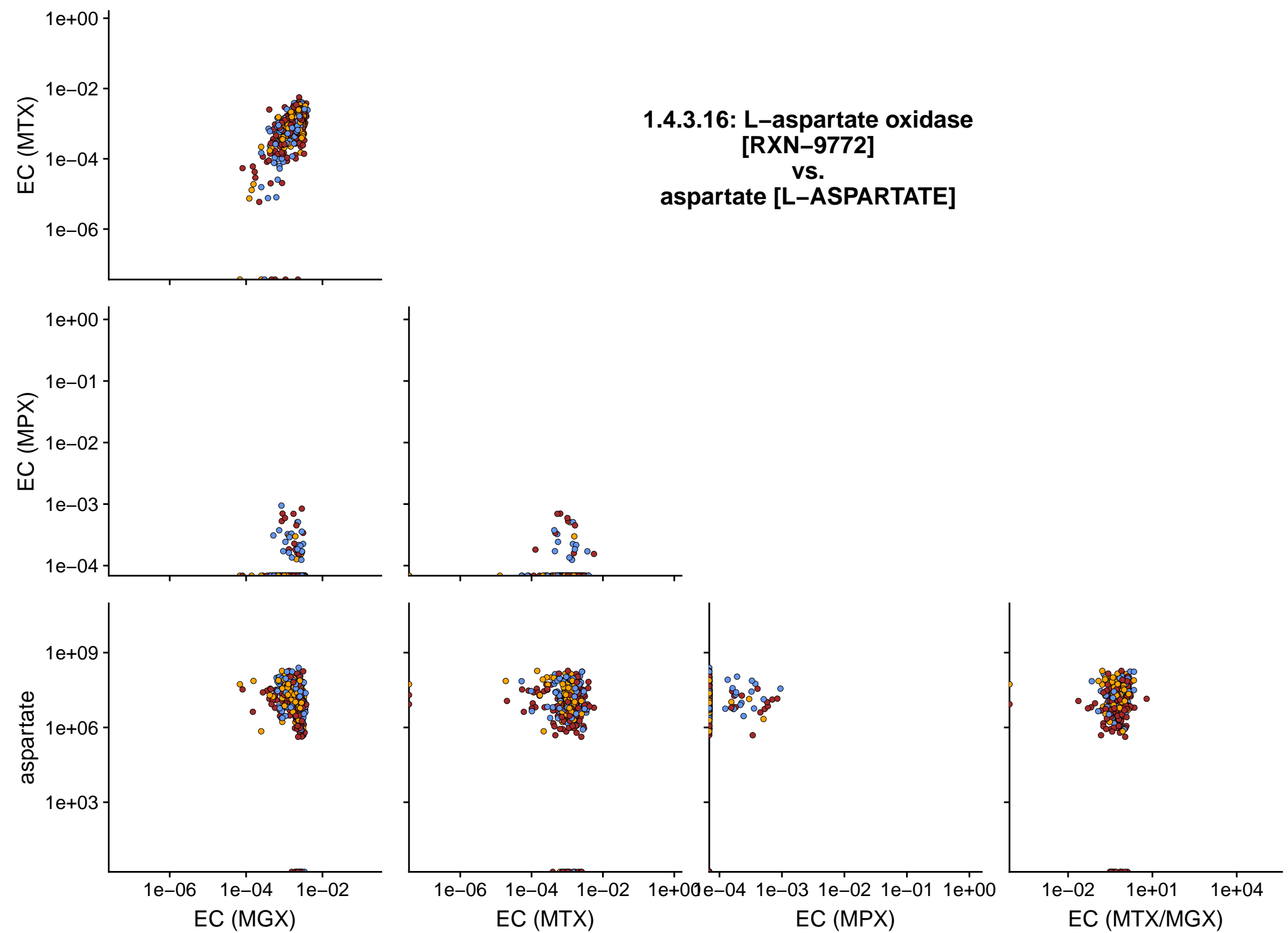


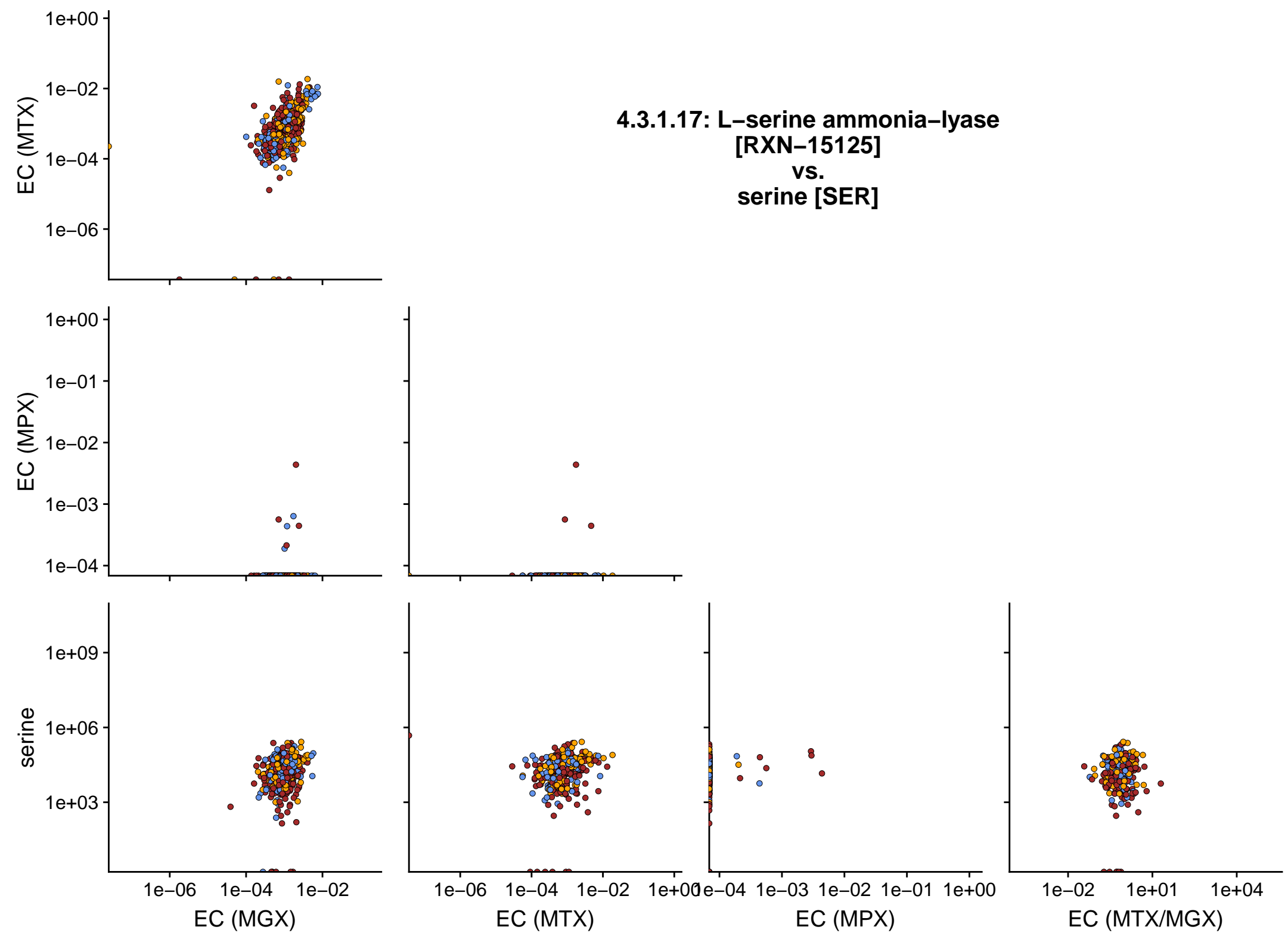
**2.8.1.6: Biotin synthase  
[2.8.1.6-RXN]  
vs.  
biotin [BIOTIN]**



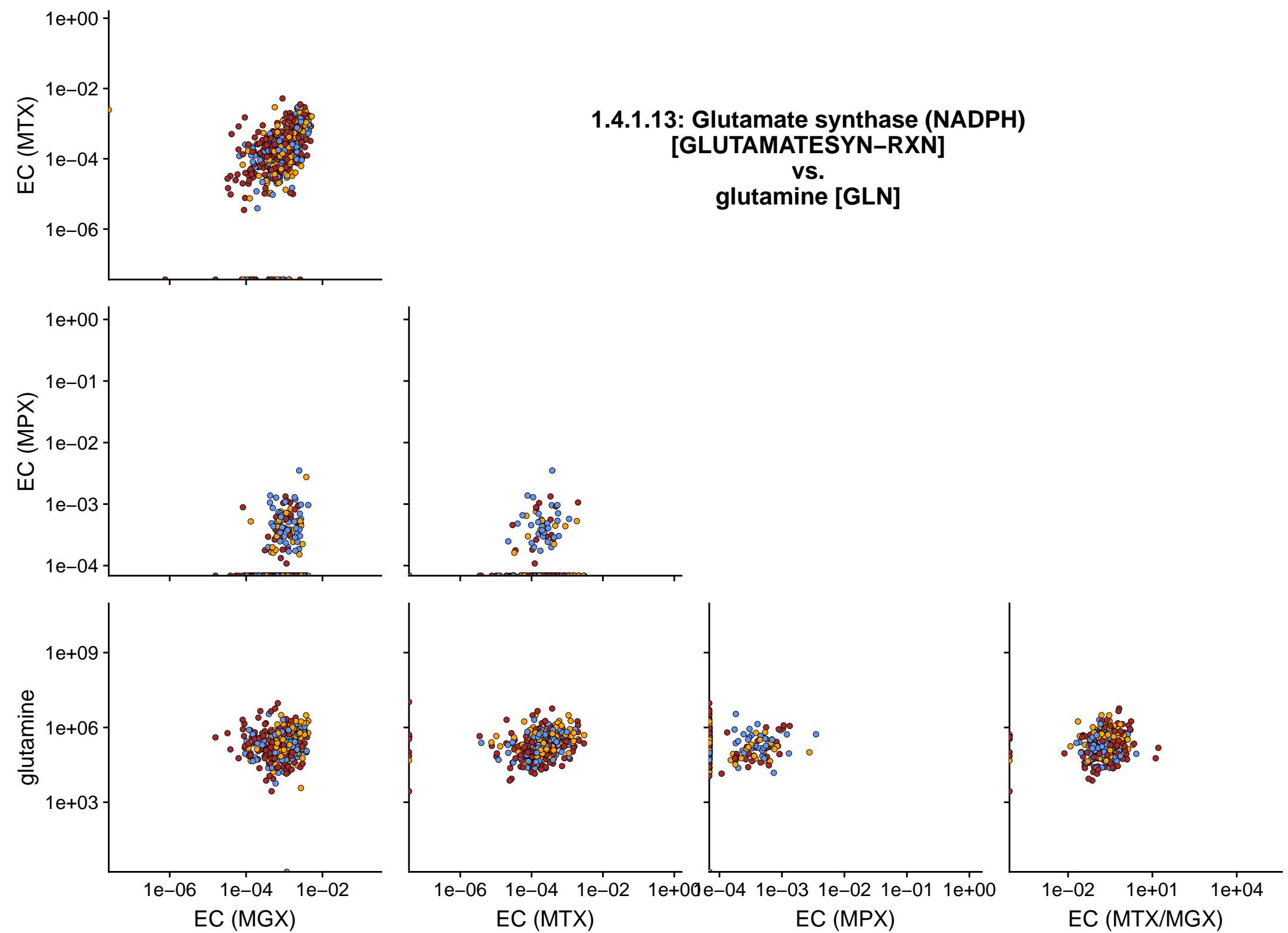
**1.4.3.16: L-aspartate oxidase  
[RXN-9772]  
vs.  
aspartate [L-ASPARTATE]**



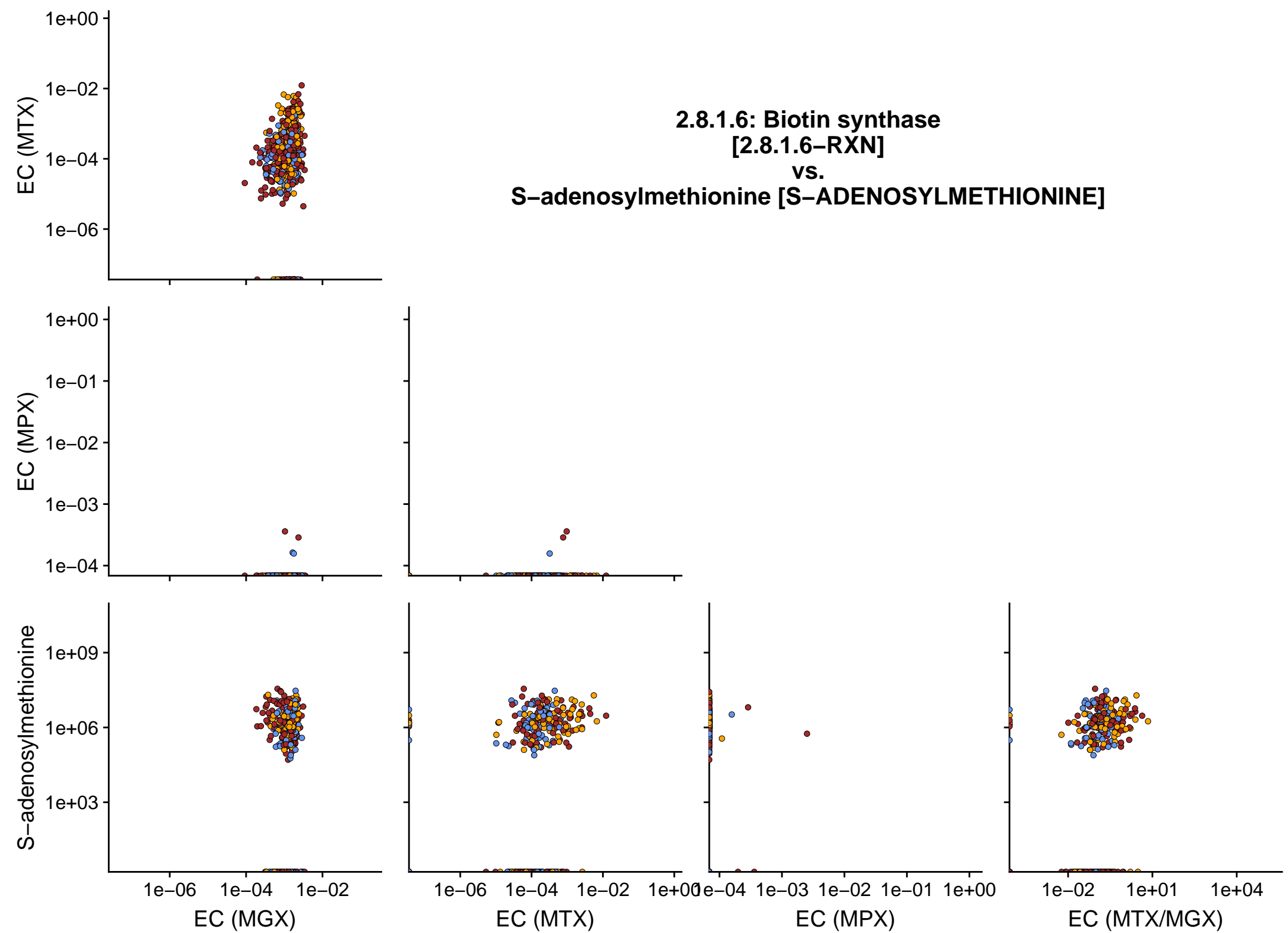
**4.3.1.17: L-serine ammonia-lyase  
[RXN-15125]  
vs.  
serine [SER]**



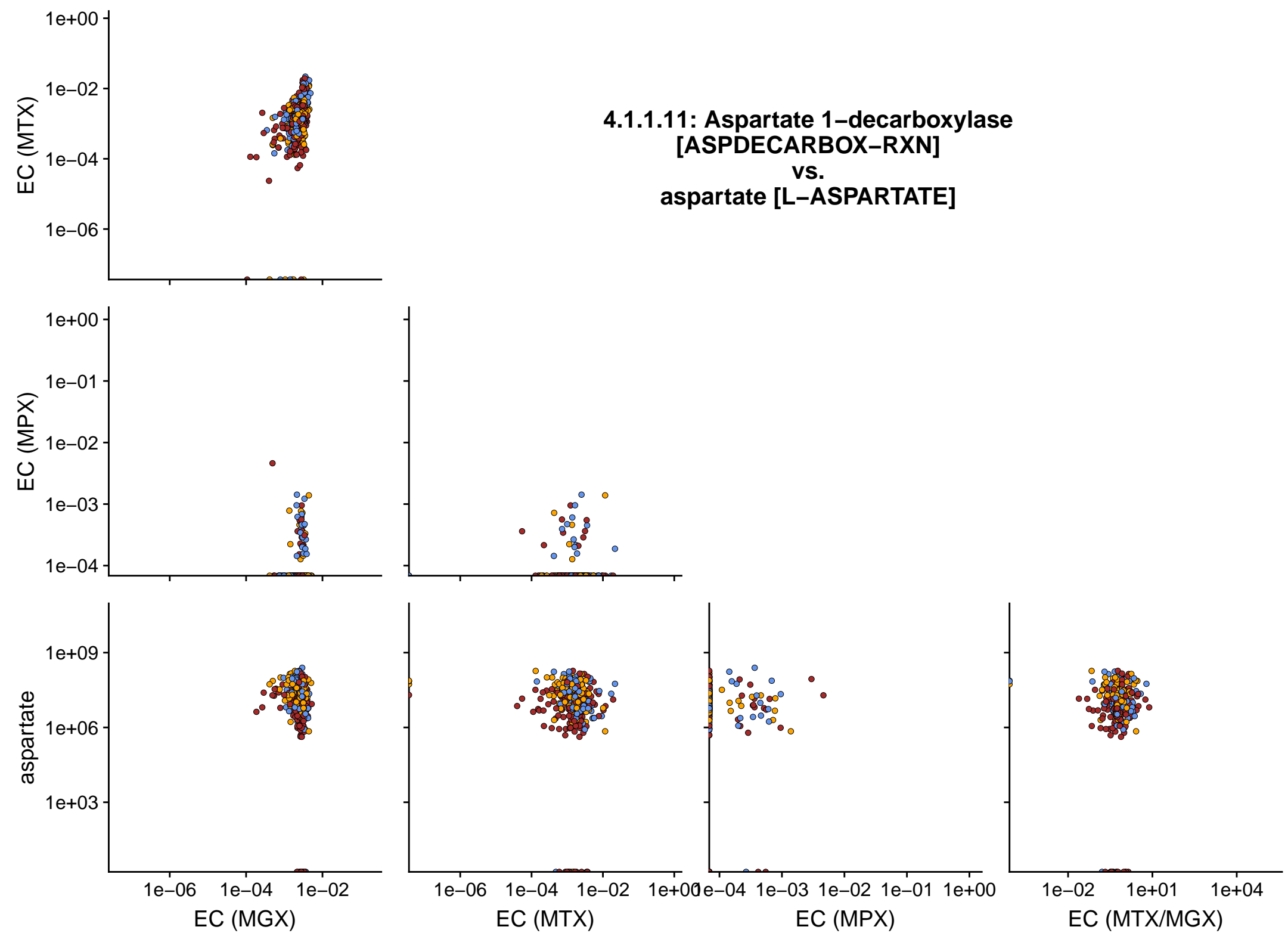
**1.4.1.13: Glutamate synthase (NADPH)  
[GLUTAMATESYN-RXN]  
vs.  
glutamine [GLN]**



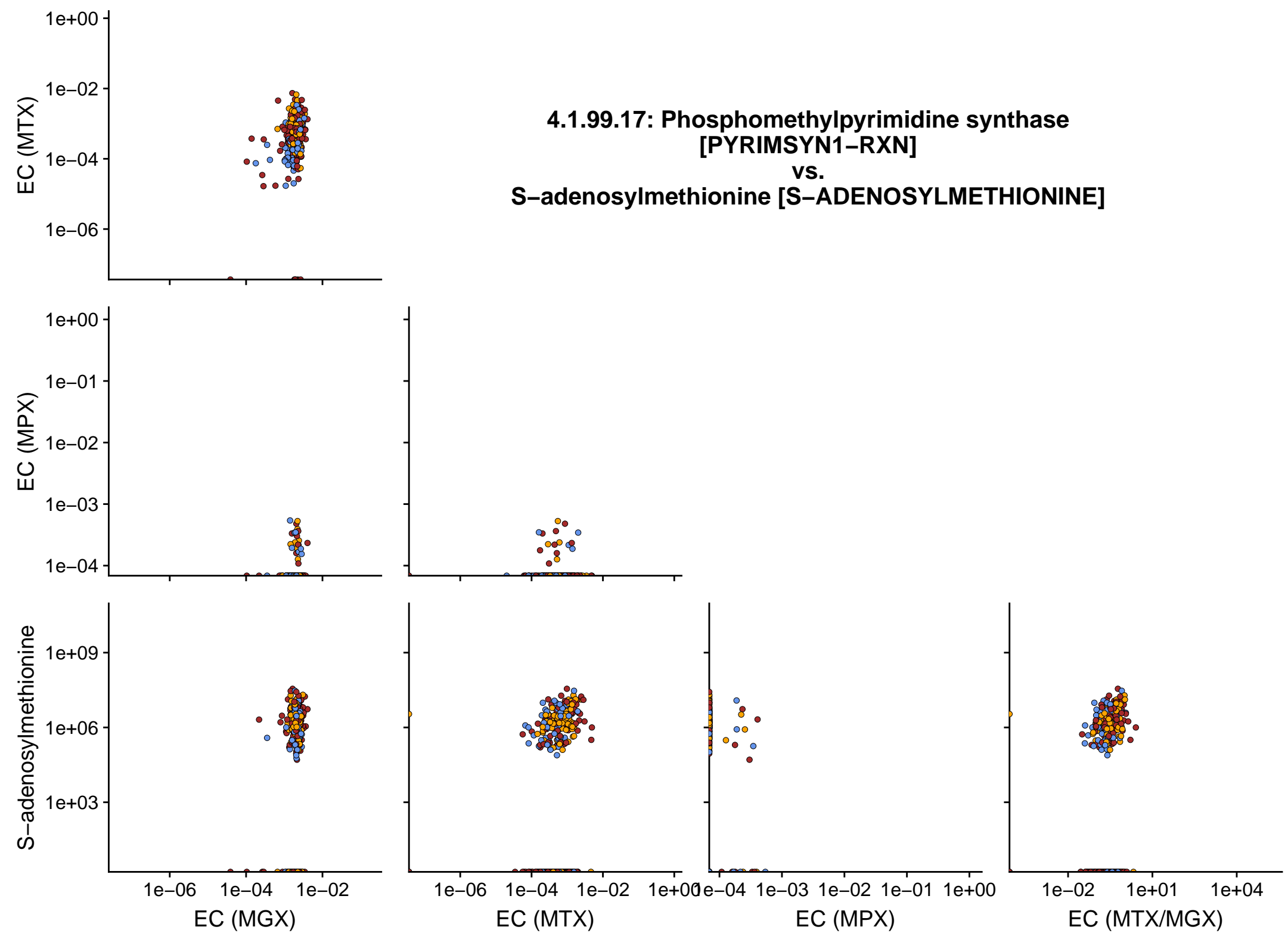
**2.8.1.6: Biotin synthase  
[2.8.1.6-RXN]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**



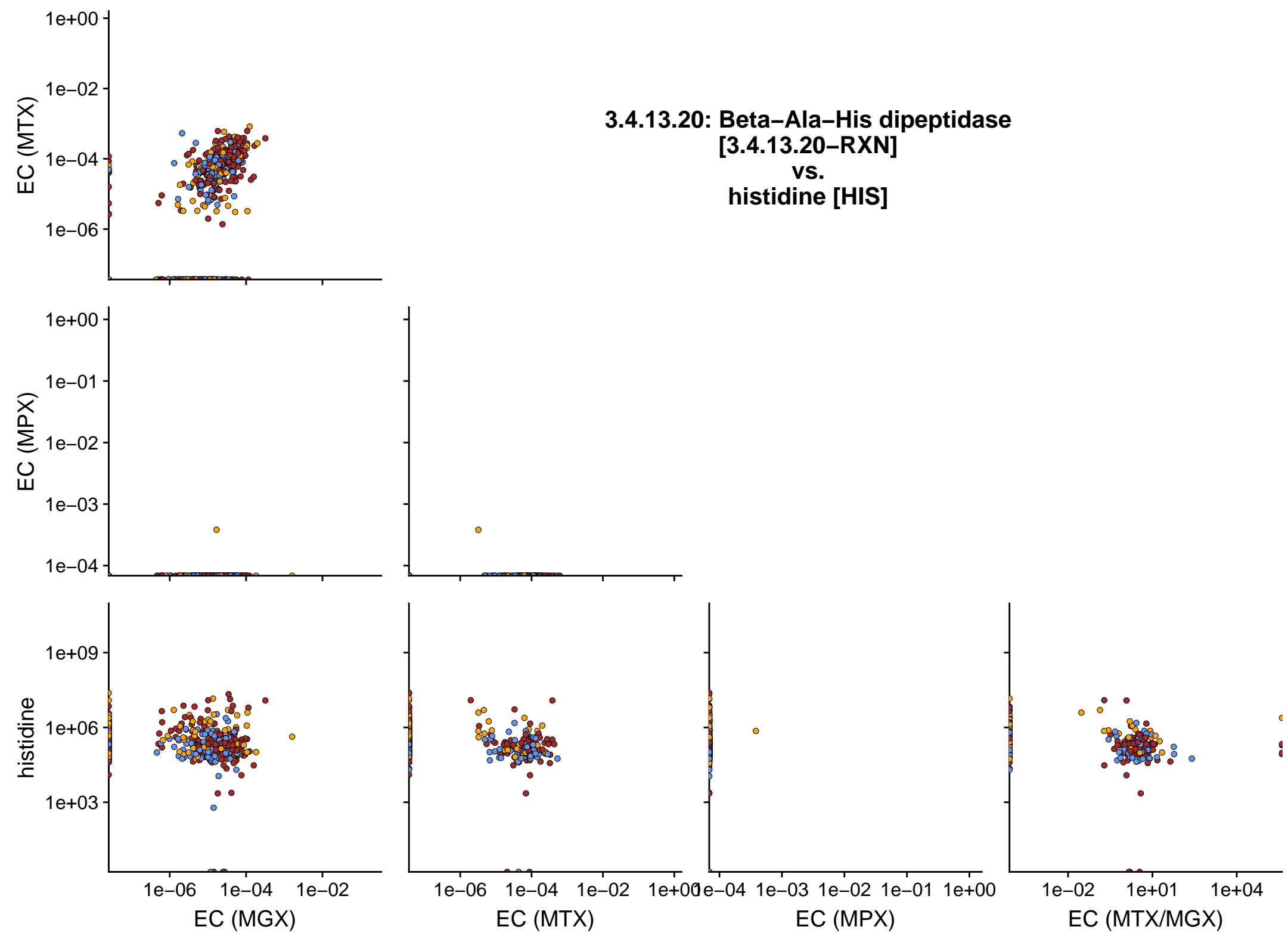
**4.1.1.11: Aspartate 1-decarboxylase  
[ASPDECARBOX-RXN]  
vs.  
aspartate [L-ASPARTATE]**



**4.1.99.17: Phosphomethylpyrimidine synthase  
[PYRIMSYN1-RXN]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**

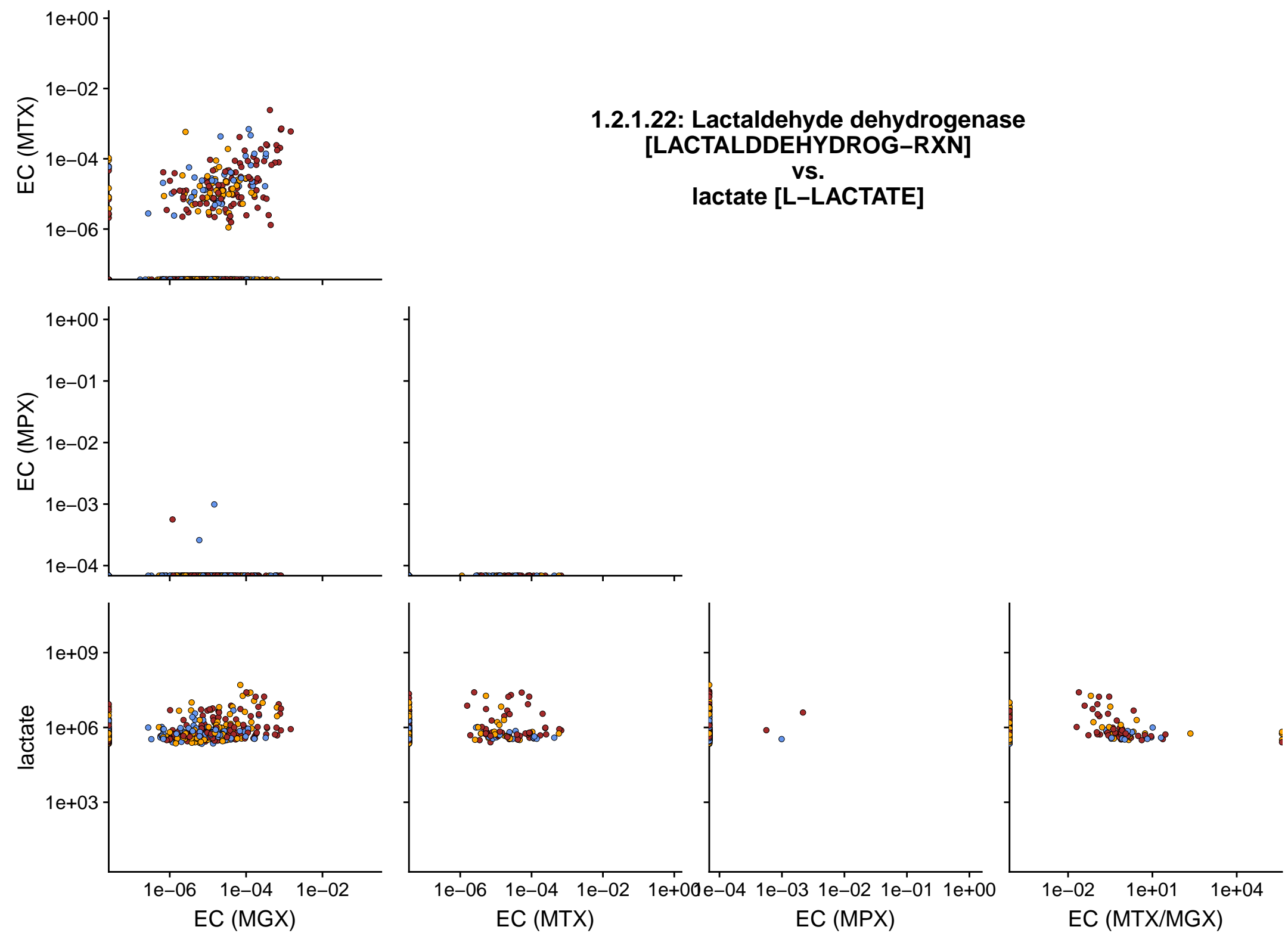


**3.4.13.20: Beta-Ala-His dipeptidase  
[3.4.13.20-RXN]  
vs.  
histidine [HIS]**

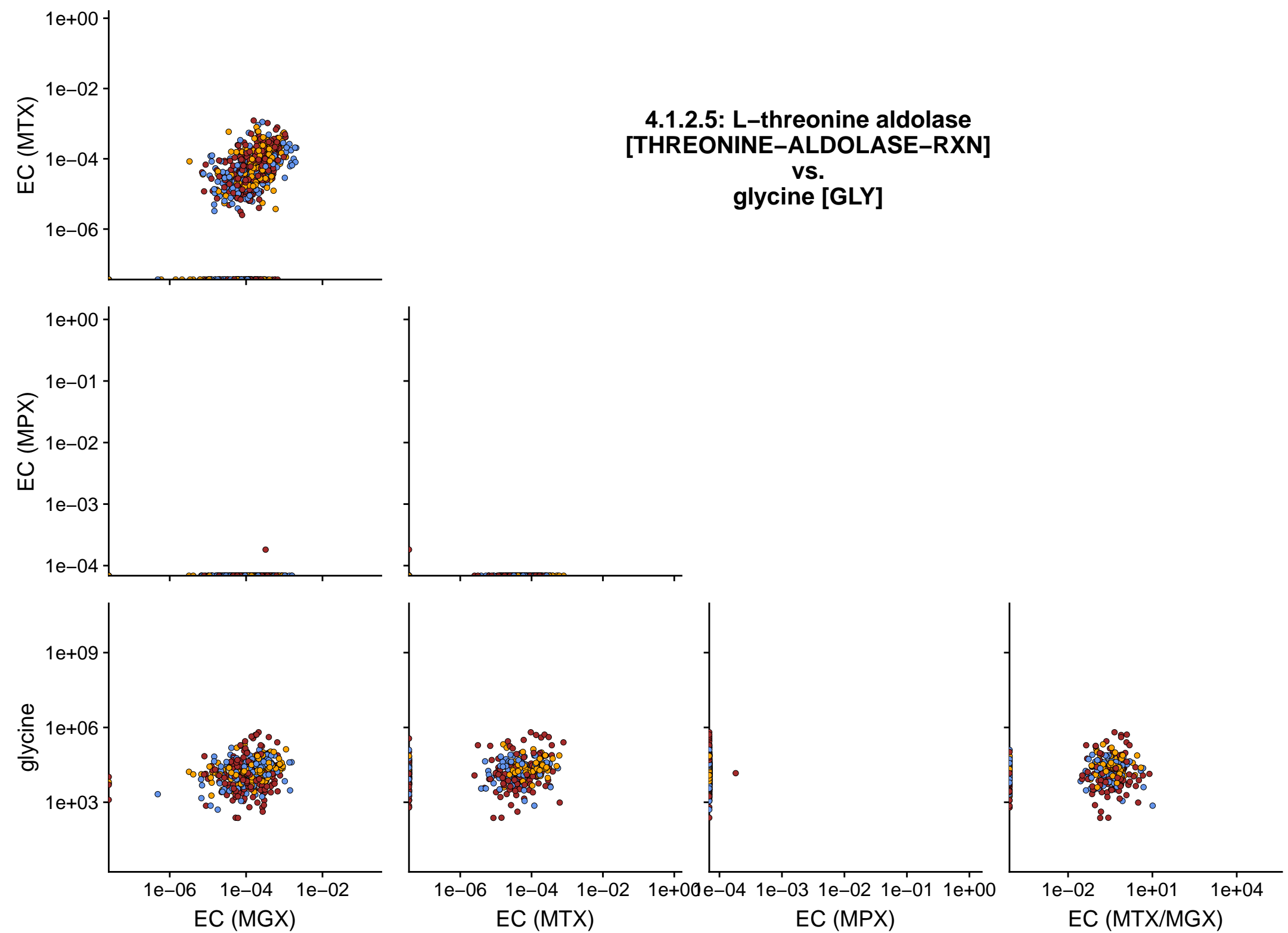




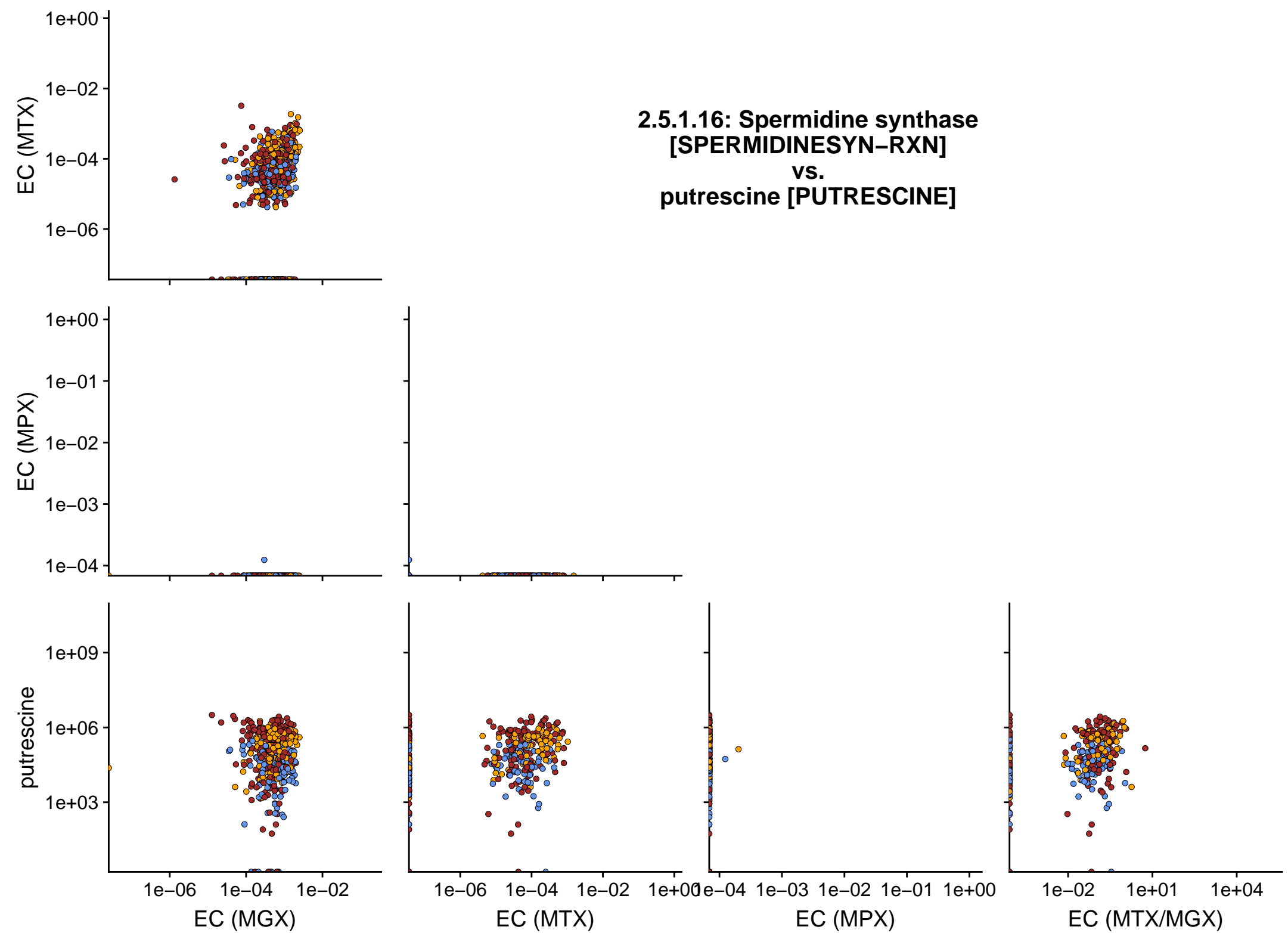
**1.2.1.22: Lactaldehyde dehydrogenase  
[LACTALDDEHYDROG-RXN]  
vs.  
lactate [L-LACTATE]**



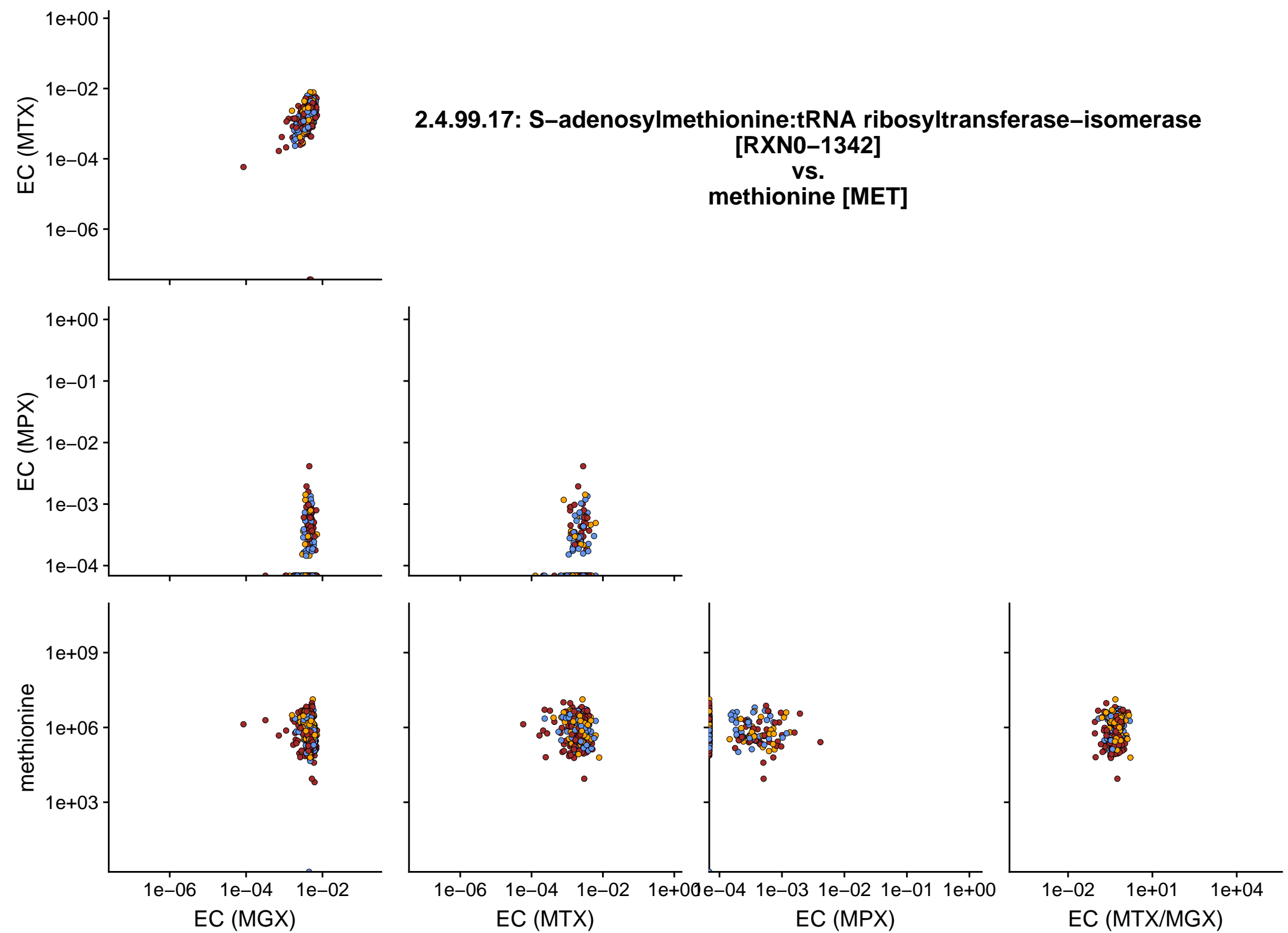
**4.1.2.5: L-threonine aldolase  
[THREONINE-ALDOLASE-RXN]  
vs.  
glycine [GLY]**



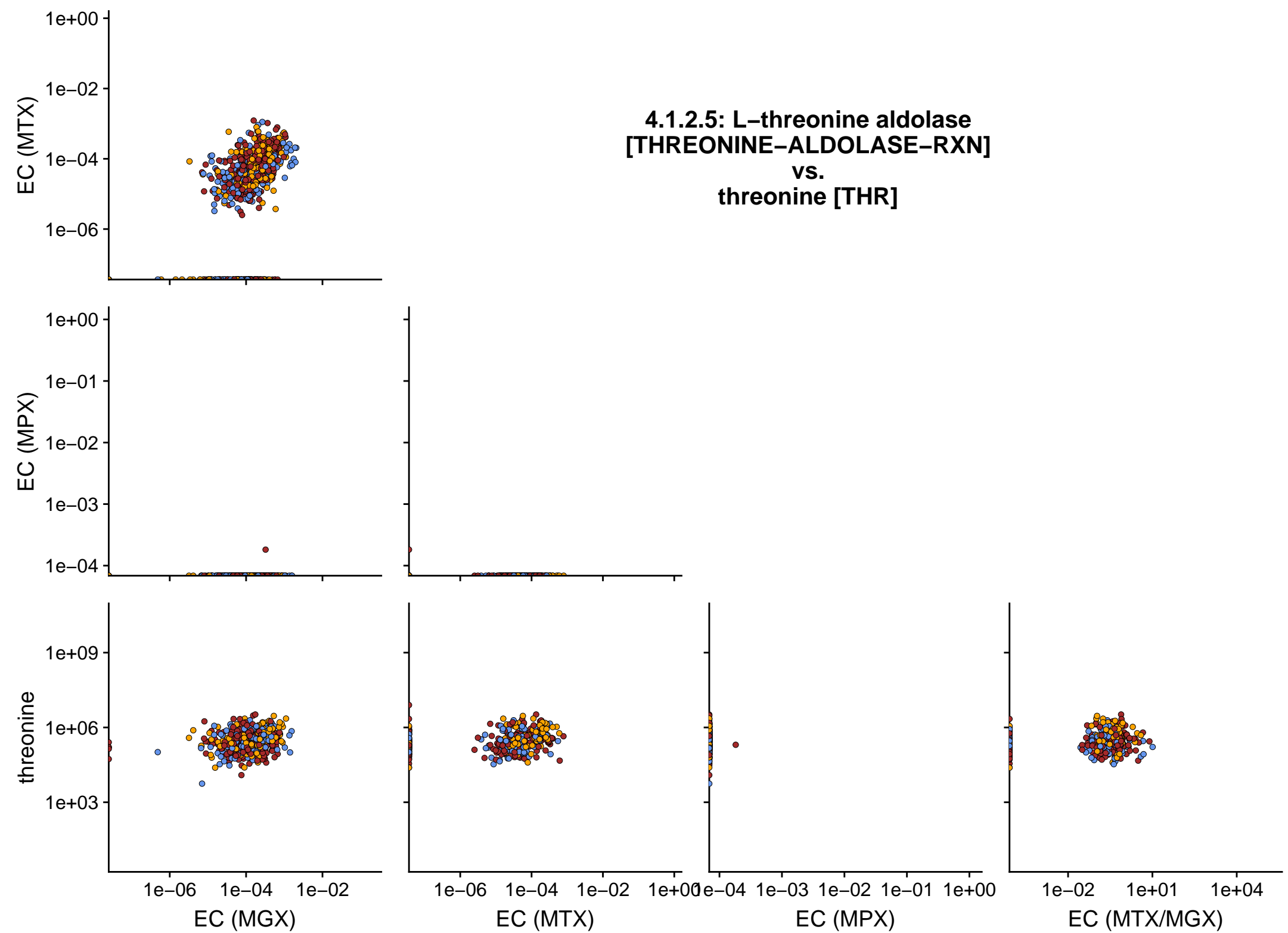
**2.5.1.16: Spermidine synthase  
[SPERMIDINESYN-RXN]  
vs.  
putrescine [PUTRESCINE]**



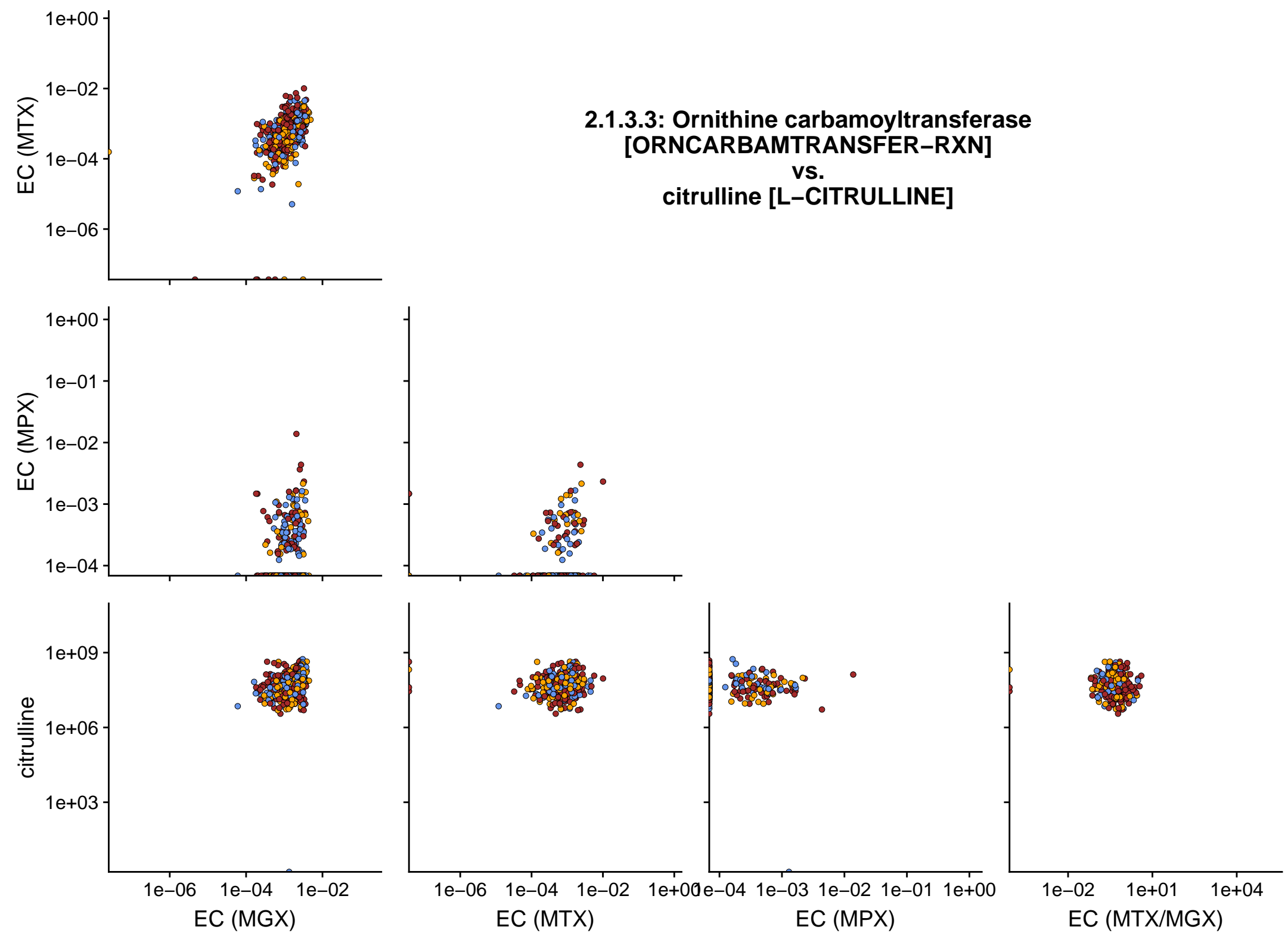
**2.4.99.17: S-adenosylmethionine:tRNA ribosyltransferase-isomerase  
[RXN0-1342]  
vs.  
methionine [MET]**



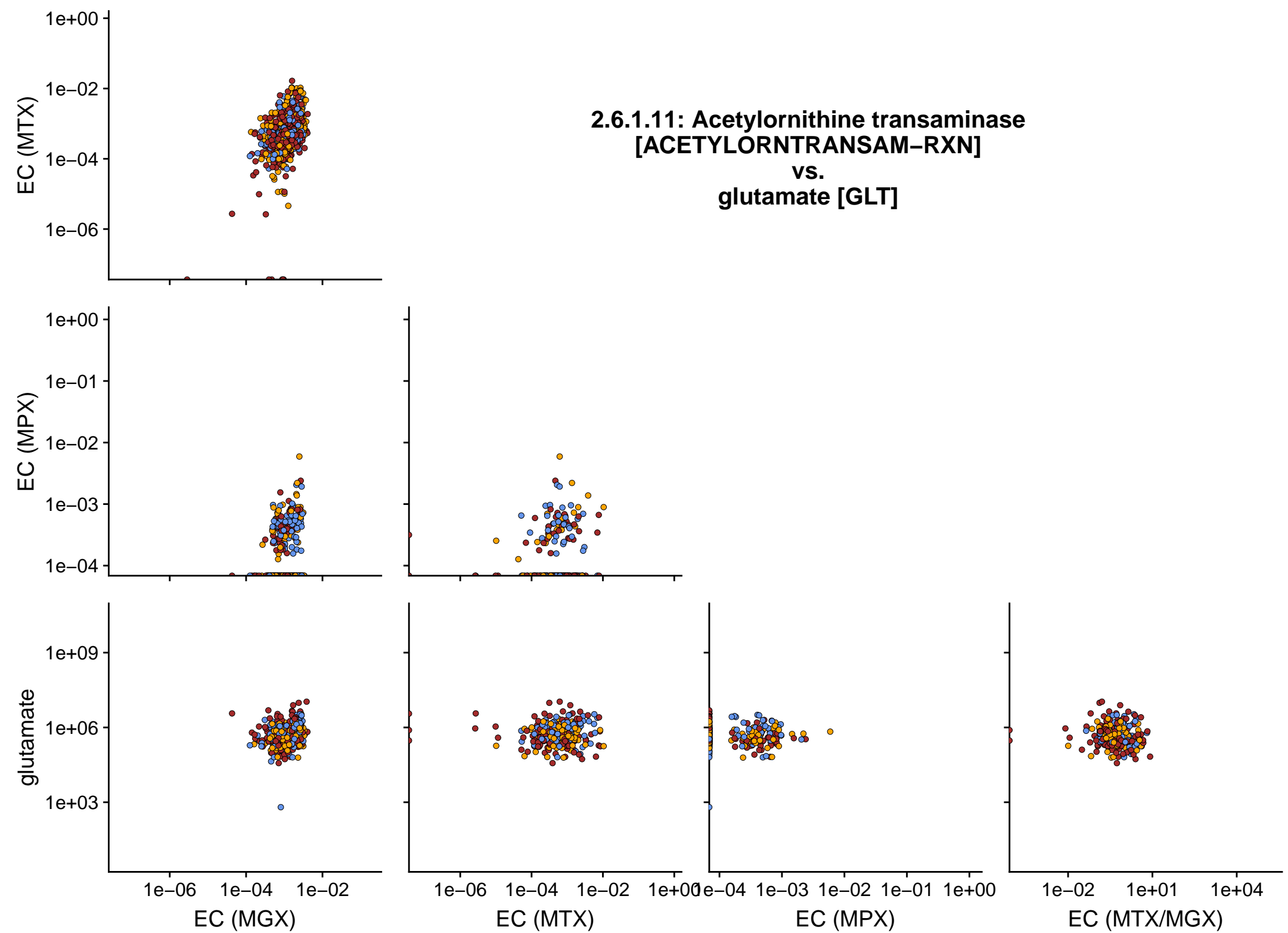
**4.1.2.5: L-threonine aldolase  
[THREONINE-ALDOLASE-RXN]  
vs.  
threonine [THR]**



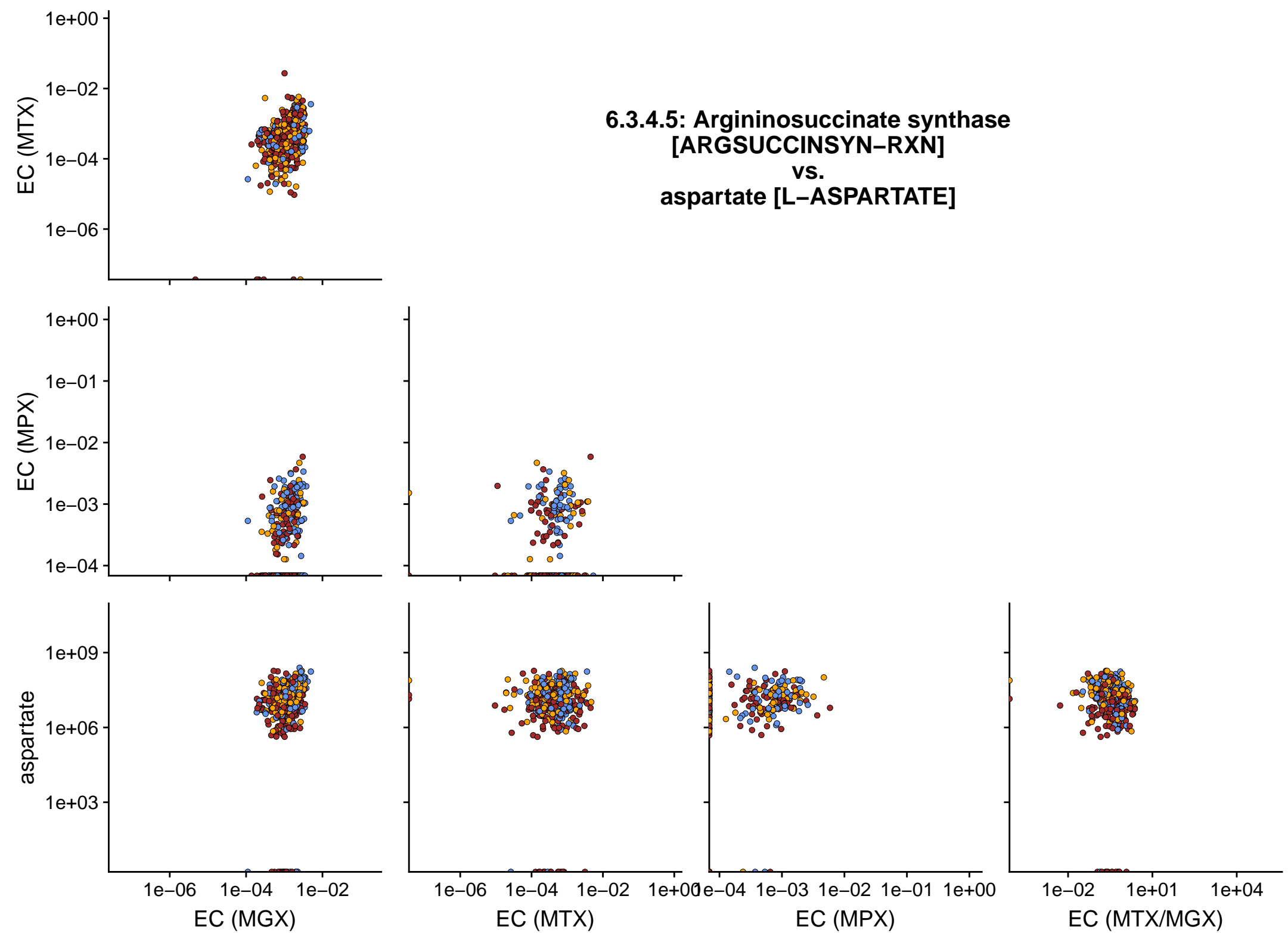
**2.1.3.3: Ornithine carbamoyltransferase  
[ORNCARBAMTRANSFER-RXN]  
vs.  
citrulline [L-CITRULLINE]**



**2.6.1.11: Acetylorntithine transaminase  
[ACETYLORNTRANSAM-RXN]  
vs.  
glutamate [GLT]**

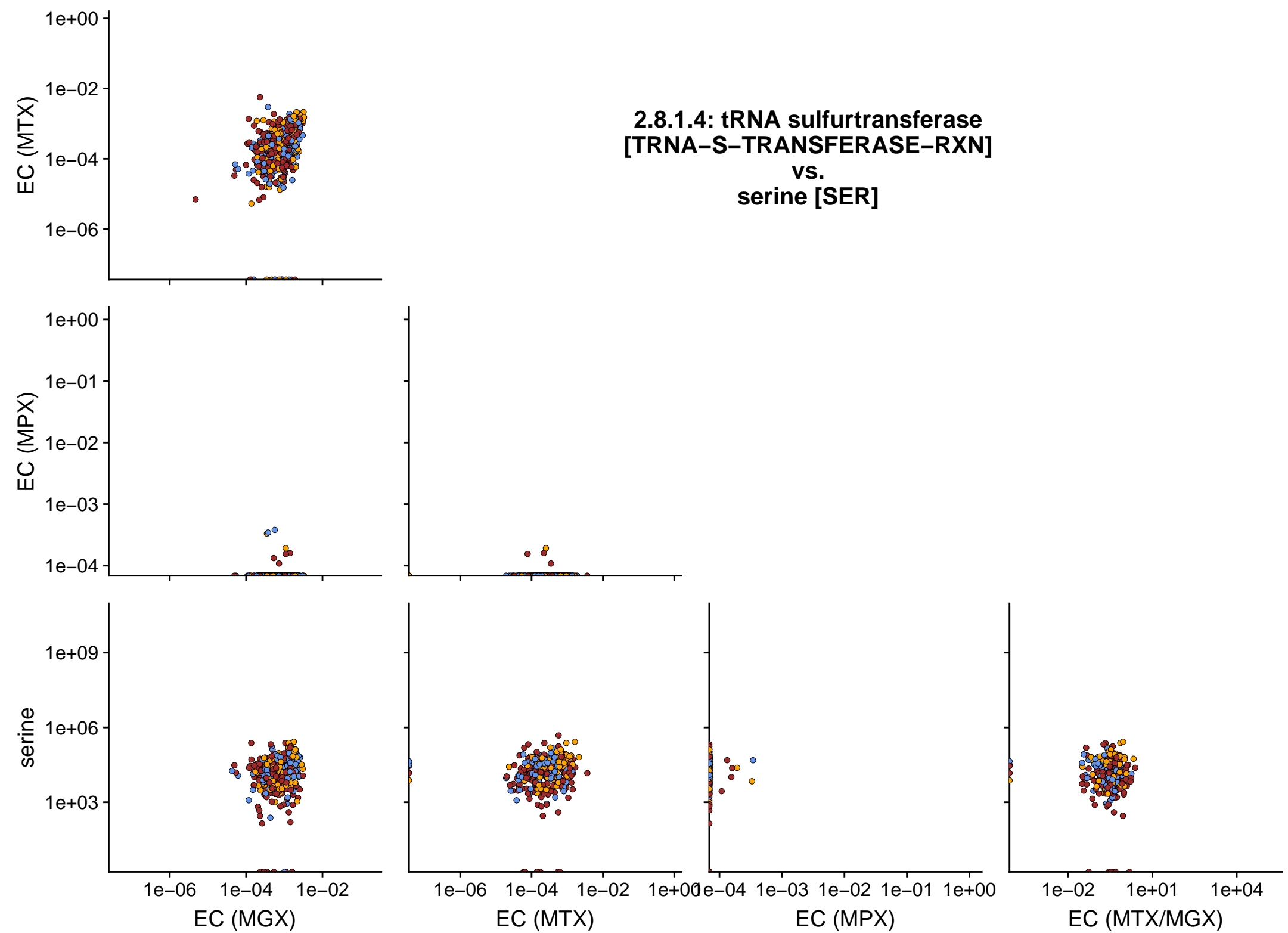


**6.3.4.5: Argininosuccinate synthase  
[ARGSUCCINSYN-RXN]  
vs.  
aspartate [L-ASPARTATE]**

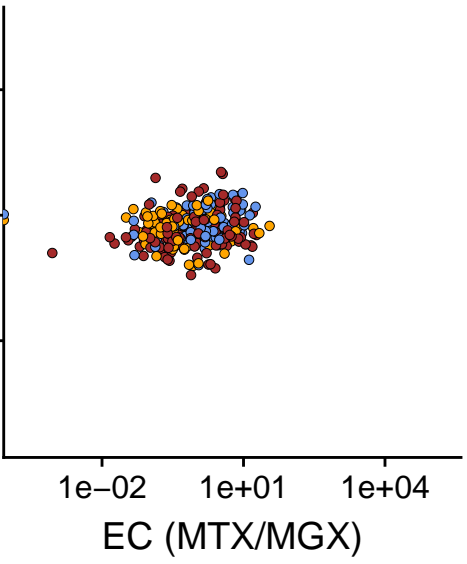
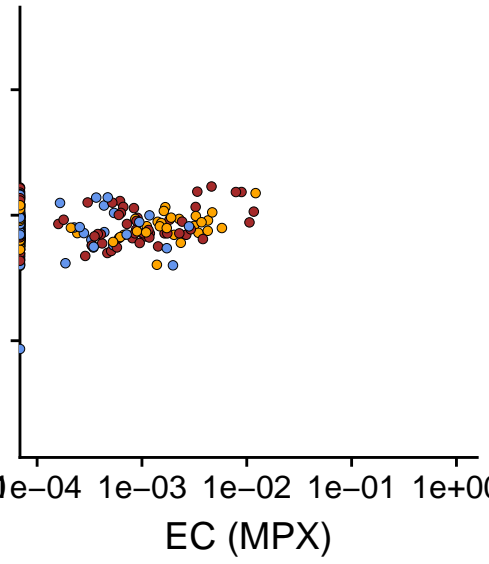
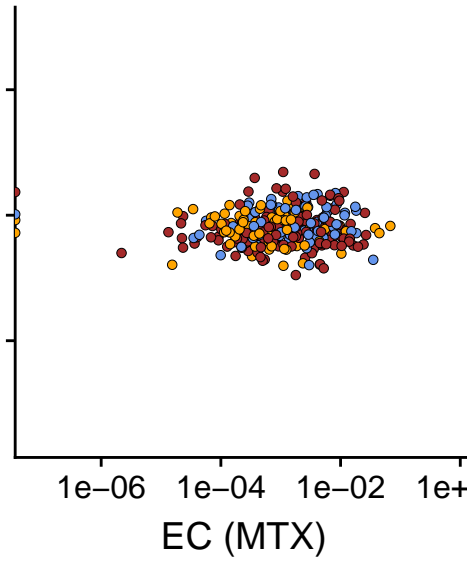
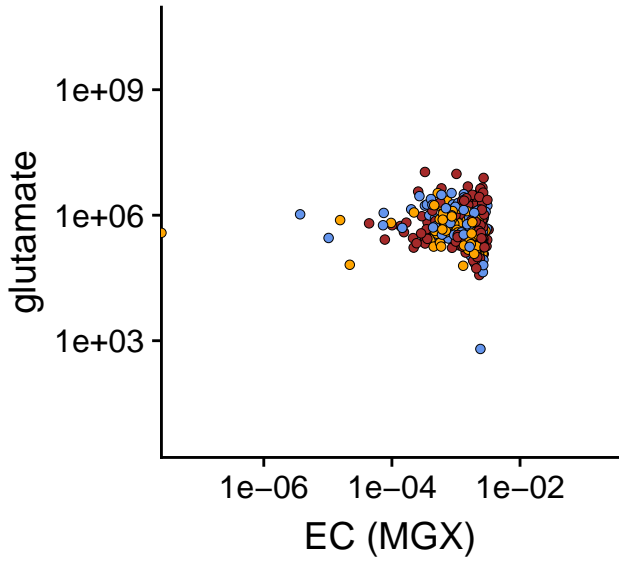
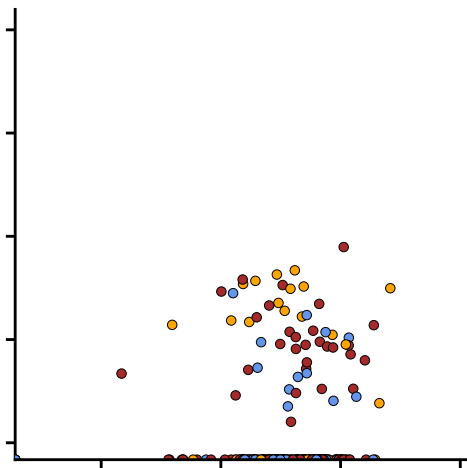
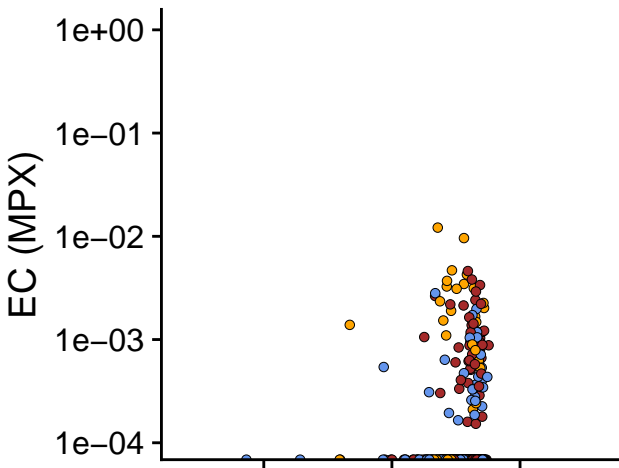
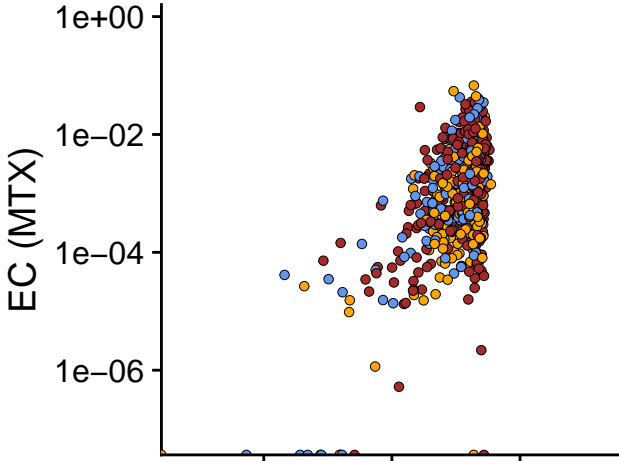




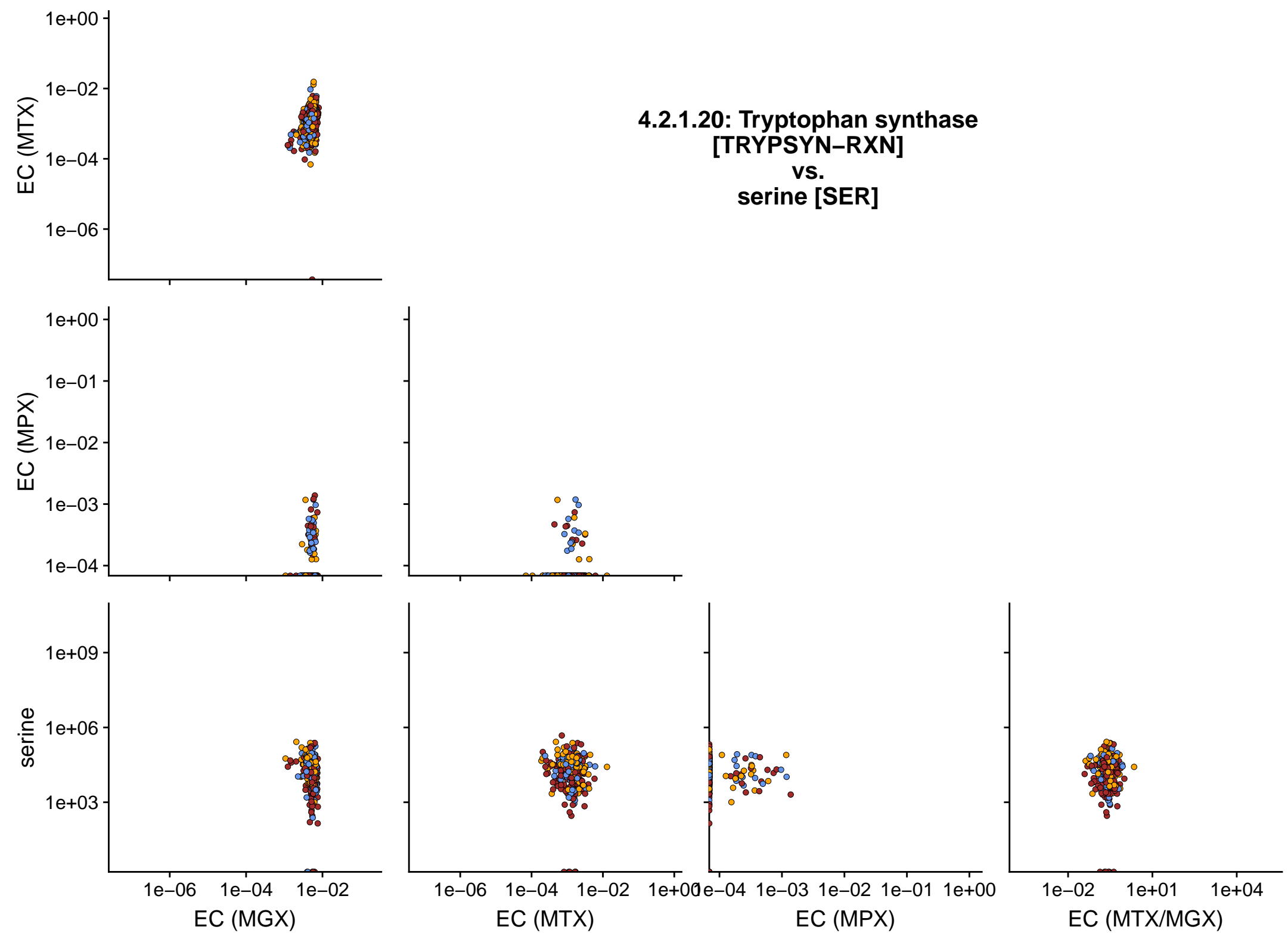
**2.8.1.4: tRNA sulfurtransferase  
[TRNA-S-TRANSFERASE-RXN]  
vs.  
serine [SER]**



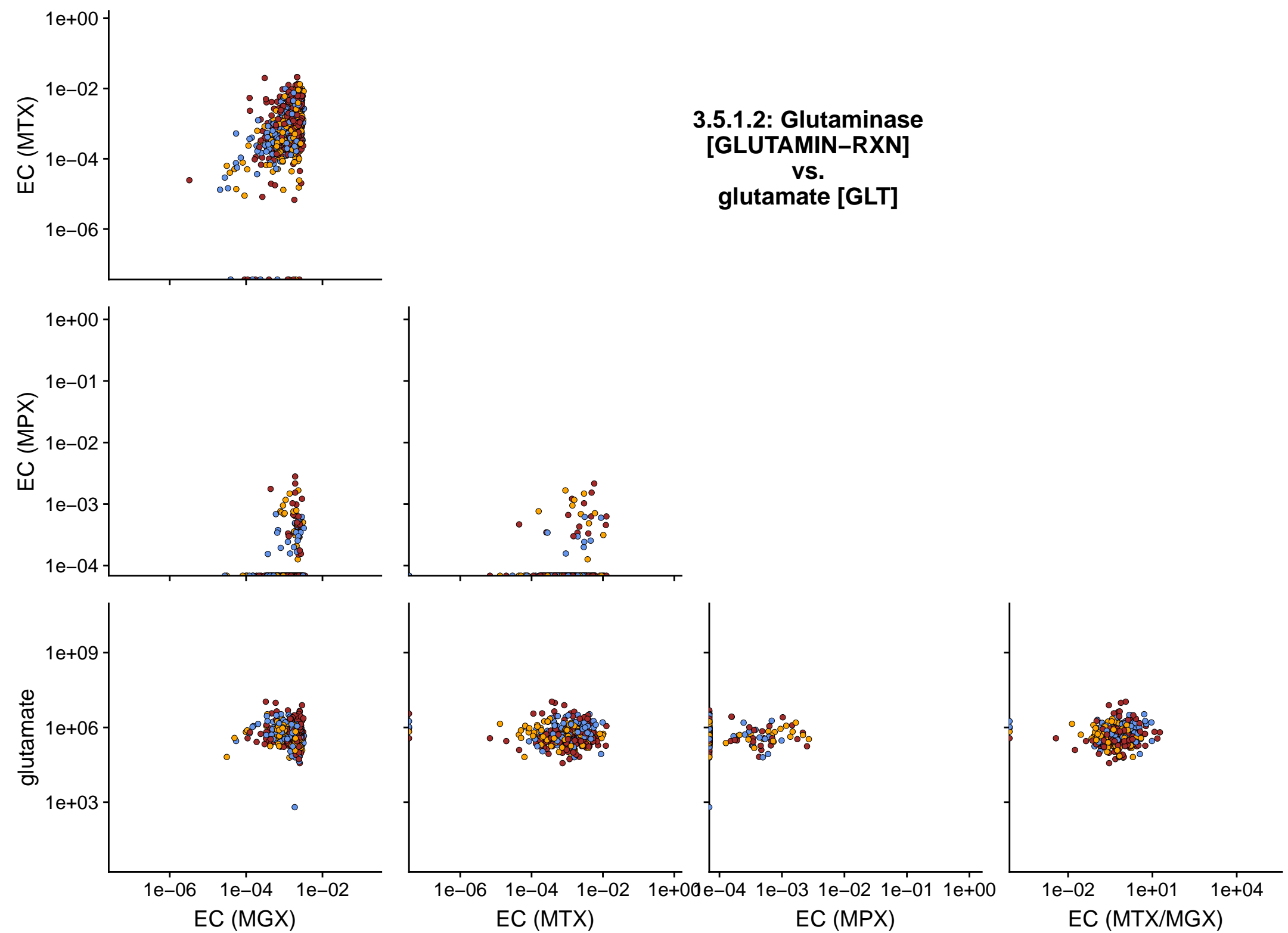
**4.1.1.15: Glutamate decarboxylase  
[GLUTDECARBOX-RXN]  
vs.  
glutamate [GLT]**



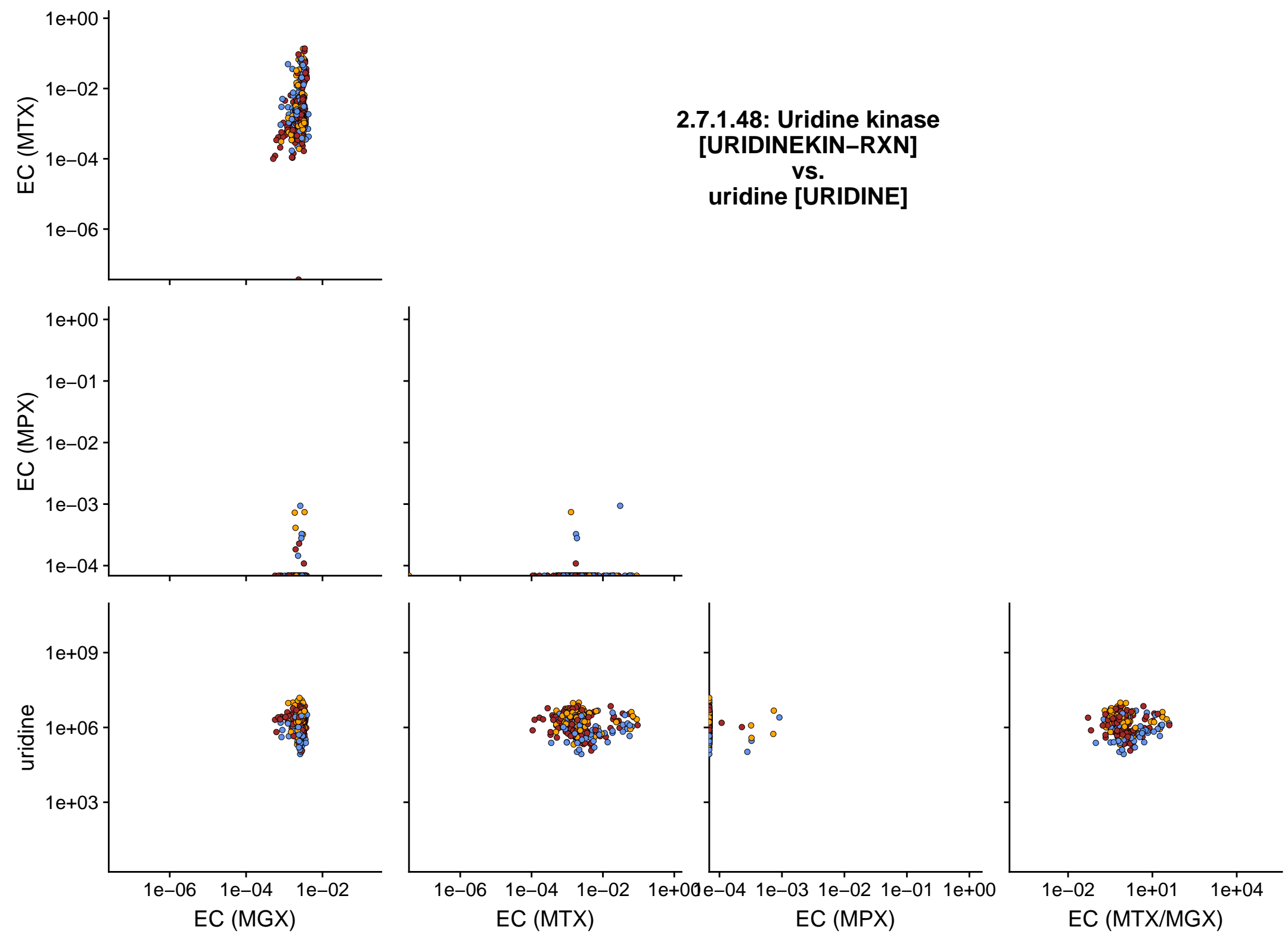
**4.2.1.20: Tryptophan synthase  
[TRYP SYN-RXN]  
vs.  
serine [SER]**



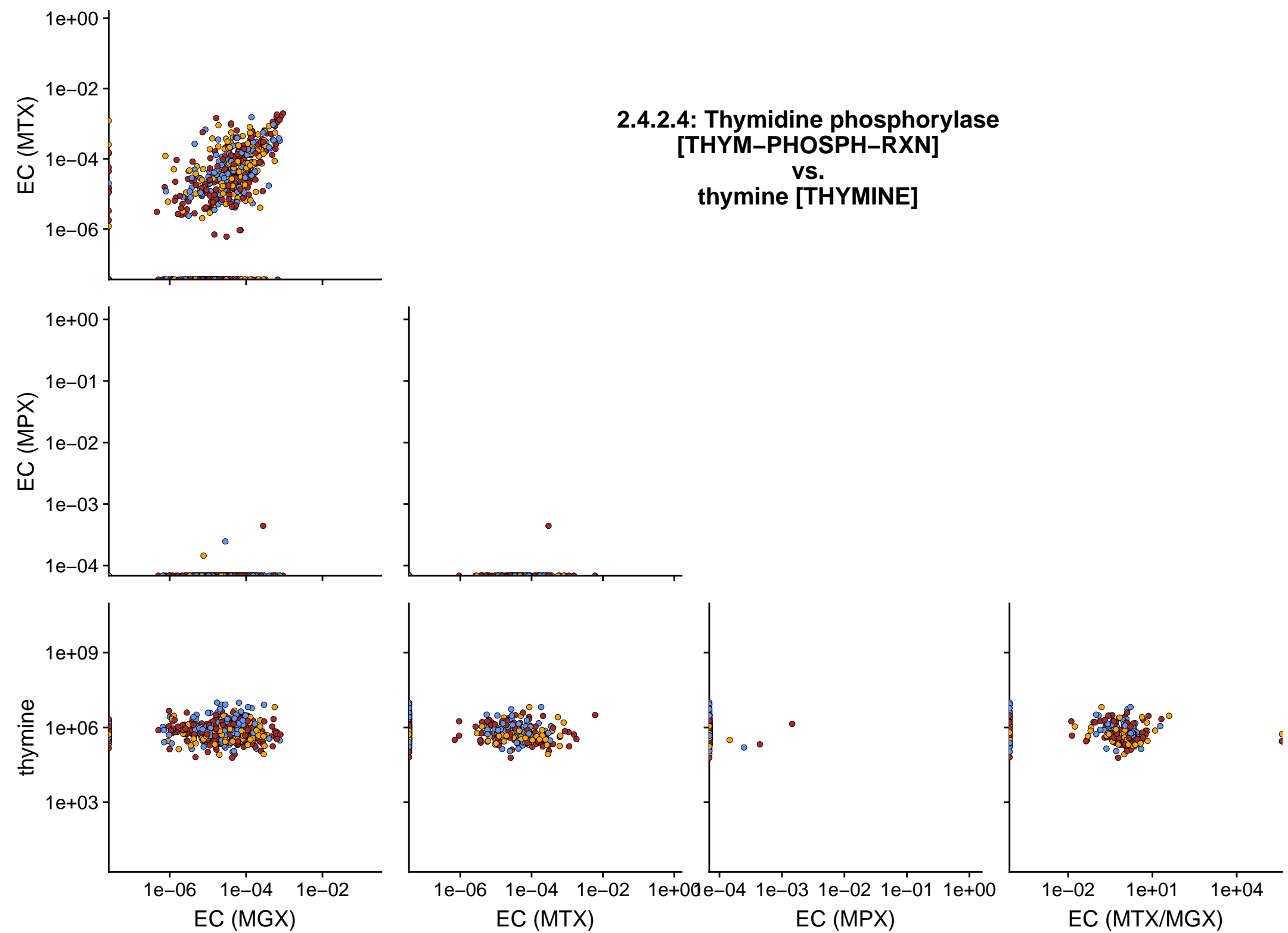
**3.5.1.2: Glutaminase  
[GLUTAMIN-RXN]  
vs.  
glutamate [GLT]**



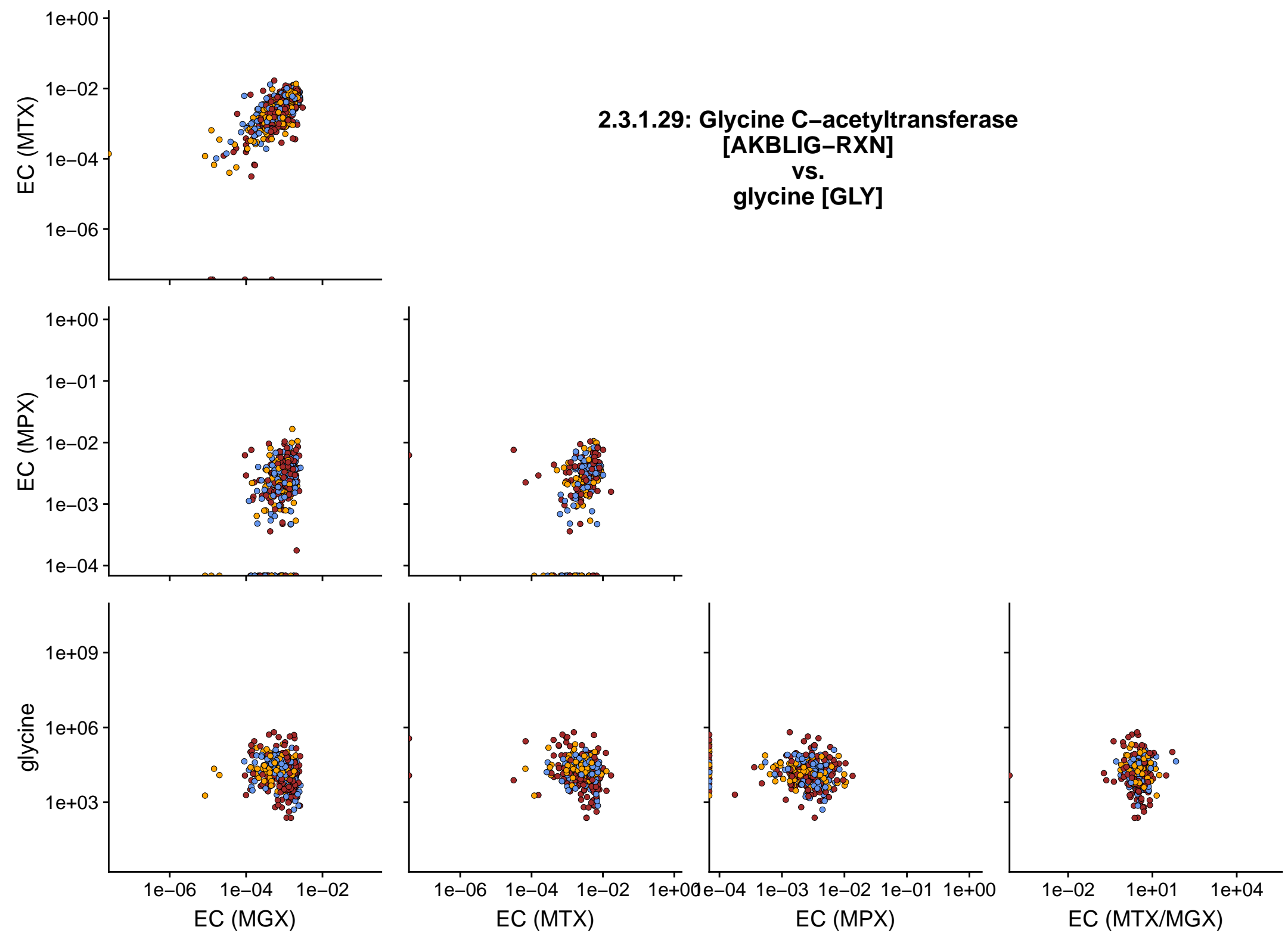
**2.7.1.48: Uridine kinase  
[URIDINEKIN-RXN]  
vs.  
uridine [URIDINE]**



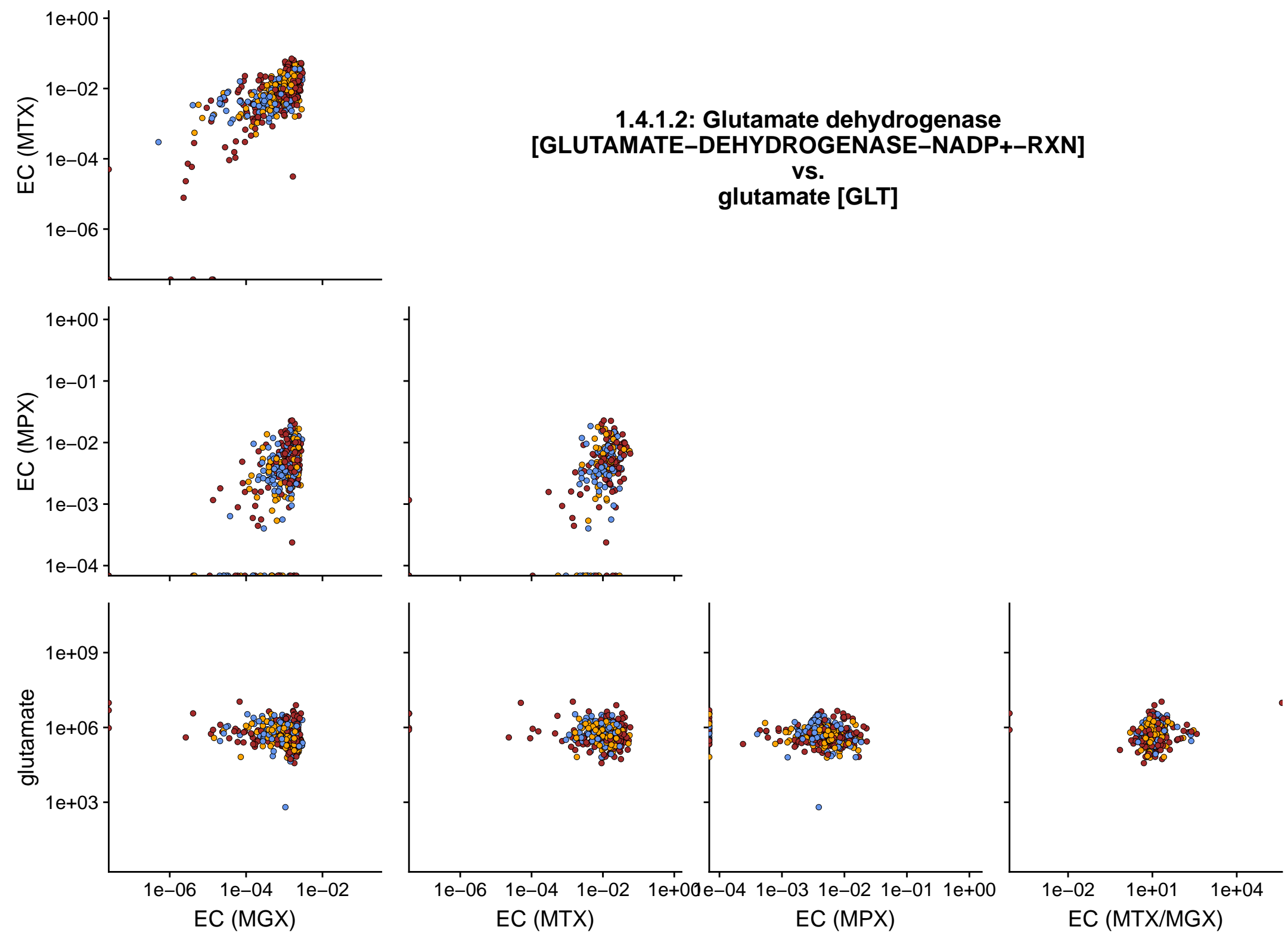
**2.4.2.4: Thymidine phosphorylase  
[THYM-PHOSPH-RXN]  
vs.  
thymine [THYMINE]**



**2.3.1.29: Glycine C-acetyltransferase  
[AKBLIG-RXN]  
vs.  
glycine [GLY]**

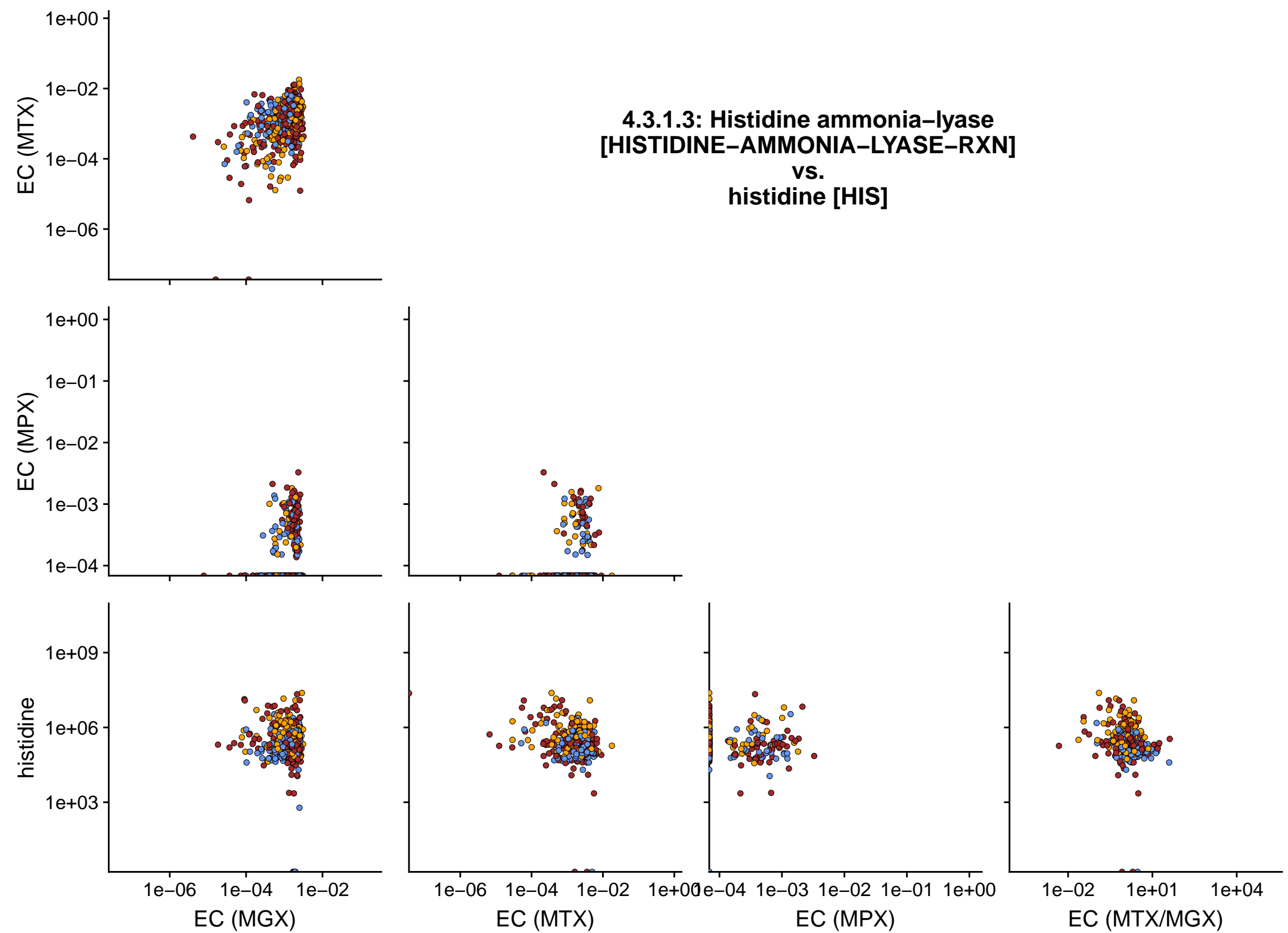


**1.4.1.2: Glutamate dehydrogenase  
[GLUTAMATE-DEHYDROGENASE-NADP+-RXN]  
vs.  
glutamate [GLT]**

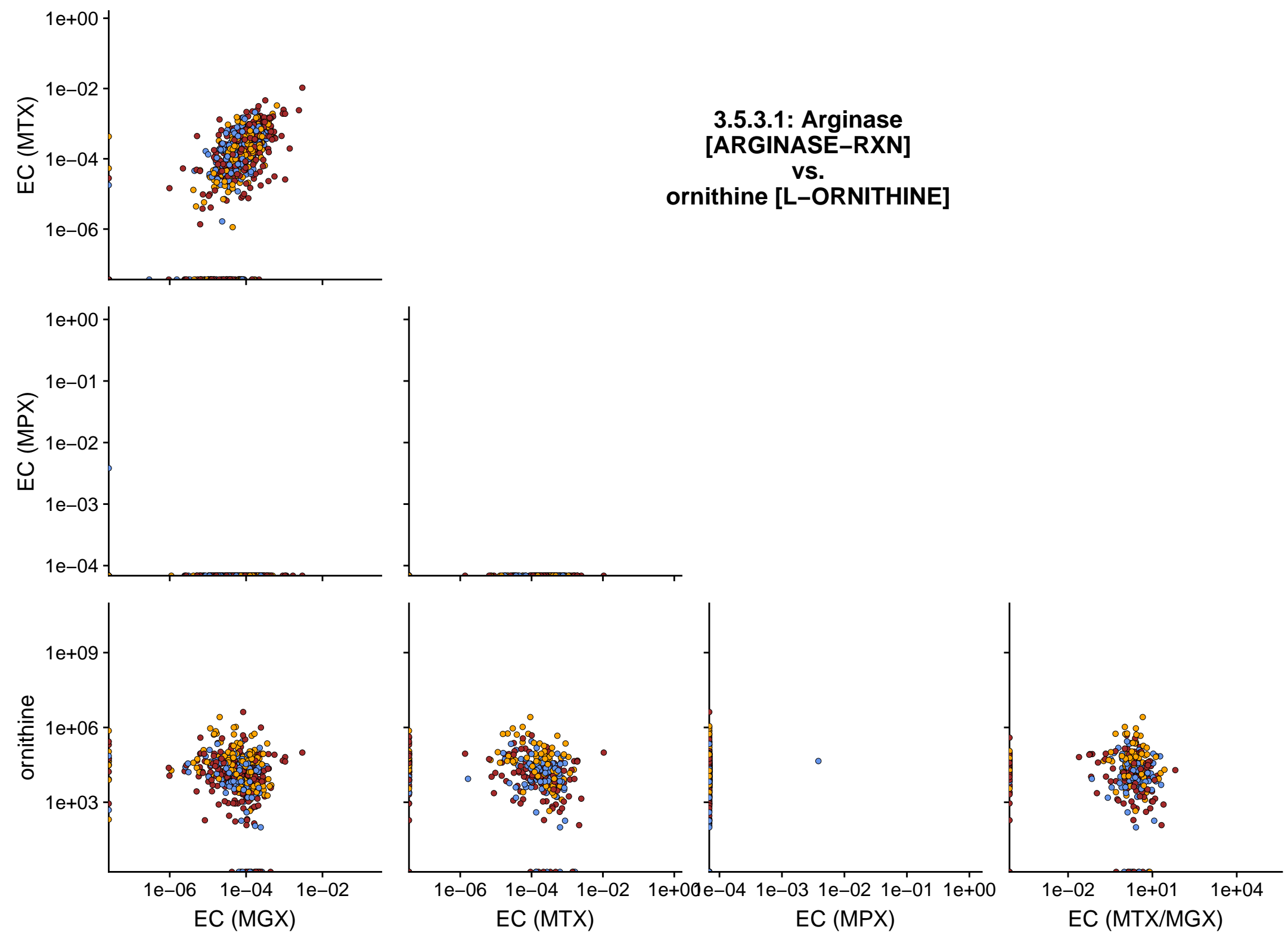




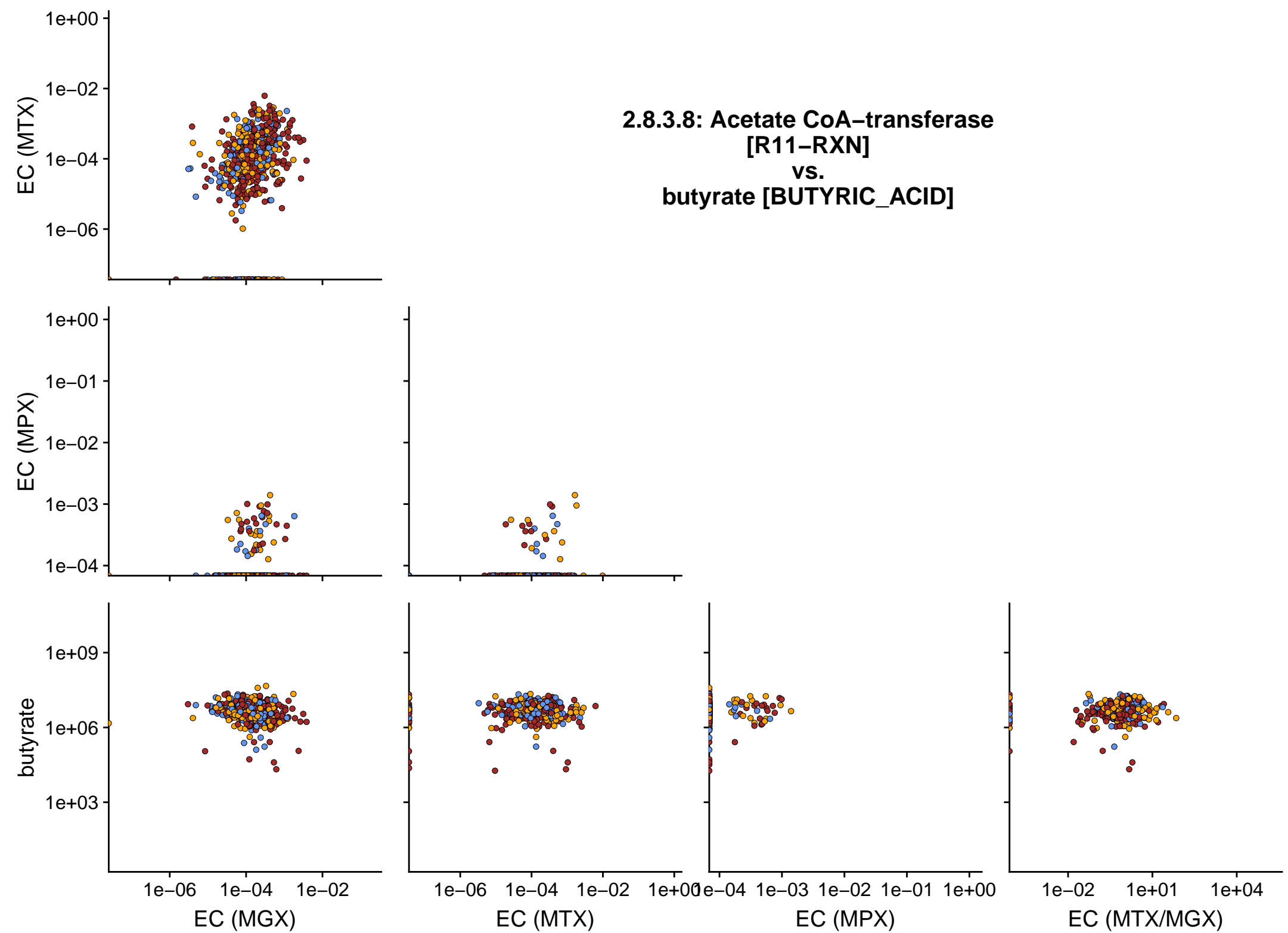
**4.3.1.3: Histidine ammonia-lyase  
[HISTIDINE-AMMONIA-LYASE-RXN]  
vs.  
histidine [HIS]**



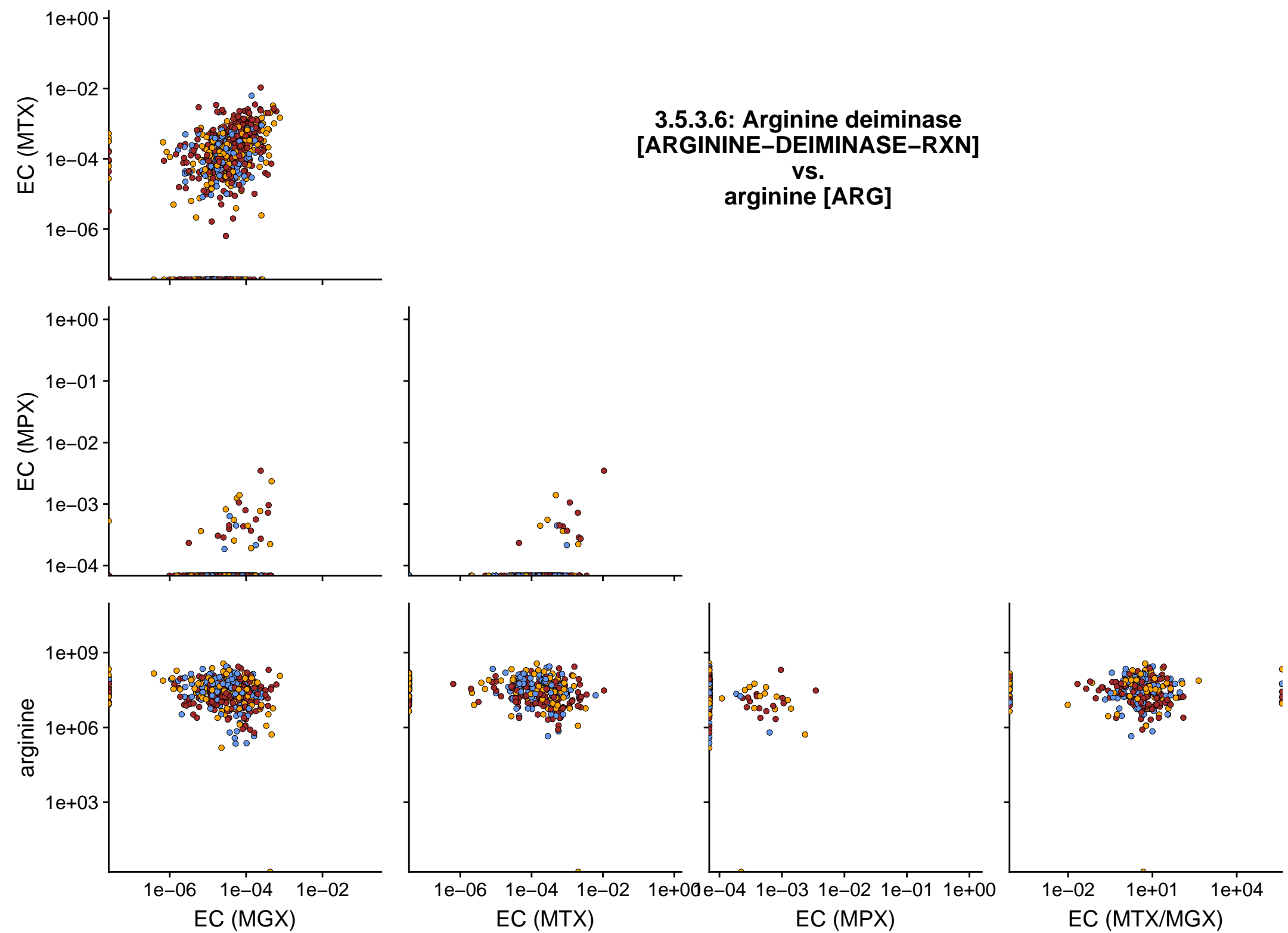
**3.5.3.1: Arginase  
[ARGINASE-RXN]  
vs.  
ornithine [L-ORNITHINE]**



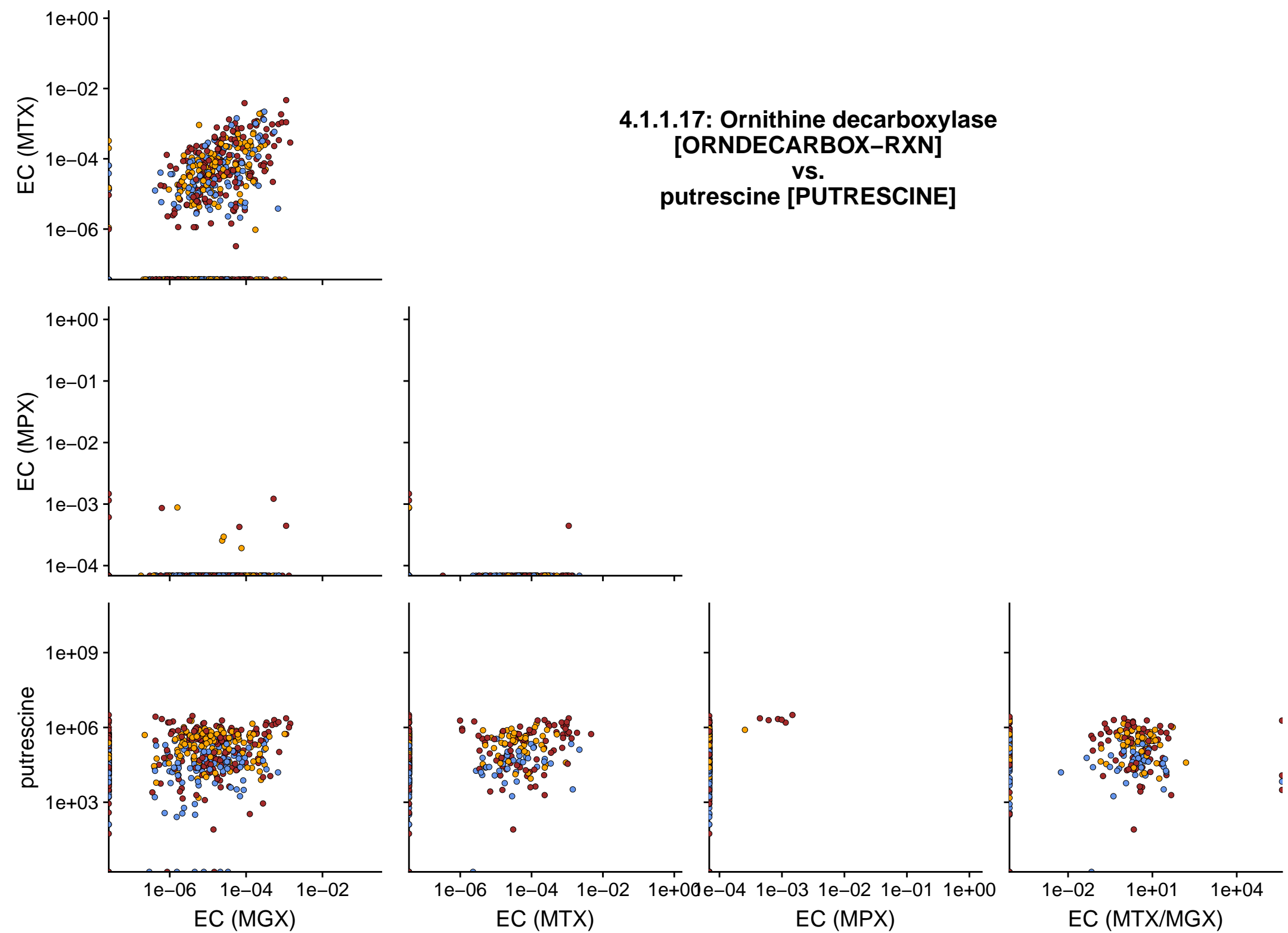
**2.8.3.8: Acetate CoA-transferase  
[R11-RXN]  
vs.  
butyrate [BUTYRIC\_ACID]**



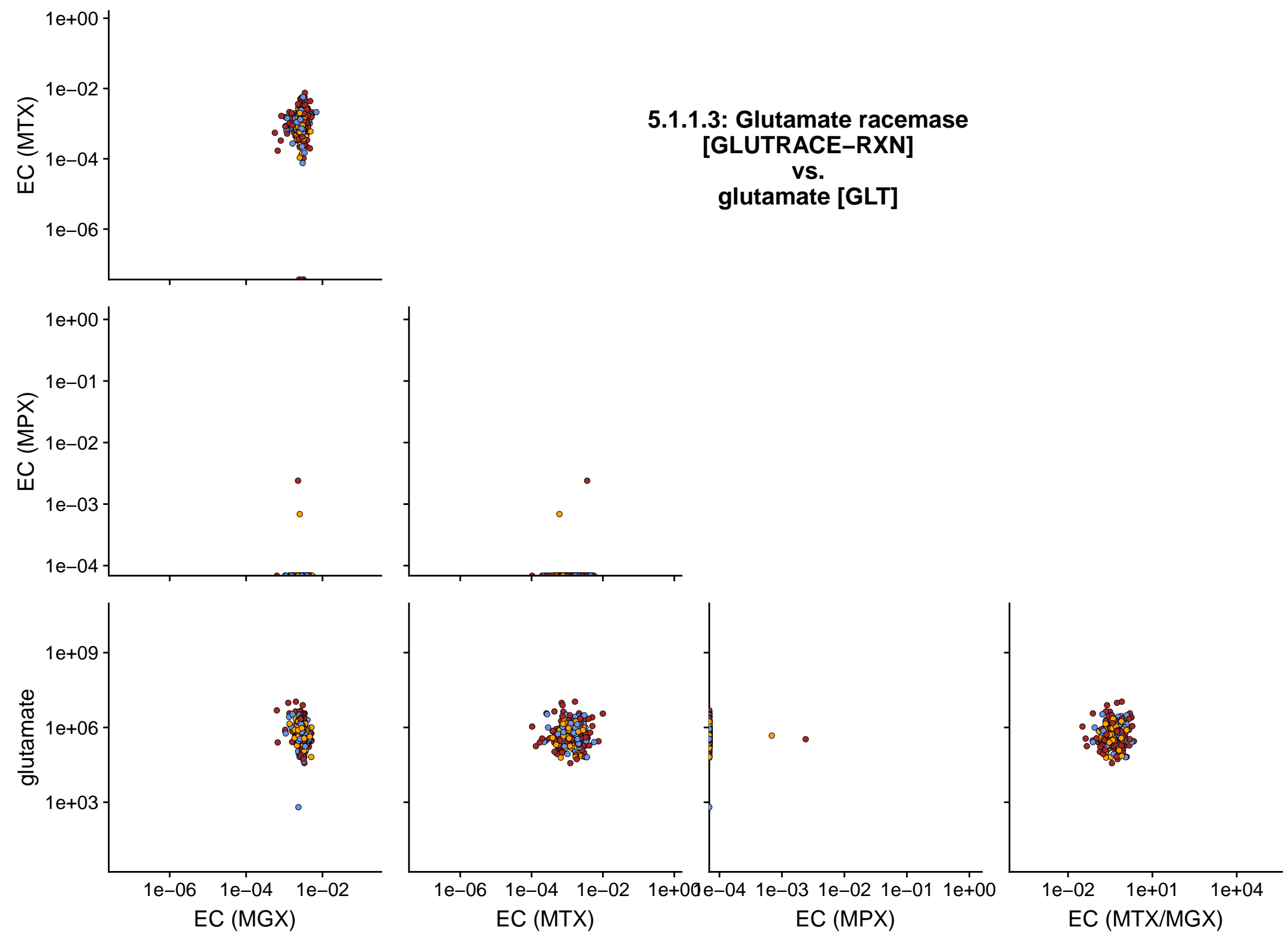
**3.5.3.6: Arginine deiminase  
[ARGININE-DEIMINASE-RXN]  
vs.  
arginine [ARG]**



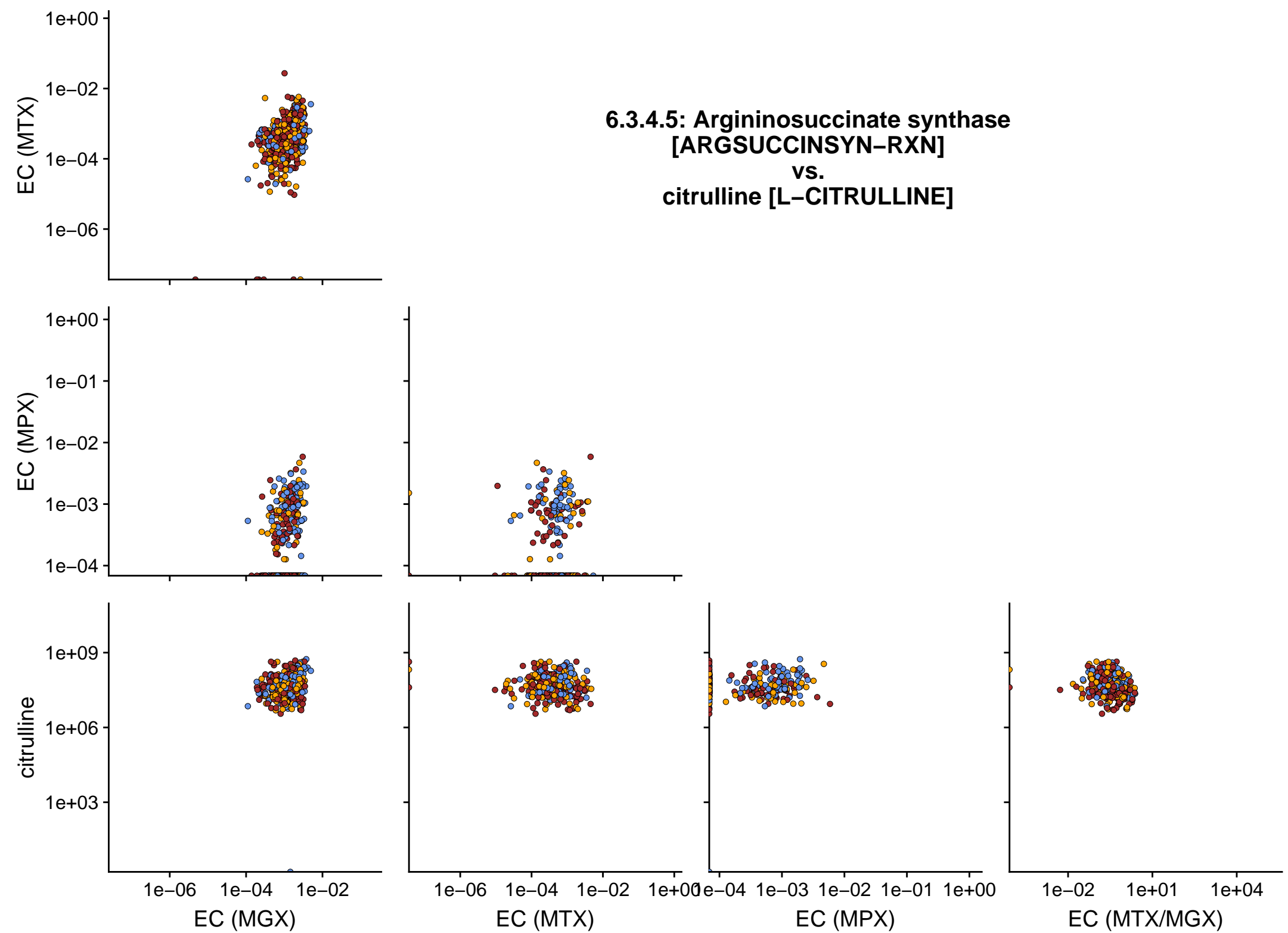
**4.1.1.17: Ornithine decarboxylase  
[ORNDECARBOX-RXN]  
vs.  
putrescine [PUTRESCINE]**



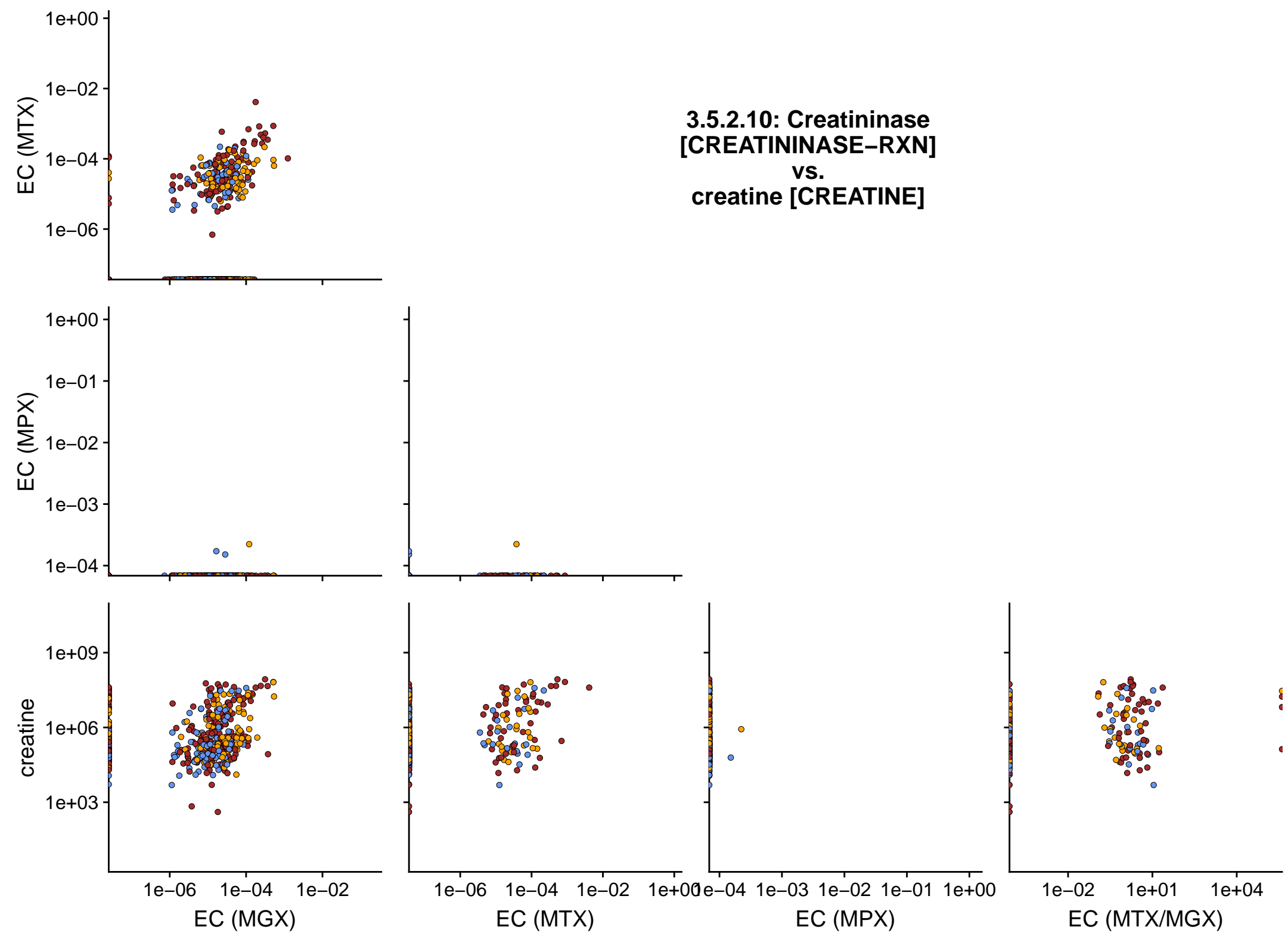
**5.1.1.3: Glutamate racemase  
[GLUTRACE-RXN]  
vs.  
glutamate [GLT]**



**6.3.4.5: Argininosuccinate synthase  
[ARGSUCCINSYN-RXN]  
vs.  
citrulline [L-CITRULLINE]**

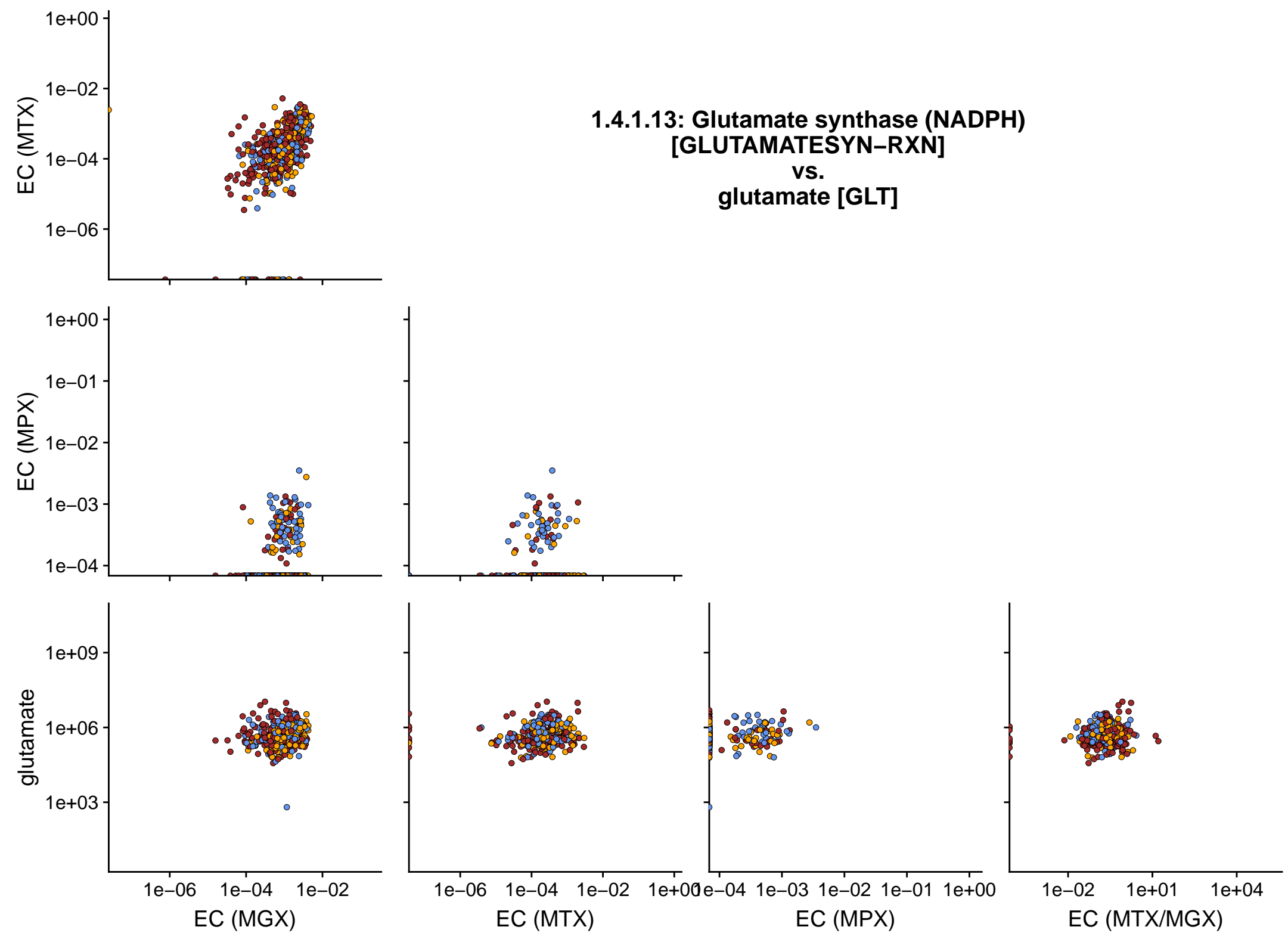


**3.5.2.10: Creatininase  
[CREATININASE-RXN]  
vs.  
creatinine [CREATINE]**

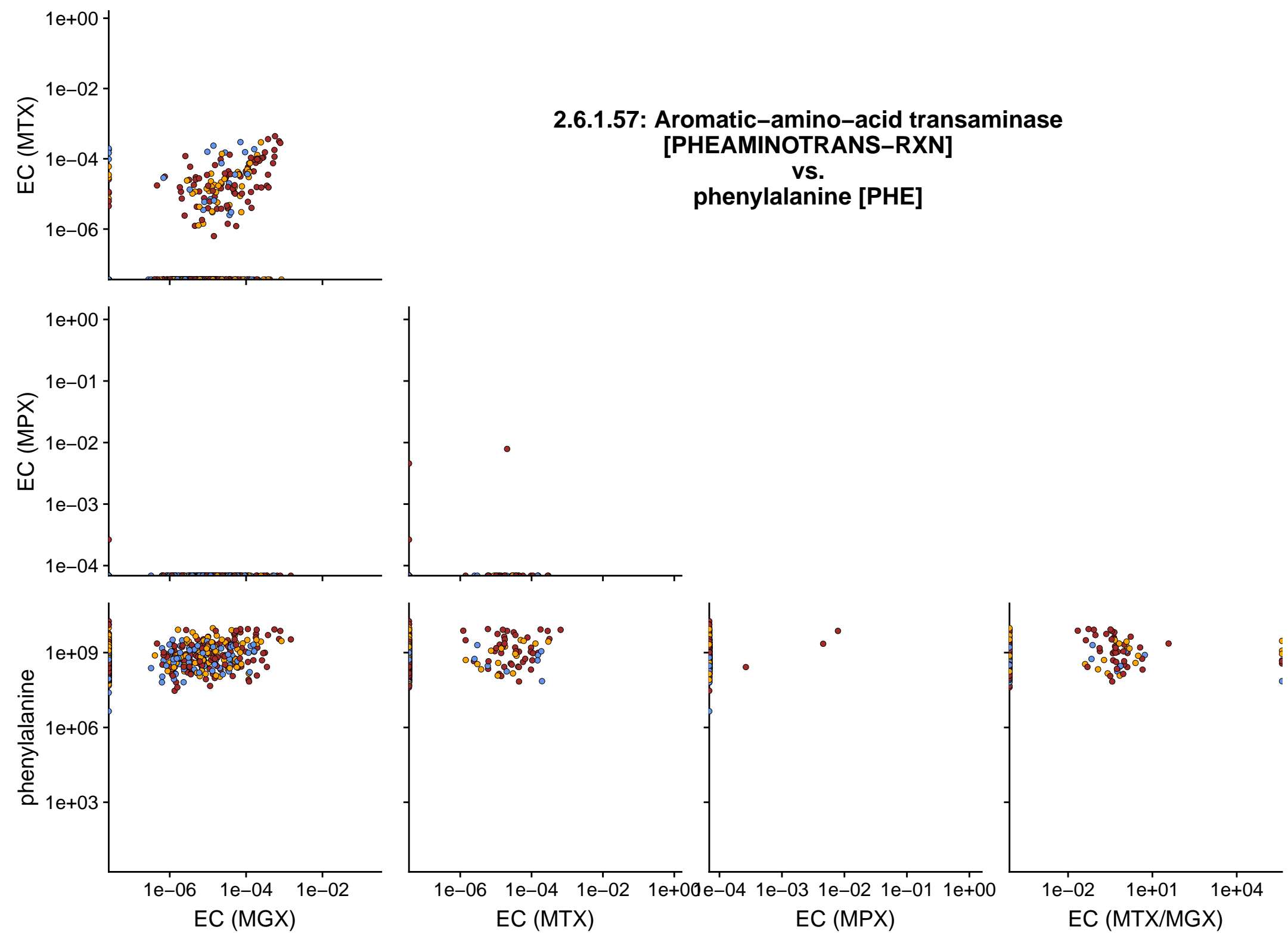




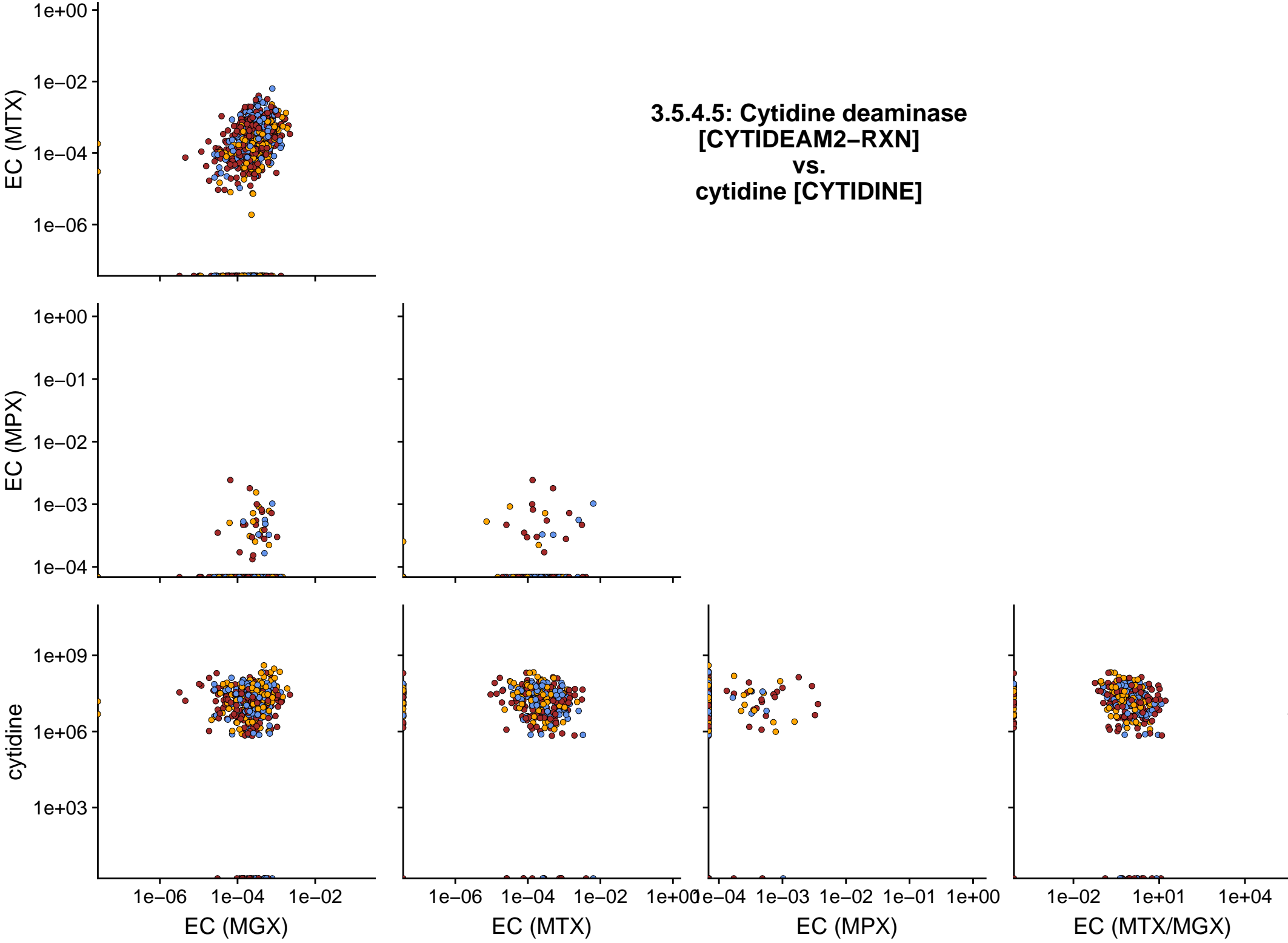
**1.4.1.13: Glutamate synthase (NADPH)  
[GLUTAMATESYN-RXN]  
vs.  
glutamate [GLT]**



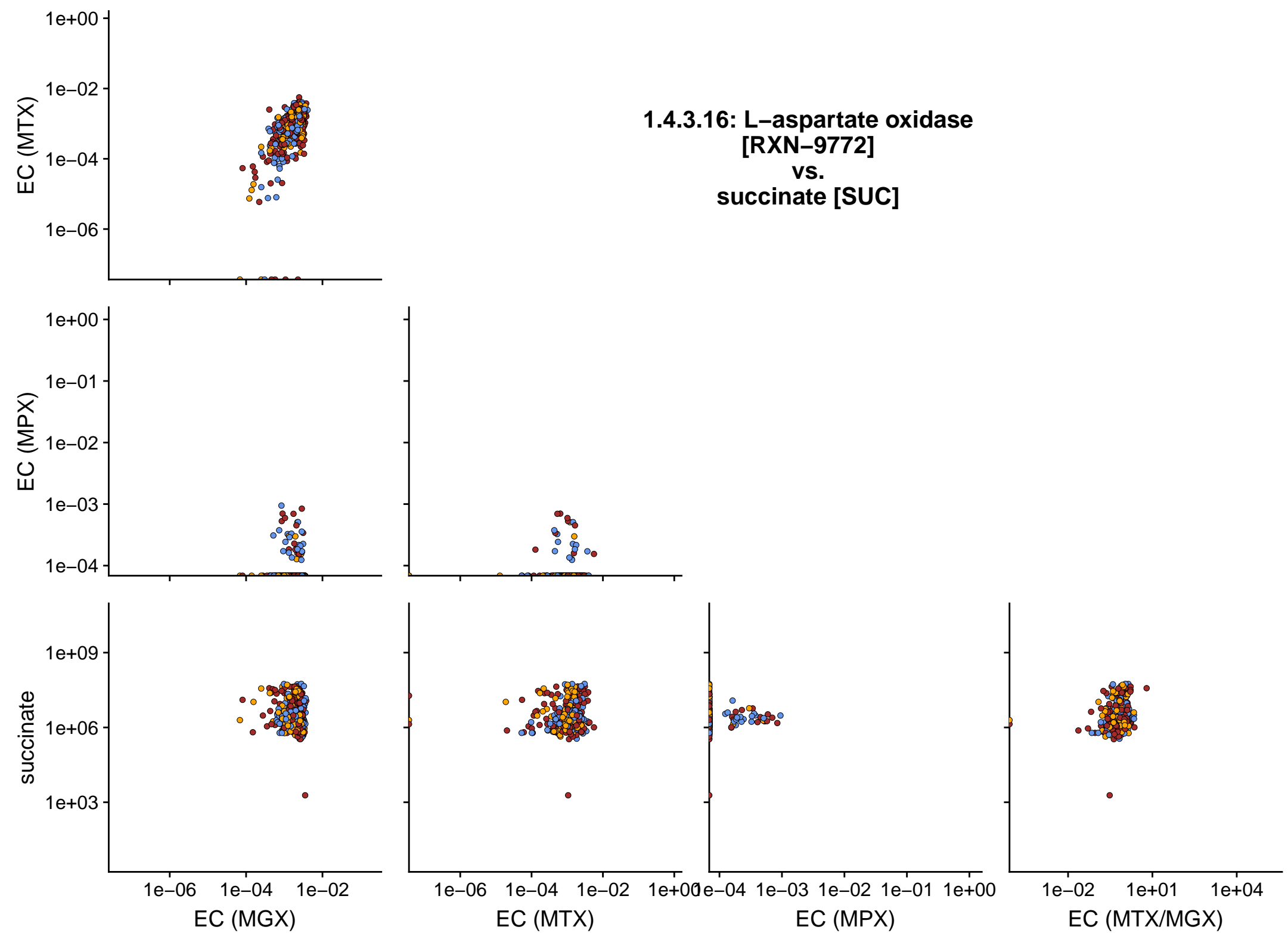
**2.6.1.57: Aromatic-amino-acid transaminase  
[PHEAMINOTRANS-RXN]  
vs.  
phenylalanine [PHE]**



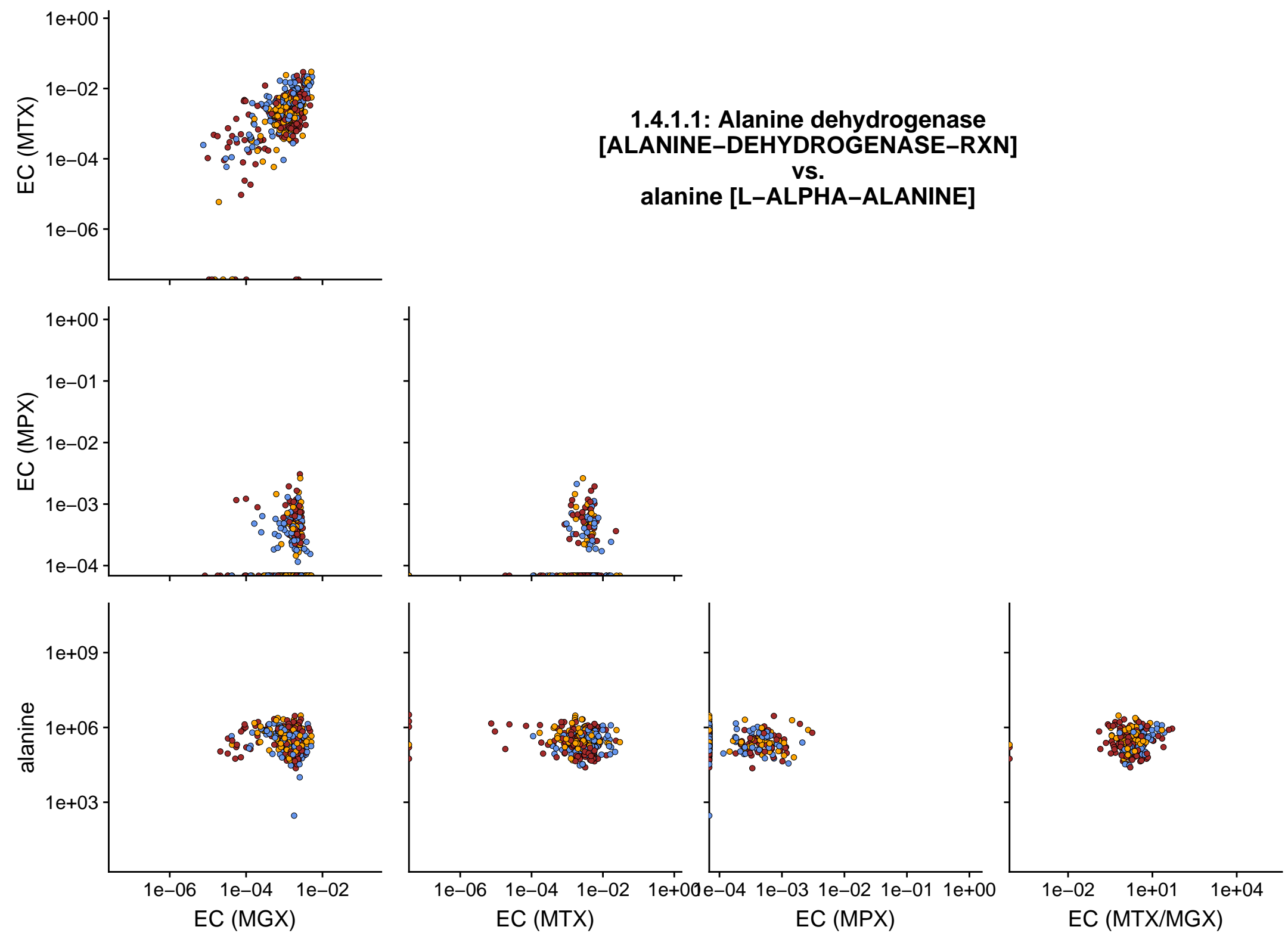
**3.5.4.5: Cytidine deaminase  
[CYTIDEAM2-RXN]  
vs.  
cytidine [CYTIDINE]**



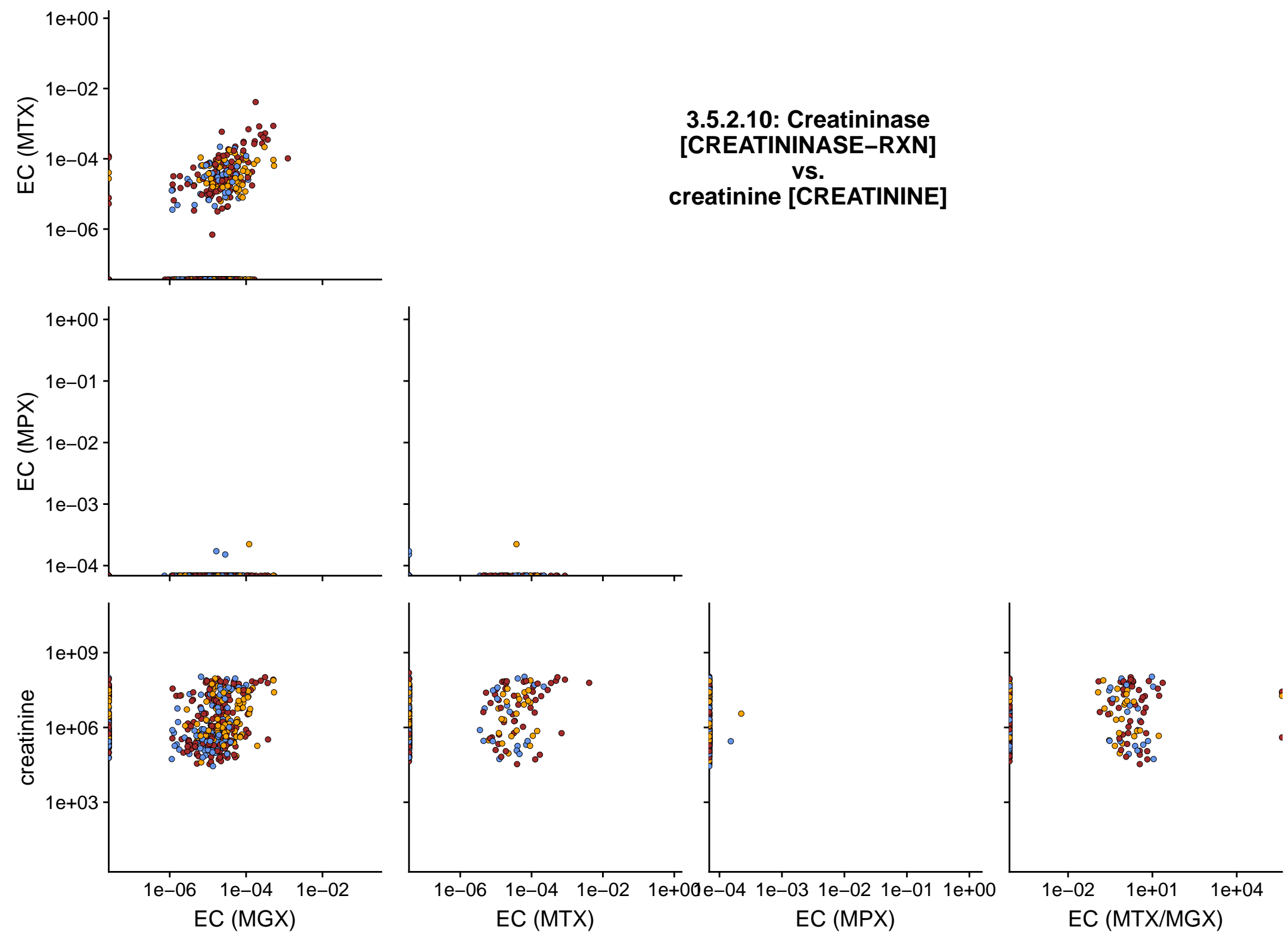
**1.4.3.16: L-aspartate oxidase  
[RXN-9772]  
vs.  
succinate [SUC]**



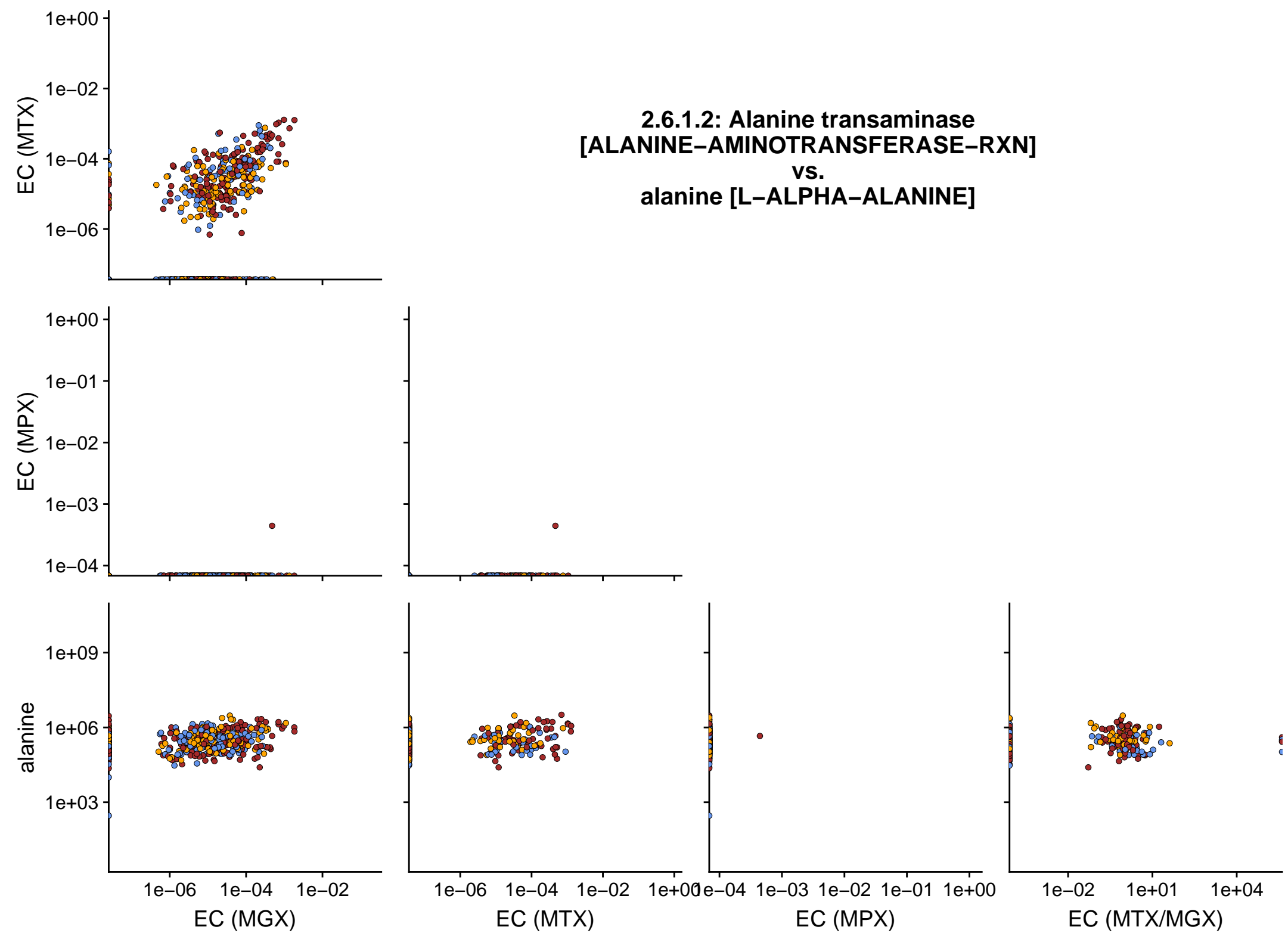
**1.4.1.1: Alanine dehydrogenase  
[ALANINE-DEHYDROGENASE-RXN]  
vs.  
alanine [L-ALPHA-ALANINE]**



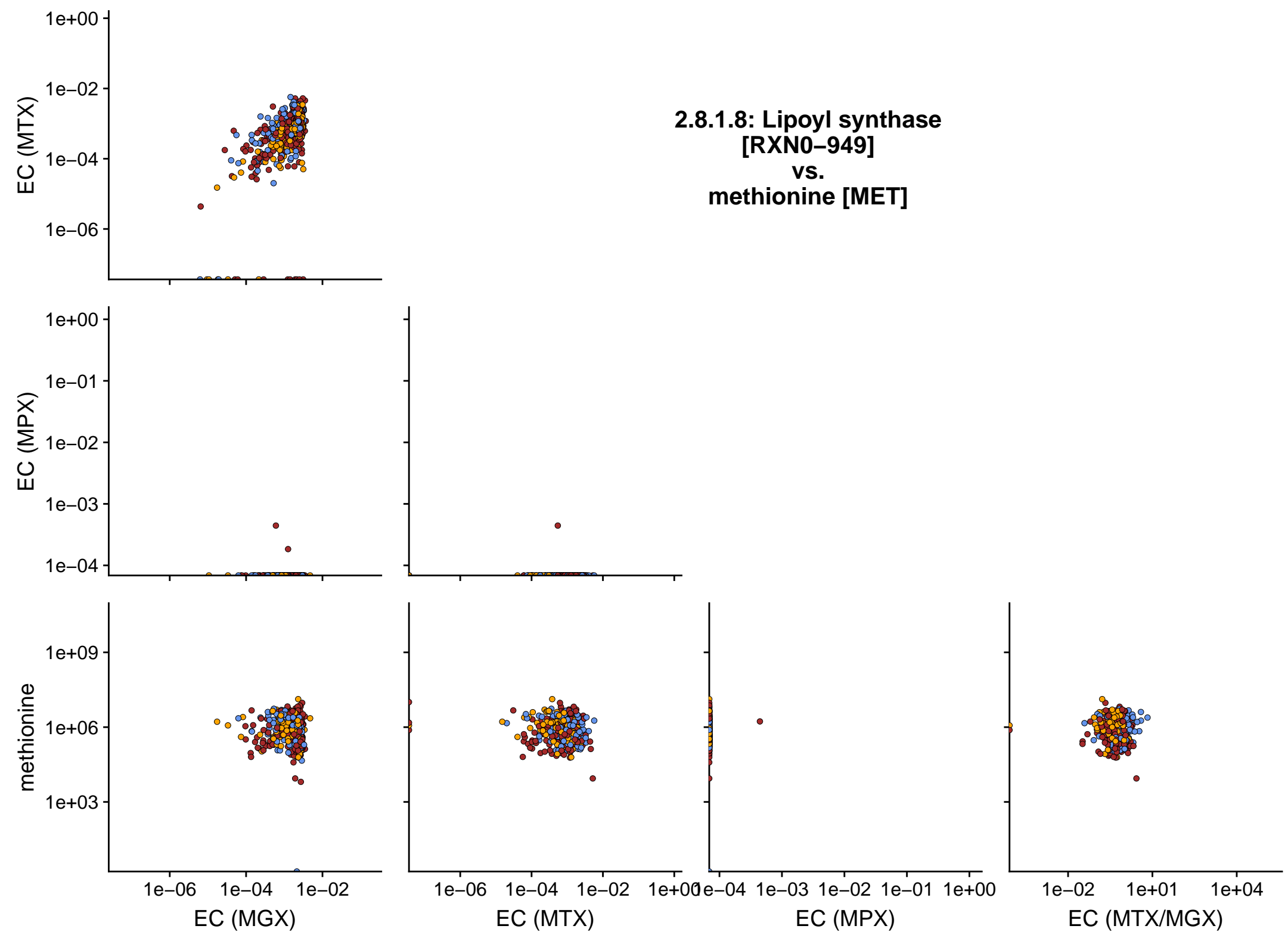
**3.5.2.10: Creatininase  
[CREATININASE-RXN]  
vs.  
creatinine [CREATININE]**



**2.6.1.2: Alanine transaminase  
[ALANINE-AMINOTRANSFERASE-RXN]  
vs.  
alanine [L-ALPHA-ALANINE]**

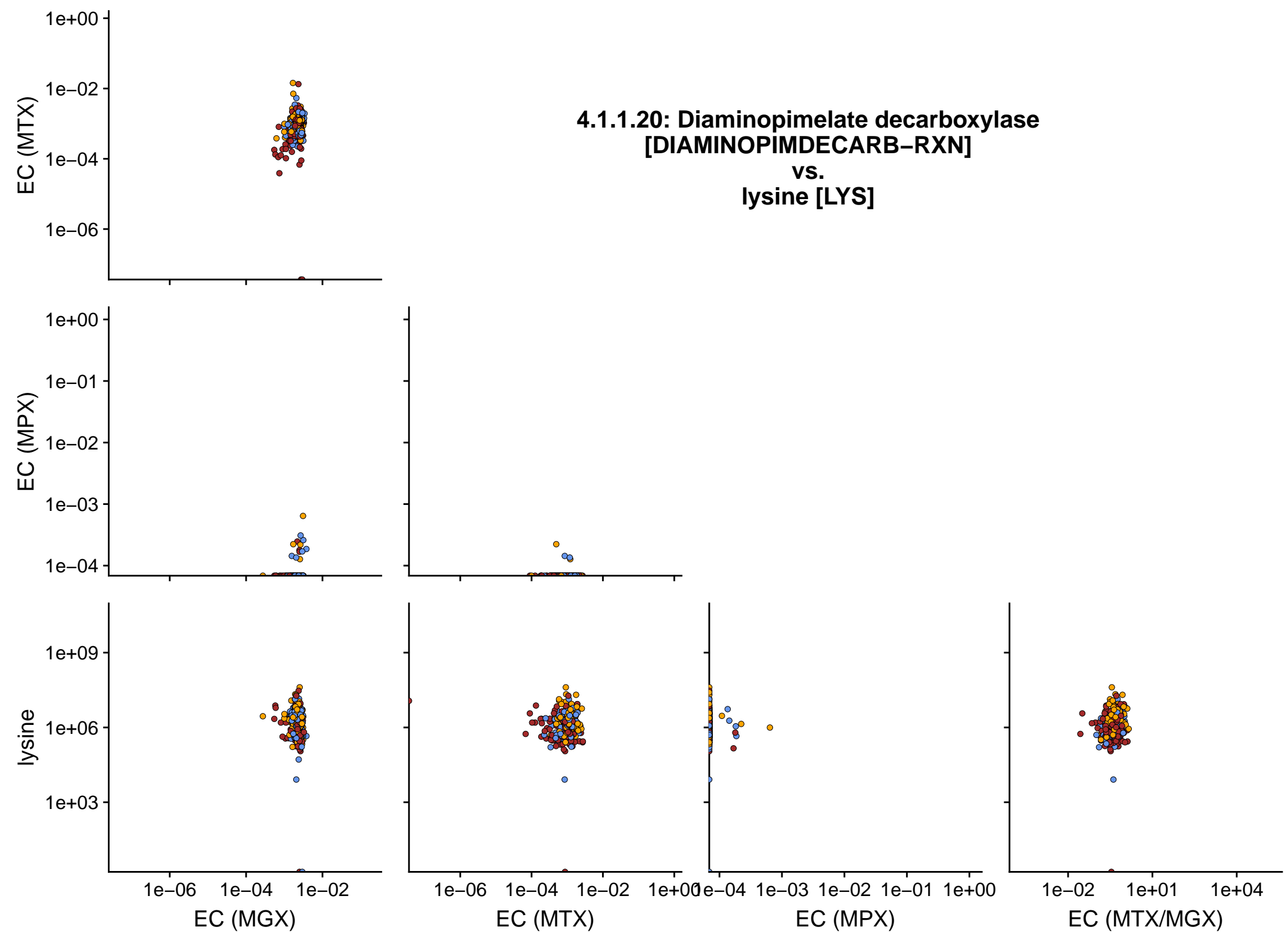


**2.8.1.8: Lipoyl synthase  
[RXN0-949]  
vs.  
methionine [MET]**

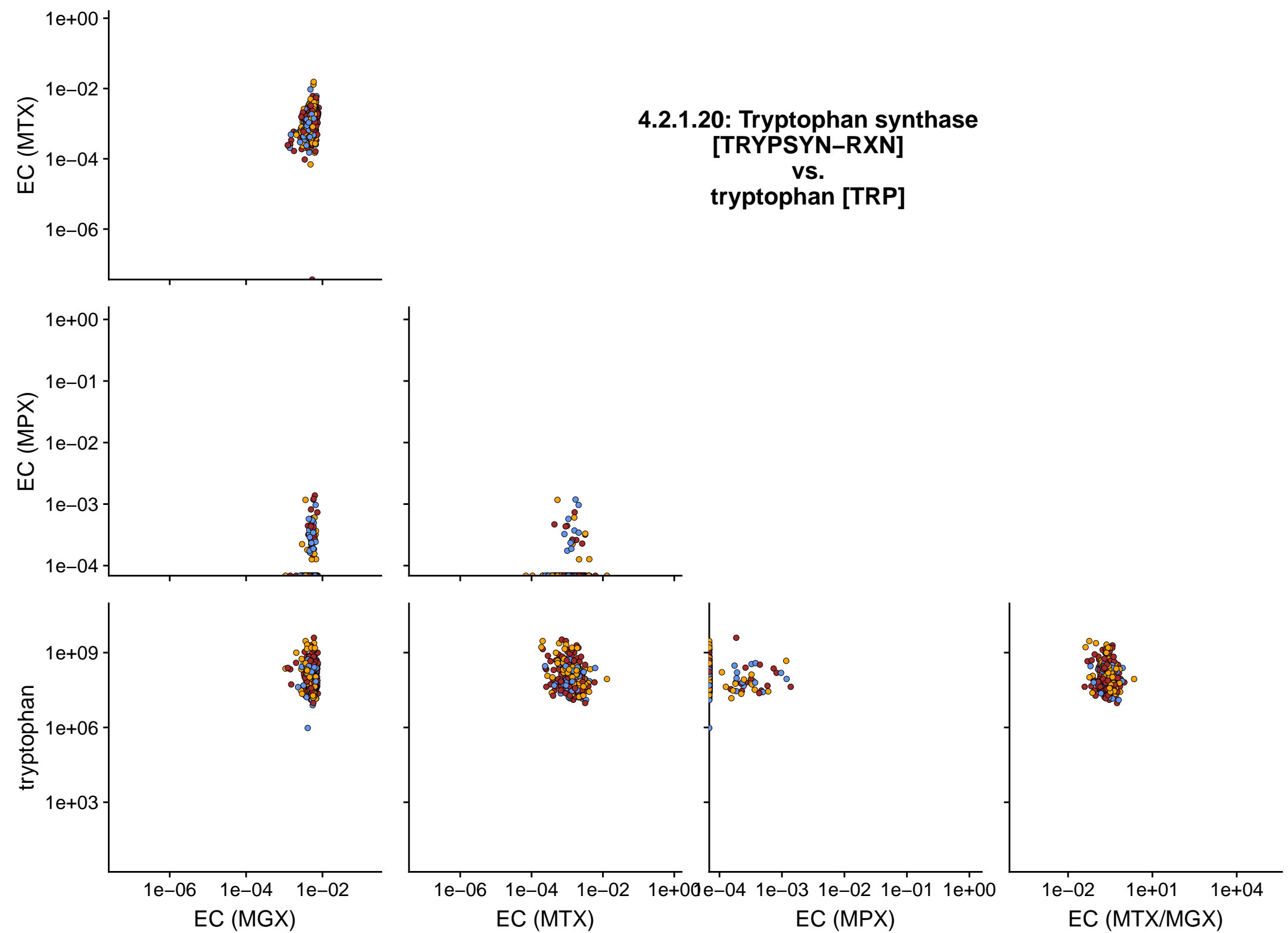




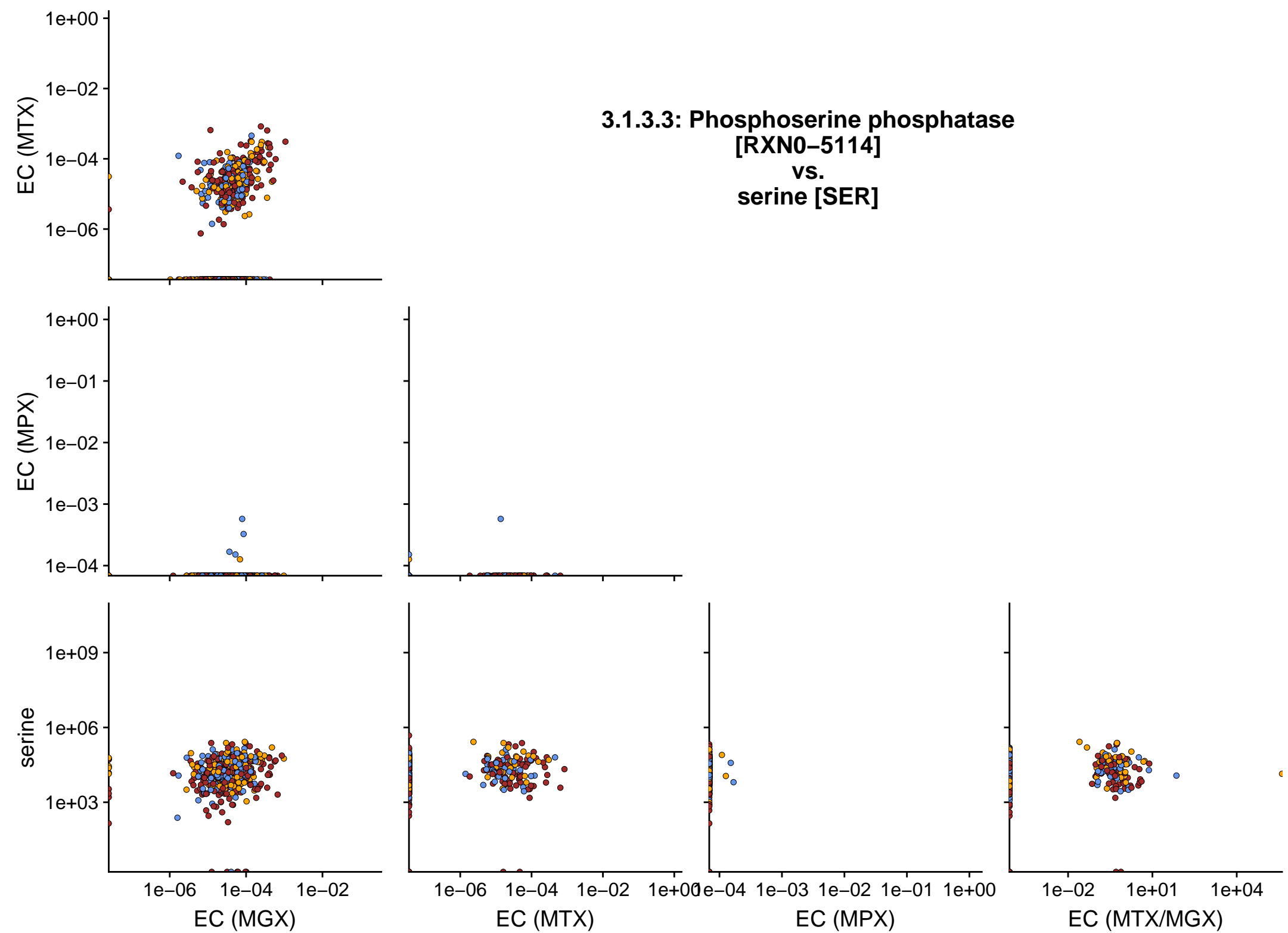
**4.1.1.20: Diaminopimelate decarboxylase  
[DIAMINOPIMDECARB-RXN]  
vs.  
lysine [LYS]**



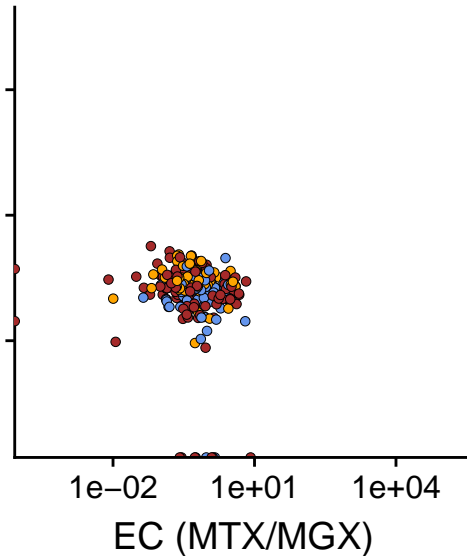
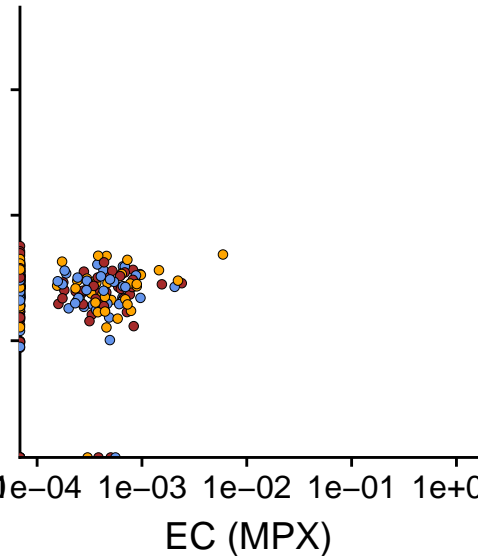
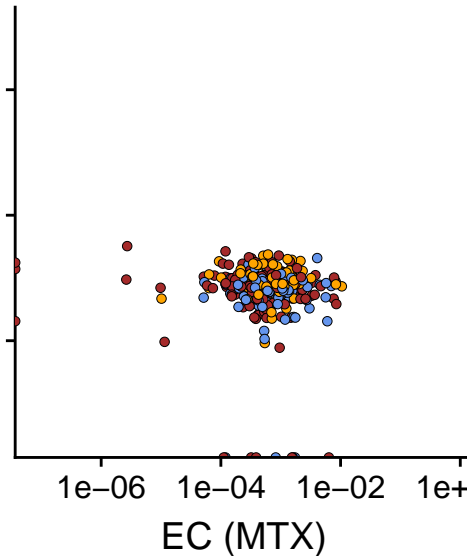
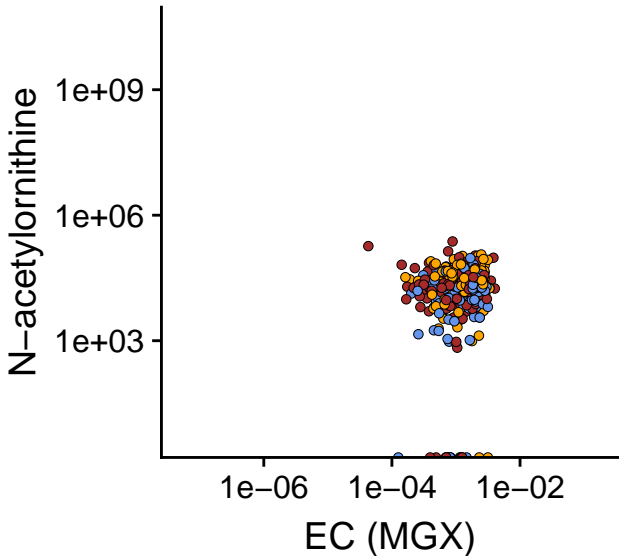
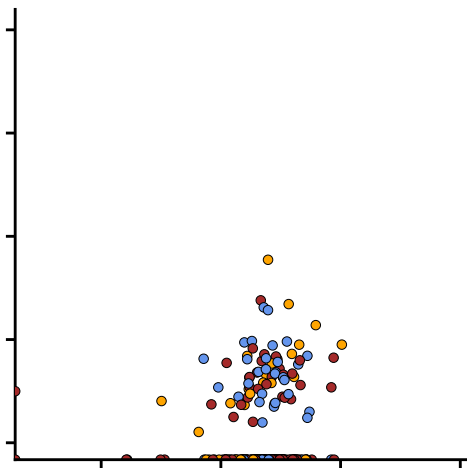
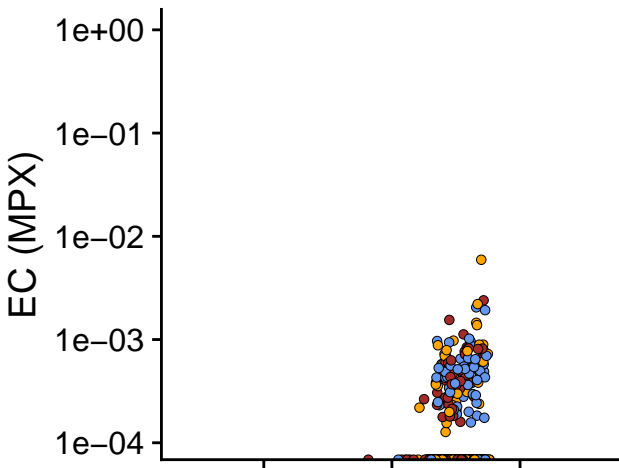
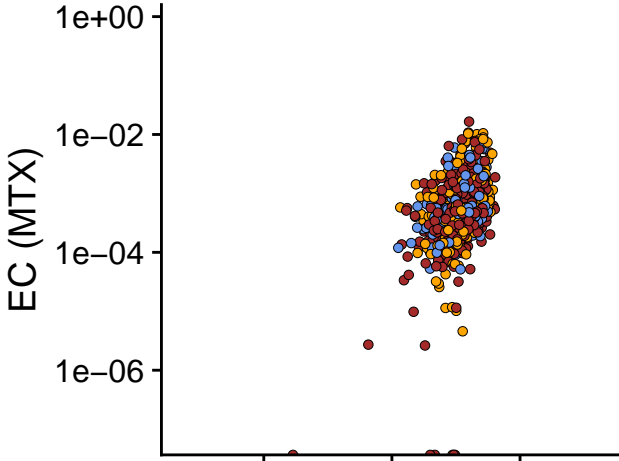
**4.2.1.20: Tryptophan synthase  
[TRYP SYN-RXN]  
vs.  
tryptophan [TRP]**



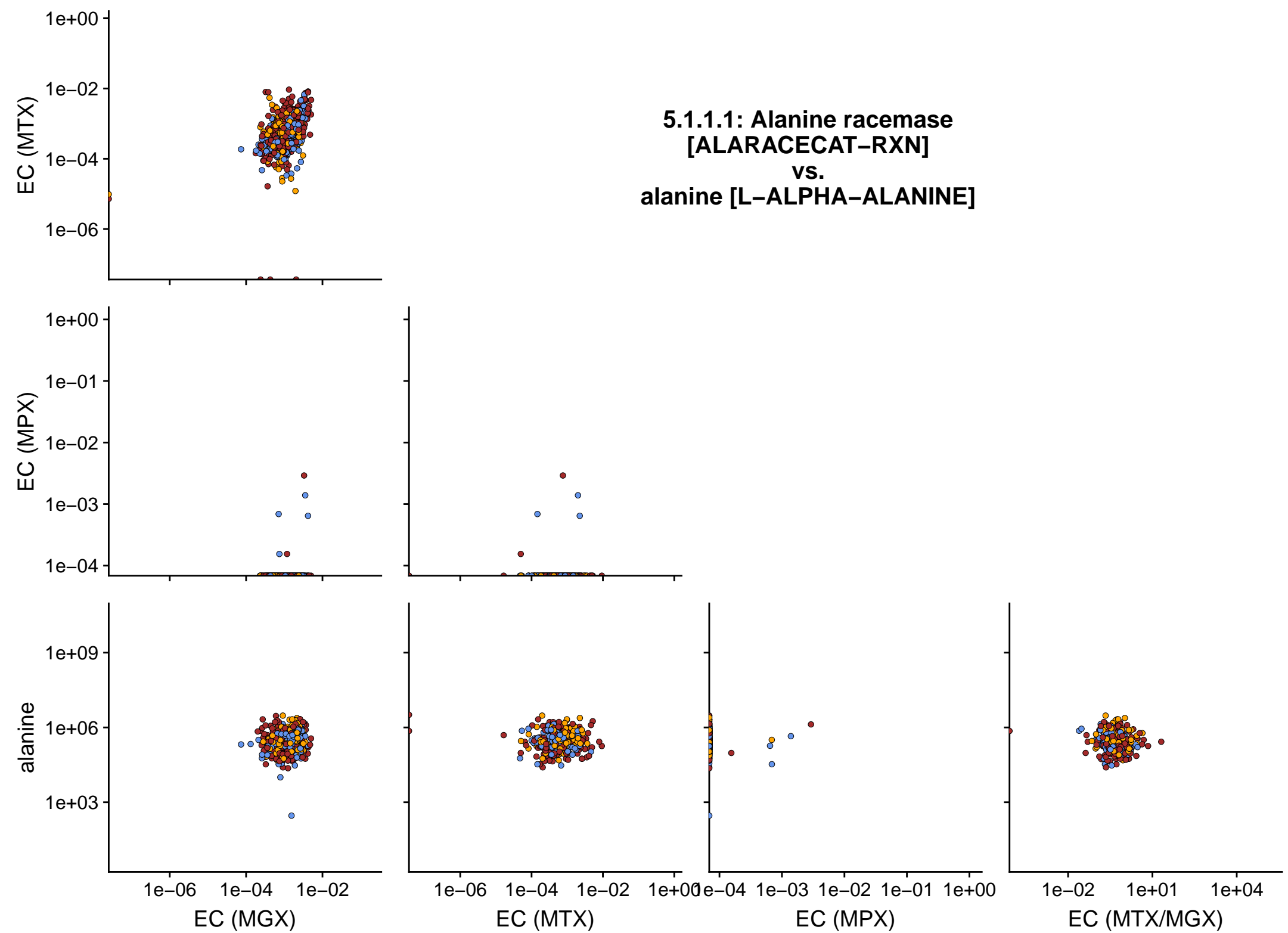
**3.1.3.3: Phosphoserine phosphatase  
[RXN0-5114]  
vs.  
serine [SER]**



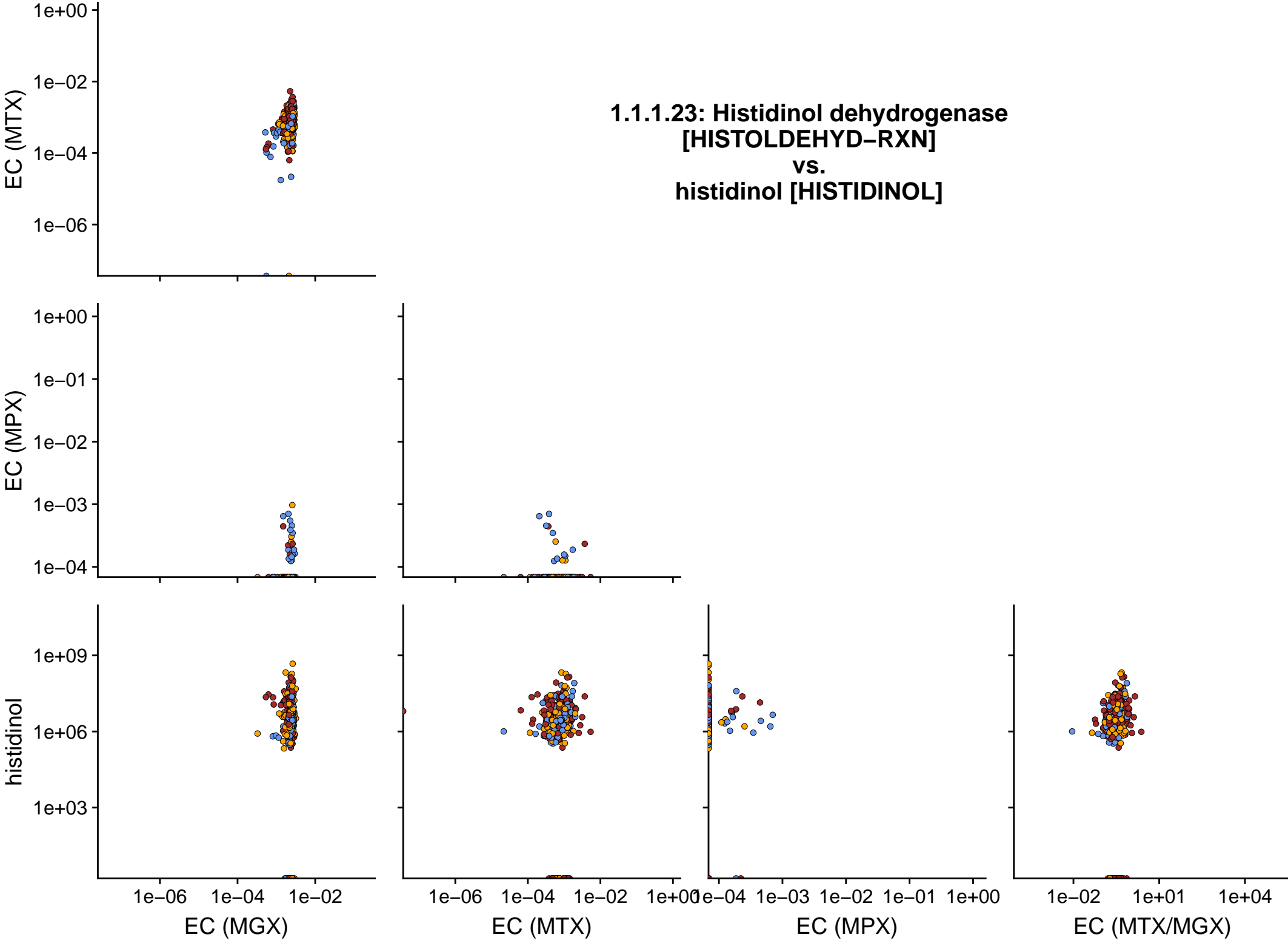
**2.6.1.11: Acetylornithine transaminase  
[ACETYLORNTRANSAM-RXN]  
vs.  
N-acetylornithine [N-ALPHA-ACETYLORNITHINE]**



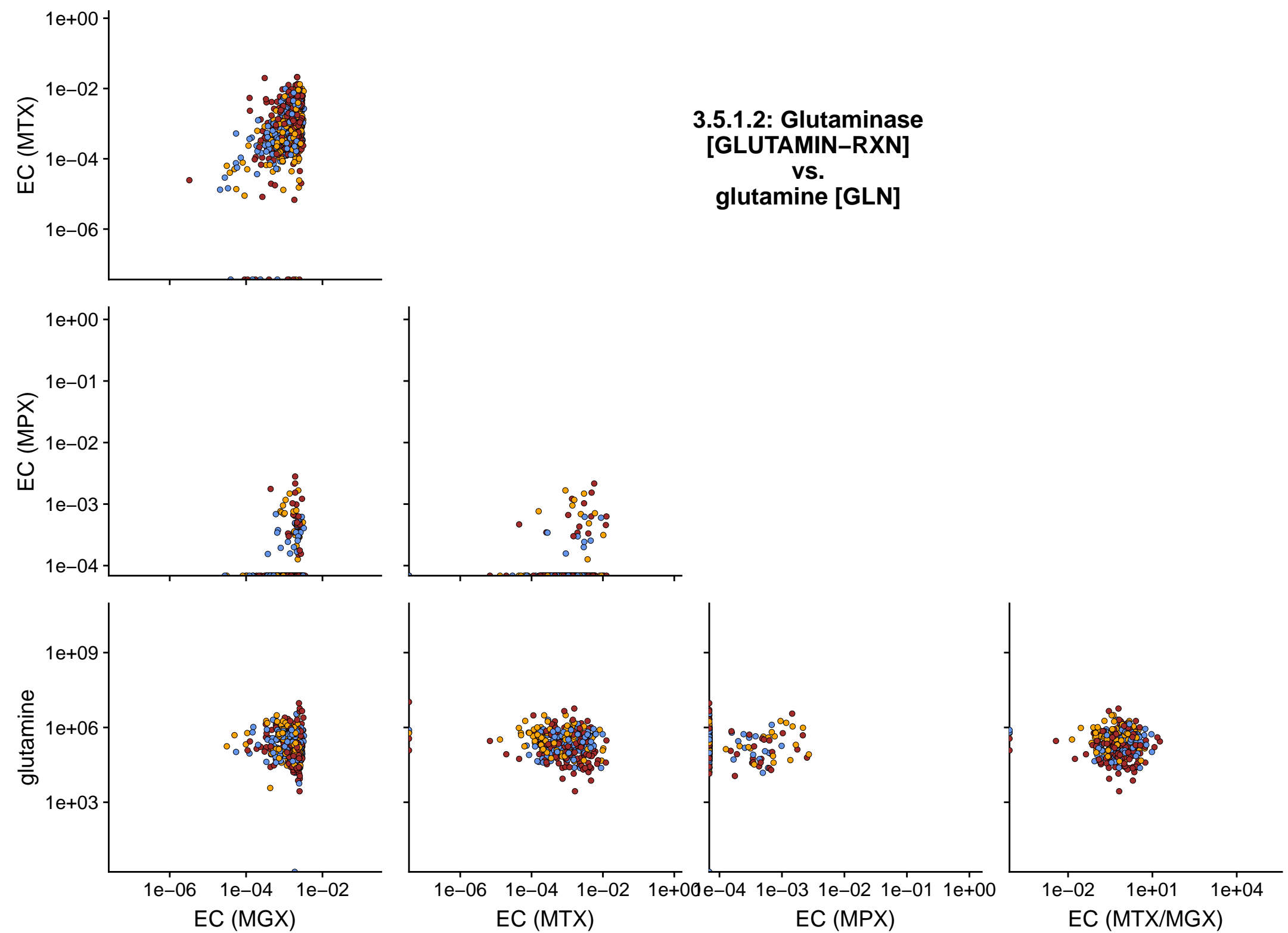
**5.1.1.1: Alanine racemase  
[ALARACECAT-RXN]  
vs.  
alanine [L-ALPHA-ALANINE]**



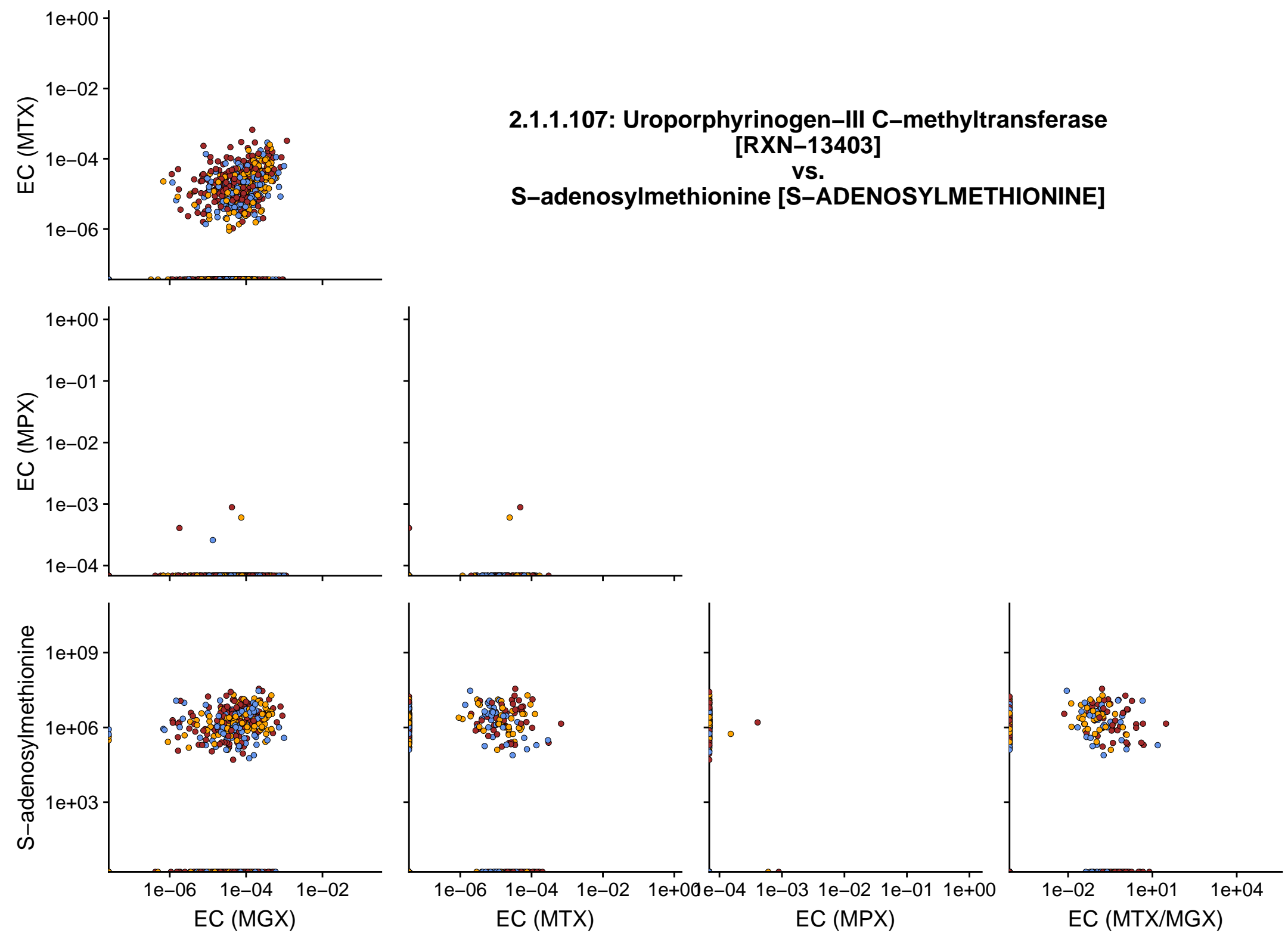
**1.1.1.23: Histidinol dehydrogenase  
[HISTOLDEHYD-RXN]  
vs.  
histidinol [HISTIDINOL]**



**3.5.1.2: Glutaminase  
[GLUTAMIN-RXN]  
vs.  
glutamine [GLN]**

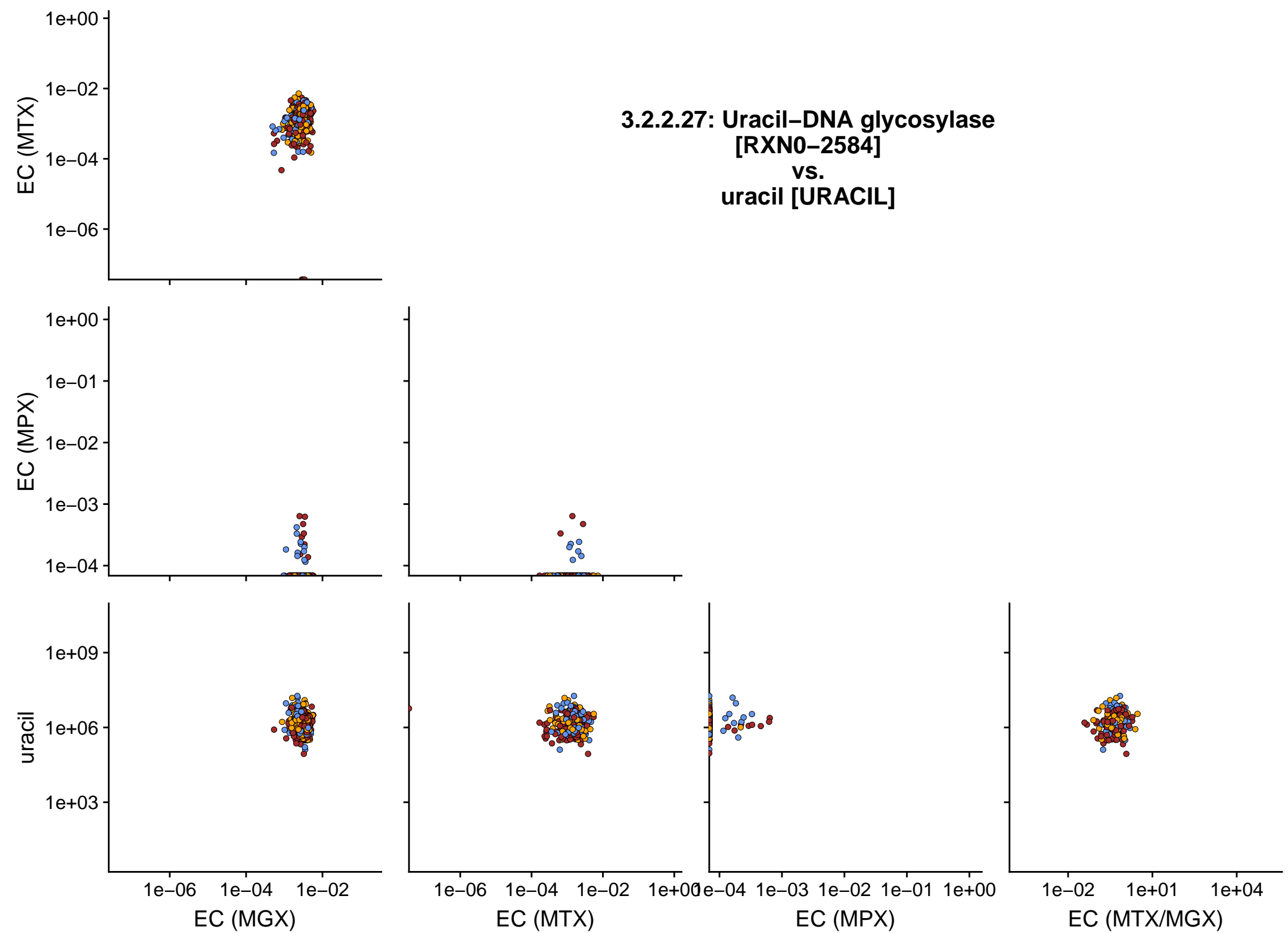


**2.1.1.107: Uroporphyrinogen-III C-methyltransferase  
[RXN-13403]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**

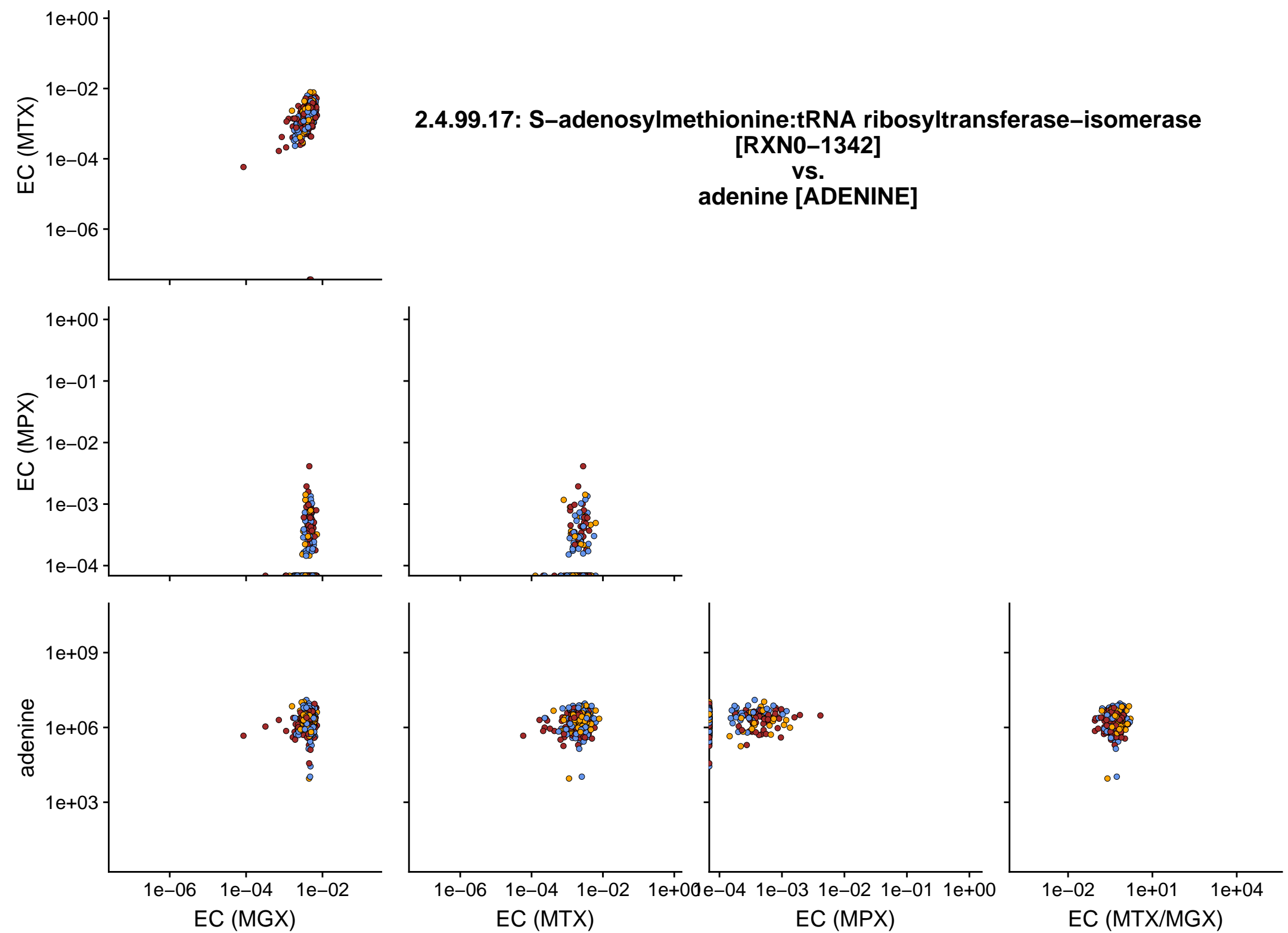




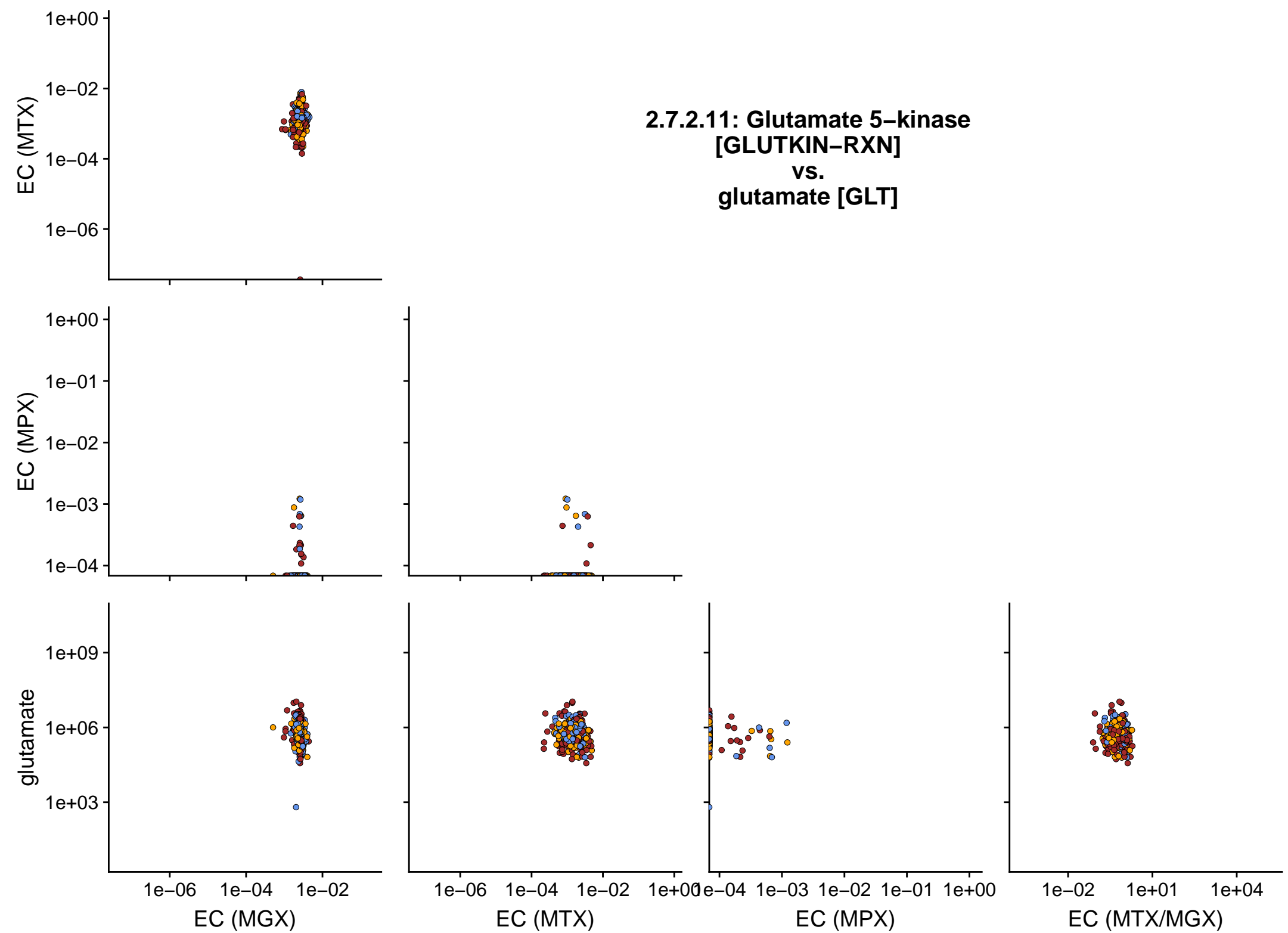
**3.2.2.27: Uracil-DNA glycosylase  
[RXN0-2584]  
vs.  
uracil [URACIL]**



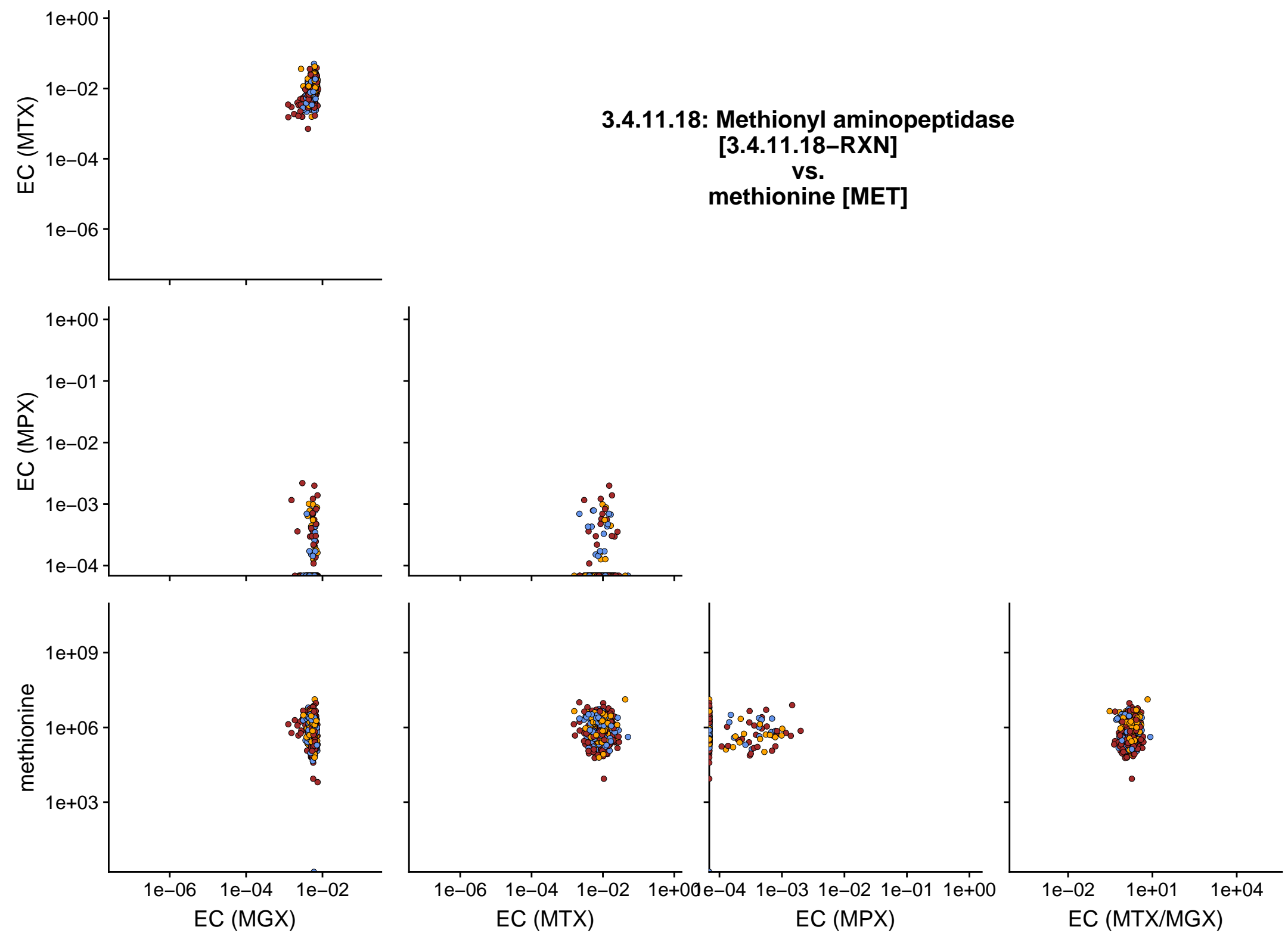
**2.4.99.17: S-adenosylmethionine:tRNA ribosyltransferase-isomerase  
[RXN0-1342]  
vs.  
adenine [ADENINE]**



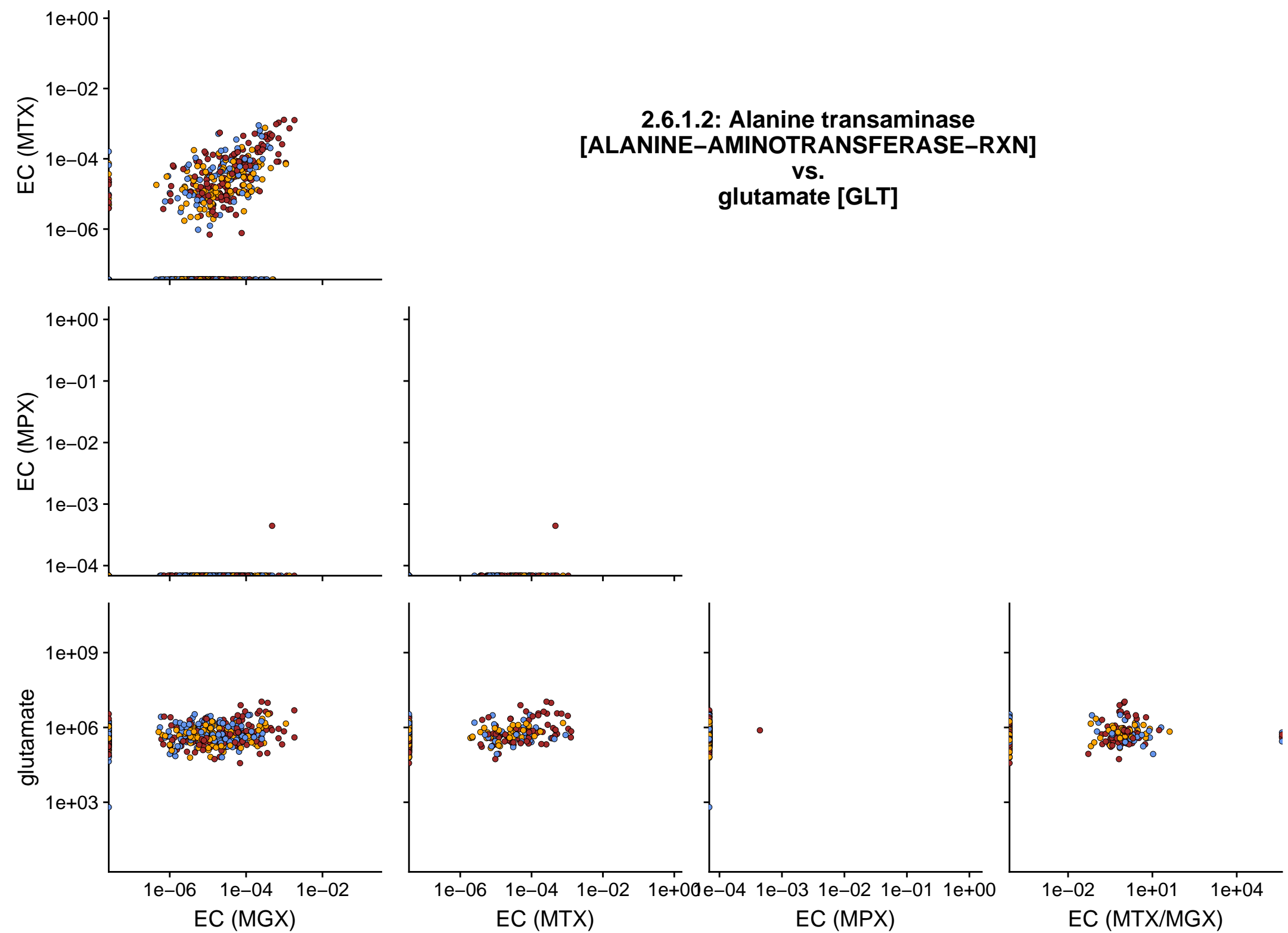
**2.7.2.11: Glutamate 5-kinase  
[GLUTKIN-RXN]  
vs.  
glutamate [GLT]**



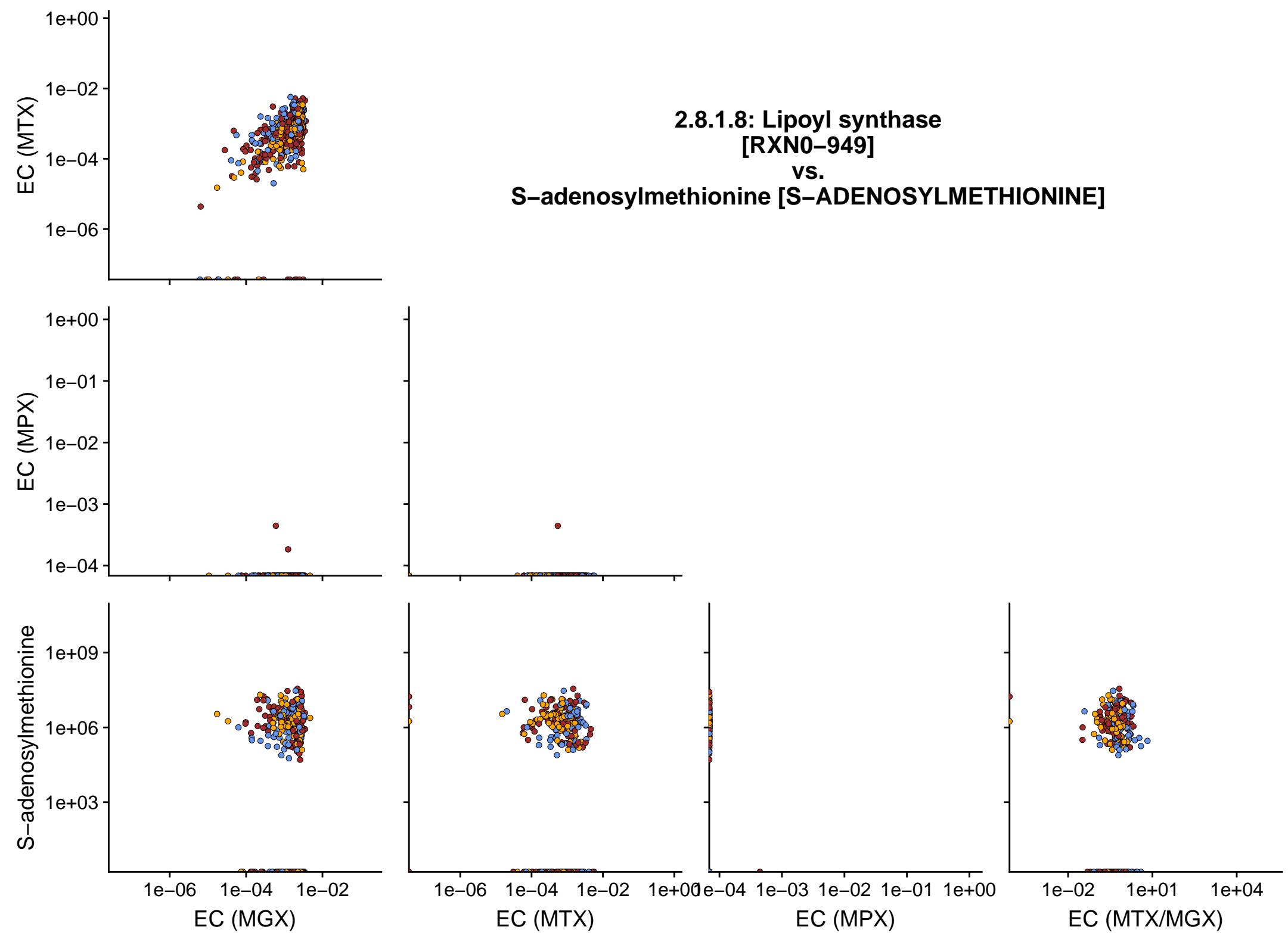
**3.4.11.18: Methionyl aminopeptidase  
[3.4.11.18-RXN]  
vs.  
methionine [MET]**



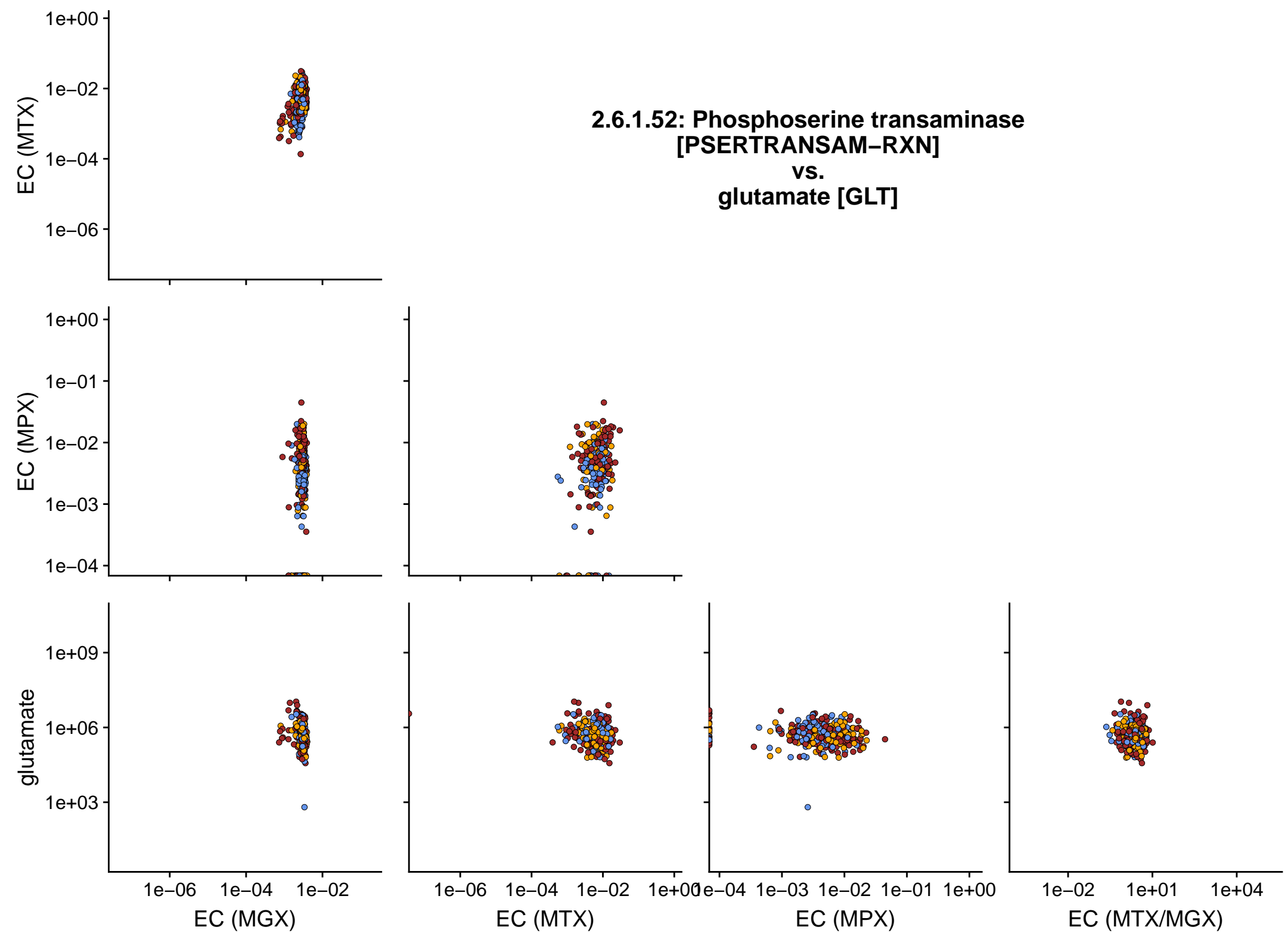
**2.6.1.2: Alanine transaminase  
[ALANINE-AMINOTRANSFERASE-RXN]  
vs.  
glutamate [GLT]**



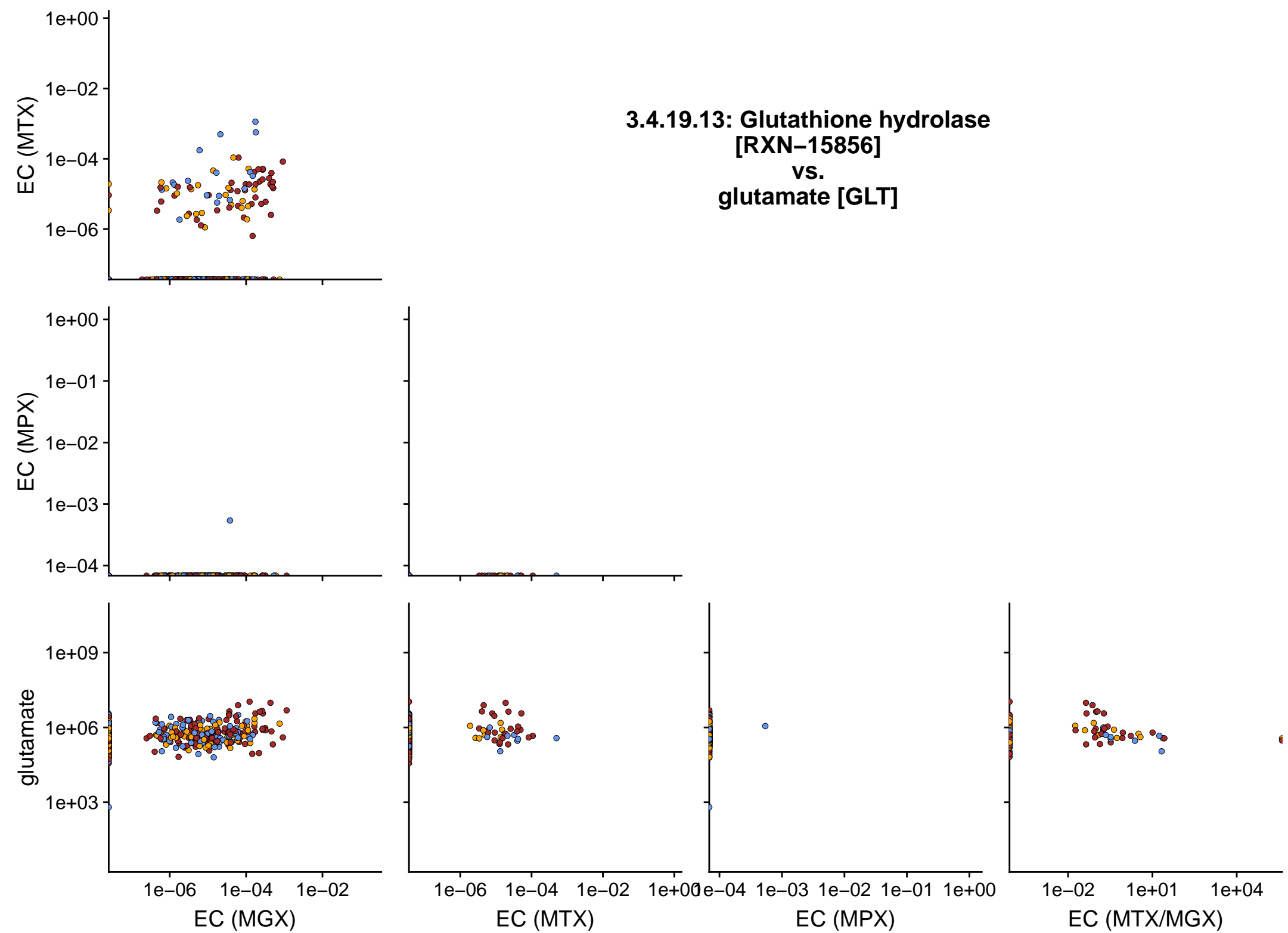
**2.8.1.8: Lipoyl synthase  
[RXN0-949]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**



**2.6.1.52: Phosphoserine transaminase  
[PSERTRANSAM-RXN]  
vs.  
glutamate [GLT]**

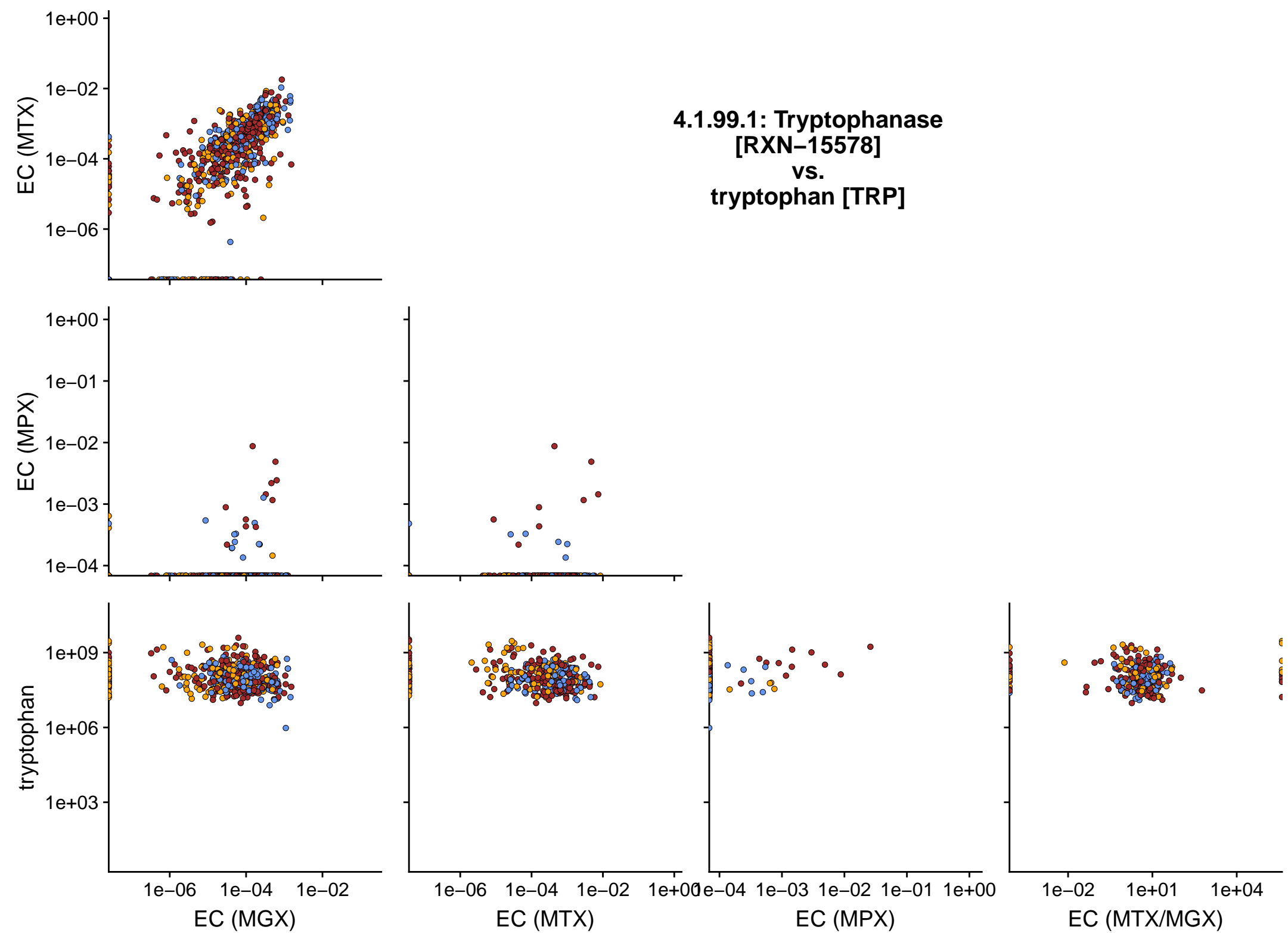


**3.4.19.13: Glutathione hydrolase  
[RXN-15856]  
vs.  
glutamate [GLT]**

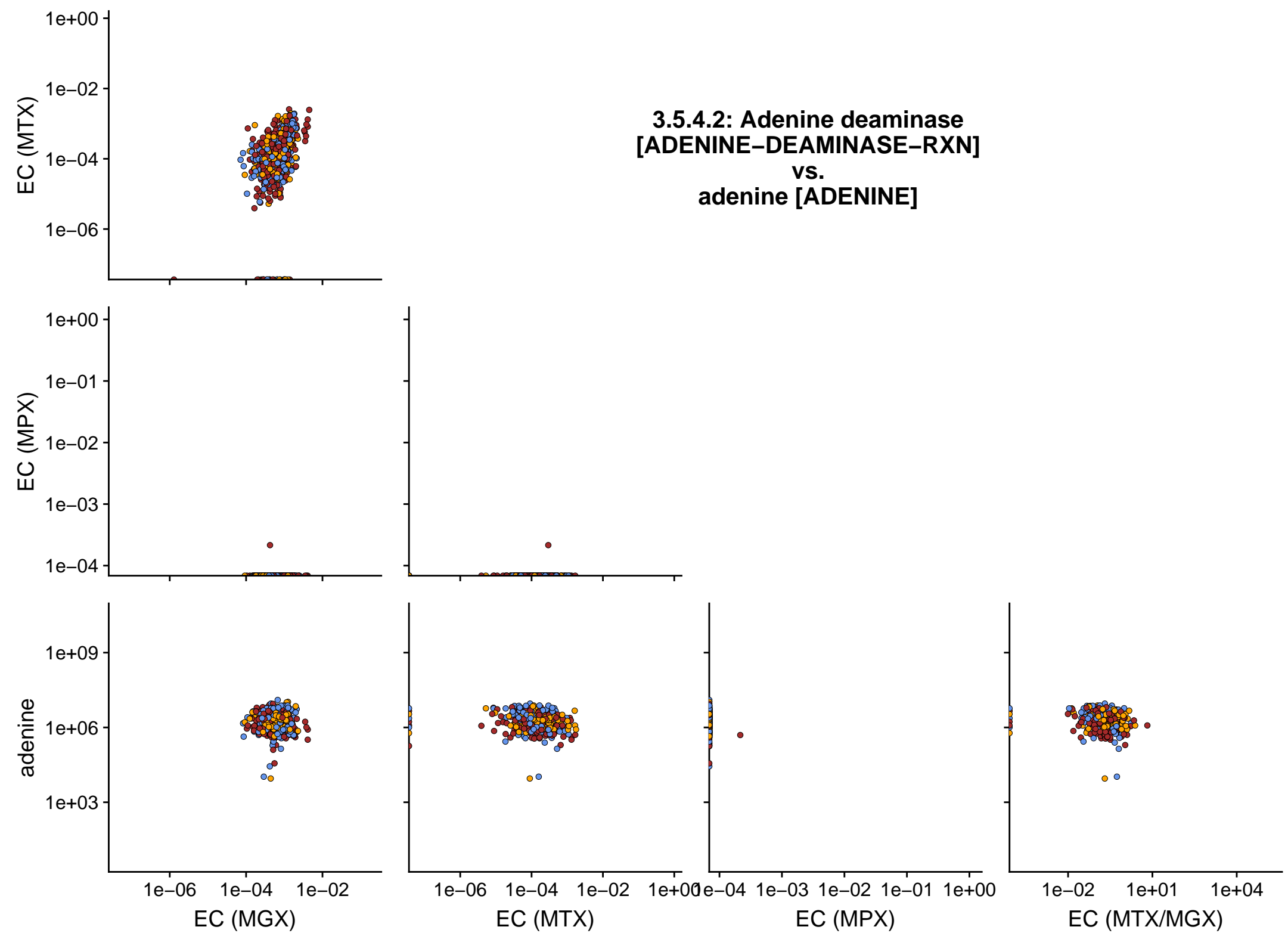




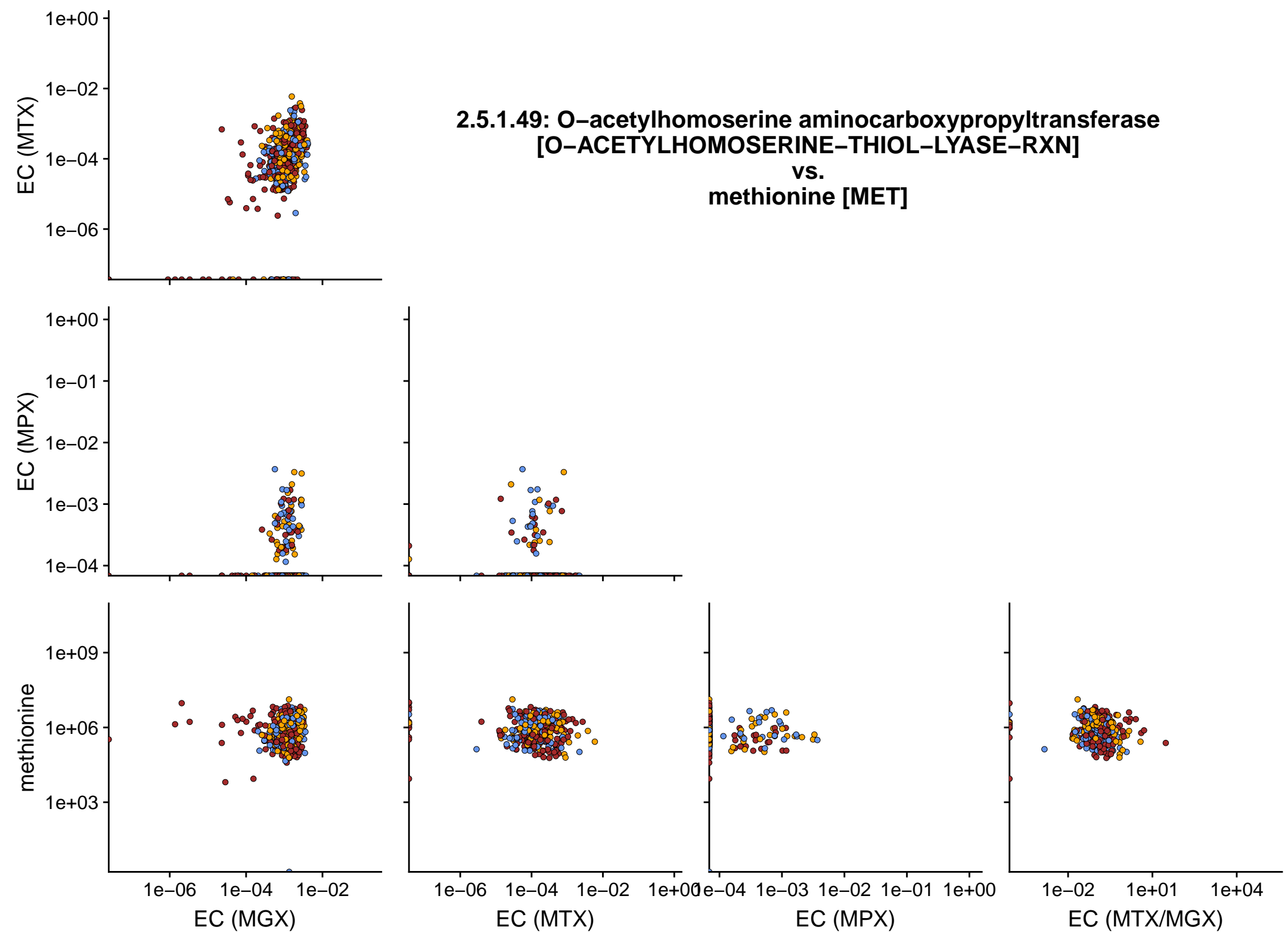
**4.1.99.1: Tryptophanase  
[RXN-15578]  
vs.  
tryptophan [TRP]**



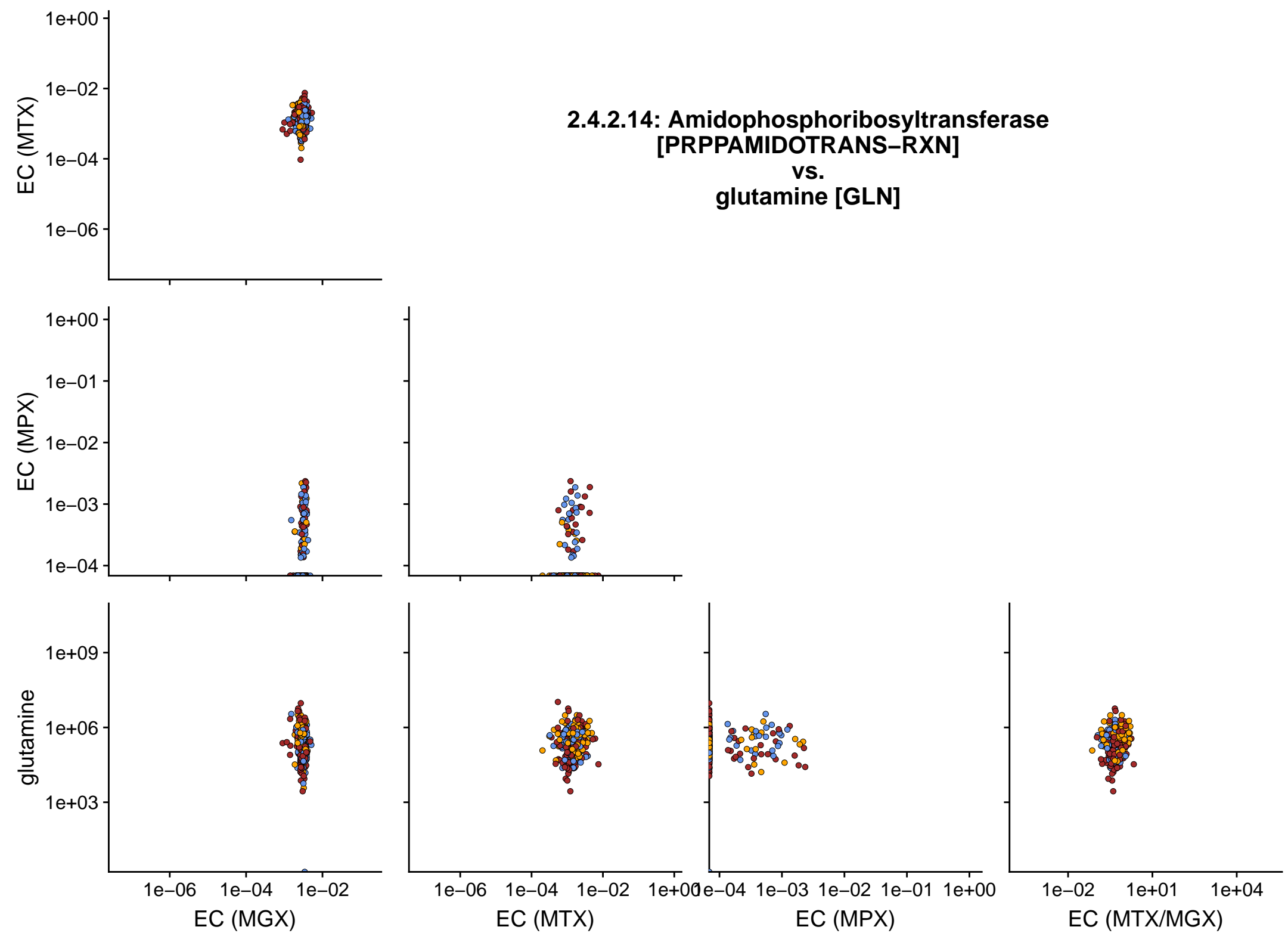
**3.5.4.2: Adenine deaminase  
[ADENINE-DEAMINASE-RXN]  
vs.  
adenine [ADENINE]**



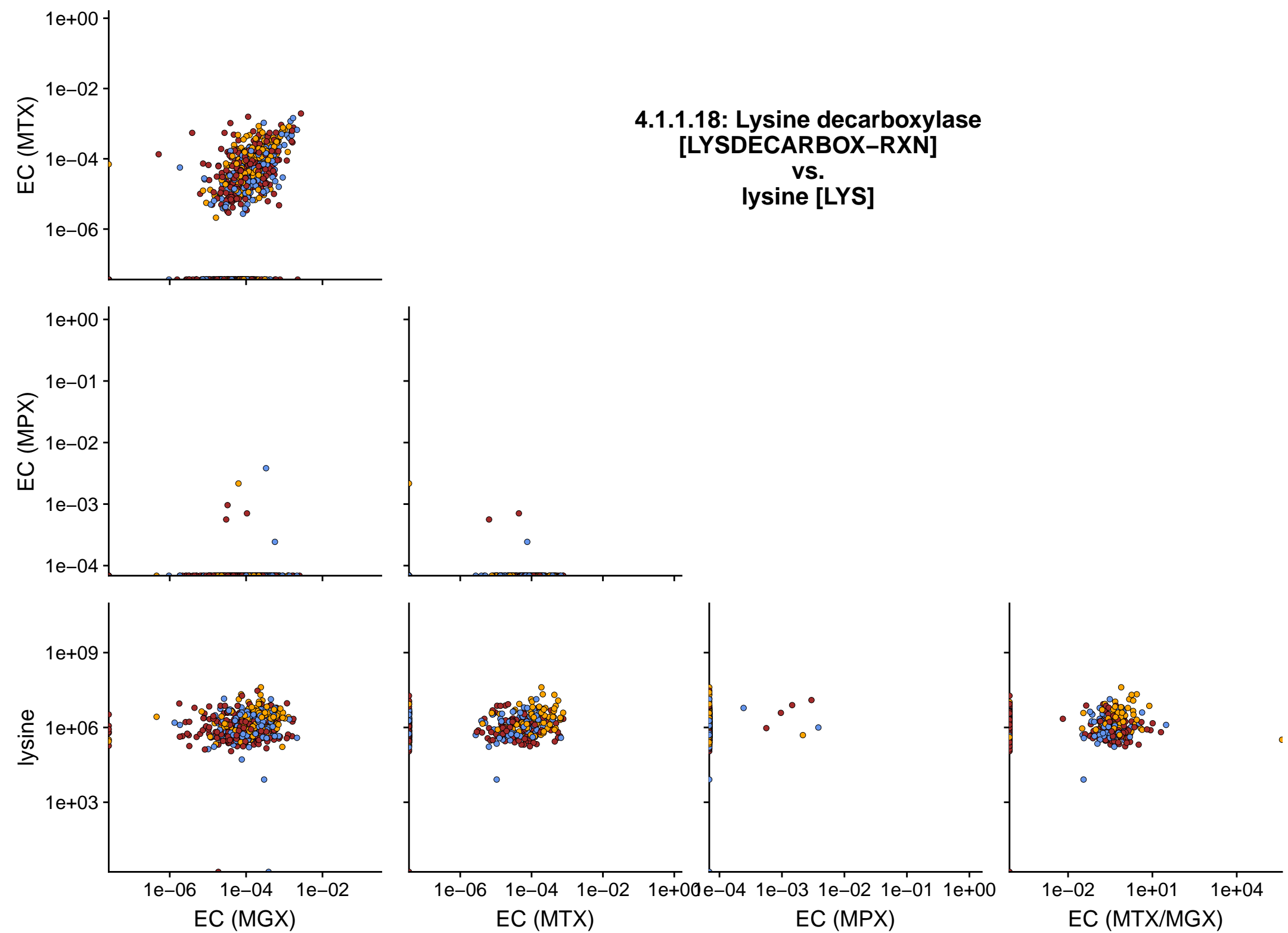
**2.5.1.49: O-acetylhomoserine aminocarboxypropyltransferase  
[O-ACETHOMOSERINE-THIOL-LYASE-RXN]  
vs.  
methionine [MET]**



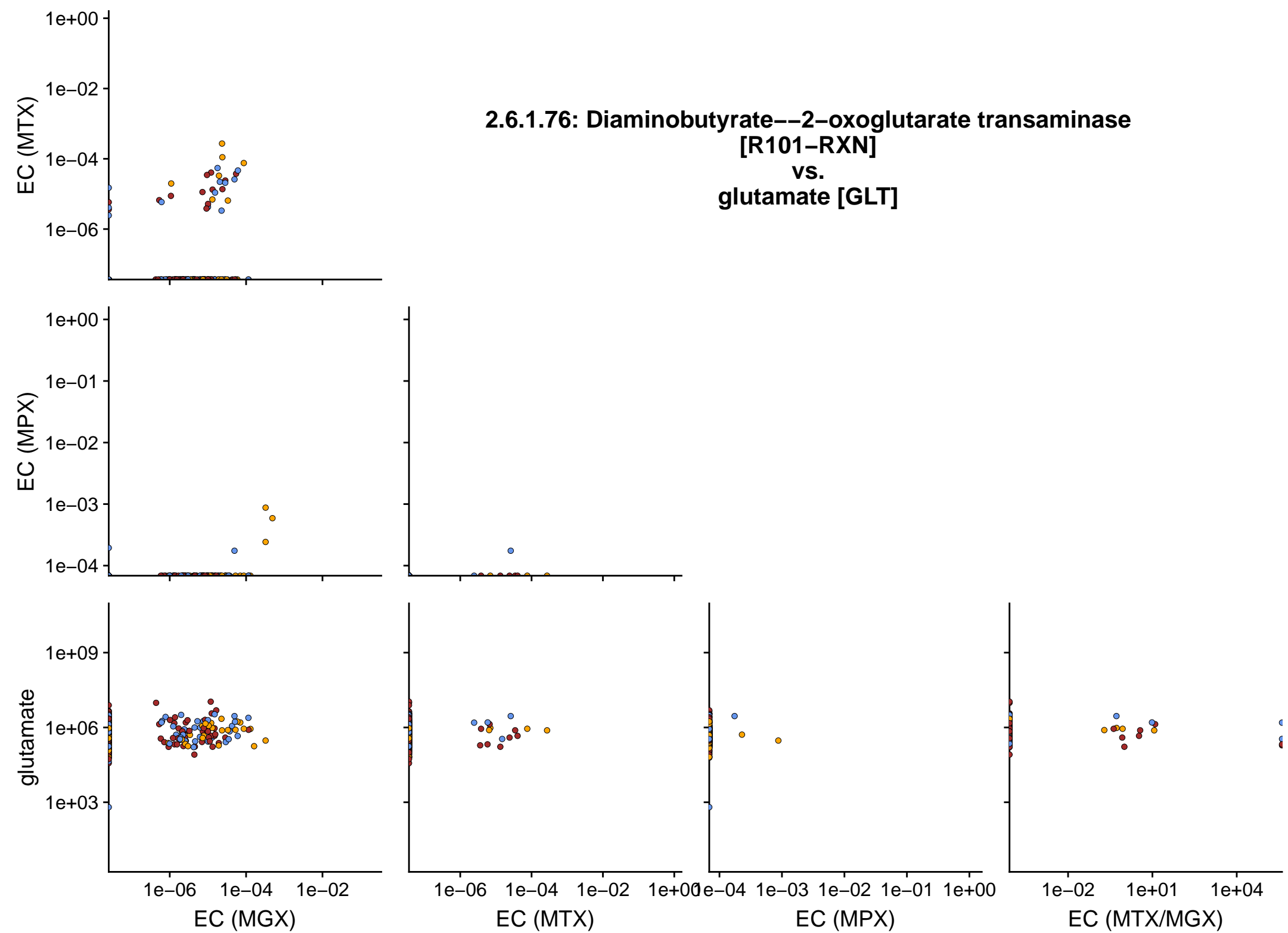
**2.4.2.14: Amidophosphoribosyltransferase  
[PRPPAMIDOTRANS-RXN]  
vs.  
glutamine [GLN]**



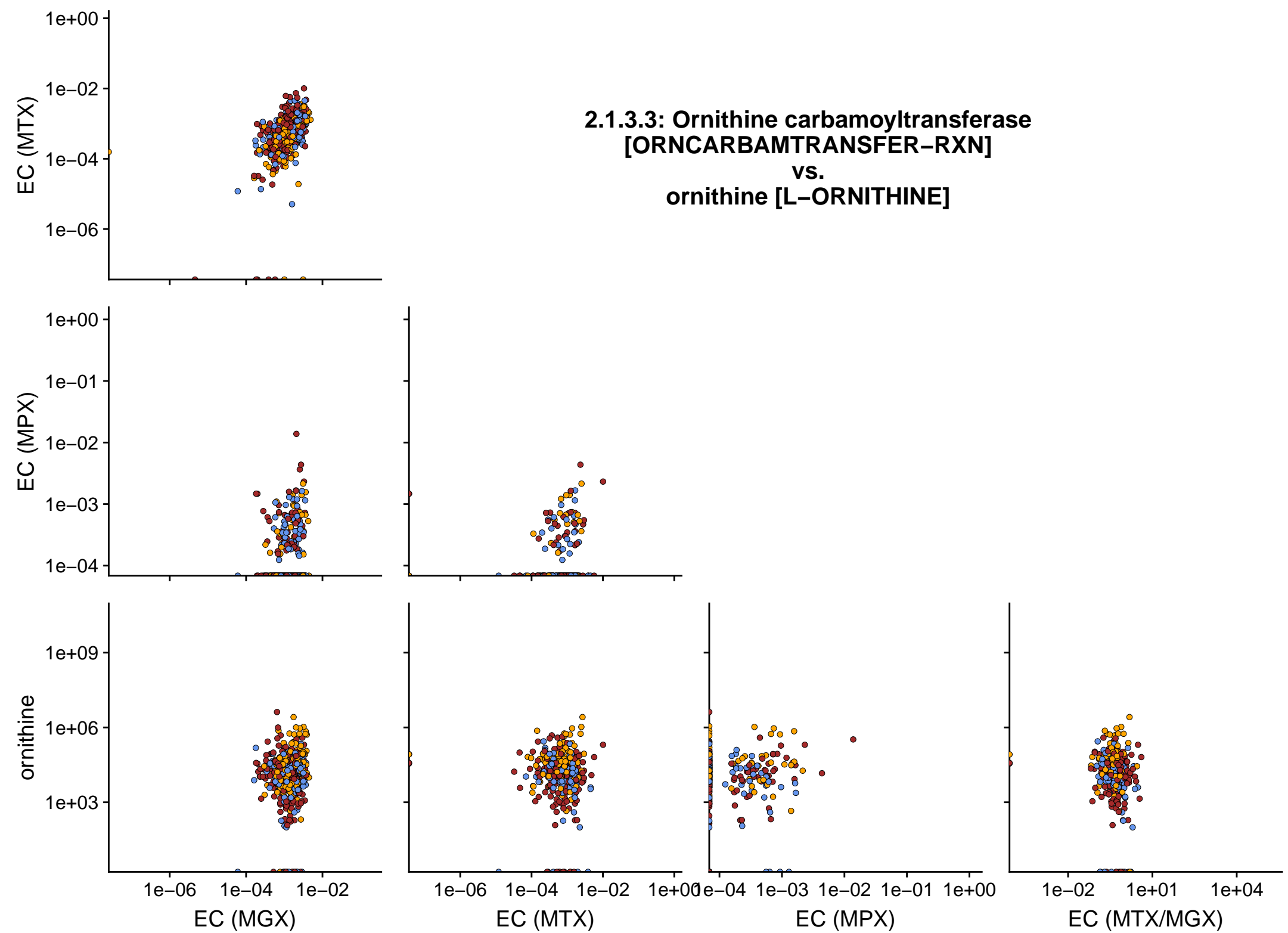
**4.1.1.18: Lysine decarboxylase  
[LYSDECARBOX-RXN]  
vs.  
lysine [LYS]**



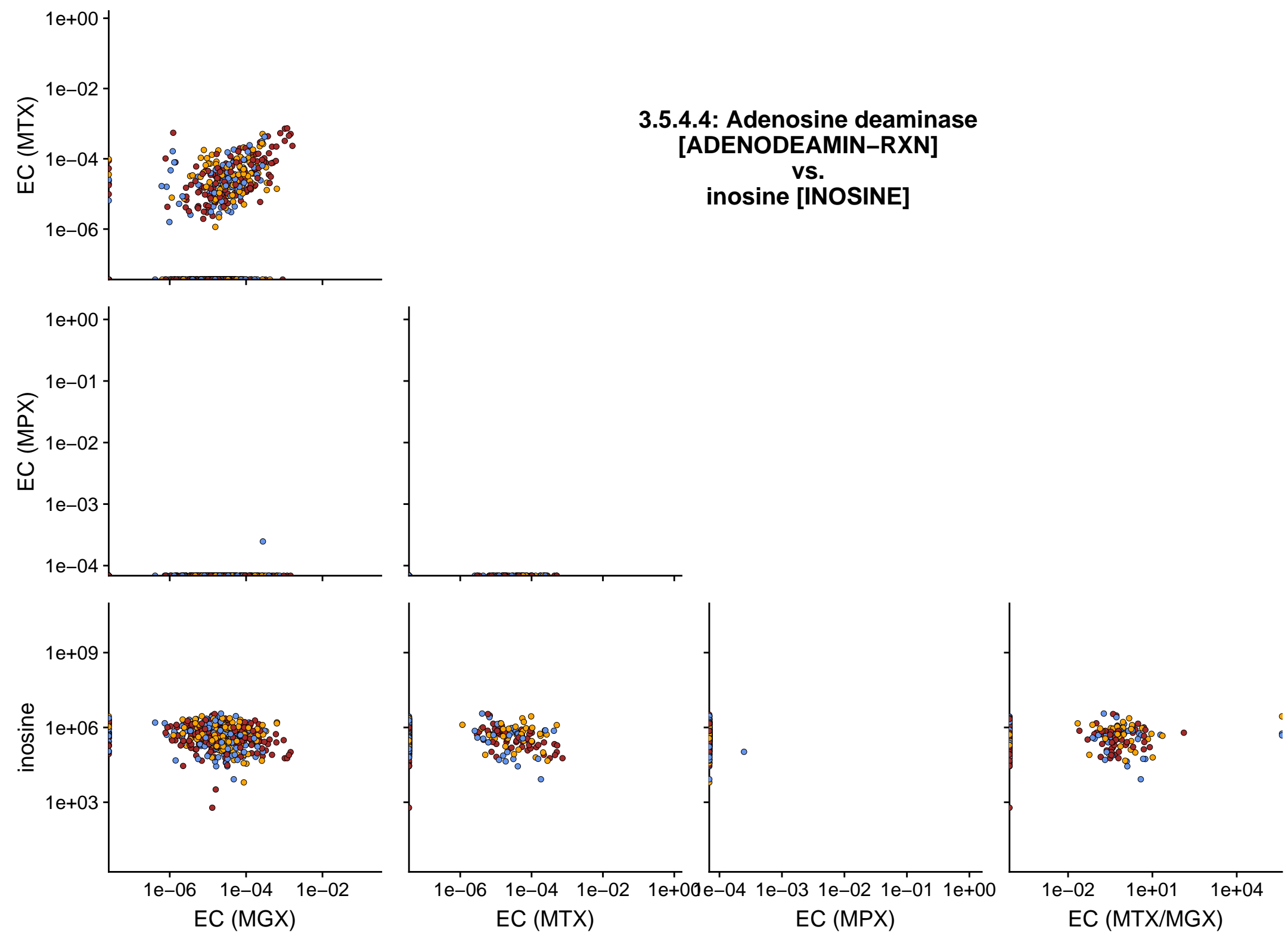
**2.6.1.76: Diaminobutyrate--2-oxoglutarate transaminase  
[R101-RXN]  
vs.  
glutamate [GLT]**



**2.1.3.3: Ornithine carbamoyltransferase  
[ORNCARBAMTRANSFER-RXN]  
vs.  
ornithine [L-ORNITHINE]**

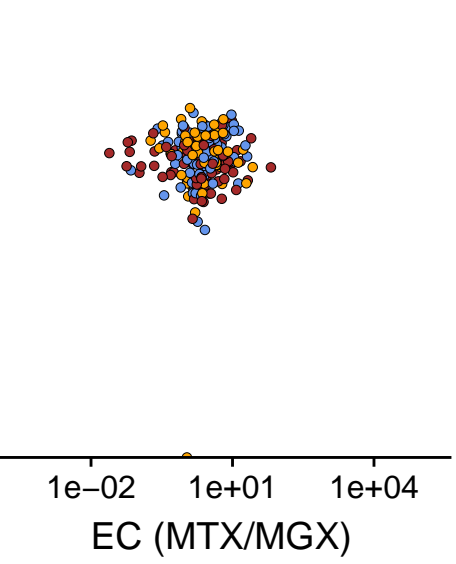
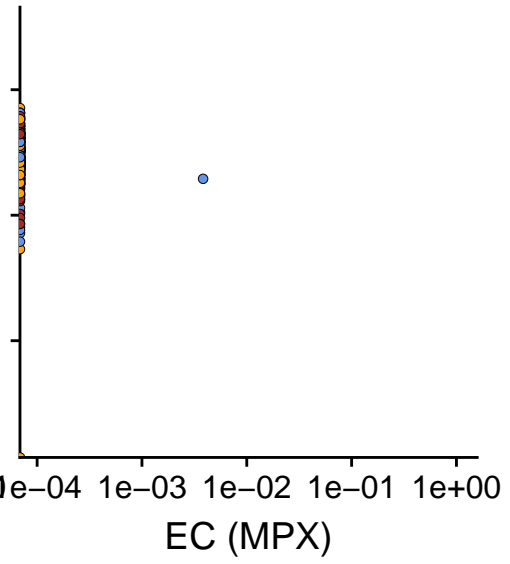
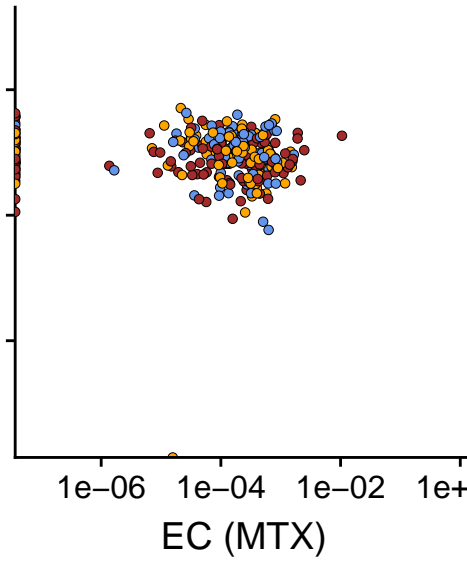
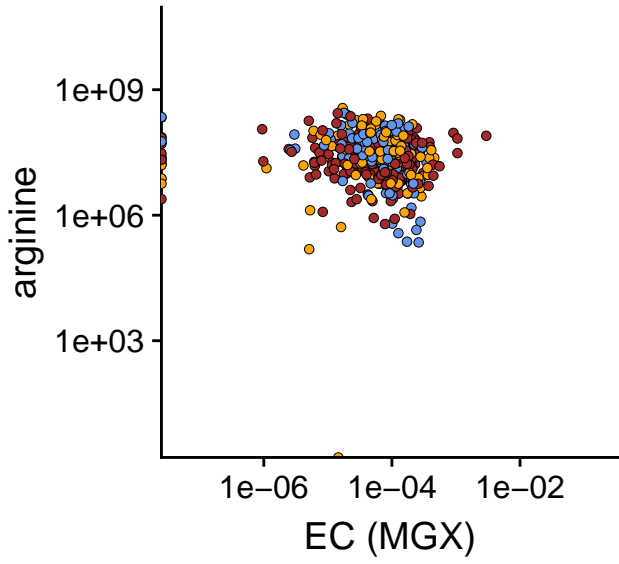
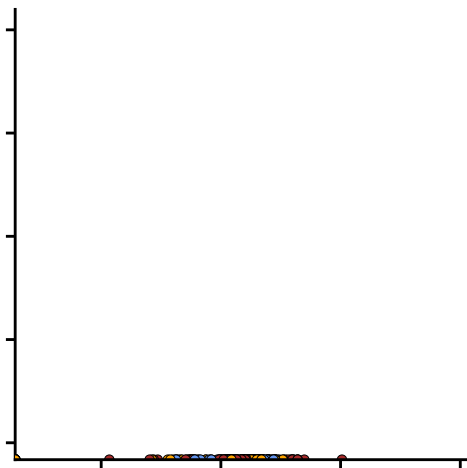
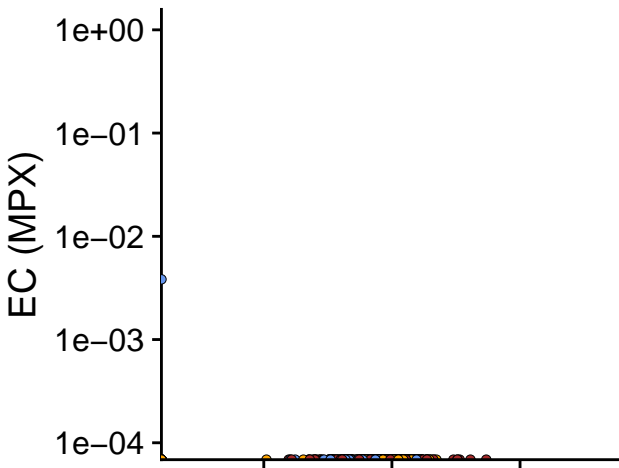
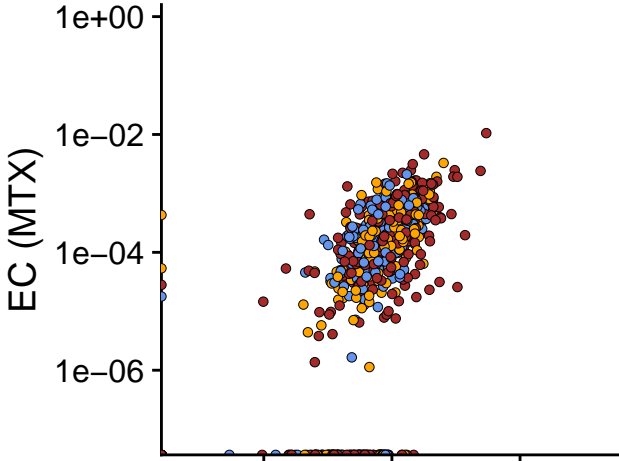


**3.5.4.4: Adenosine deaminase  
[ADENODEAMIN-RXN]  
vs.  
inosine [INOSINE]**

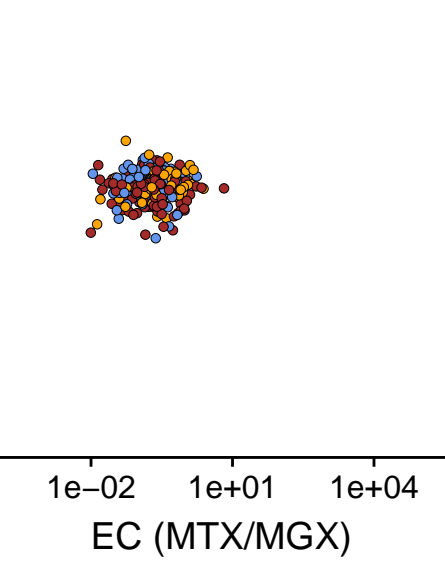
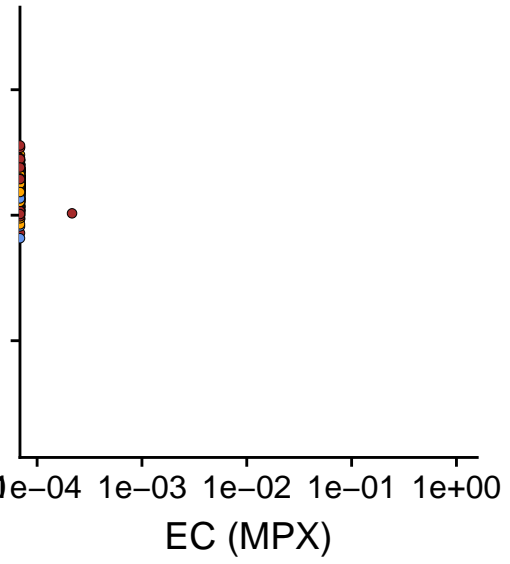
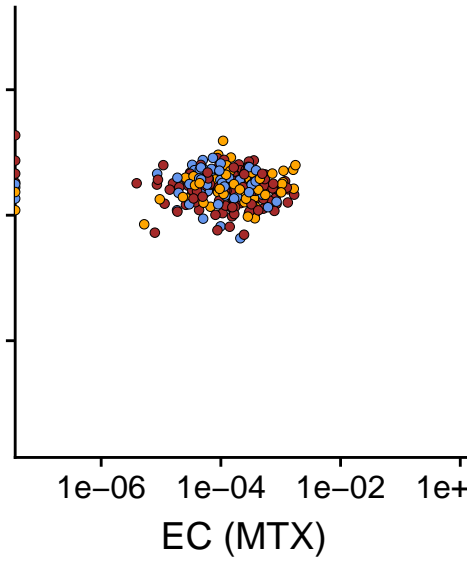
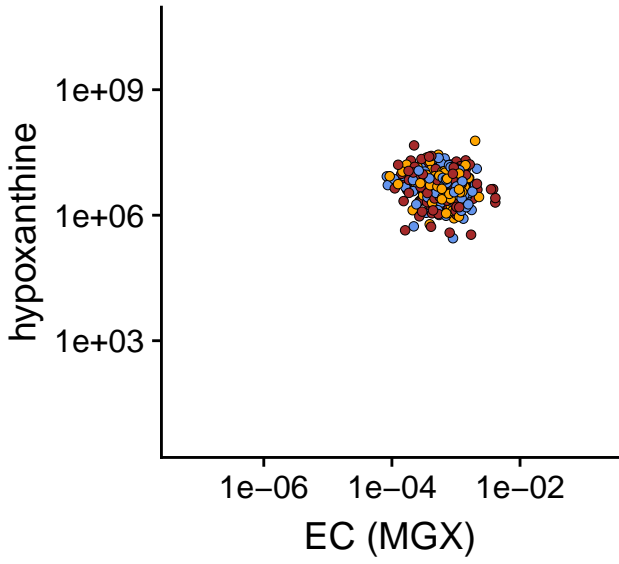
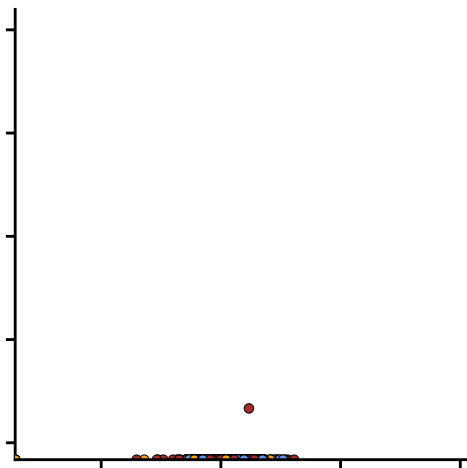
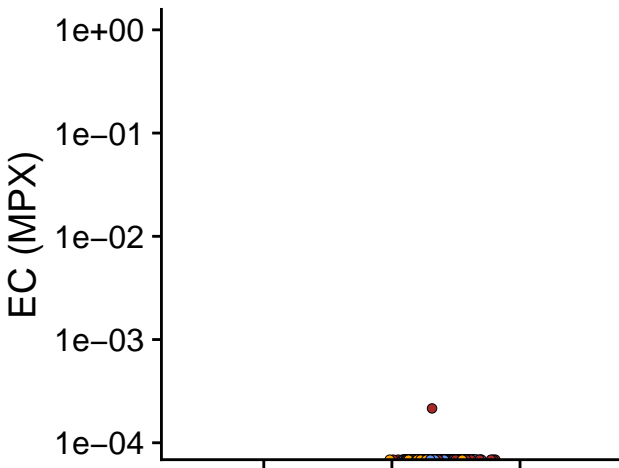
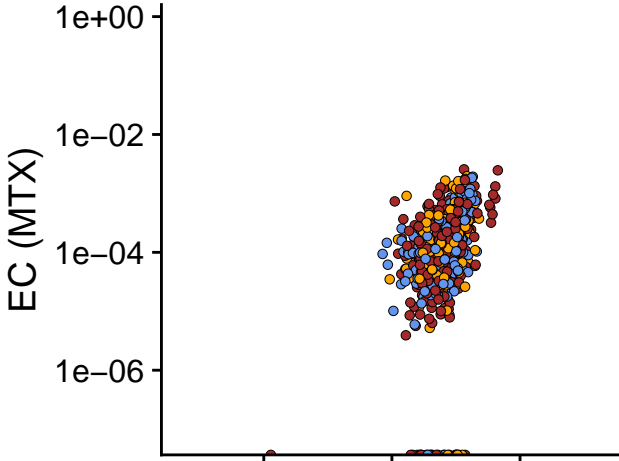




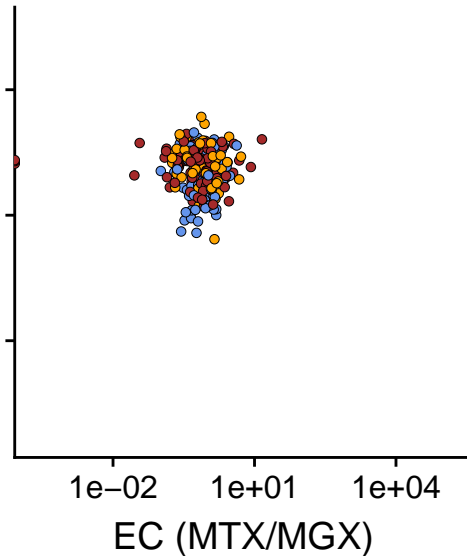
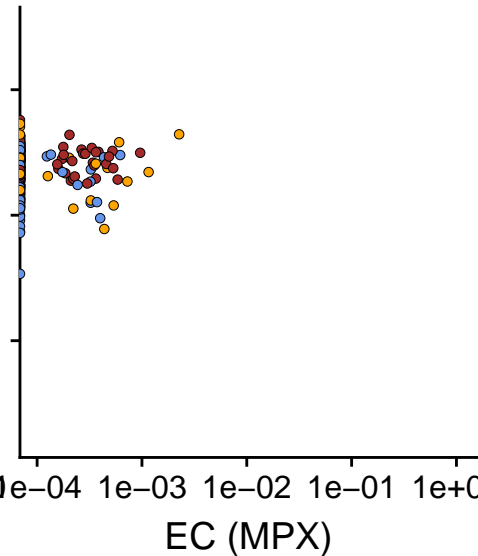
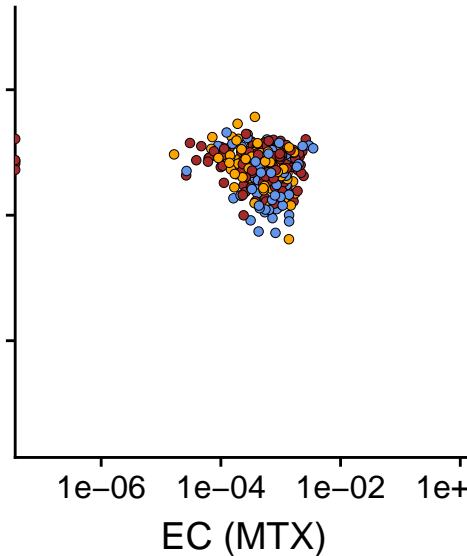
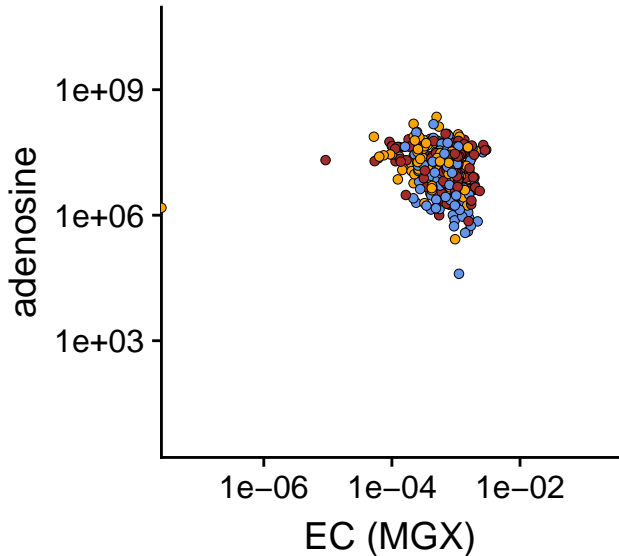
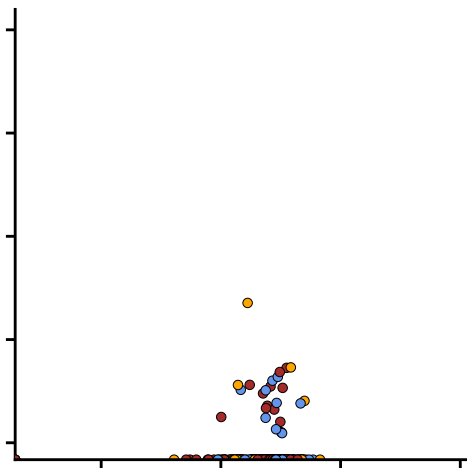
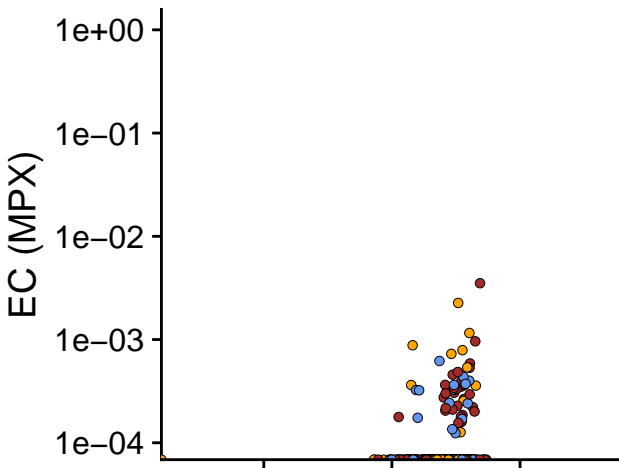
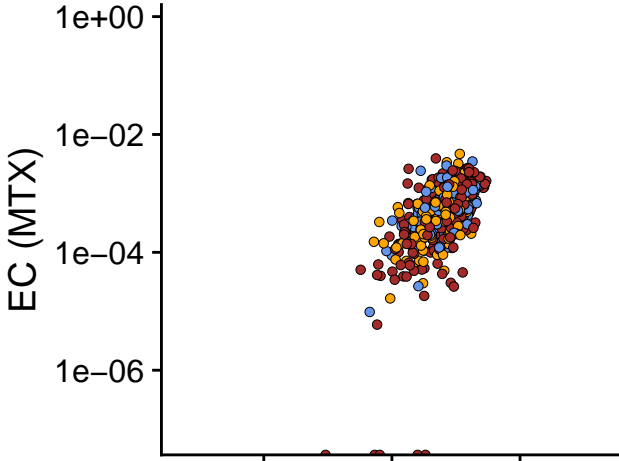
**3.5.3.1: Arginase  
[ARGINASE-RXN]  
vs.  
arginine [ARG]**



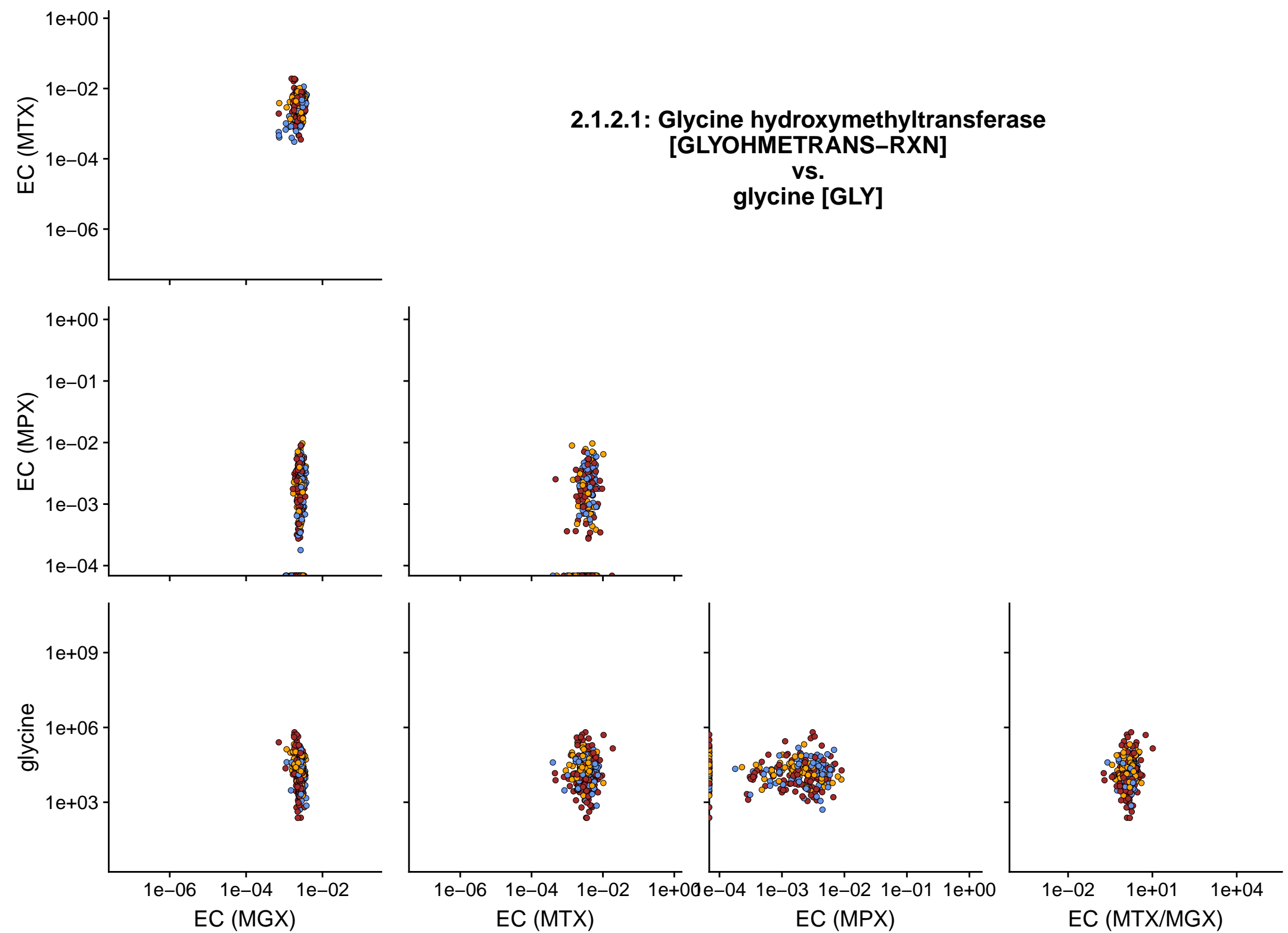
**3.5.4.2: Adenine deaminase  
[ADENINE-DEAMINASE-RXN]  
vs.  
hypoxanthine [HYPOXANTHINE]**



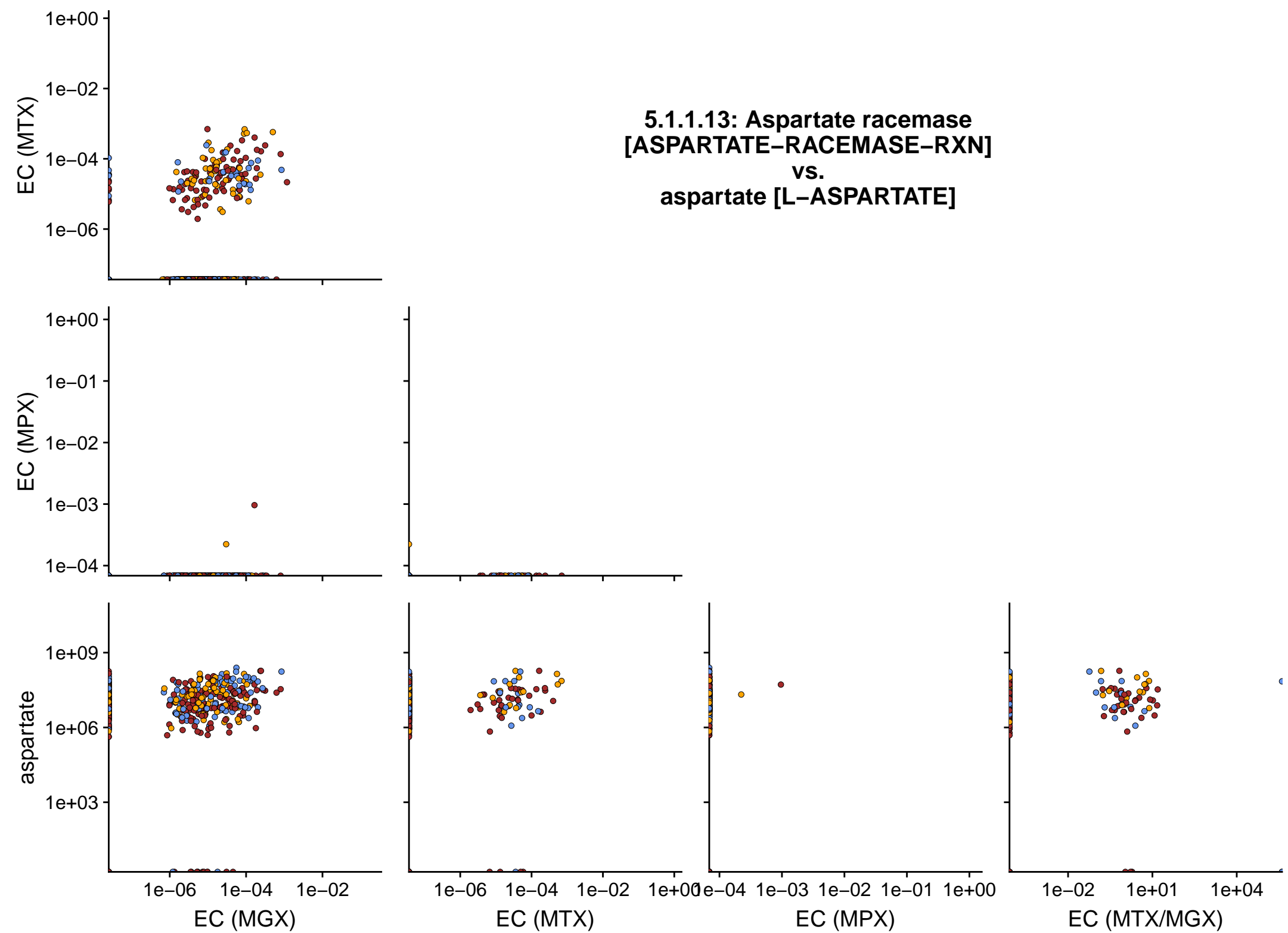
**3.3.1.1: Adenosylhomocysteinase  
[ADENOSYLHOMOCYSTEINASE-RXN]  
vs.  
adenosine [ADENOSINE]**



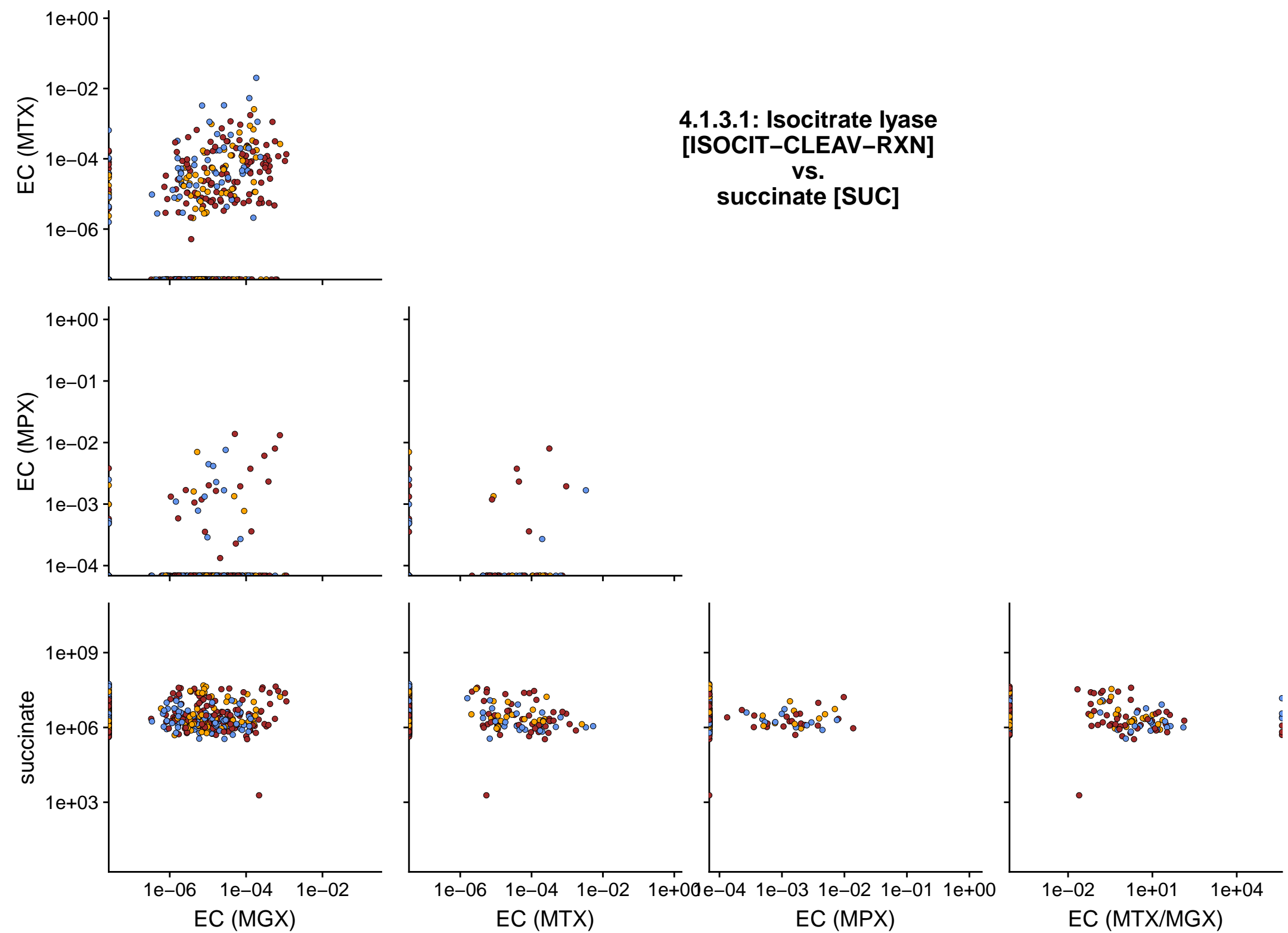
**2.1.2.1: Glycine hydroxymethyltransferase  
[GLYOHMETRANS-RXN]  
vs.  
glycine [GLY]**



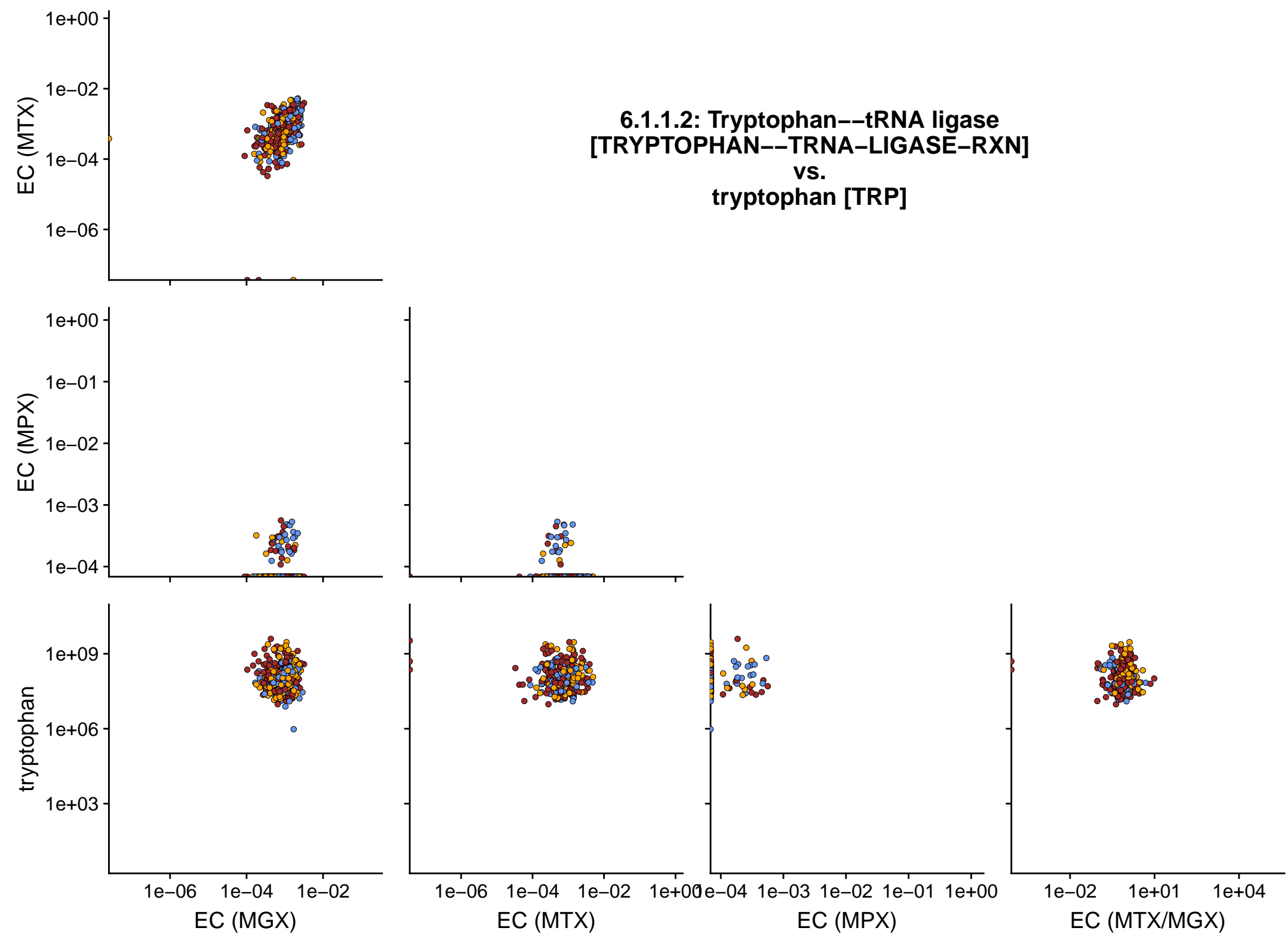
**5.1.1.13: Aspartate racemase  
[ASPARTATE-RACEMASE-RXN]  
vs.  
aspartate [L-ASPARTATE]**



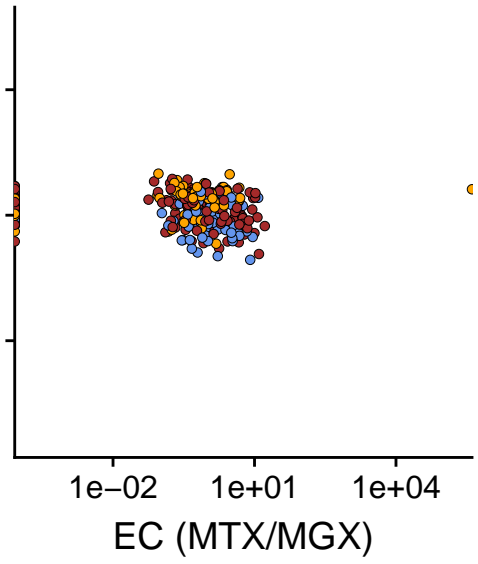
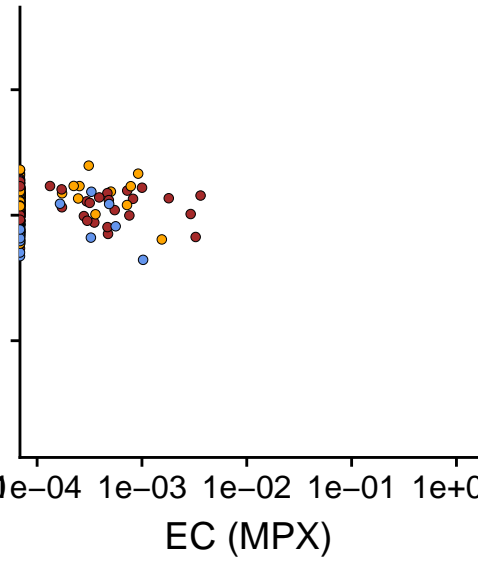
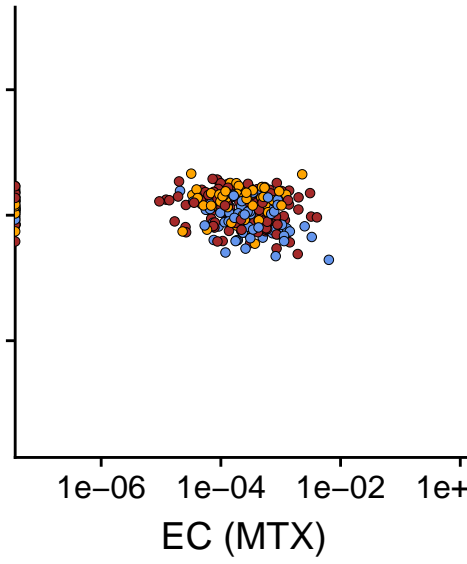
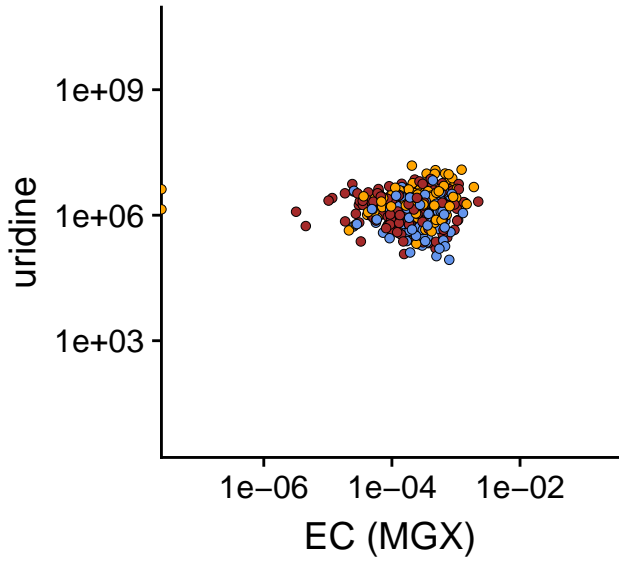
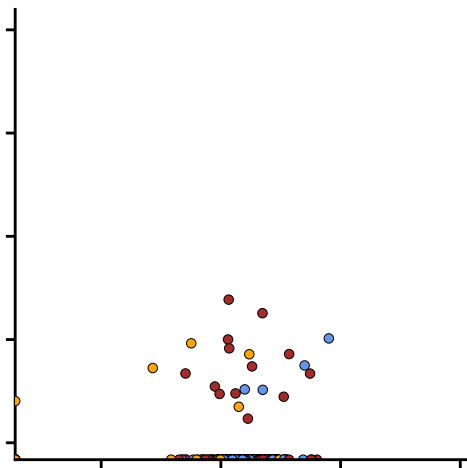
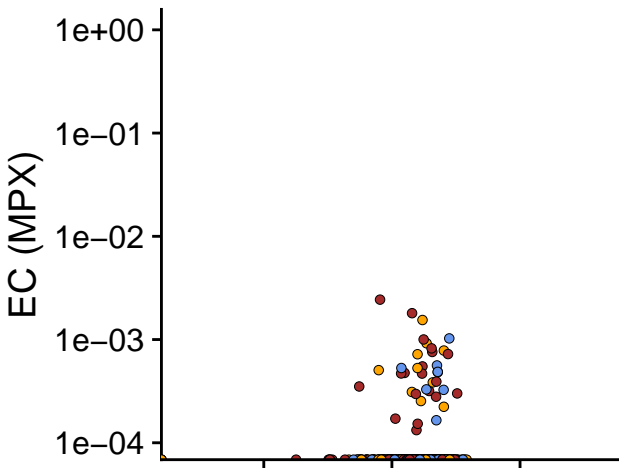
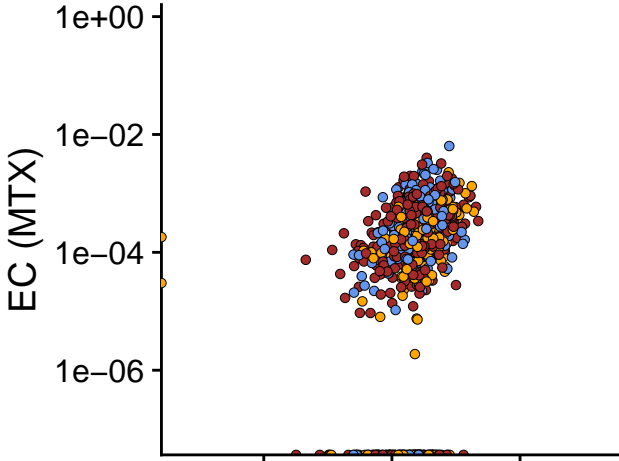
**4.1.3.1: Isocitrate lyase  
[ISOCIT-CLEAV-RXN]  
vs.  
succinate [SUC]**



**6.1.1.2: Tryptophan--tRNA ligase  
[TRYPTOPHAN--TRNA-LIGASE-RXN]  
vs.  
tryptophan [TRP]**

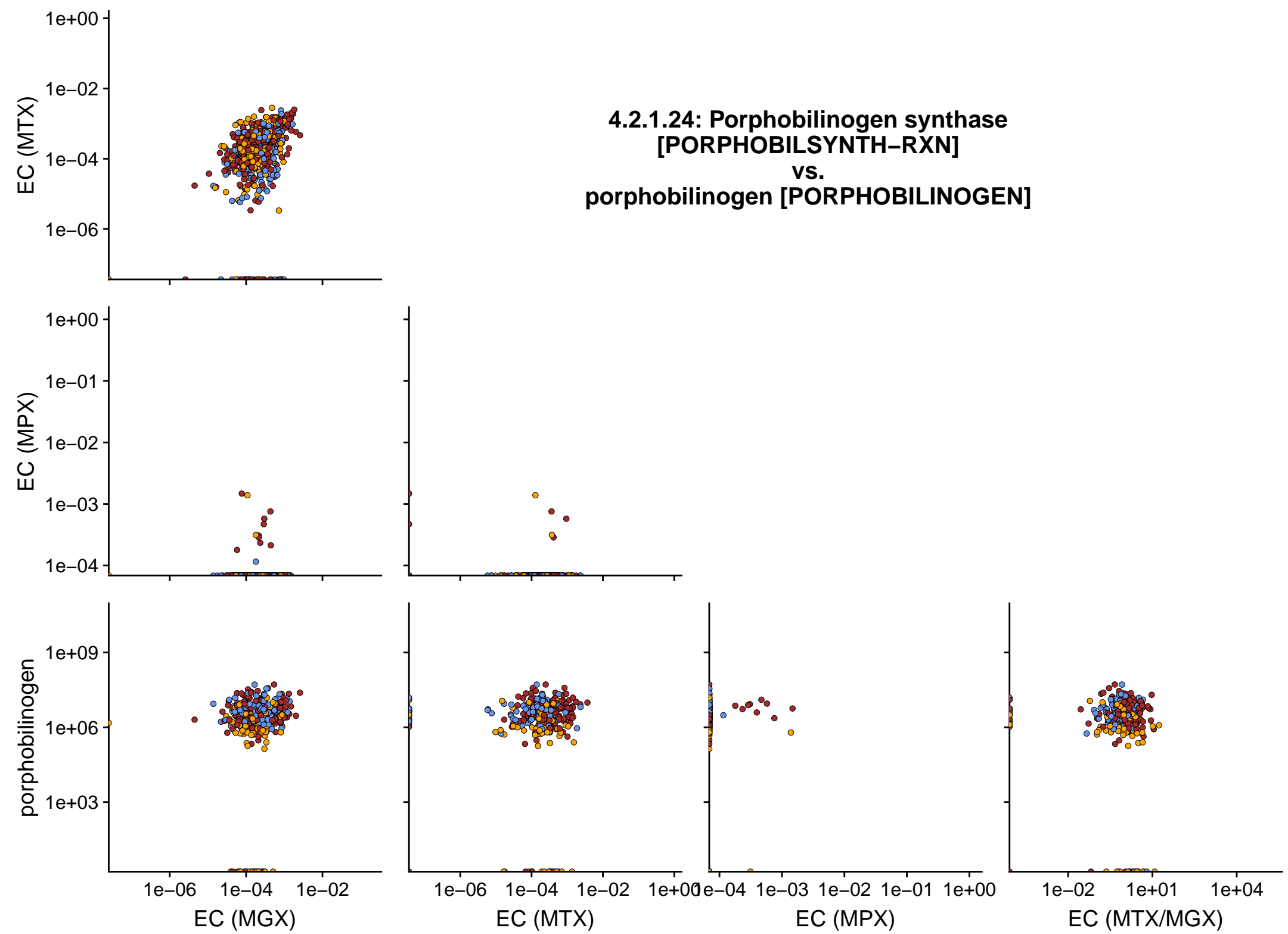


**3.5.4.5: Cytidine deaminase  
[CYTIDEAM2-RXN]  
vs.  
uridine [URIDINE]**

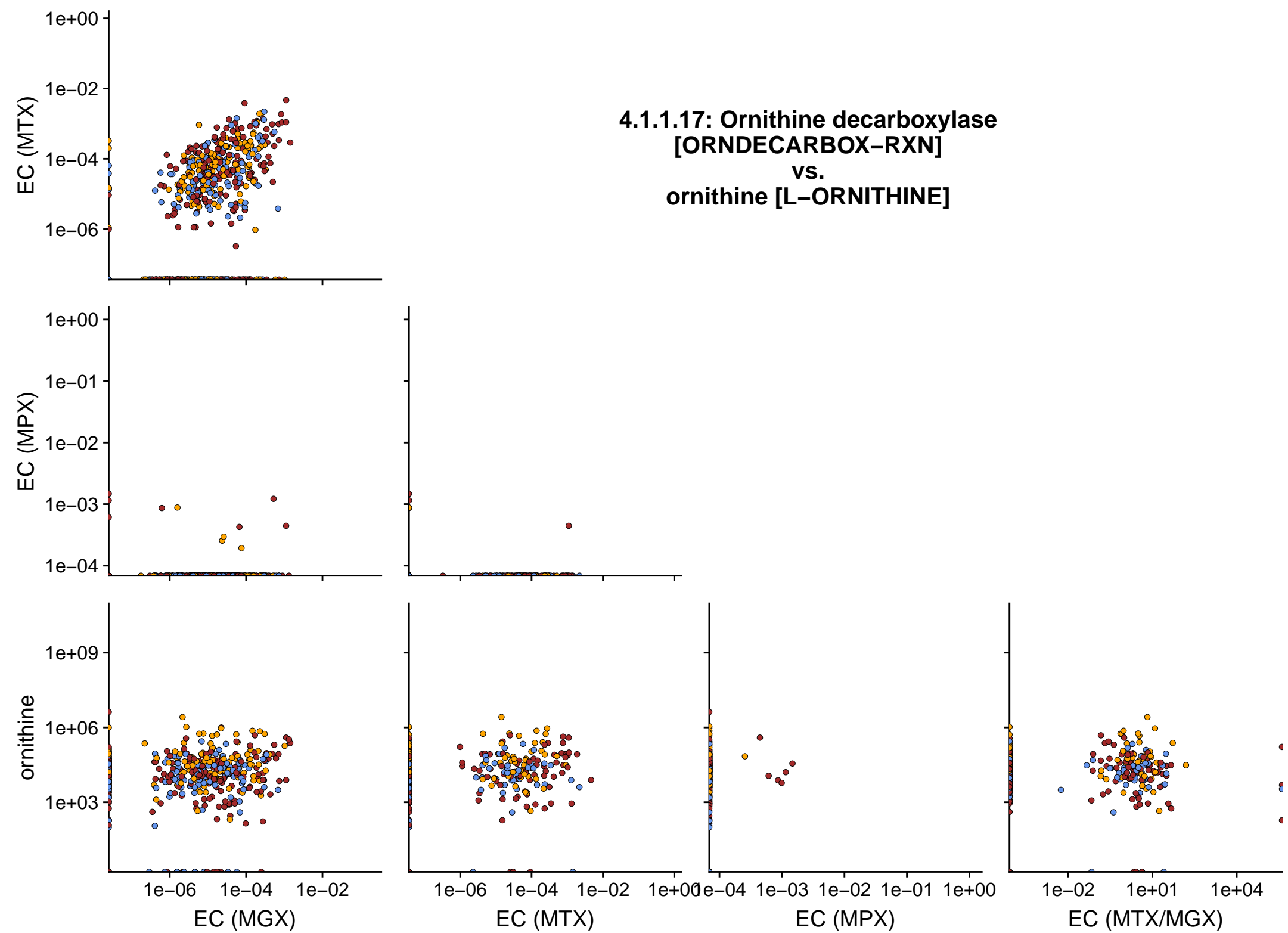




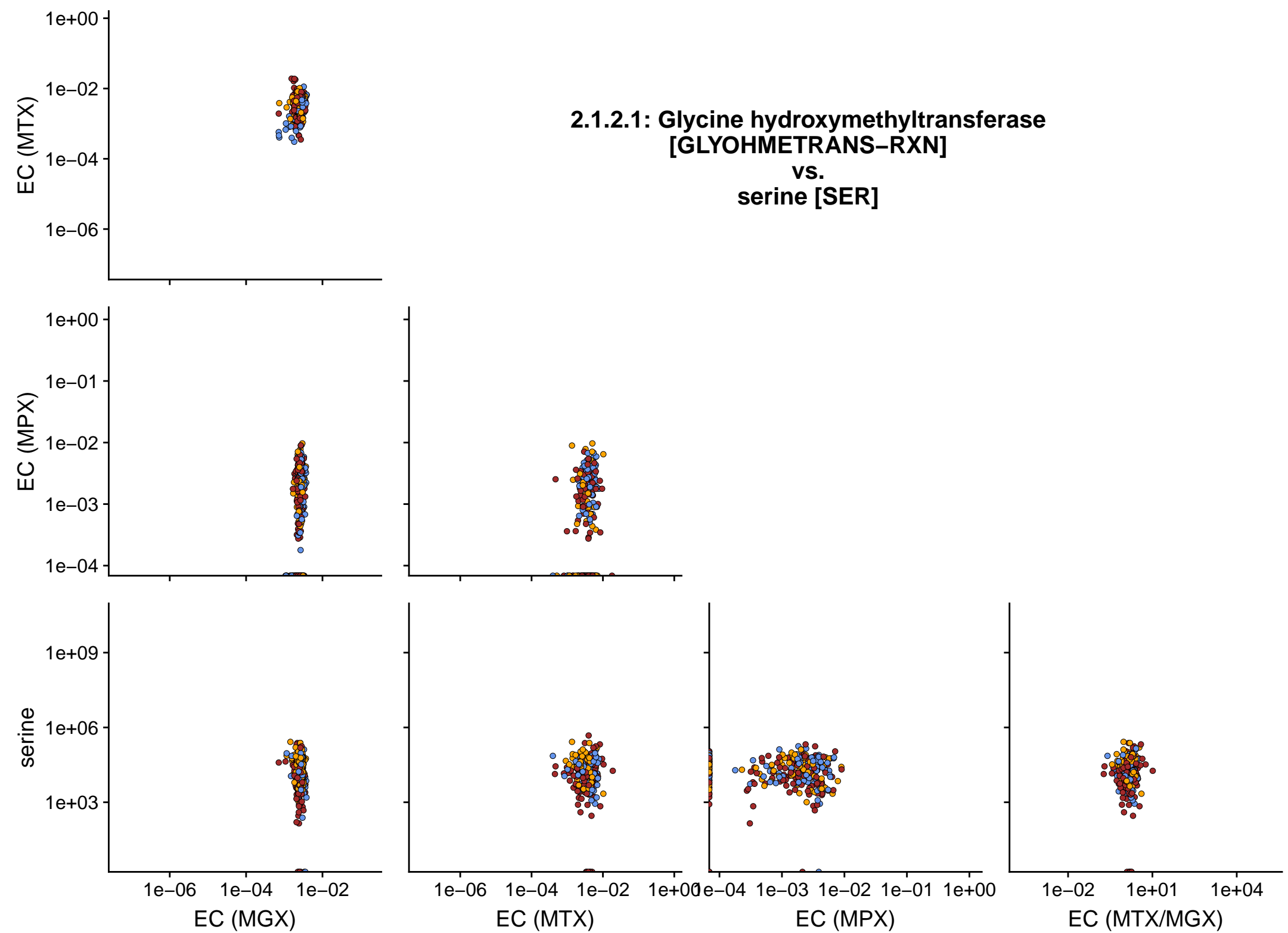
**4.2.1.24: Porphobilinogen synthase  
[PORPHOBILSYNTH-RXN]  
vs.  
porphobilinogen [PORPHOBILINOGEN]**



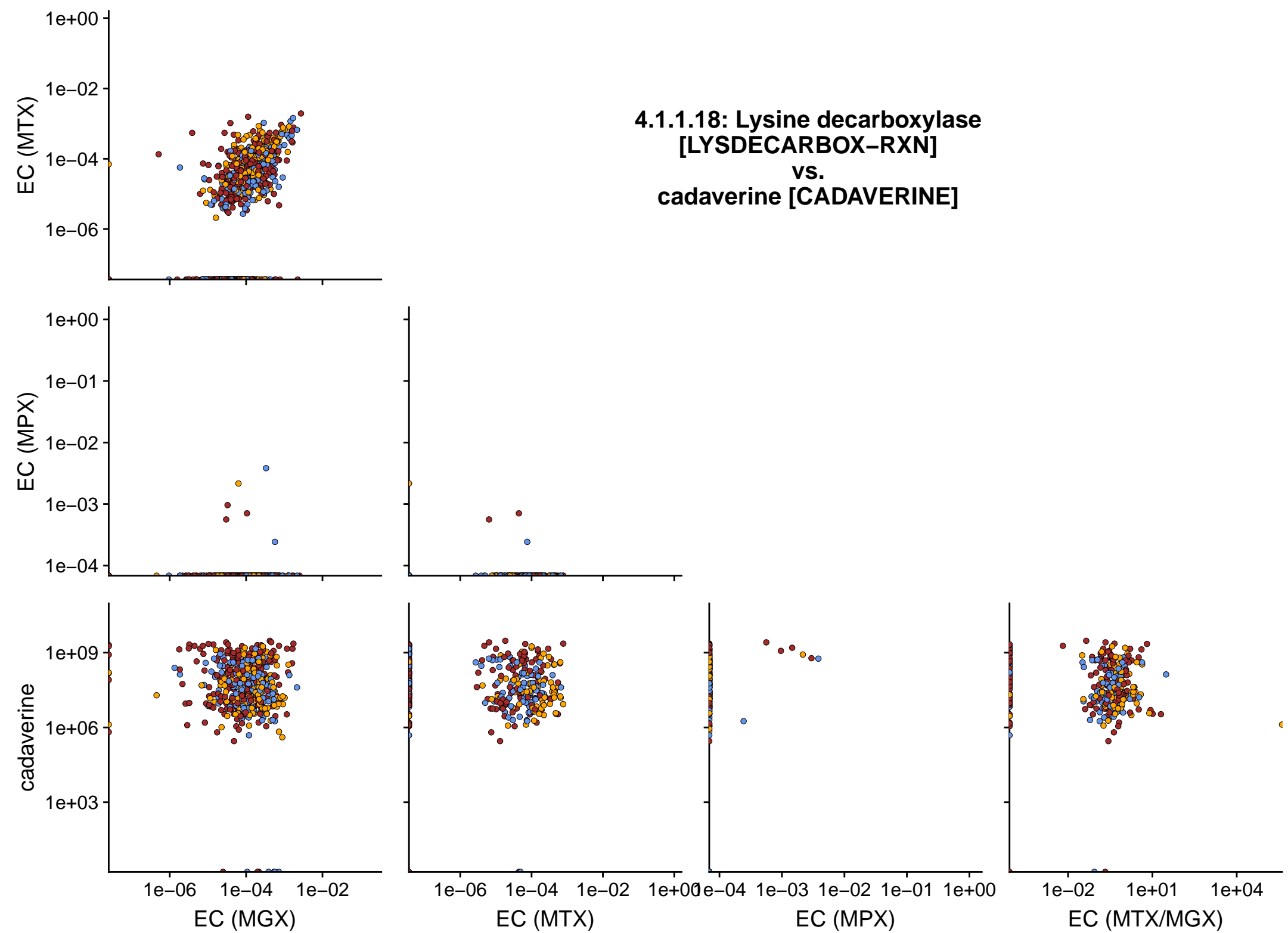
**4.1.1.17: Ornithine decarboxylase  
[ORNDECARBOX-RXN]  
vs.  
ornithine [L-ORNITHINE]**



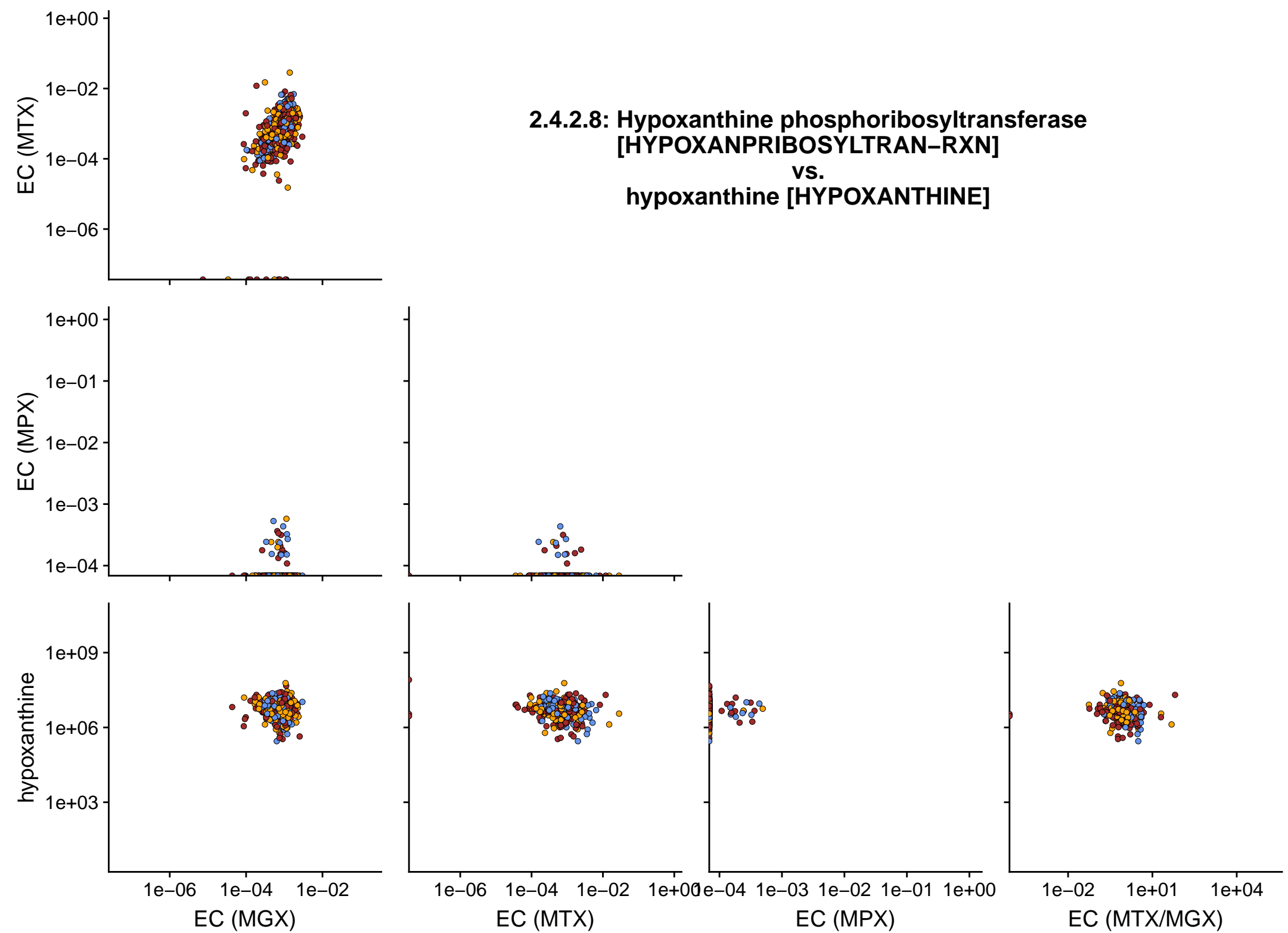
**2.1.2.1: Glycine hydroxymethyltransferase  
[GLYOHMETRANS-RXN]  
vs.  
serine [SER]**



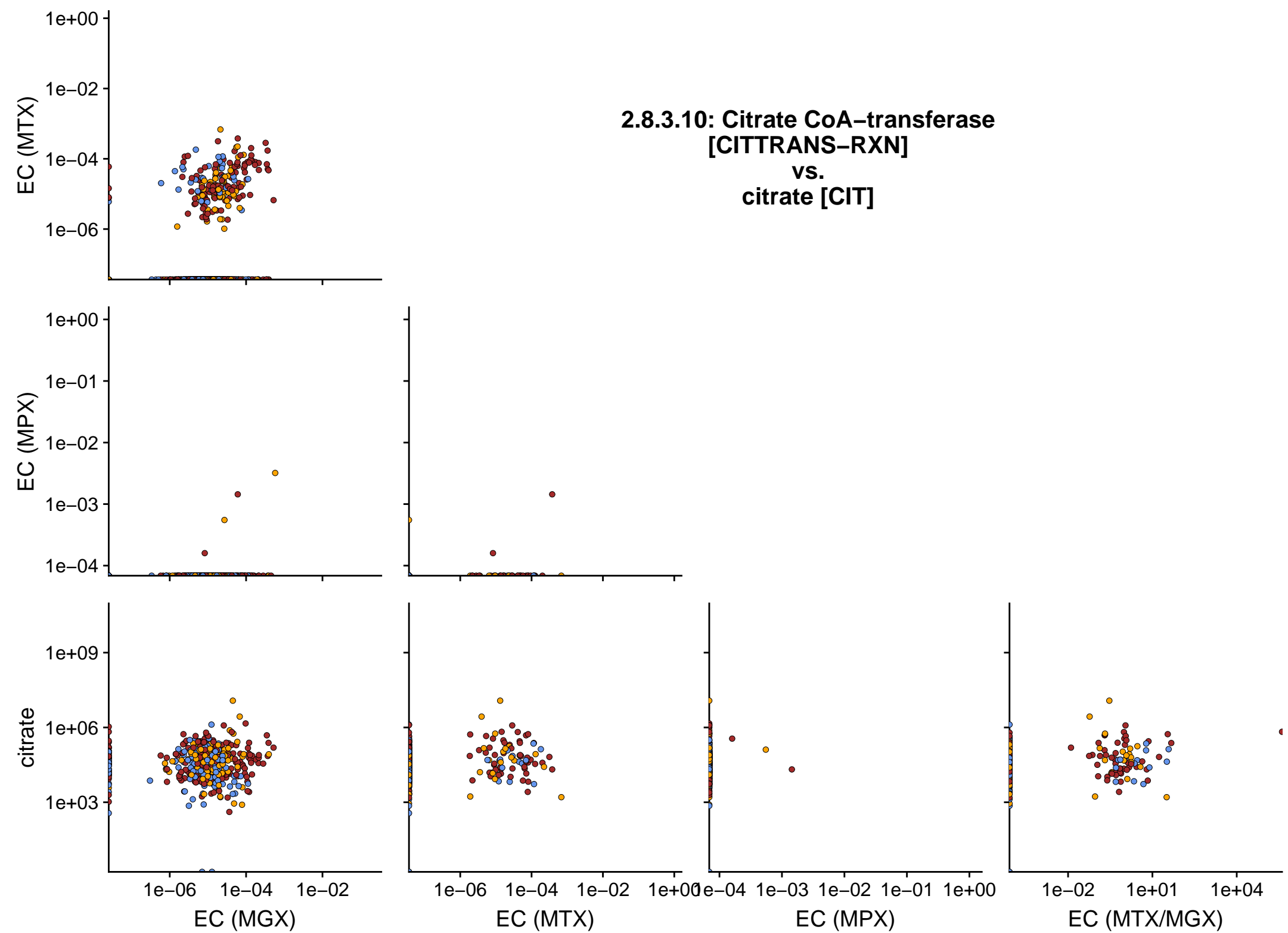
**4.1.1.18: Lysine decarboxylase  
[LYSDECARBOX-RXN]  
vs.  
cadaverine [CADAVERINE]**



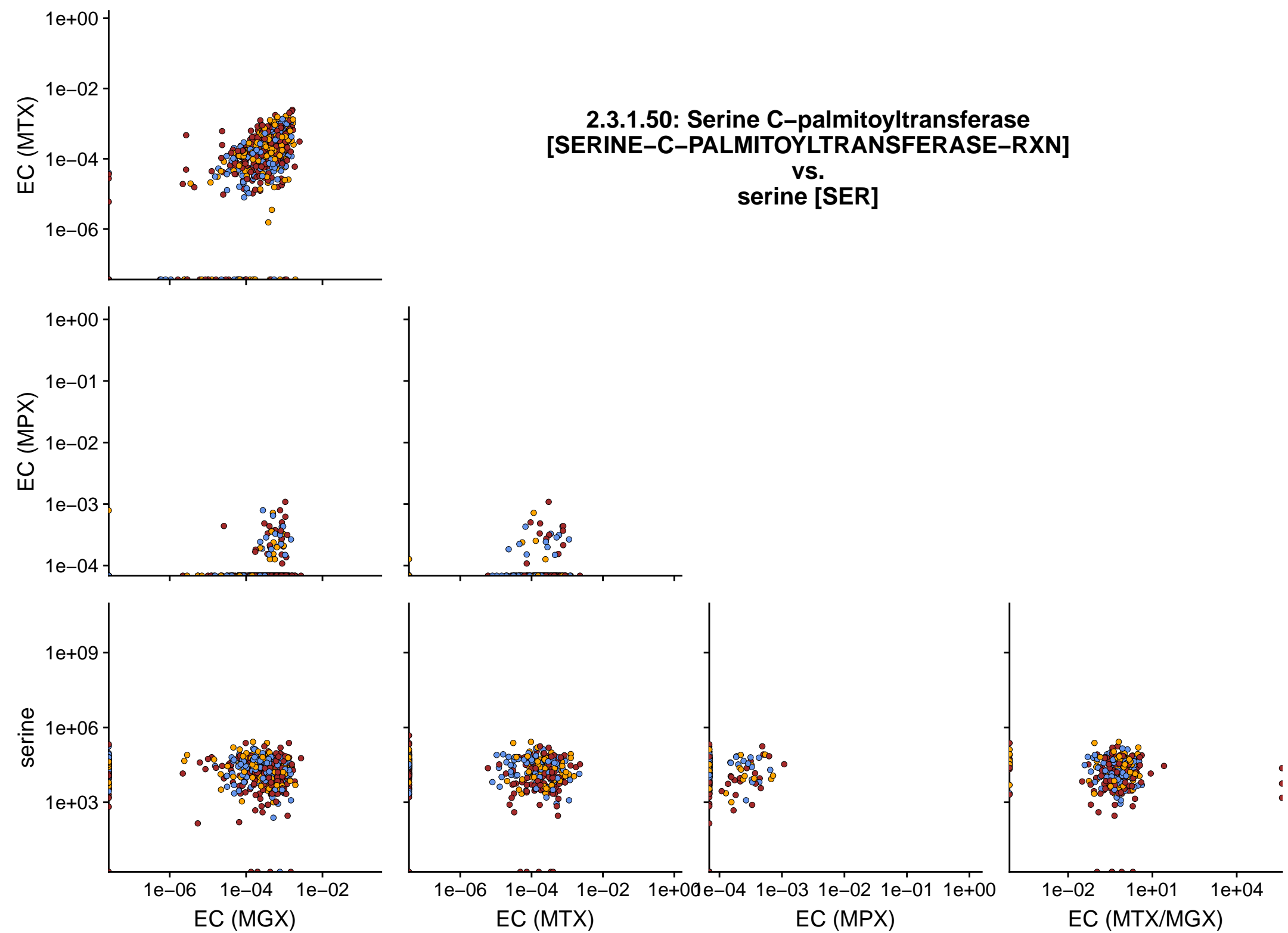
**2.4.2.8: Hypoxanthine phosphoribosyltransferase  
[HYPOXANPRIBOSYLTRAN-RXN]  
vs.  
hypoxanthine [HYPOXANTHINE]**



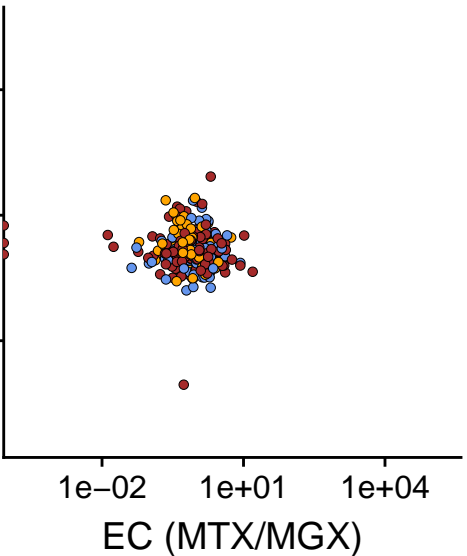
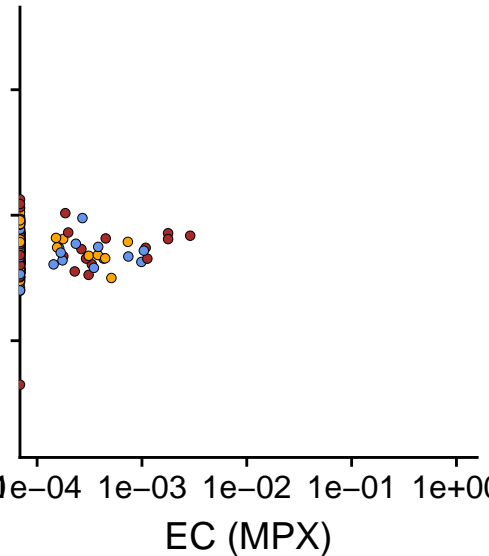
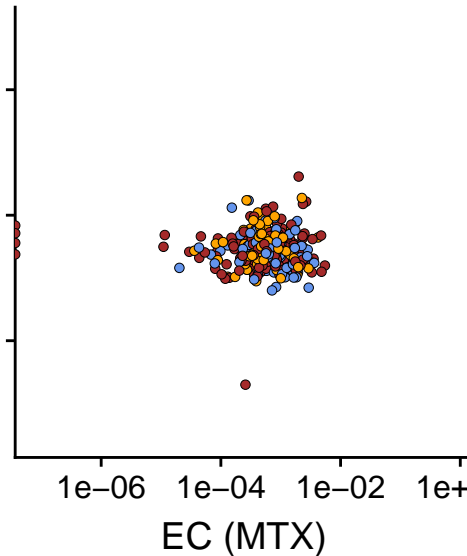
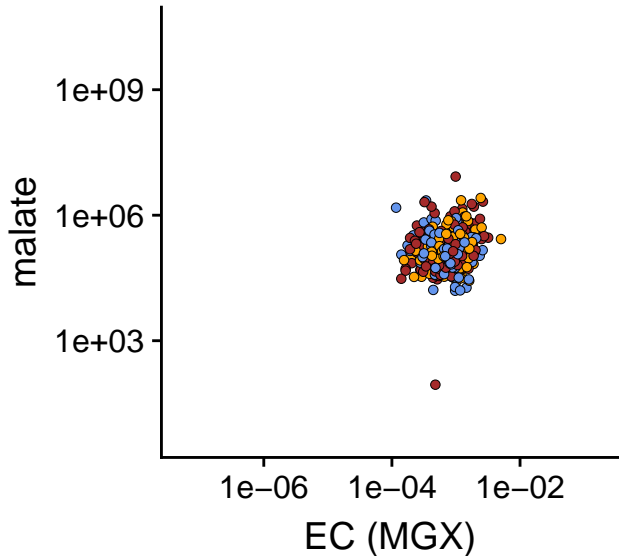
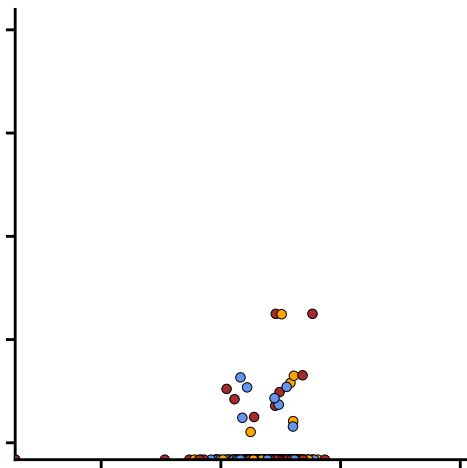
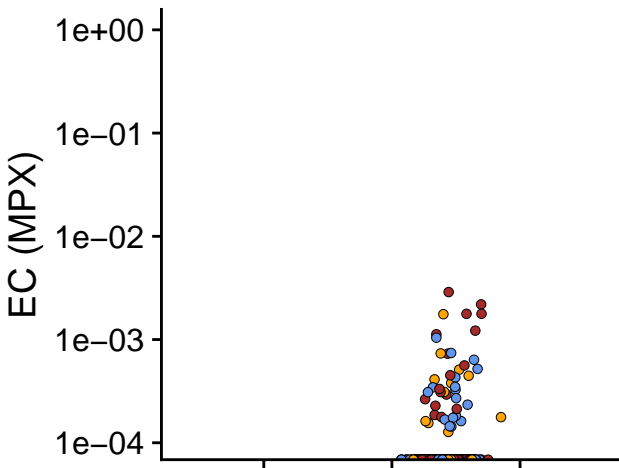
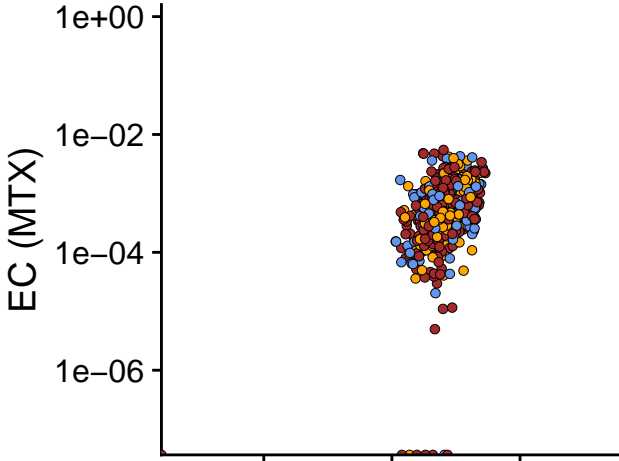
**2.8.3.10: Citrate CoA-transferase  
[CITTRANS-RXN]  
vs.  
citrate [CIT]**



**2.3.1.50: Serine C-palmitoyltransferase  
[SERINE-C-PALMITOYLTRANSFERASE-RXN]  
vs.  
serine [SER]**

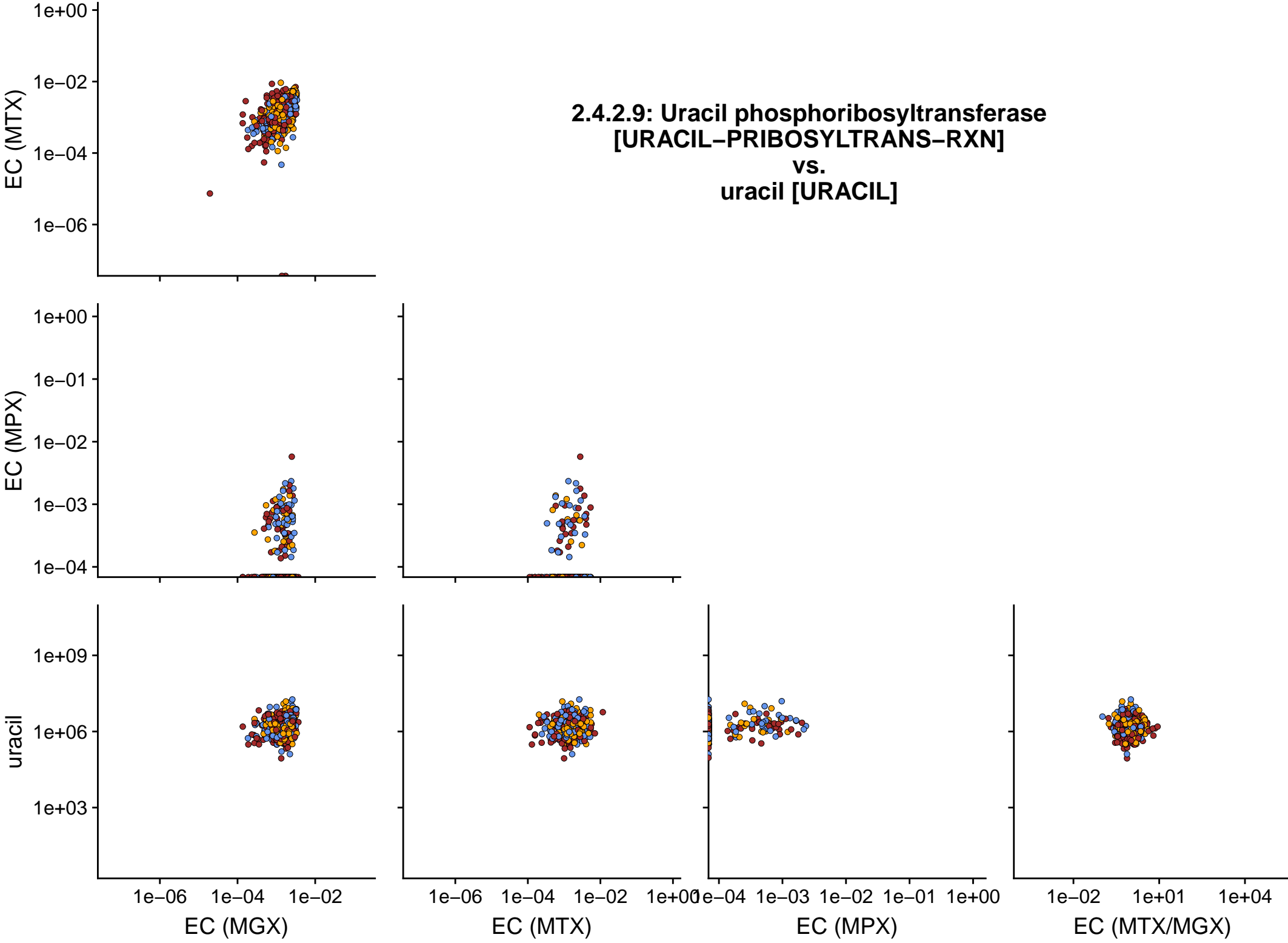


**4.2.1.2: Fumarate hydratase  
[FUMHYDR-RXN]  
vs.  
malate [MAL]**

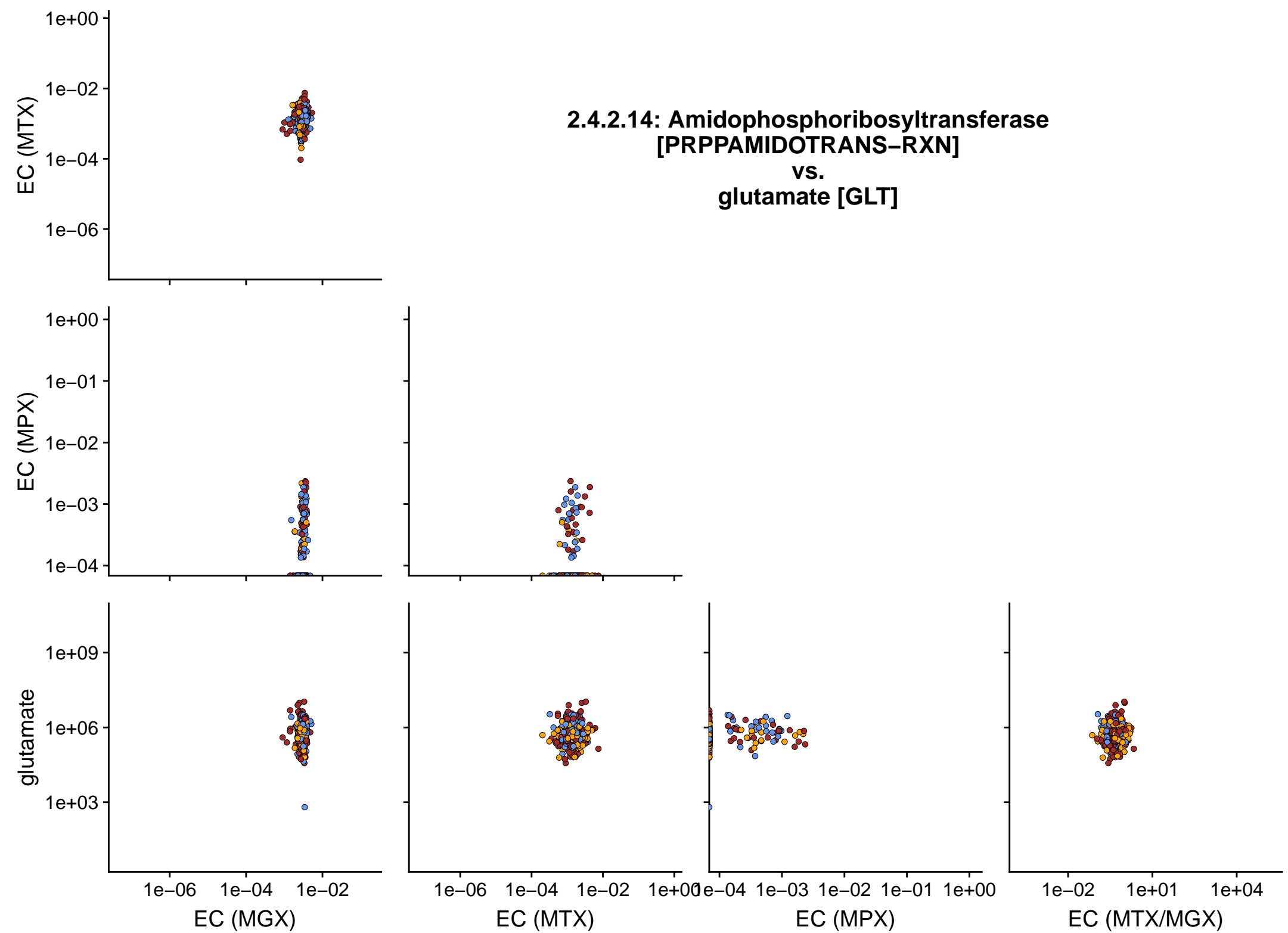




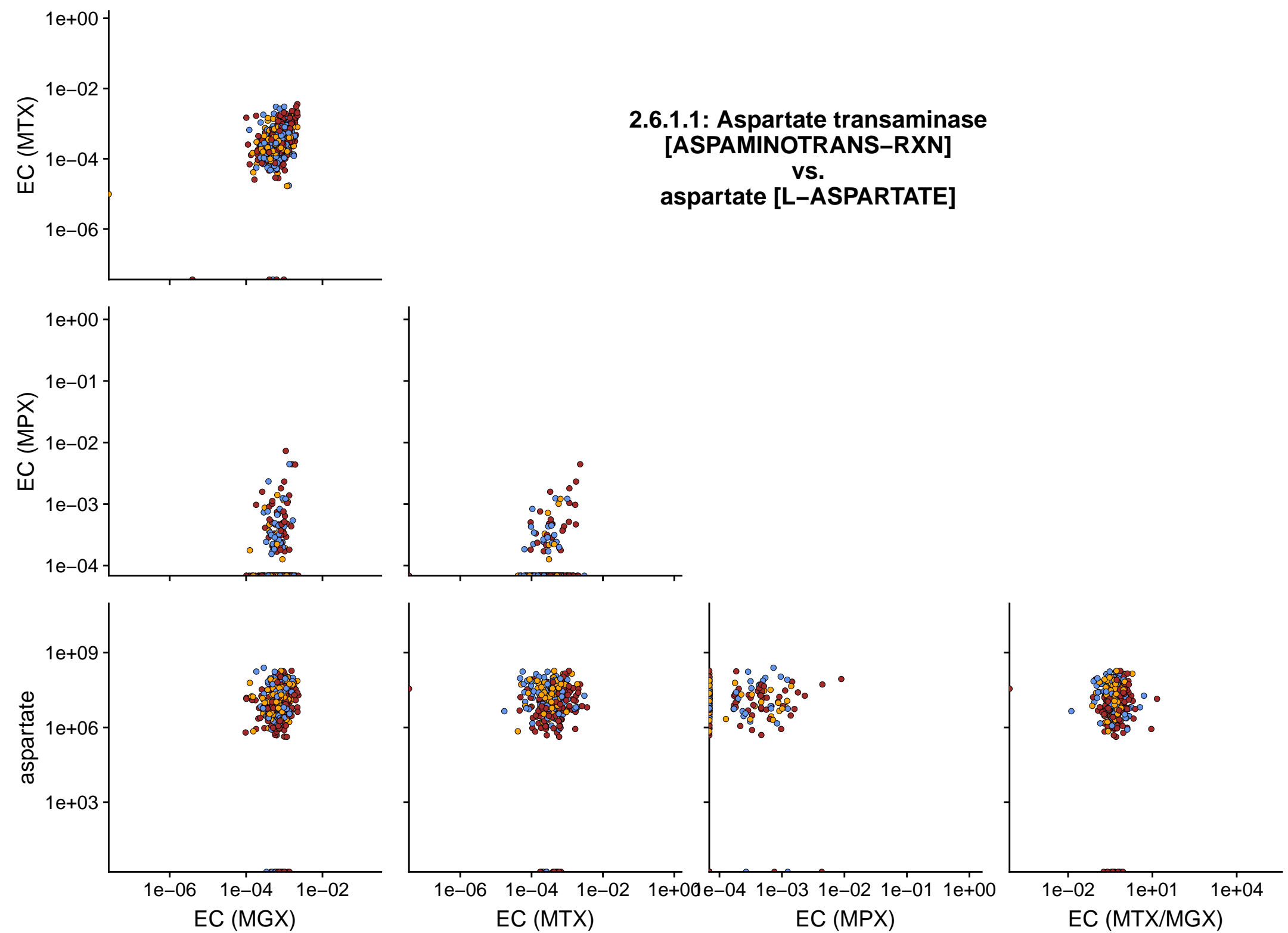
**2.4.2.9: Uracil phosphoribosyltransferase  
[URACIL-PRIBOSYLTRANS-RXN]  
vs.  
uracil [URACIL]**



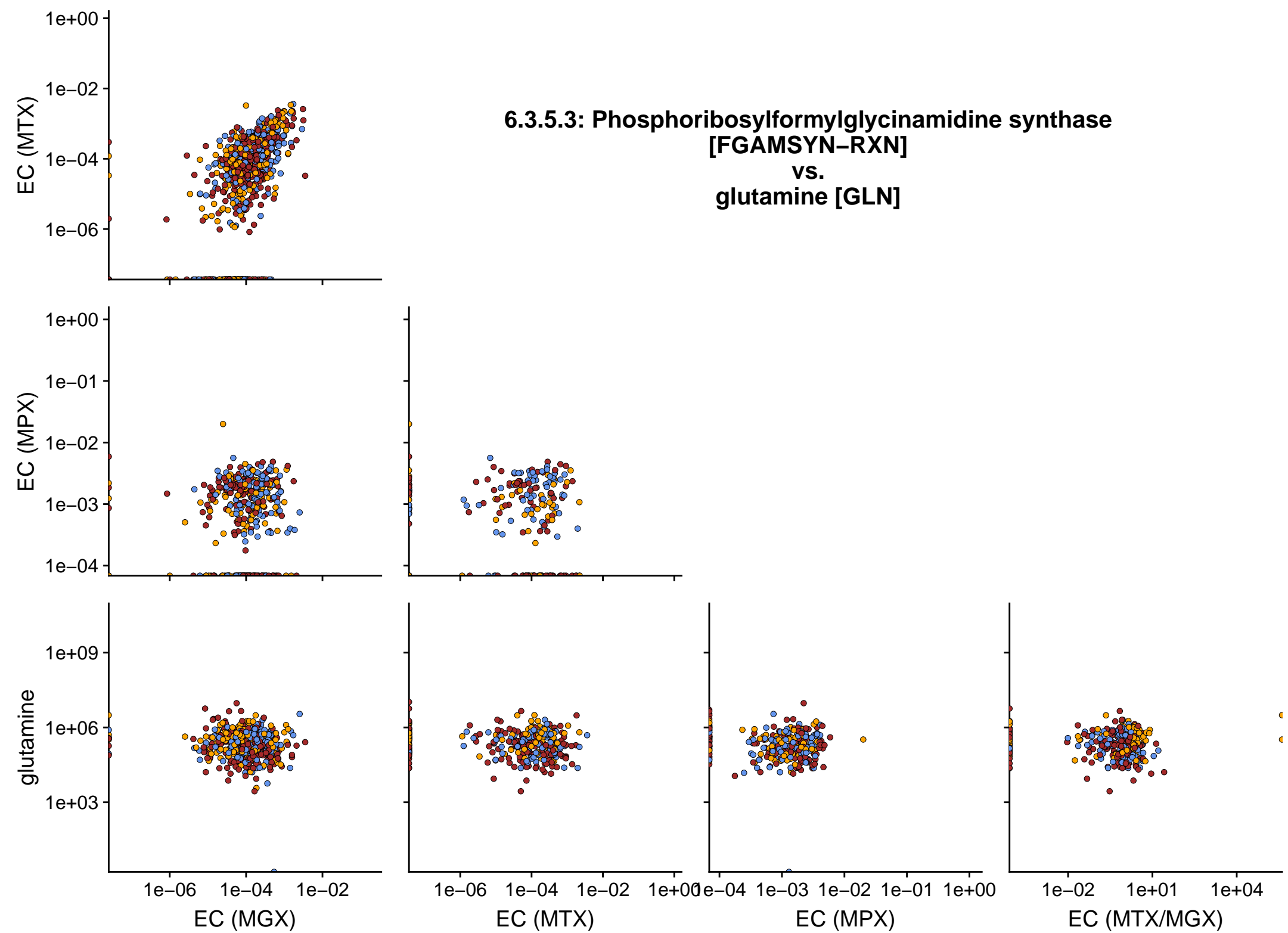
**2.4.2.14: Amidophosphoribosyltransferase  
[PRPPAMIDOTRANS-RXN]  
vs.  
glutamate [GLT]**



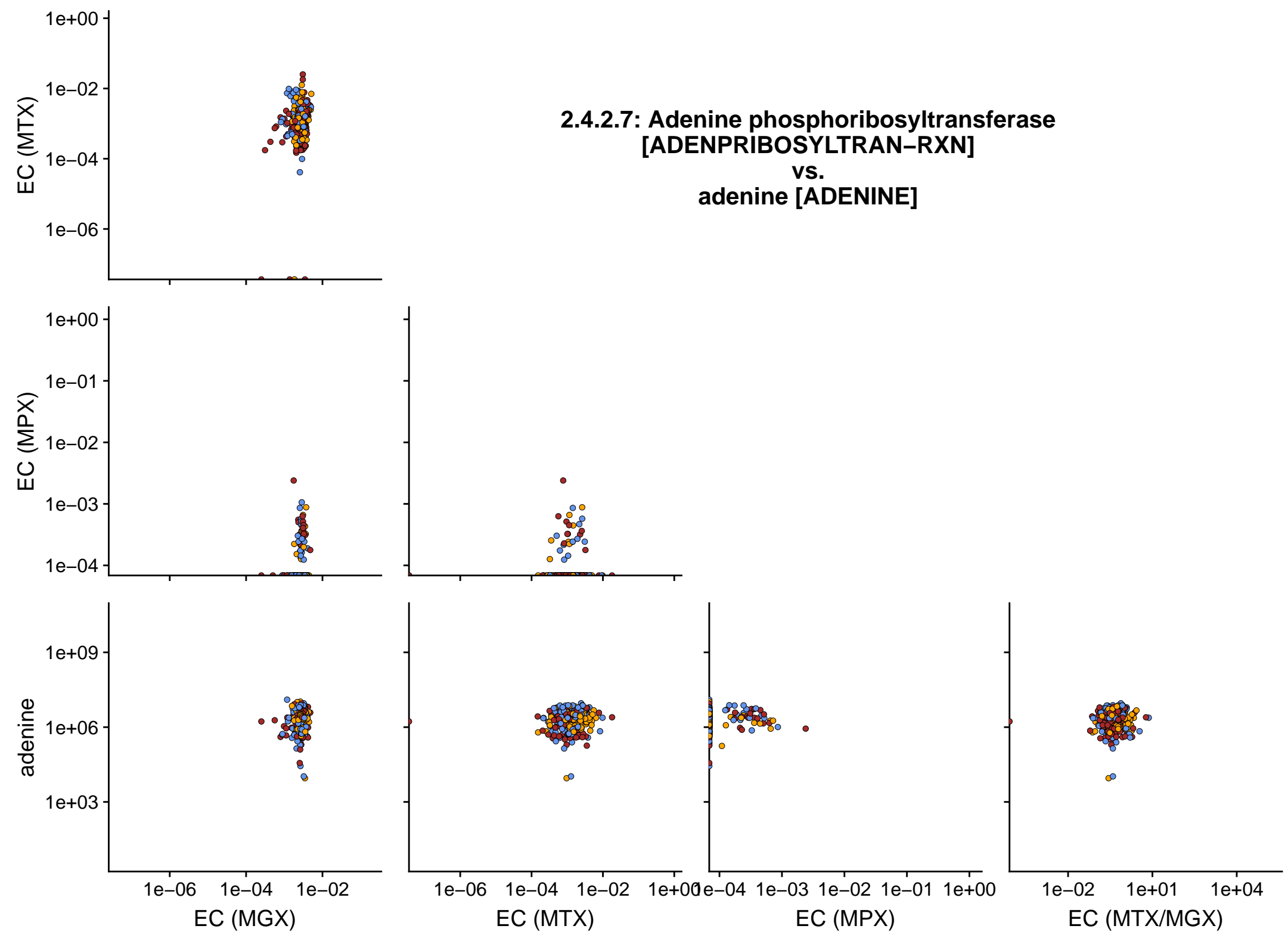
**2.6.1.1: Aspartate transaminase  
[ASPAMINOTRANS-RXN]  
vs.  
aspartate [L-ASPARTATE]**



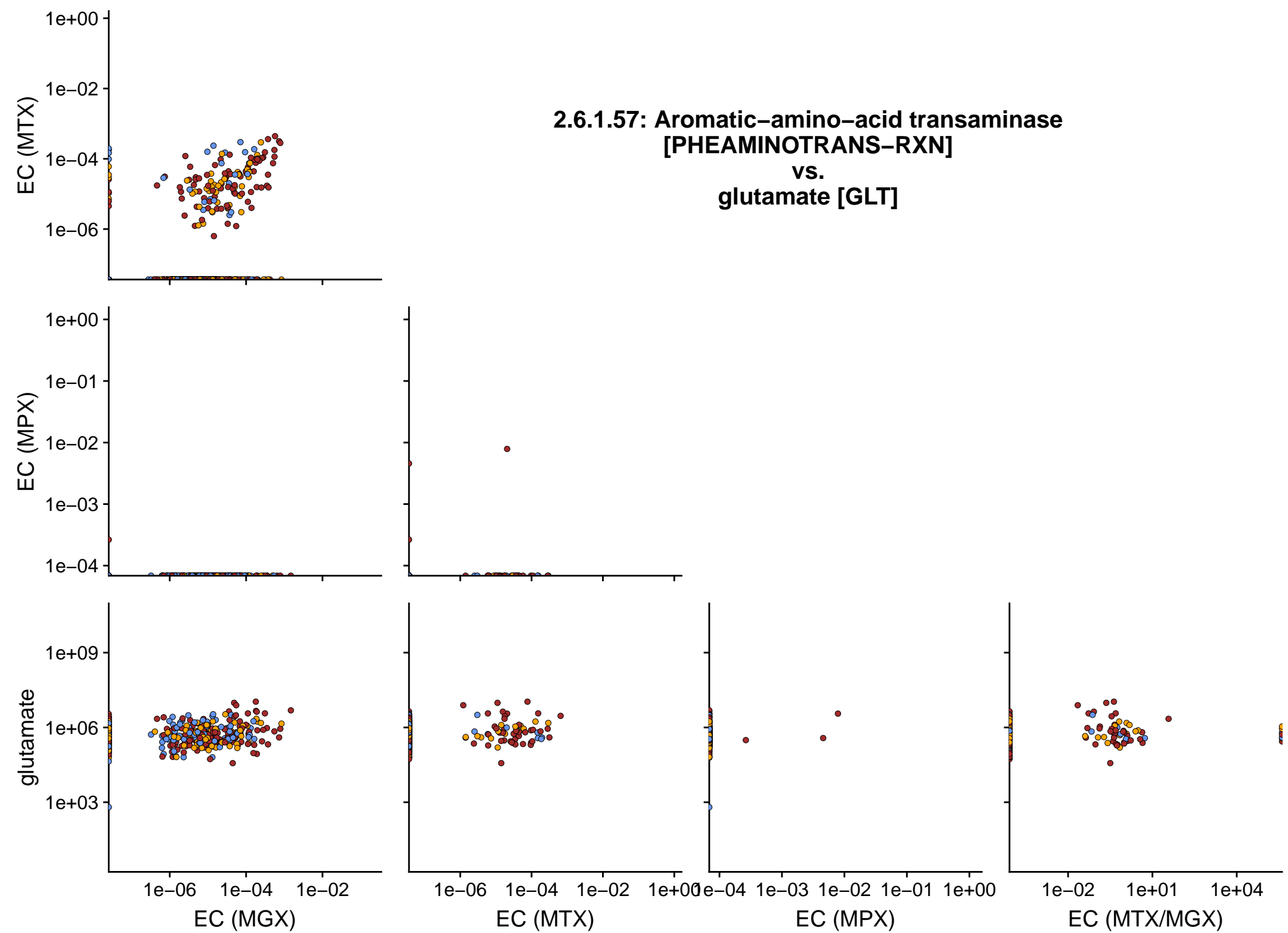
**6.3.5.3: Phosphoribosylformylglycinamide synthase  
[FGAMSYN-RXN]  
vs.  
glutamine [GLN]**



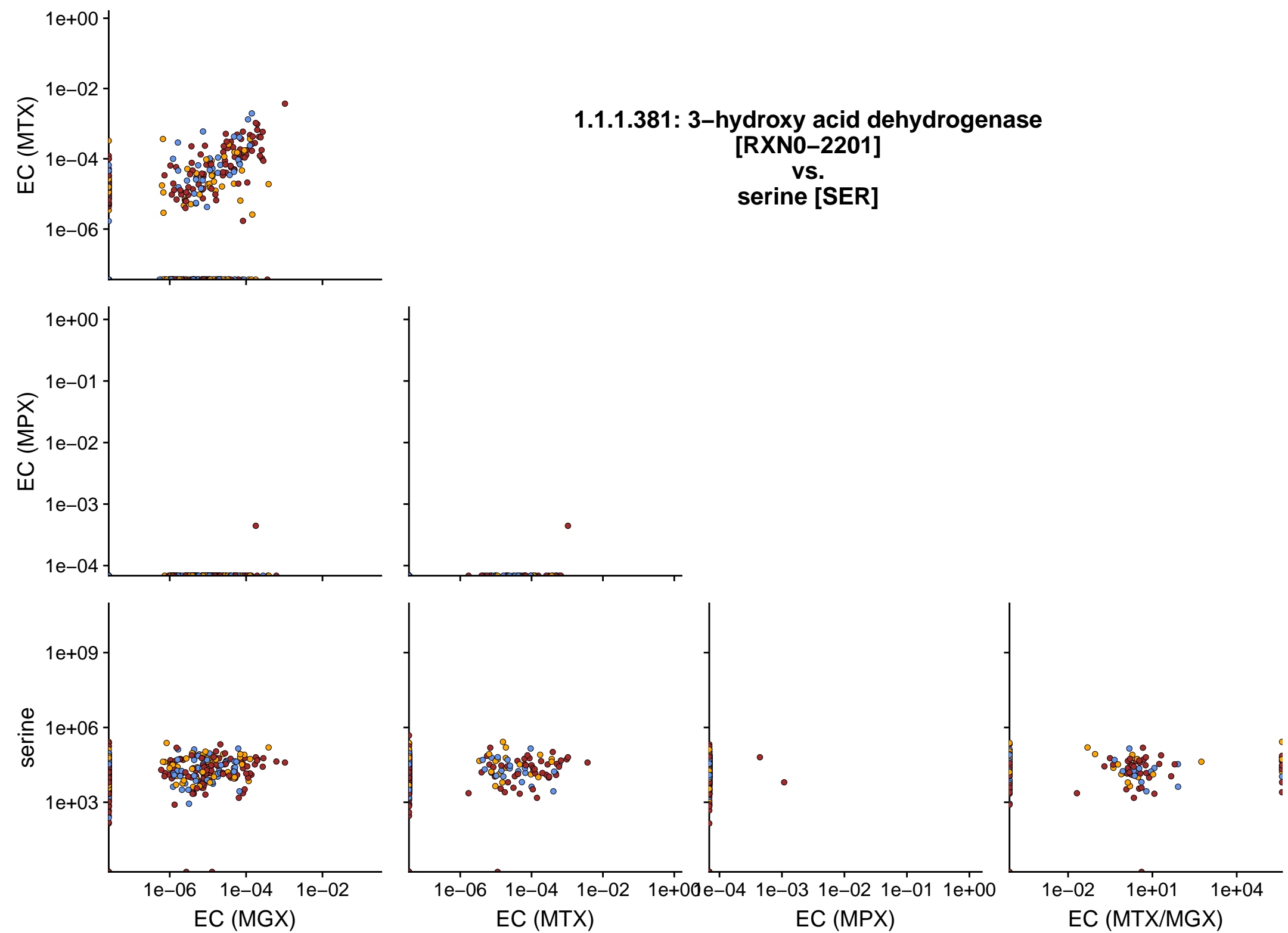
**2.4.2.7: Adenine phosphoribosyltransferase  
[ADENPRIBOSYLTRAN-RXN]  
vs.  
adenine [ADENINE]**



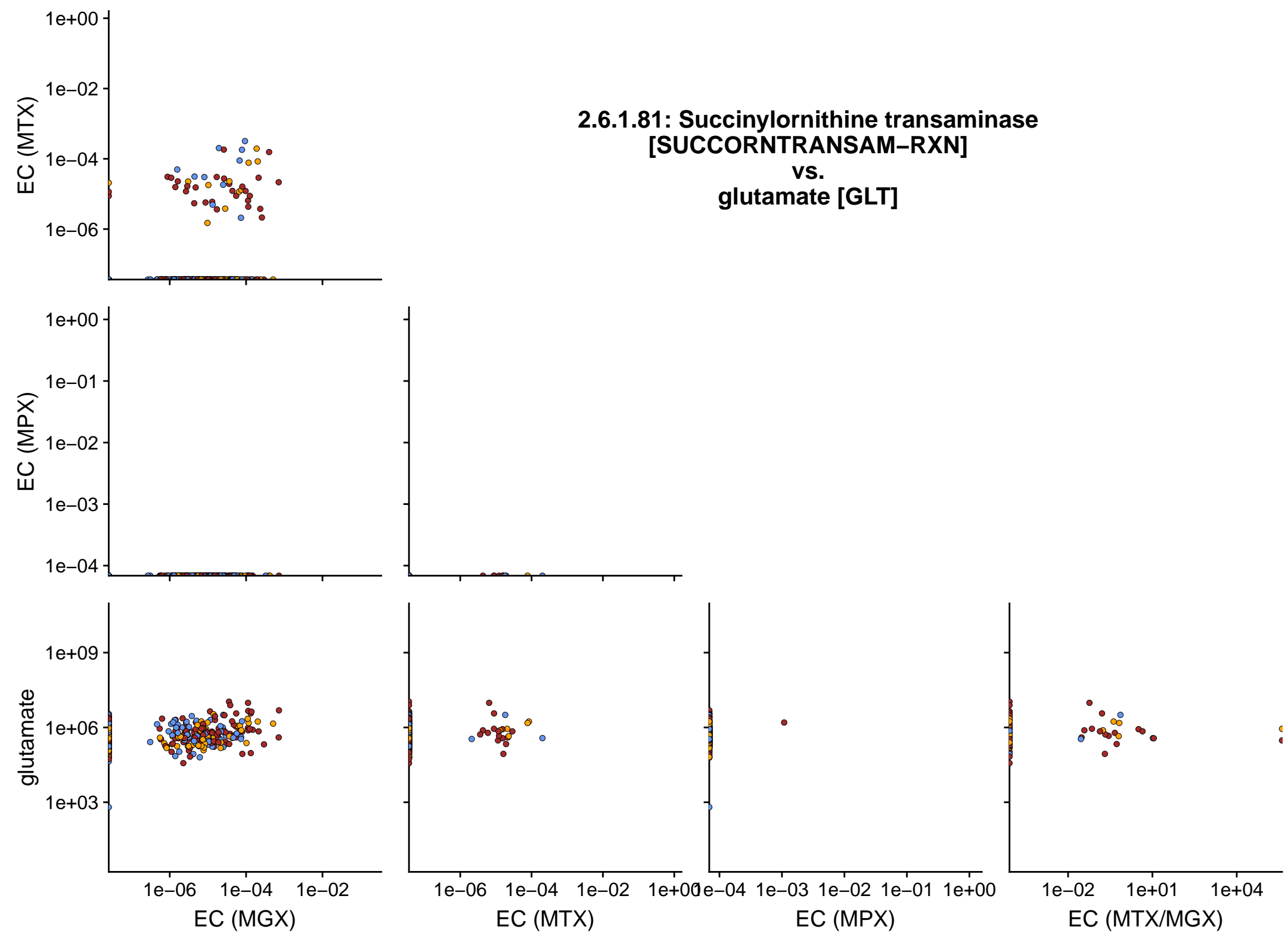
**2.6.1.57: Aromatic-amino-acid transaminase  
[PHEAMINOTRANS-RXN]  
vs.  
glutamate [GLT]**



**1.1.1.381: 3-hydroxy acid dehydrogenase  
[RXN0-2201]  
vs.  
serine [SER]**

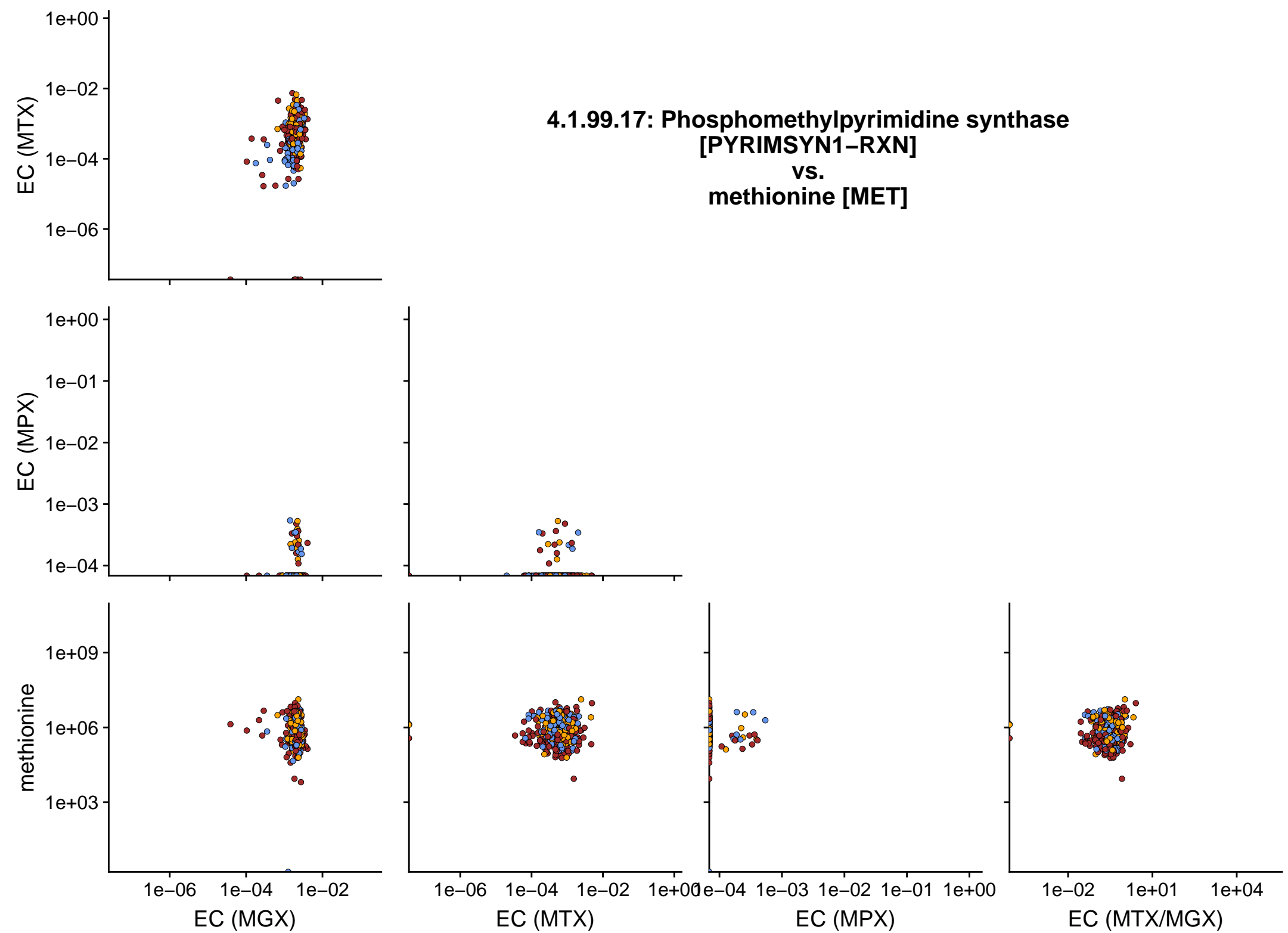


**2.6.1.81: Succinylornithine transaminase  
[SUCCORNTRANSAM-RXN]  
vs.  
glutamate [GLT]**

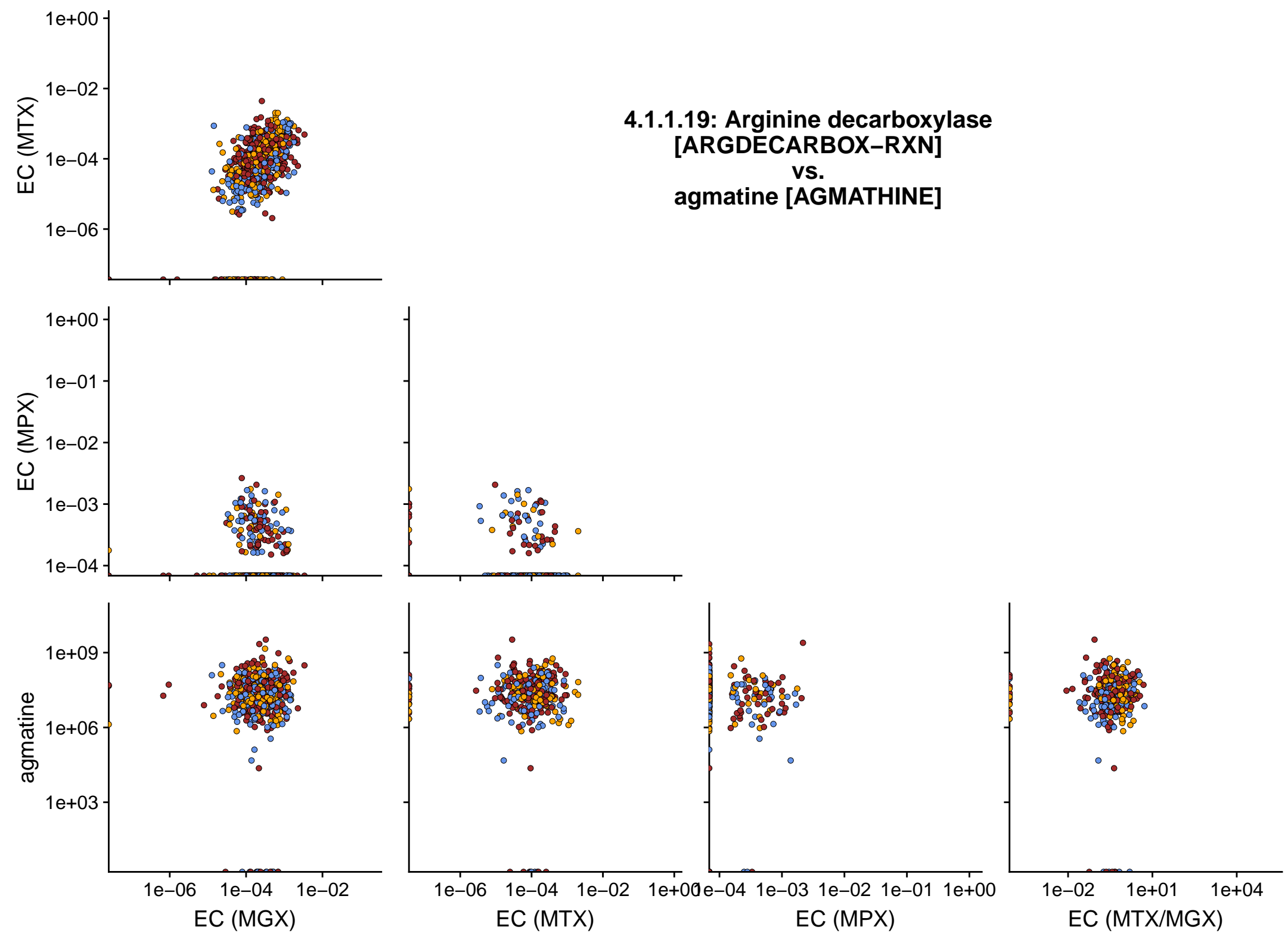




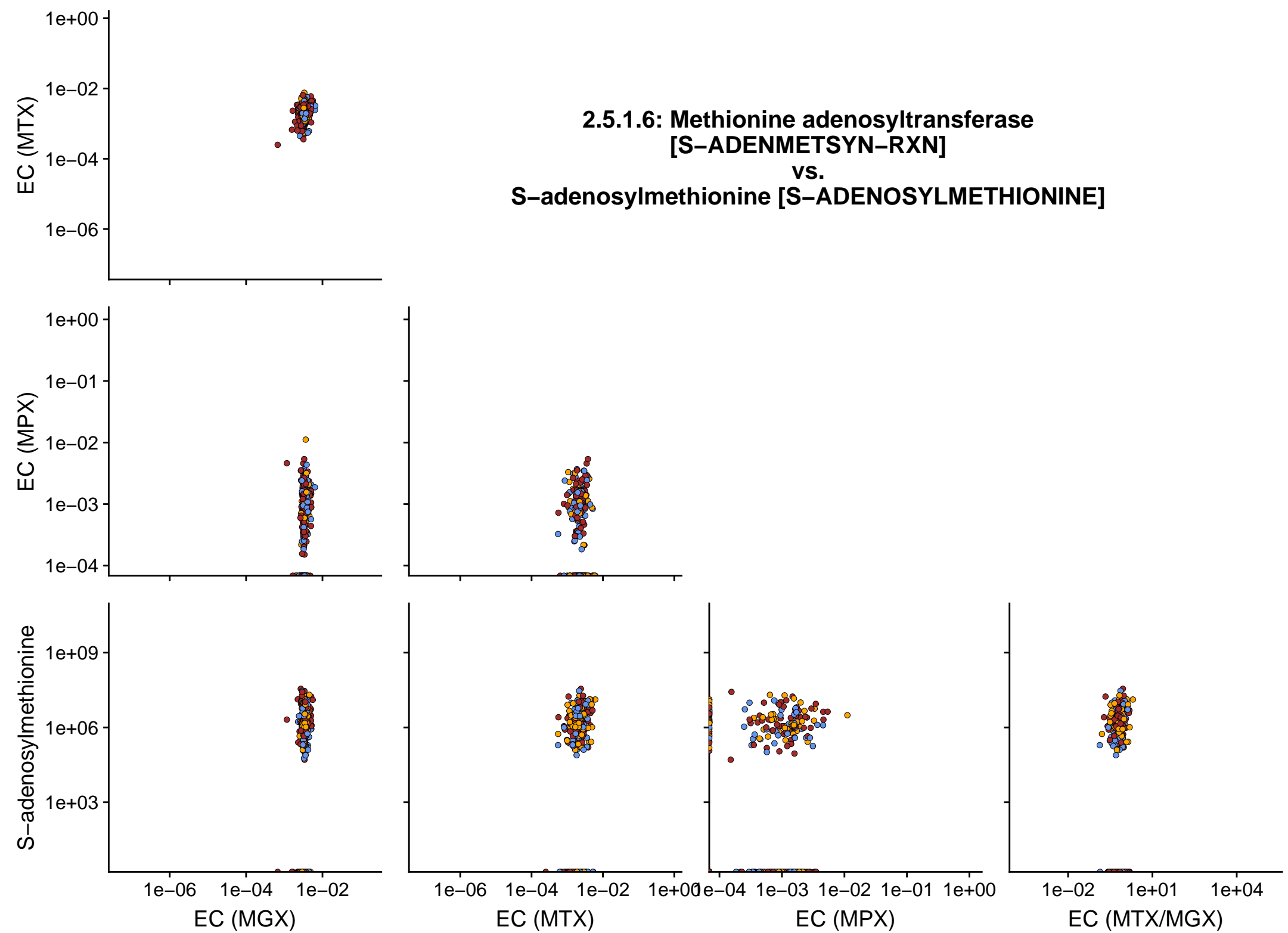
**4.1.99.17: Phosphomethylpyrimidine synthase  
[PYRIMSYN1-RXN]  
vs.  
methionine [MET]**



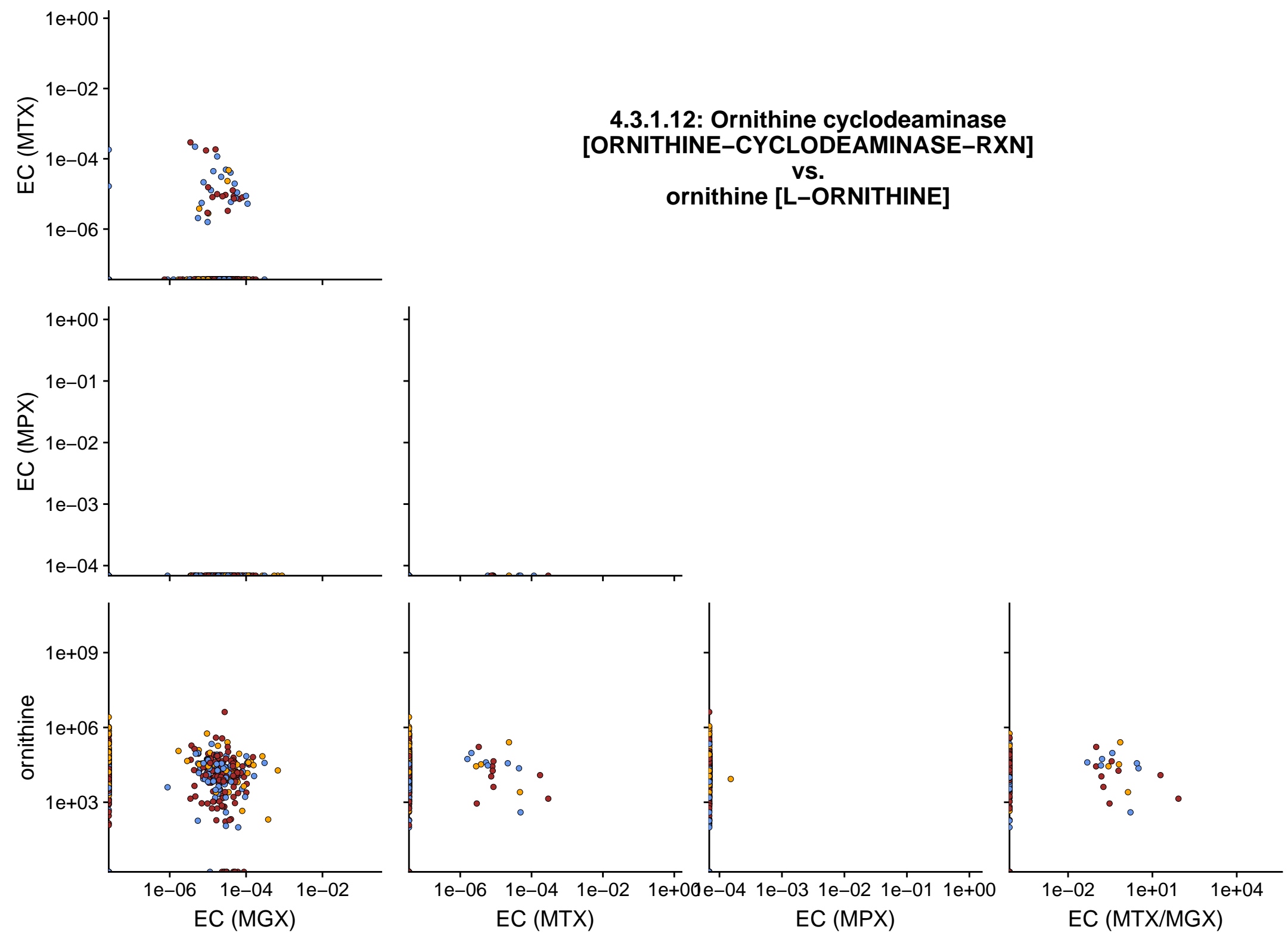
**4.1.1.19: Arginine decarboxylase  
[ARGDECARBOX-RXN]  
vs.  
agmatine [AGMATHINE]**



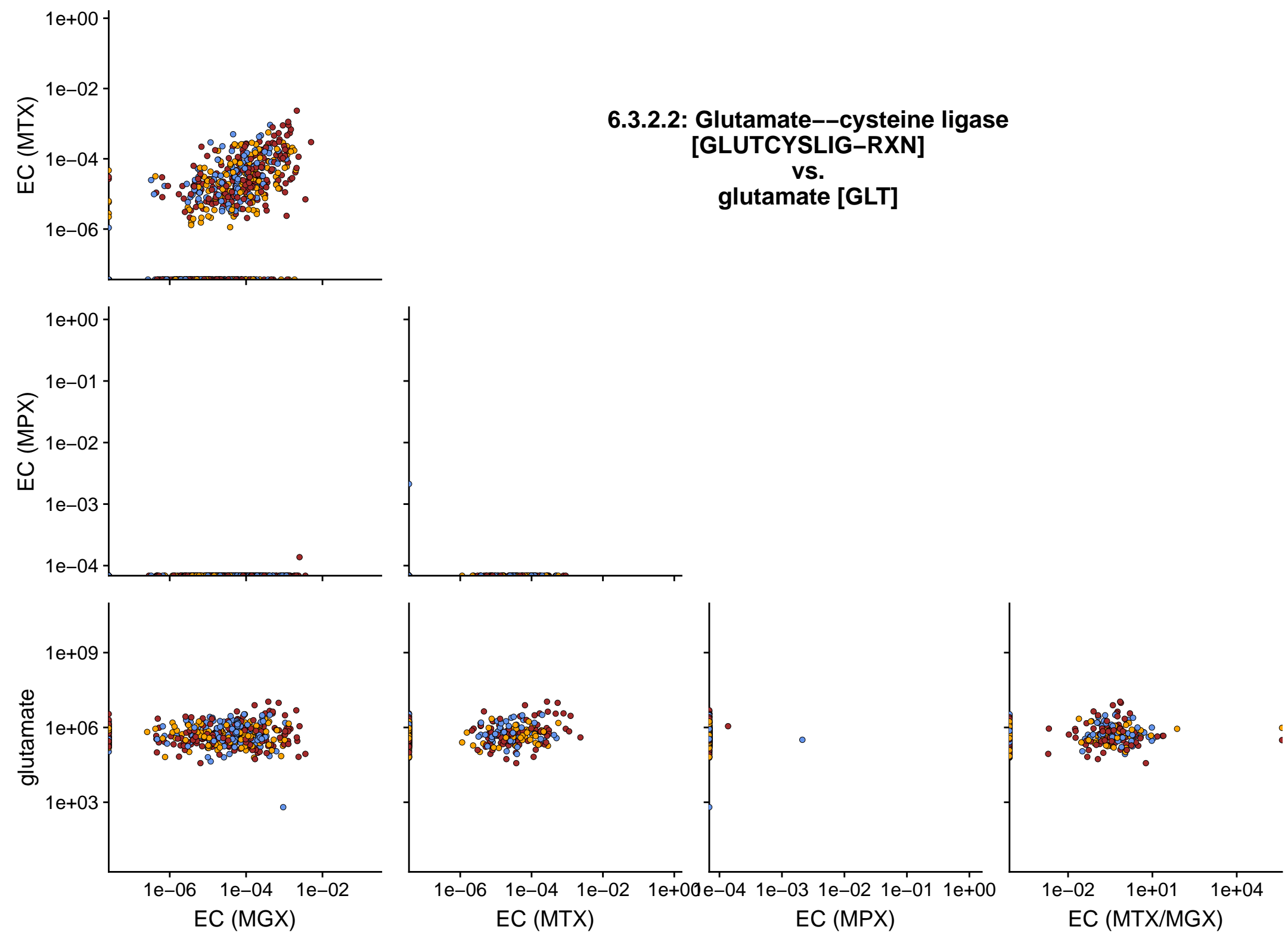
**2.5.1.6: Methionine adenosyltransferase  
[S-ADENMETSYN-RXN]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**



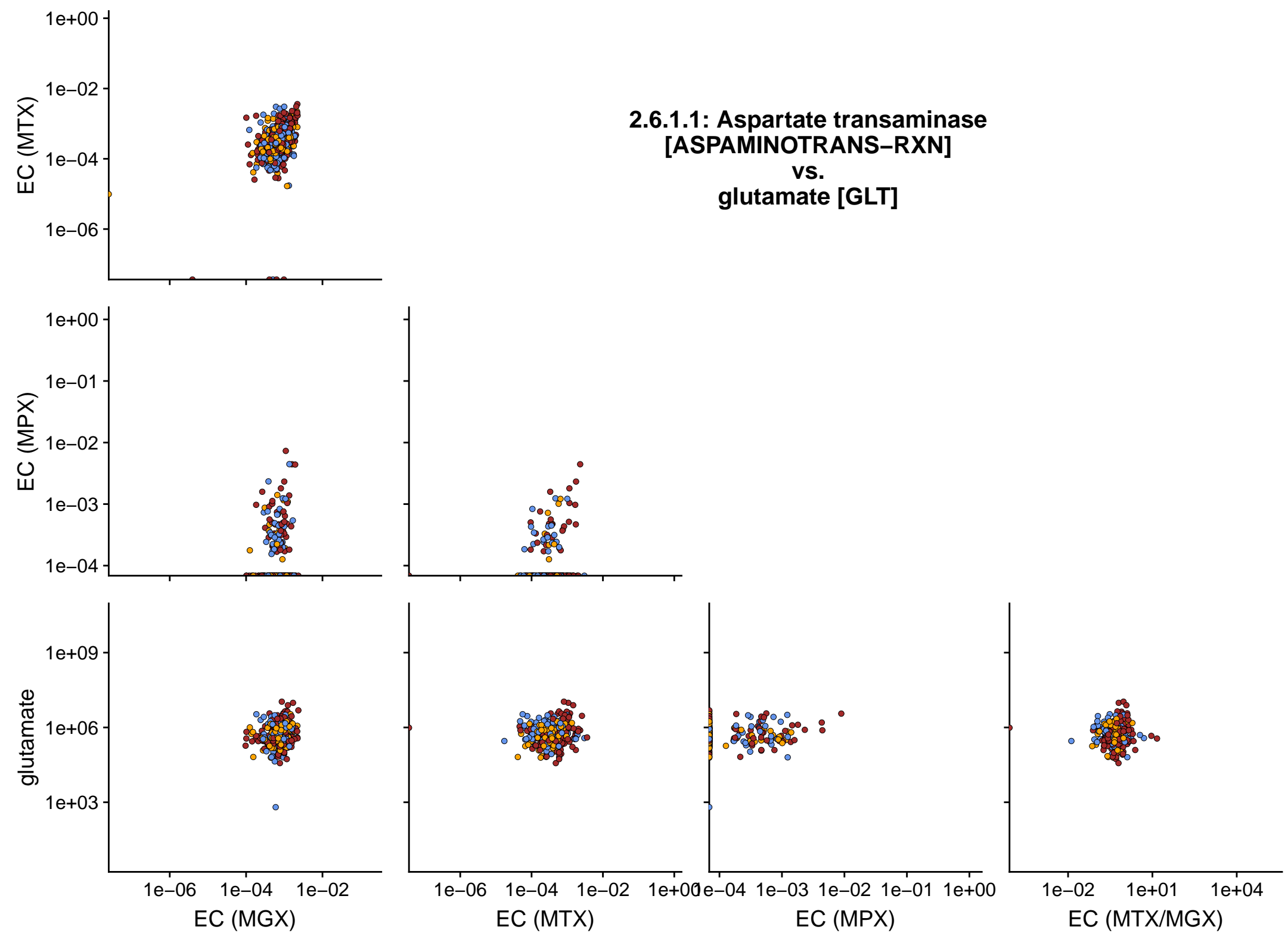
**4.3.1.12: Ornithine cyclodeaminase  
[ORNITHINE-CYCLODEAMINASE-RXN]  
vs.  
ornithine [L-ORNITHINE]**



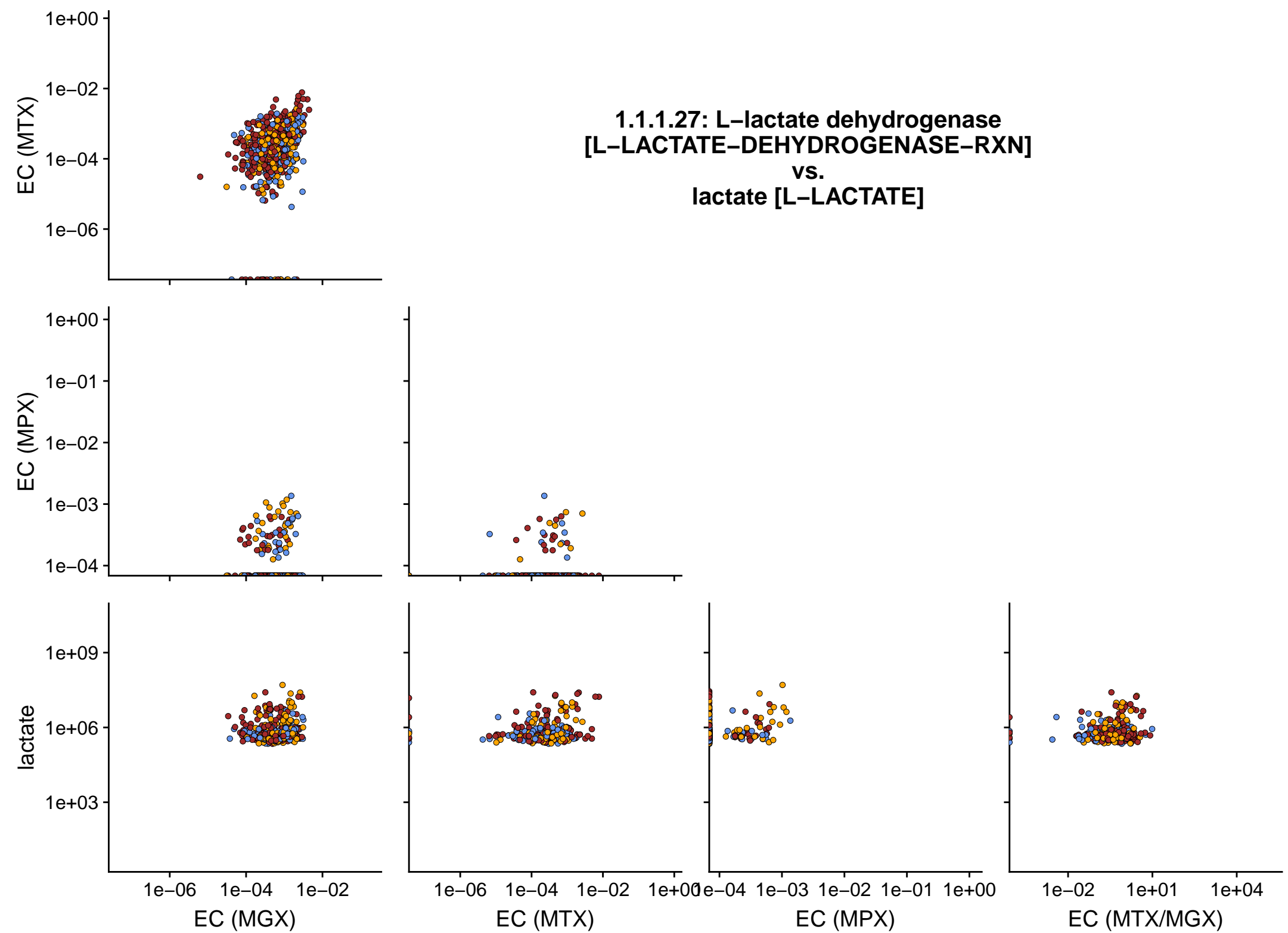
**6.3.2.2: Glutamate--cysteine ligase  
[GLUTCYSLIG-RXN]  
vs.  
glutamate [GLT]**



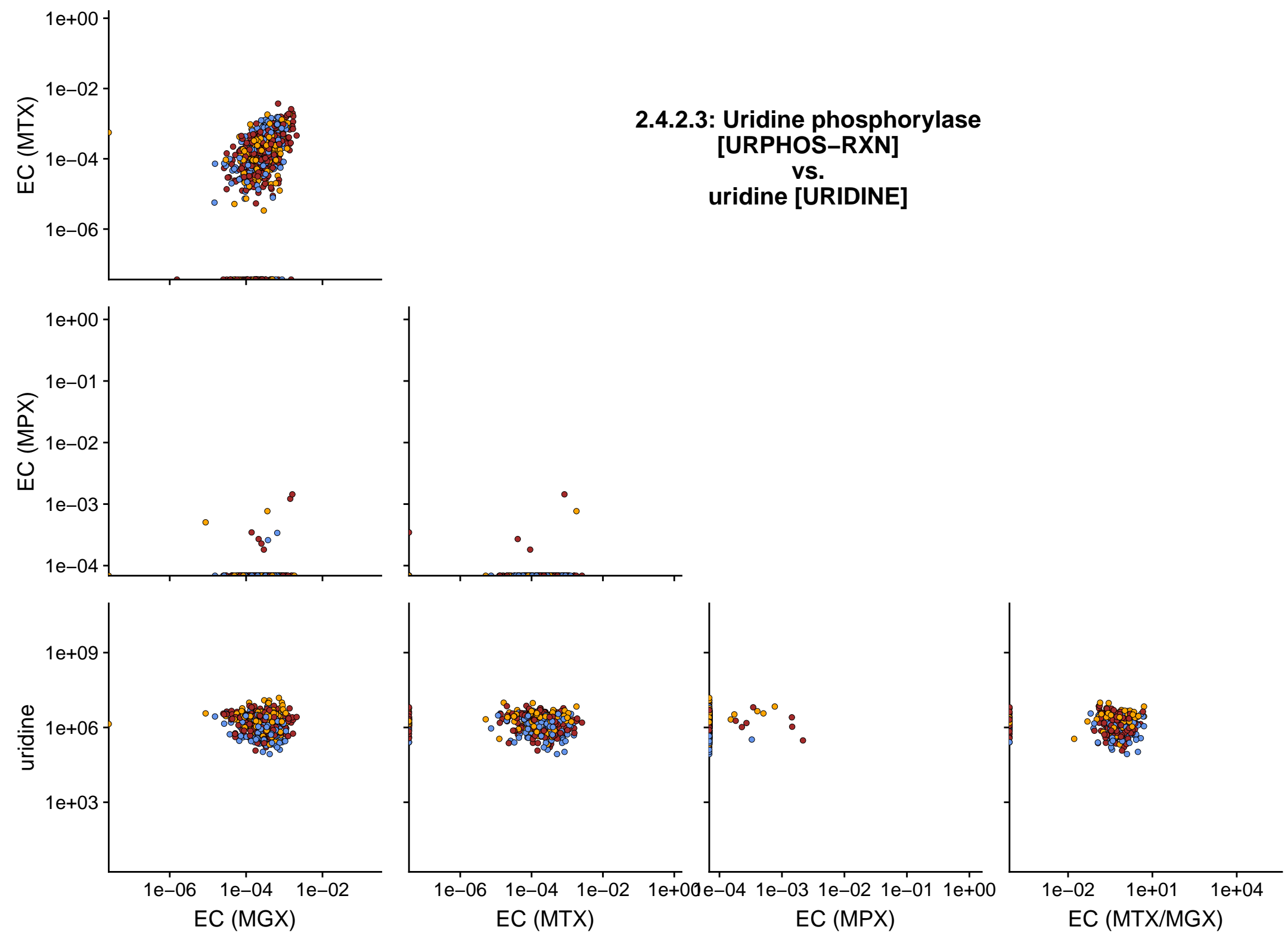
**2.6.1.1: Aspartate transaminase  
[ASPAMINOTRANS-RXN]  
vs.  
glutamate [GLT]**



**1.1.1.27: L-lactate dehydrogenase  
[L-LACTATE-DEHYDROGENASE-RXN]  
vs.  
lactate [L-LACTATE]**

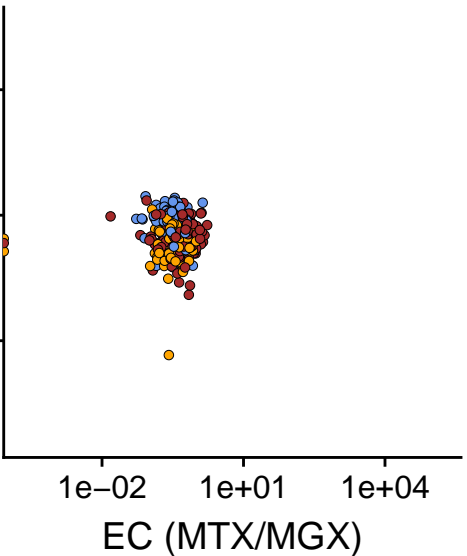
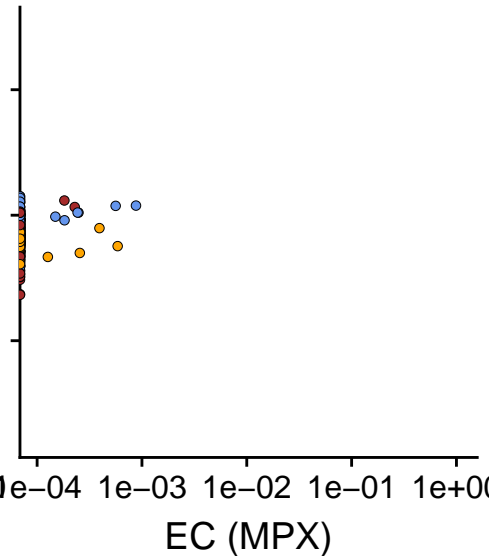
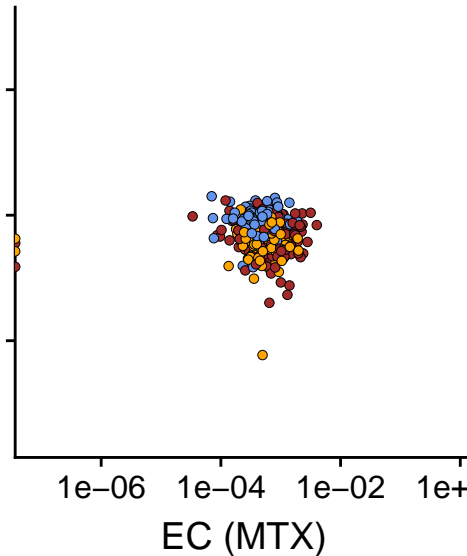
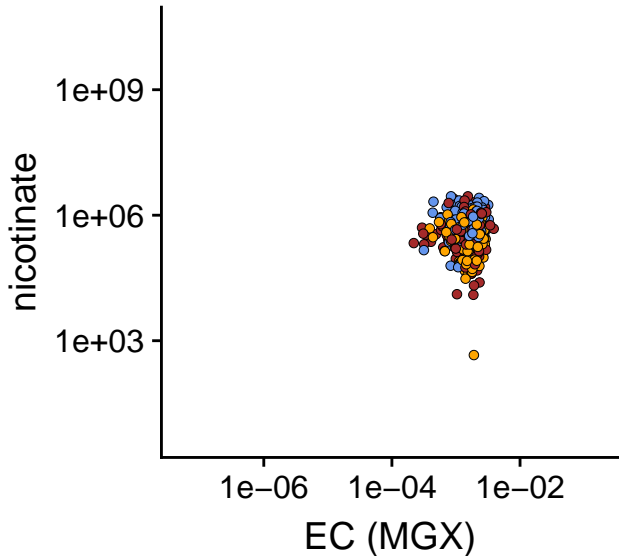
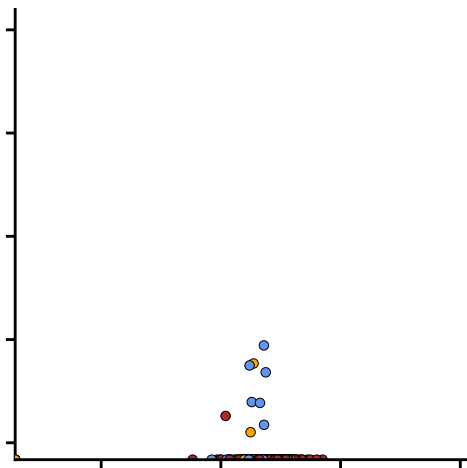
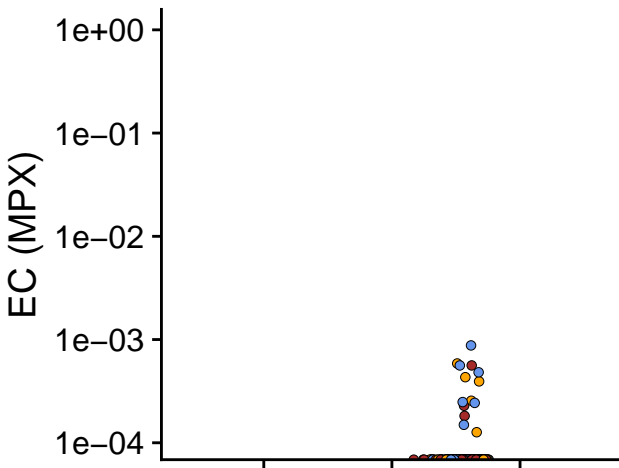
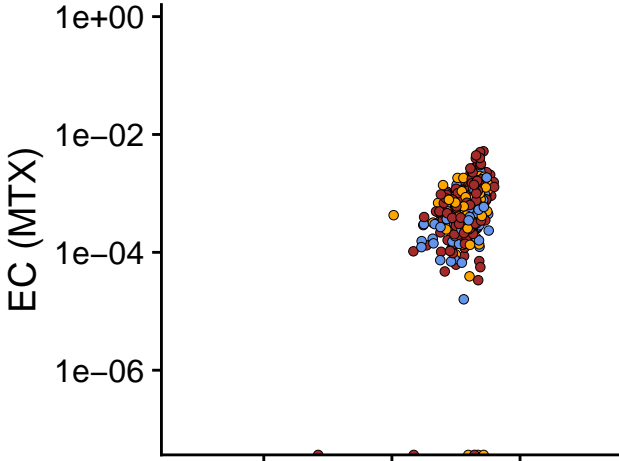


**2.4.2.3: Uridine phosphorylase  
[URPHOS-RXN]  
vs.  
uridine [URIDINE]**

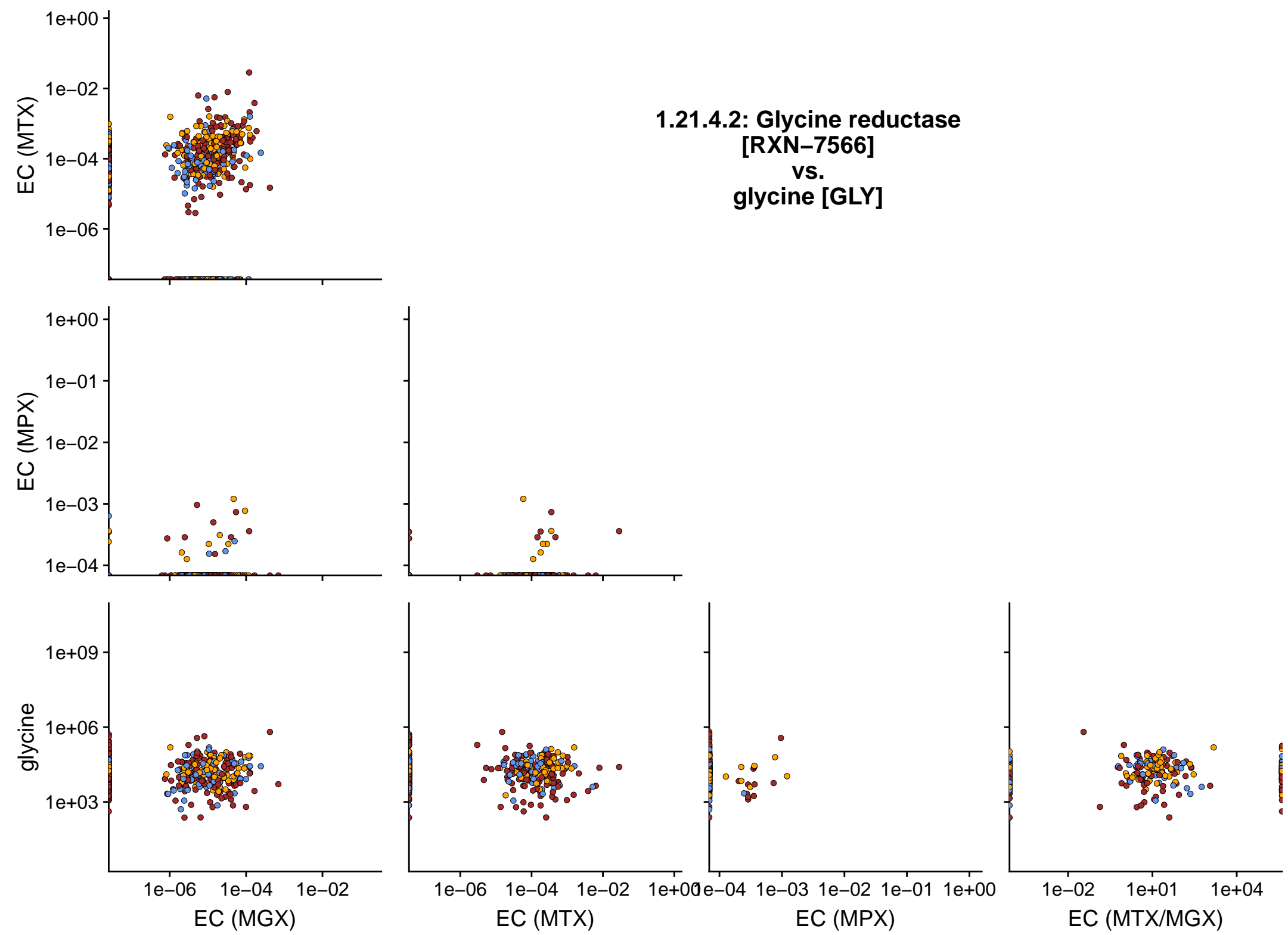




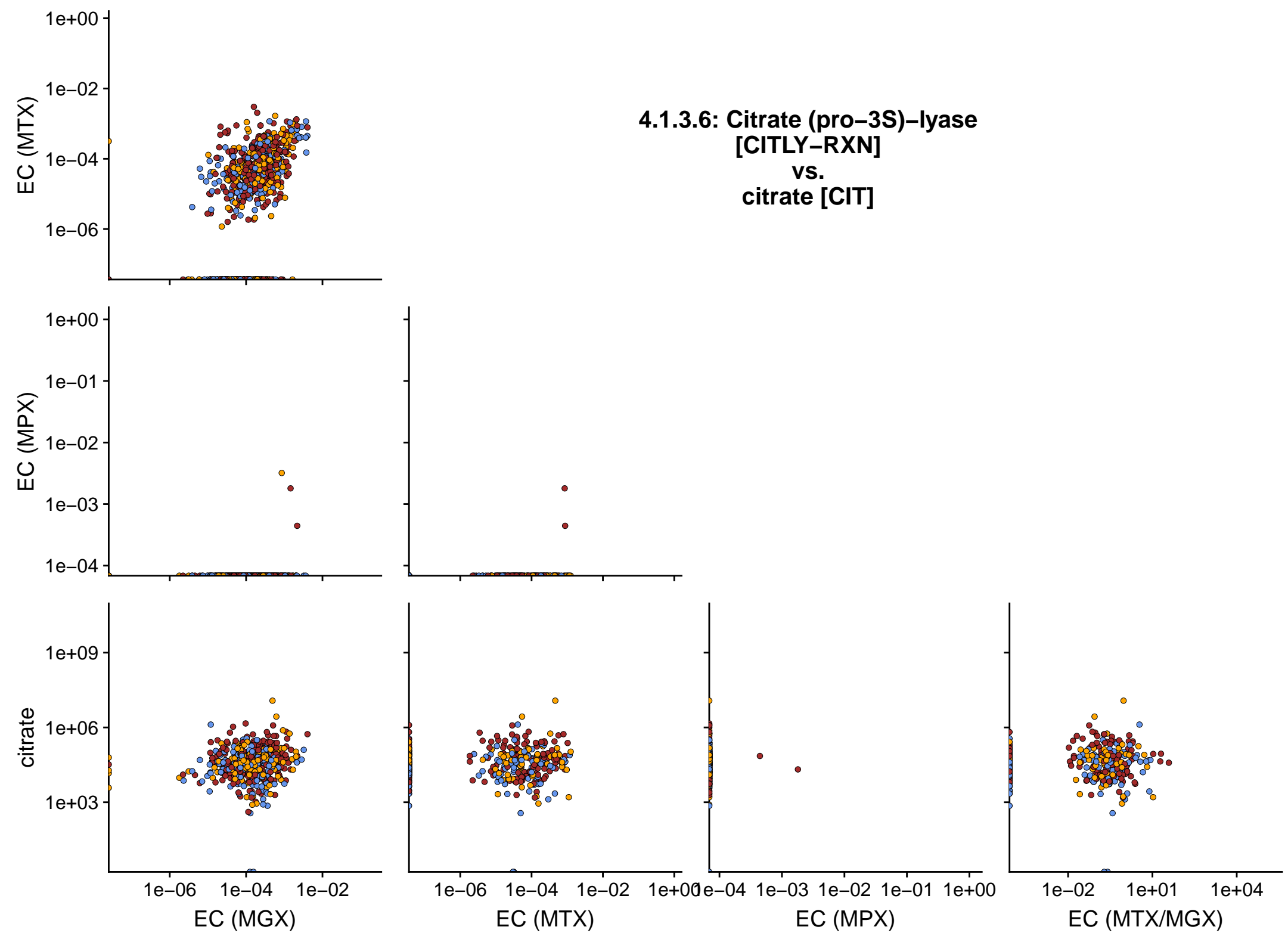
**6.3.4.21: Nicotinate phosphoribosyltransferase  
[NICOTINATEPRIBOSYLTRANS-RXN]  
vs.  
nicotinate [NIACINE]**



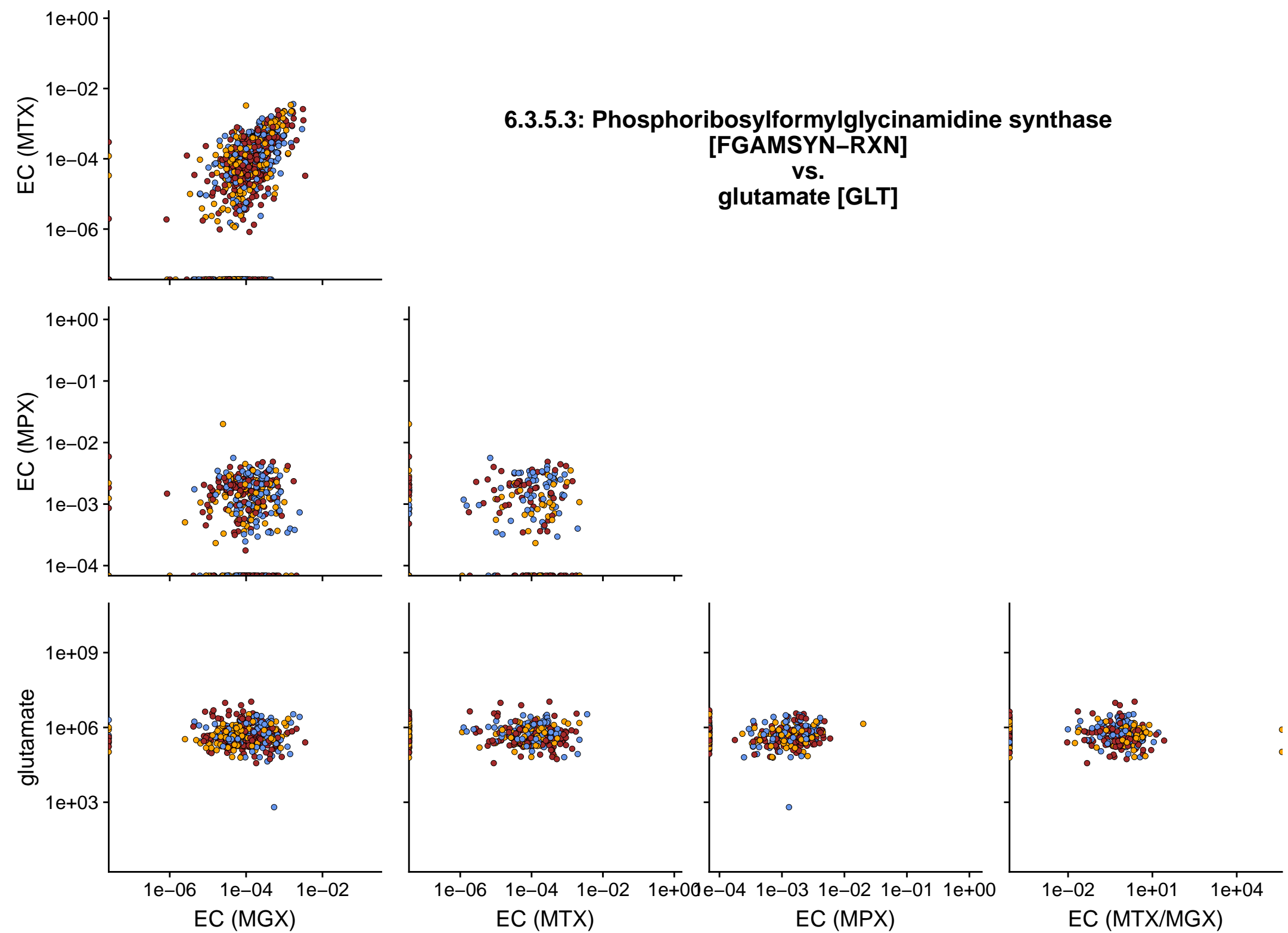
**1.21.4.2: Glycine reductase  
[RXN-7566]  
vs.  
glycine [GLY]**



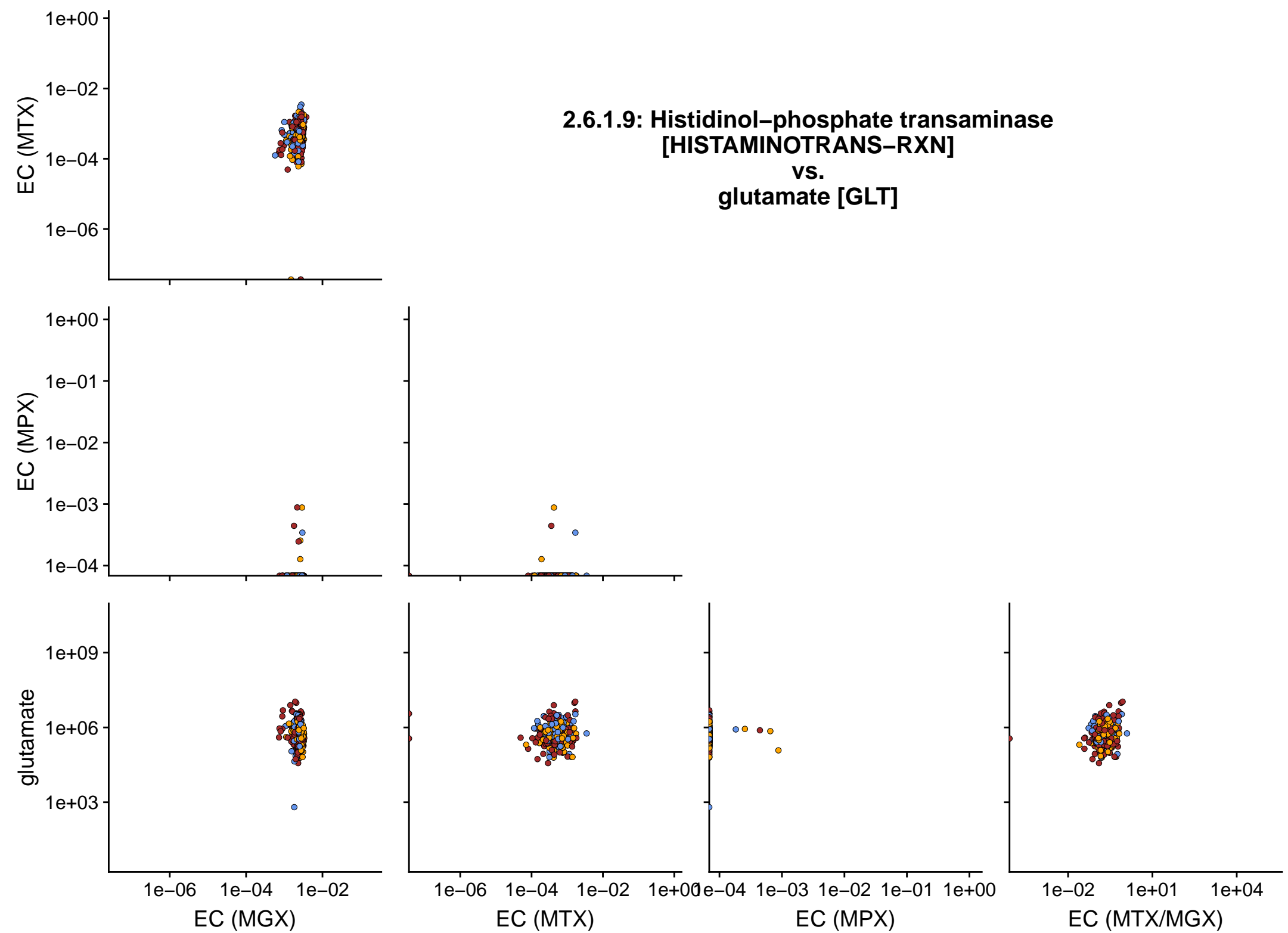
**4.1.3.6: Citrate (pro-3S)-lyase  
[CITLY-RXN]  
vs.  
citrate [CIT]**



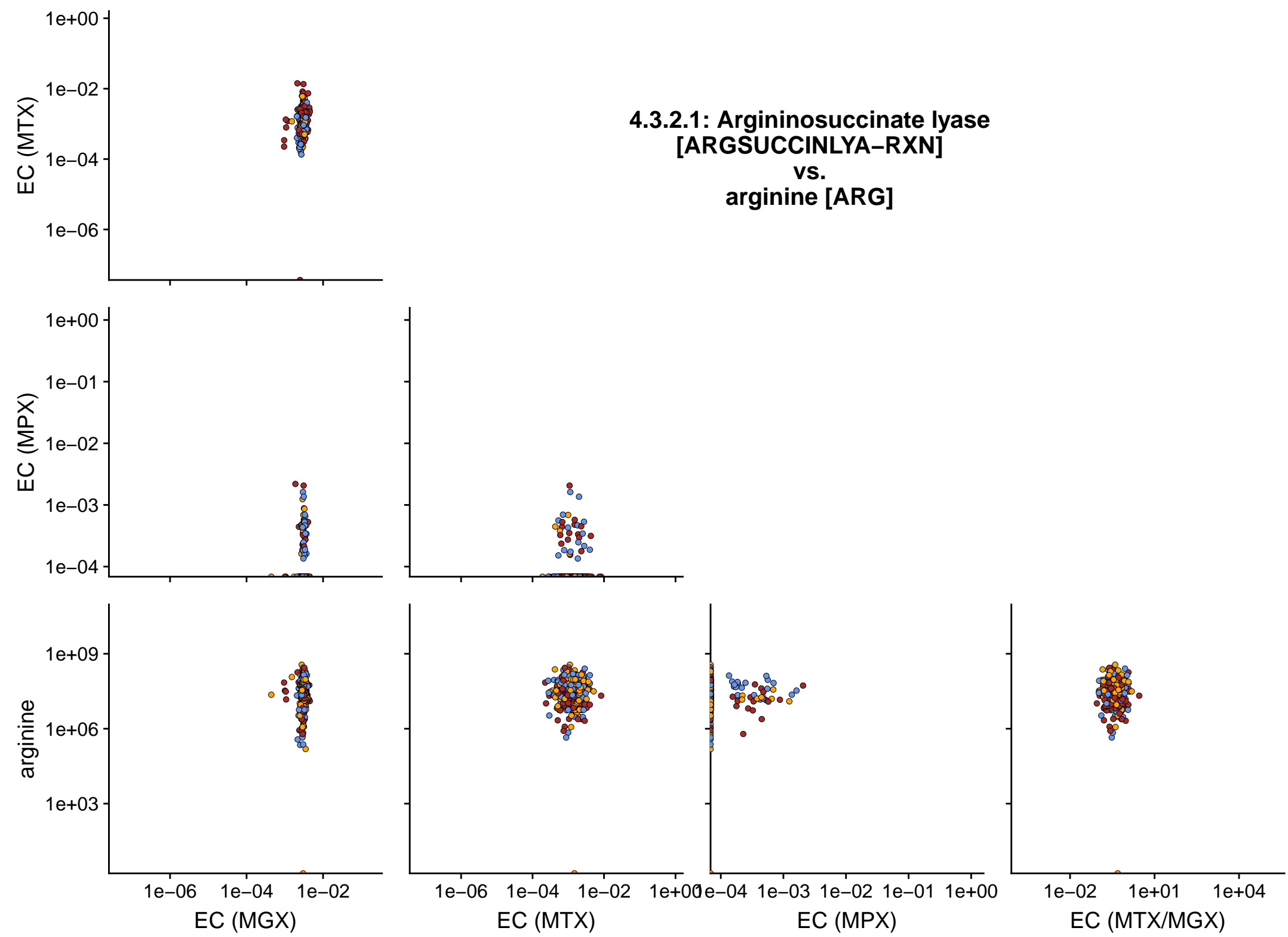
**6.3.5.3: Phosphoribosylformylglycinamide synthase  
[FGAMSYN-RXN]  
vs.  
glutamate [GLT]**



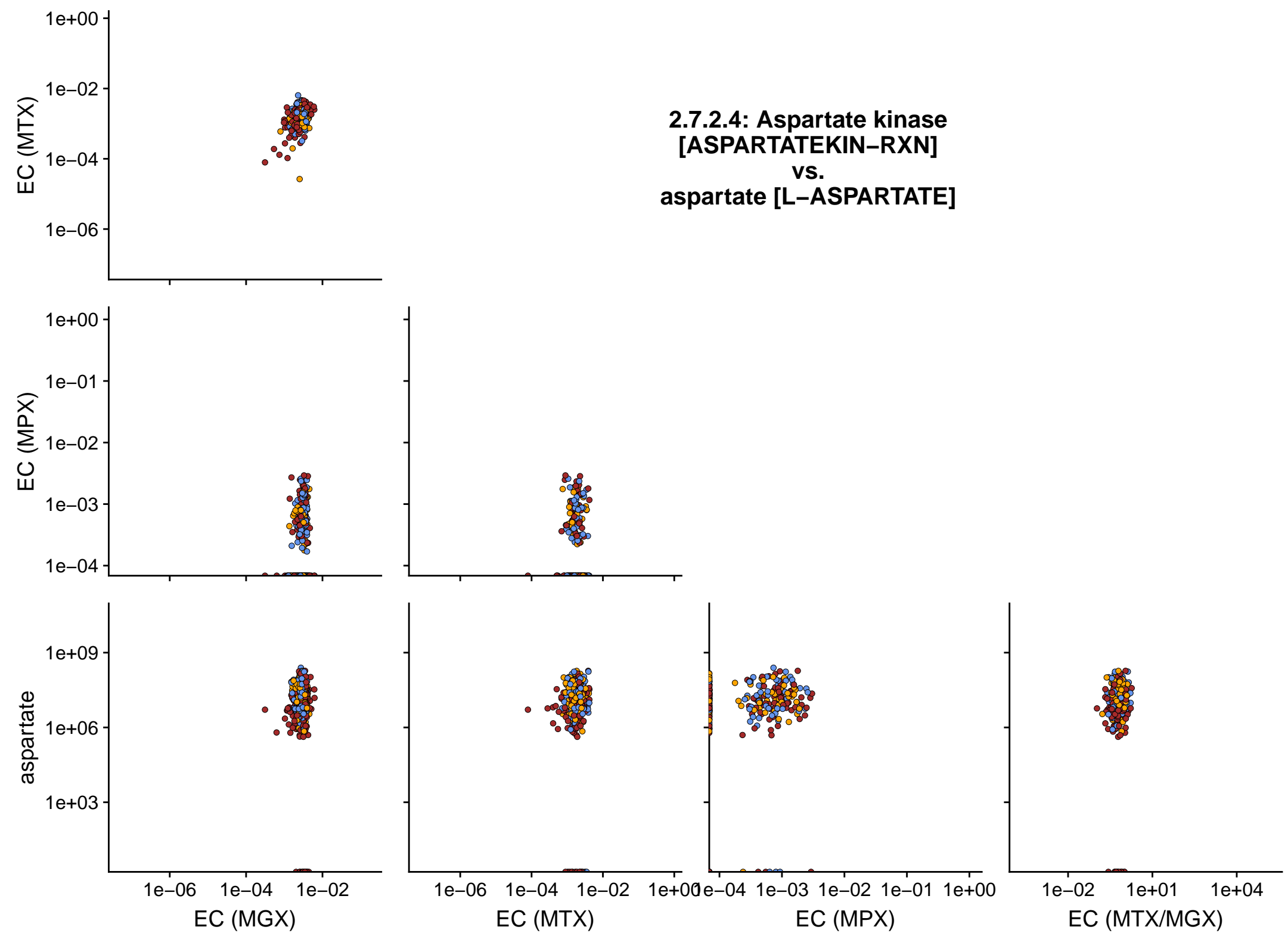
**2.6.1.9: Histidinol-phosphate transaminase  
[HISTAMINOTRANS-RXN]  
vs.  
glutamate [GLT]**



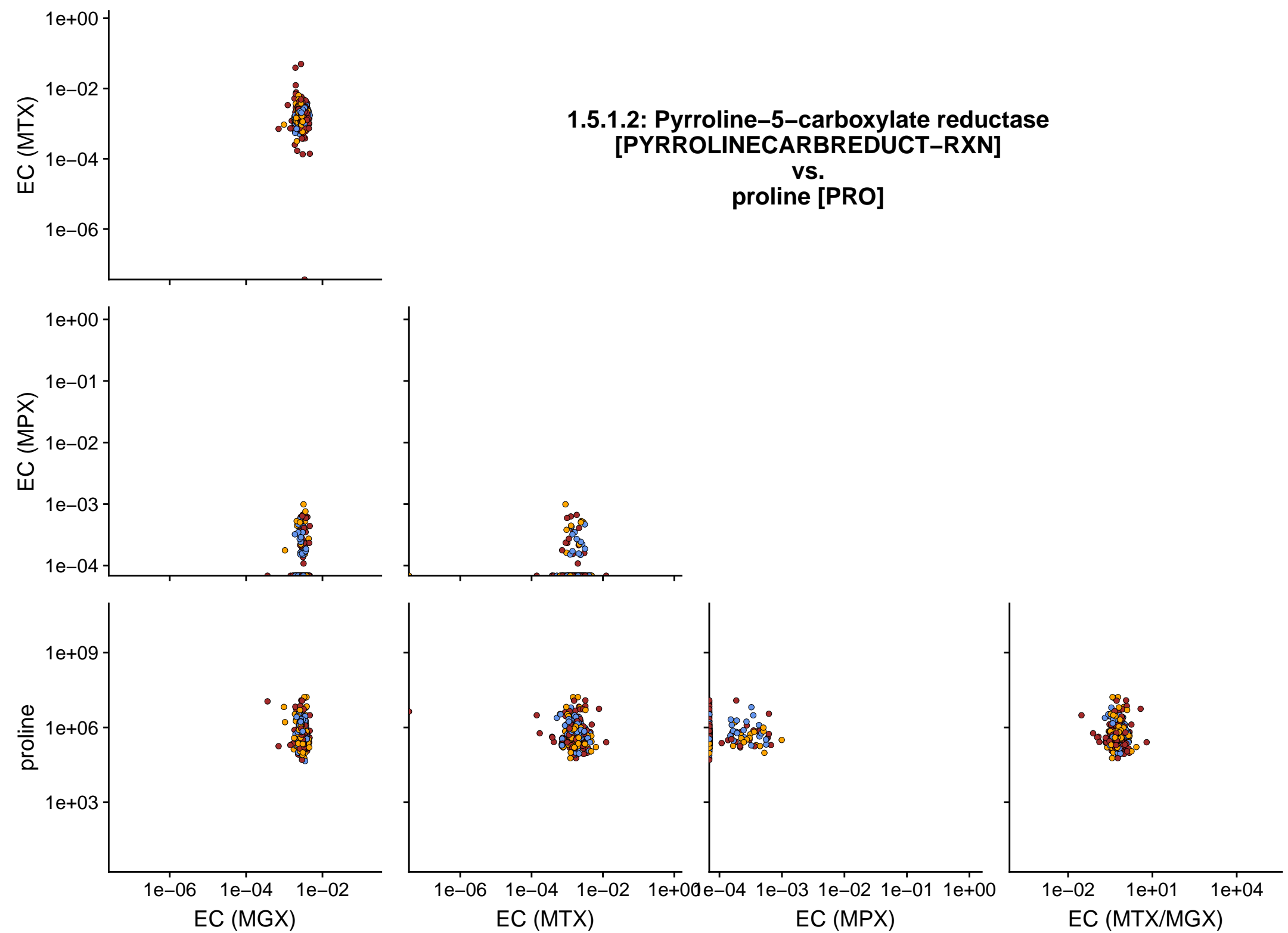
**4.3.2.1: Argininosuccinate lyase  
[ARGSUCCINLYA-RXN]  
vs.  
arginine [ARG]**



**2.7.2.4: Aspartate kinase  
[ASPARTATEKIN-RXN]  
vs.  
aspartate [L-ASPARTATE]**

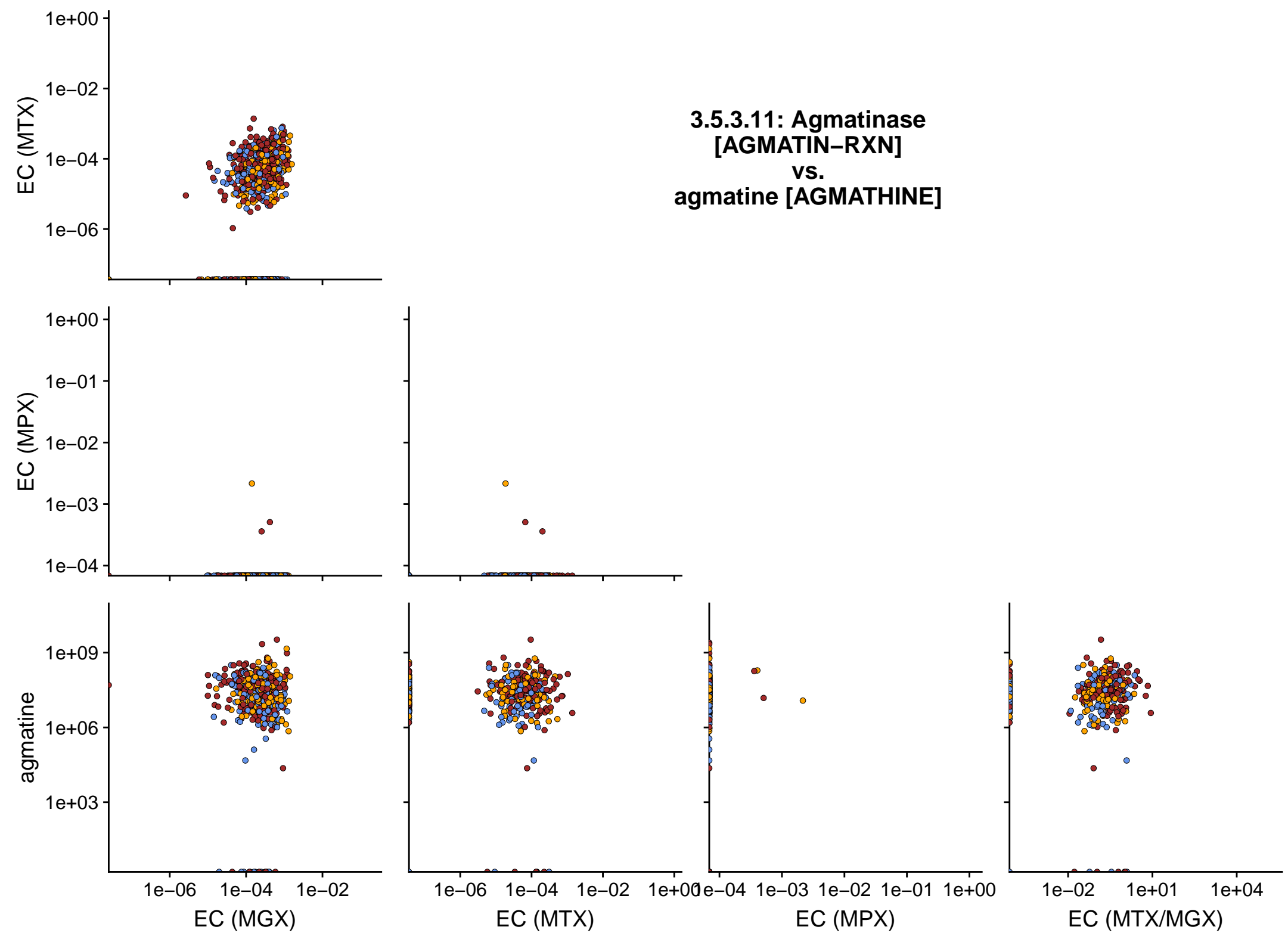


**1.5.1.2: Pyrroline-5-carboxylate reductase  
[PYRROLINECARBREDUCT-RXN]  
vs.  
proline [PRO]**

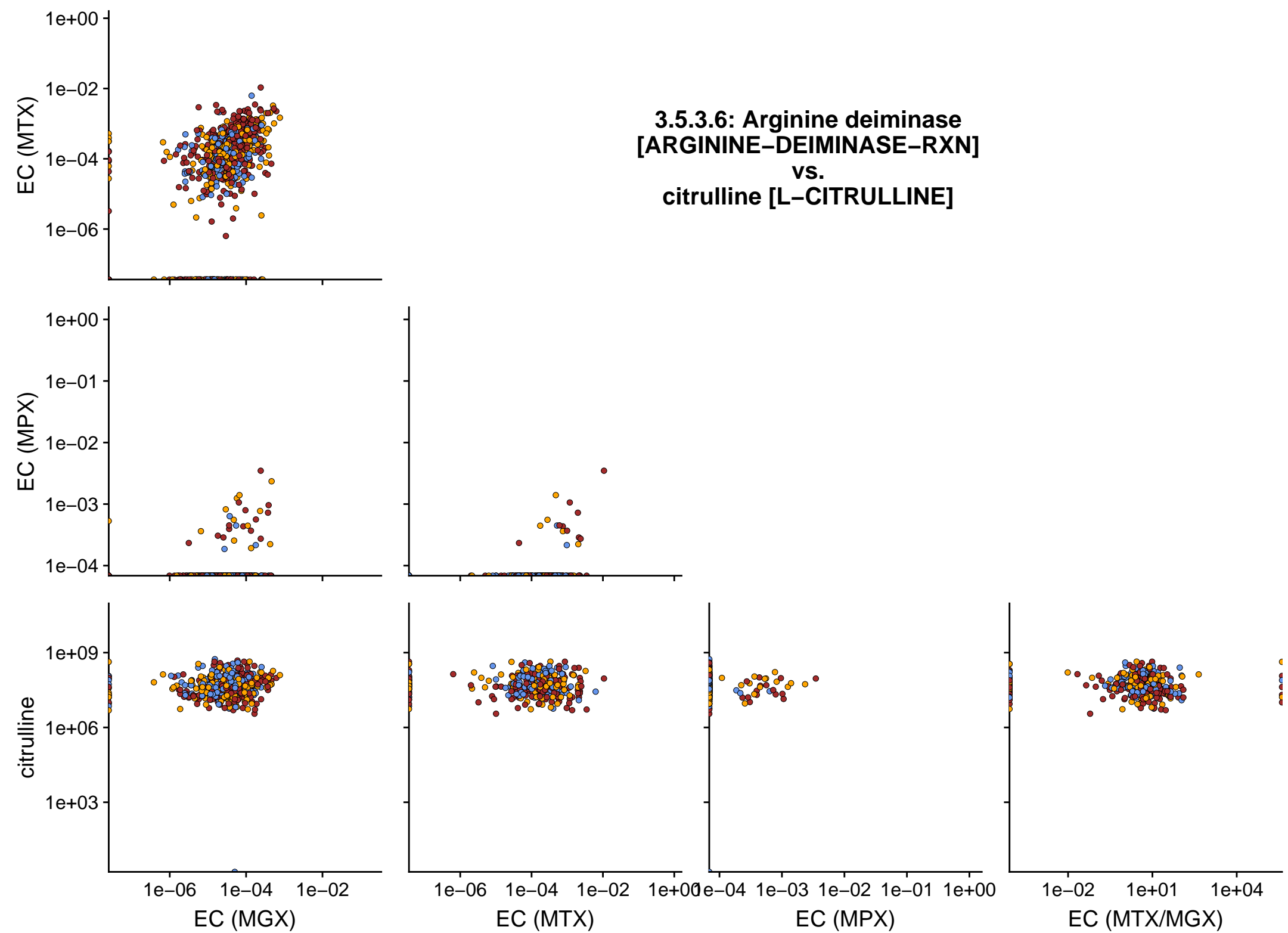




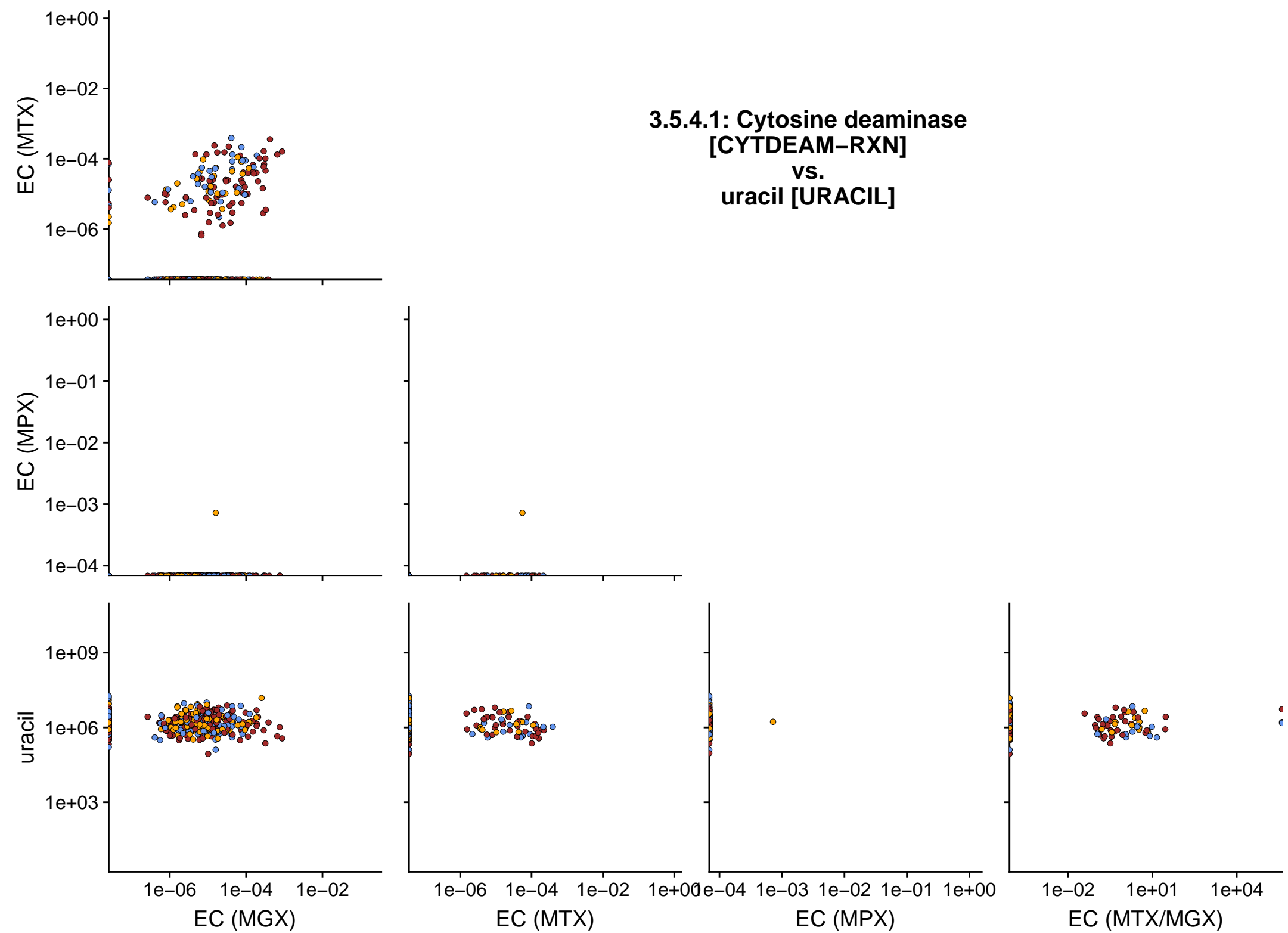
**3.5.3.11: Agmatinase  
[AGMATIN-RXN]  
vs.  
agmatine [AGMATHINE]**



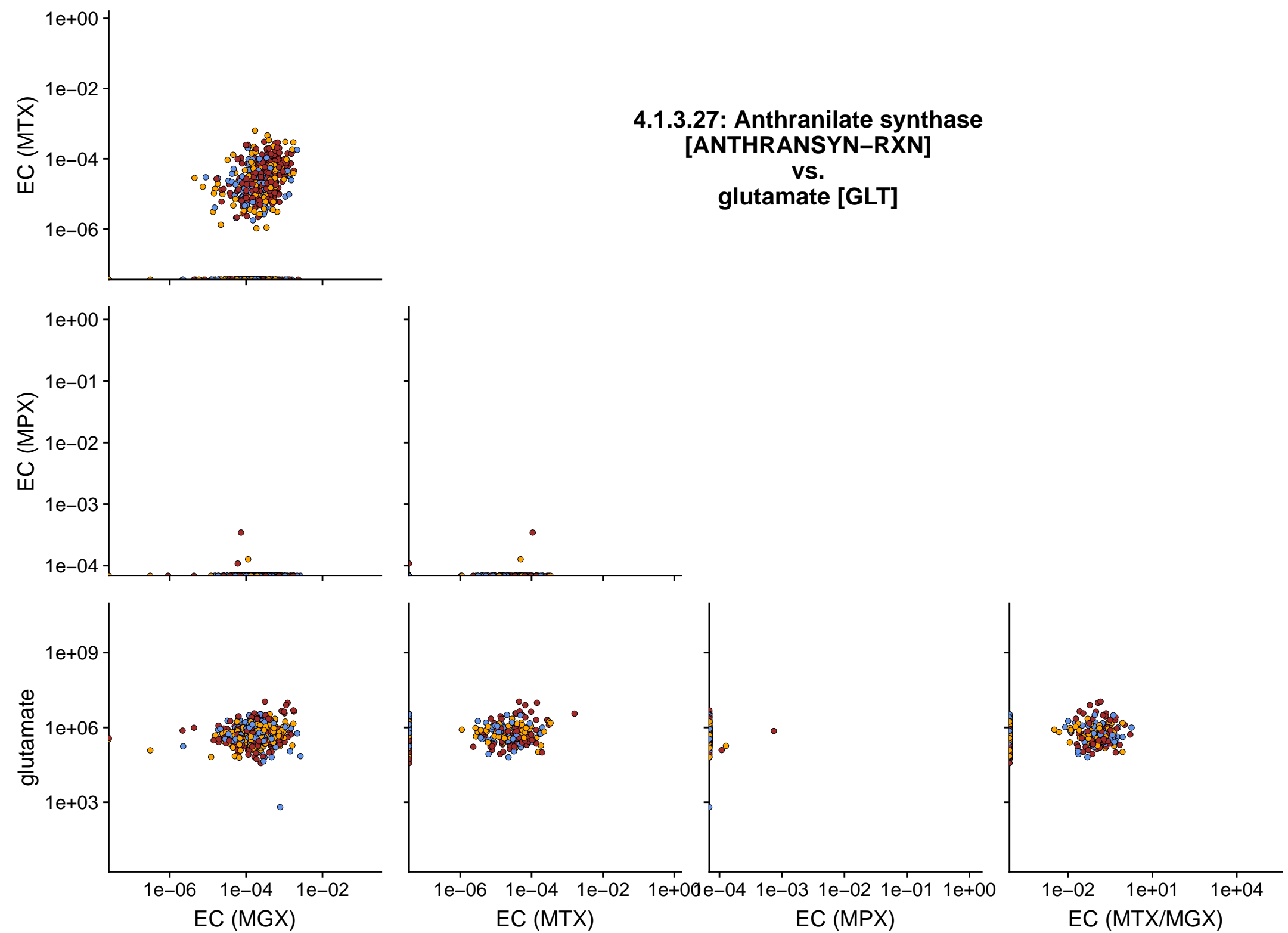
**3.5.3.6: Arginine deiminase  
[ARGININE-DEIMINASE-RXN]  
vs.  
citrulline [L-CITRULLINE]**

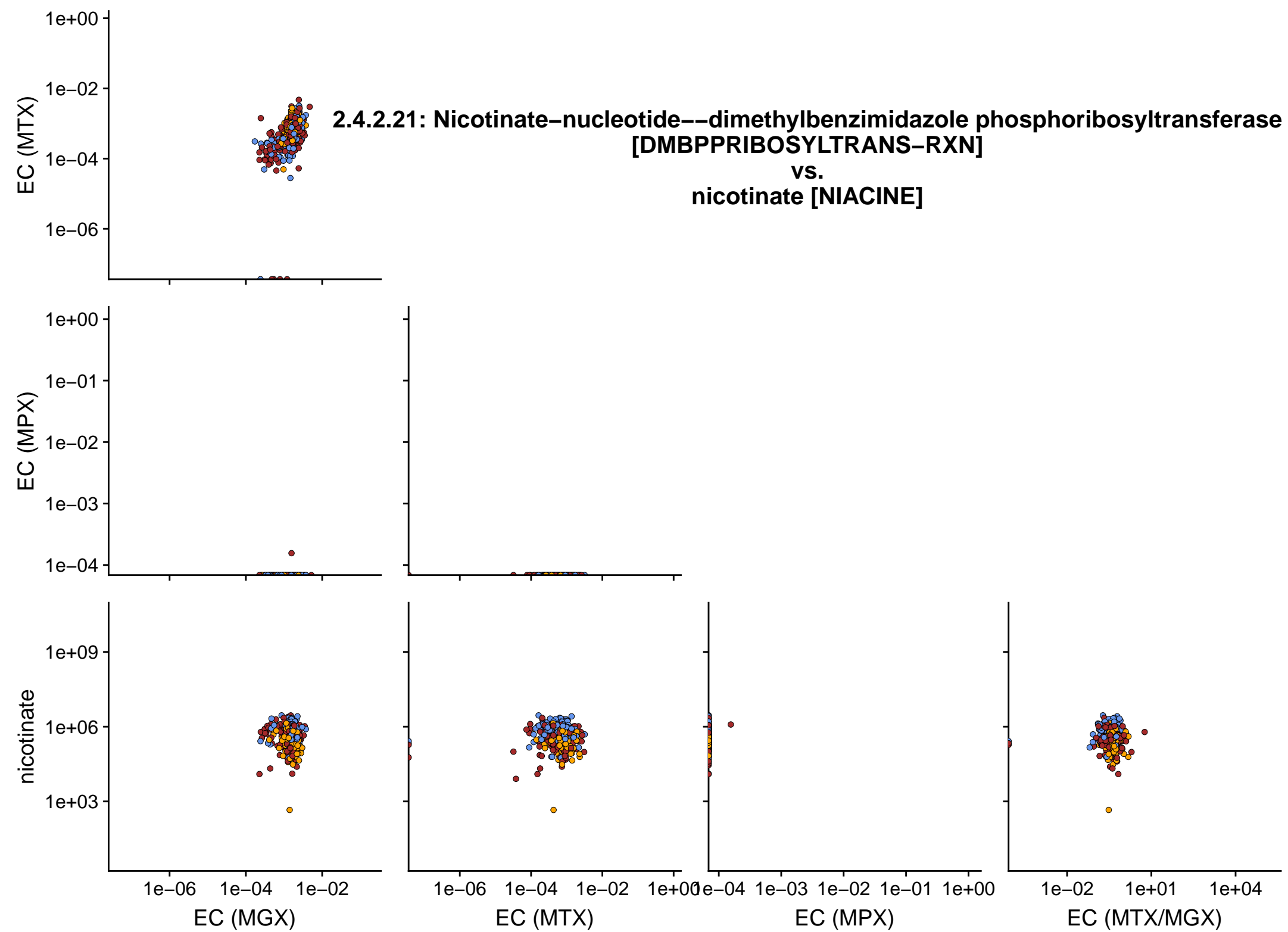


**3.5.4.1: Cytosine deaminase  
[CYTDEAM-RXN]  
vs.  
uracil [URACIL]**

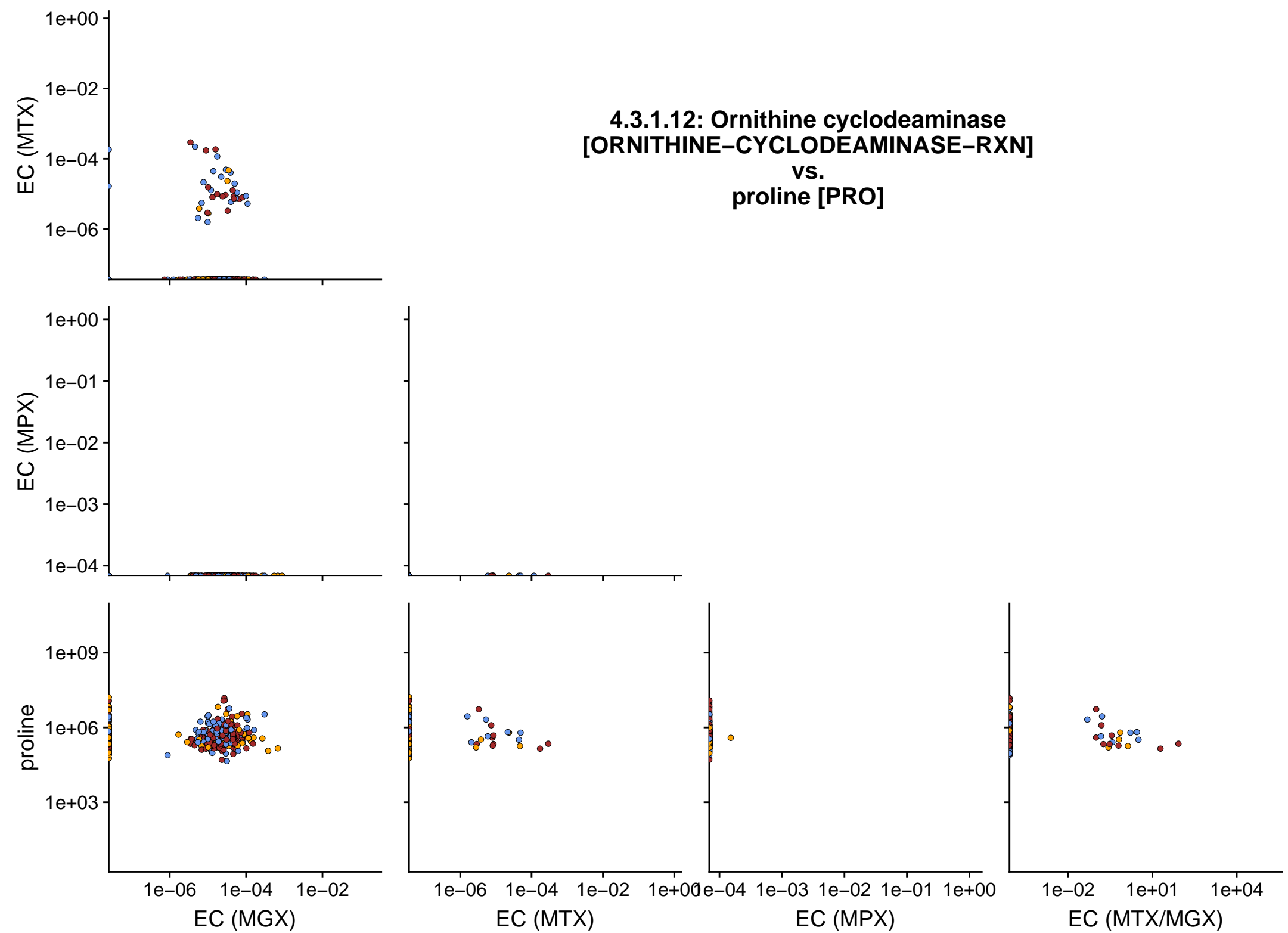


**4.1.3.27: Anthranilate synthase  
[ANTHRANSYN-RXN]  
vs.  
glutamate [GLT]**

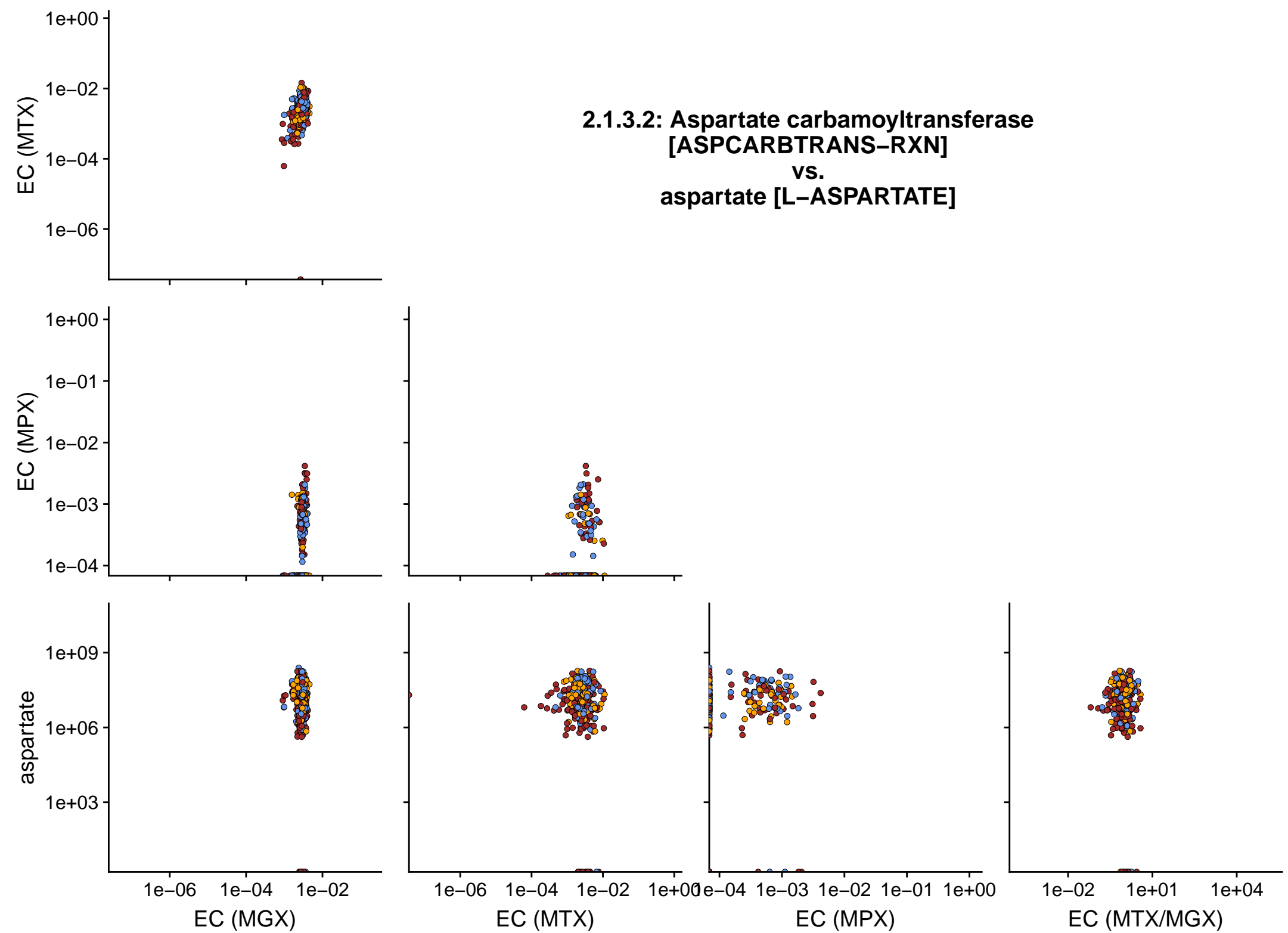




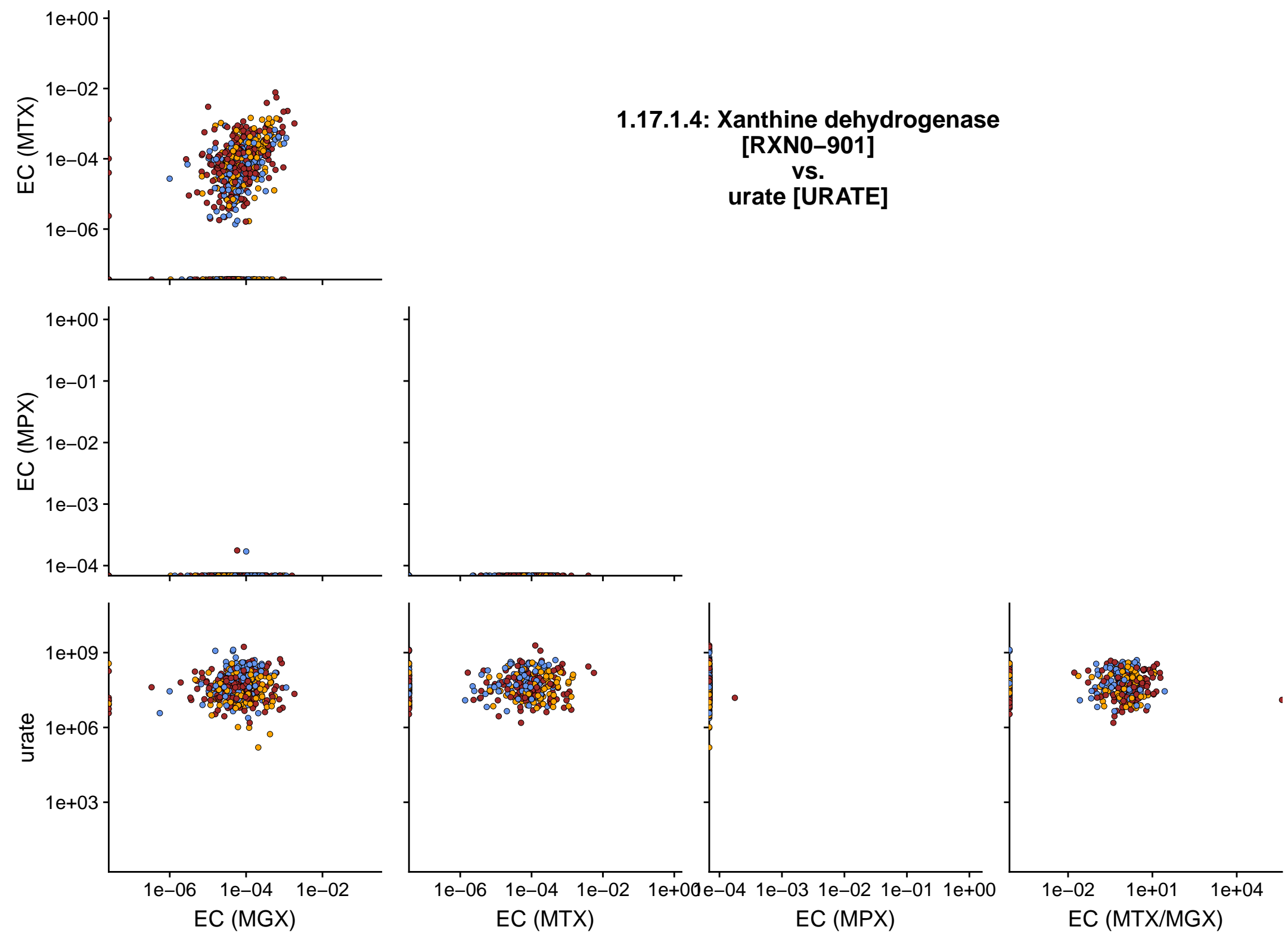
**4.3.1.12: Ornithine cyclodeaminase  
[ORNITHINE-CYCLODEAMINASE-RXN]  
vs.  
proline [PRO]**



**2.1.3.2: Aspartate carbamoyltransferase  
[ASPCARBTRANS-RXN]  
vs.  
aspartate [L-ASPARTATE]**

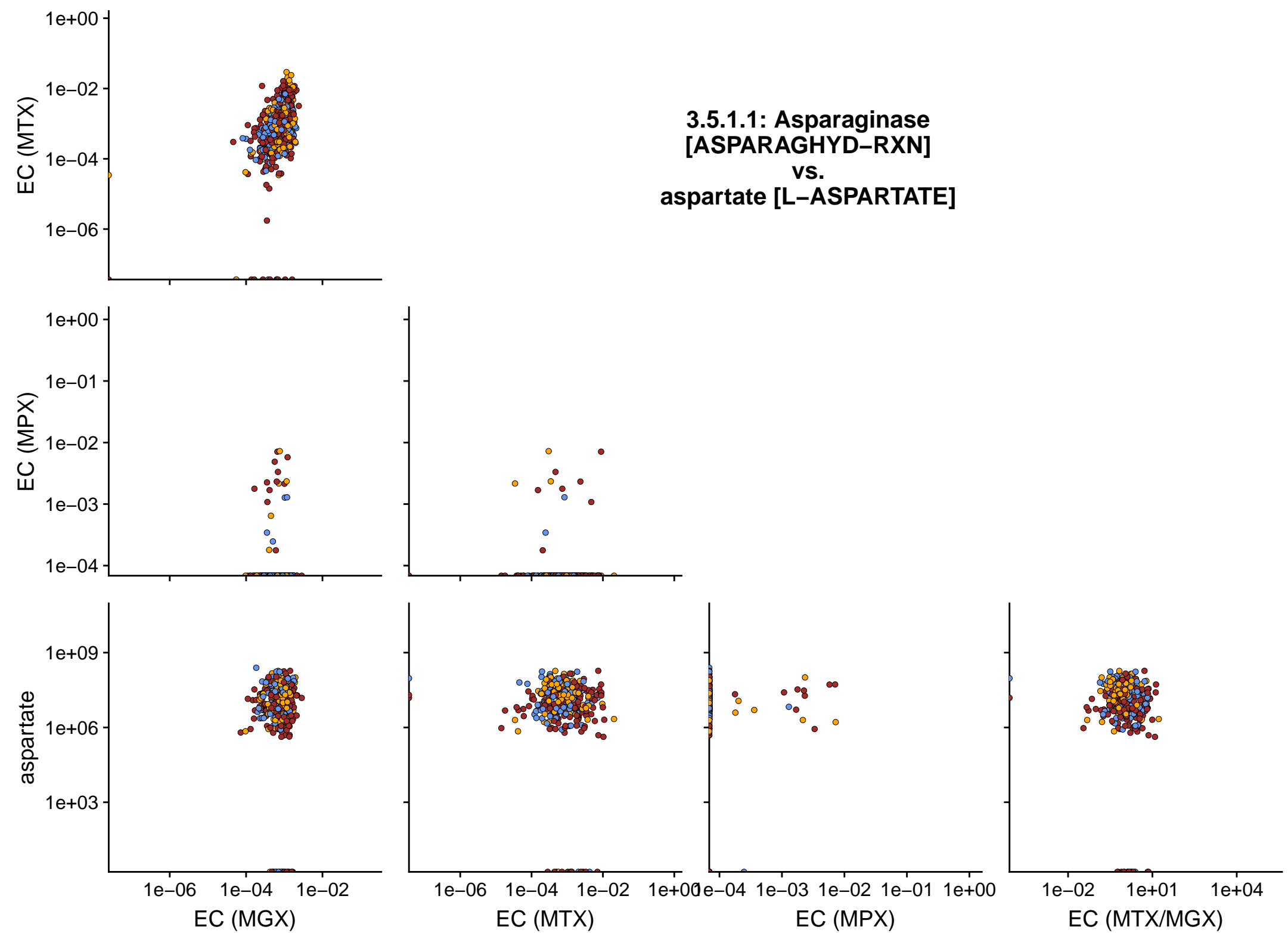


**1.17.1.4: Xanthine dehydrogenase  
[RXN0-901]  
vs.  
urate [URATE]**

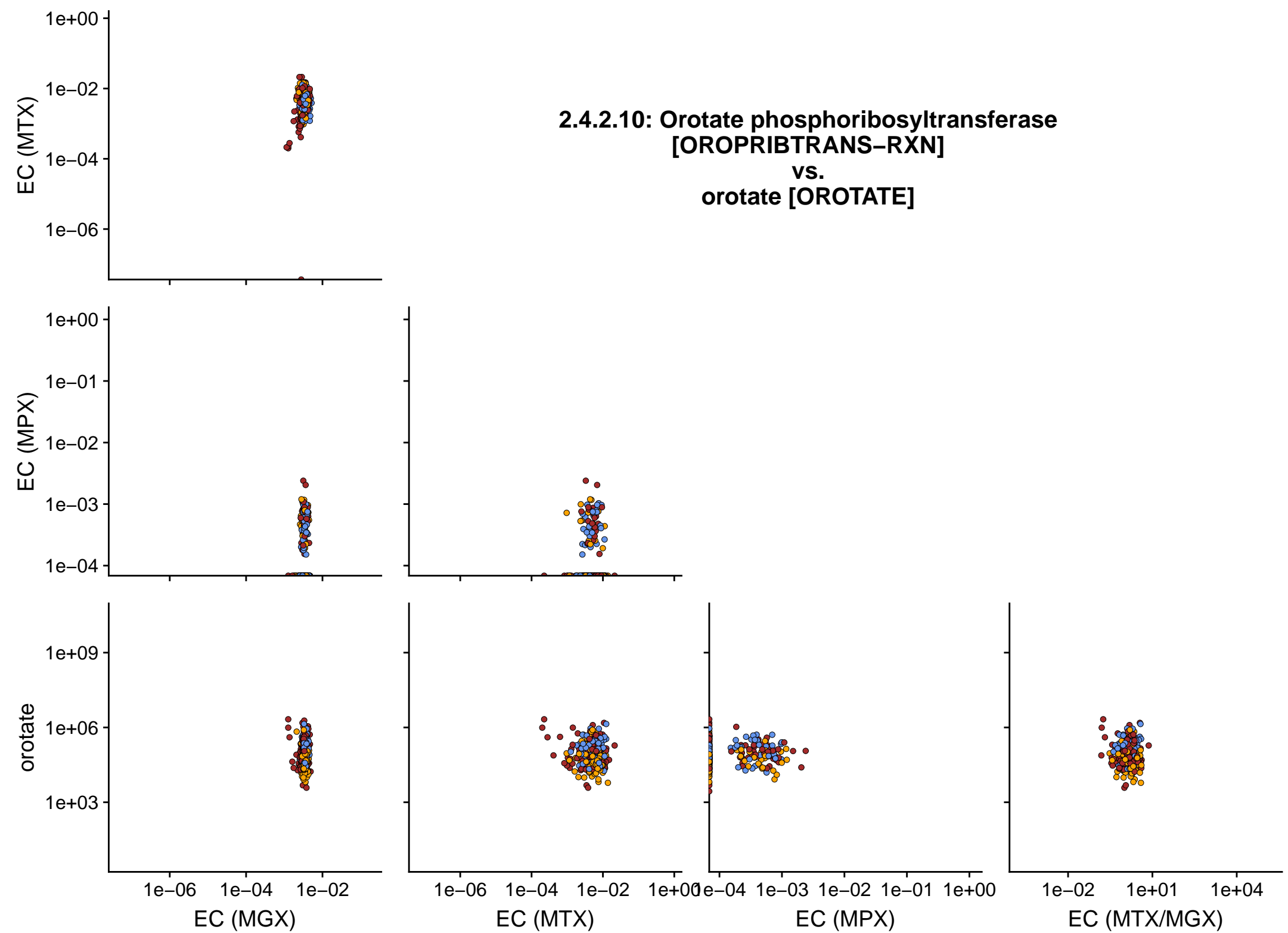




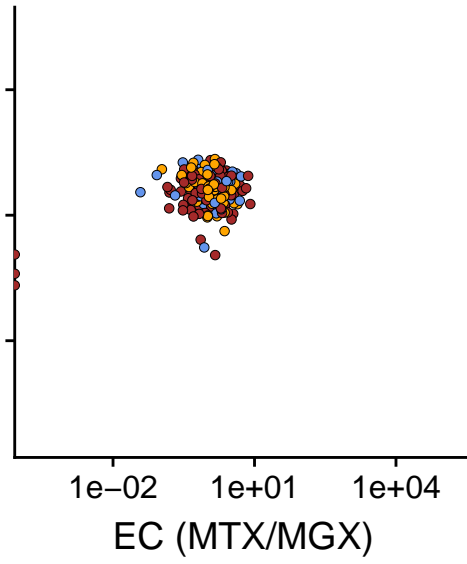
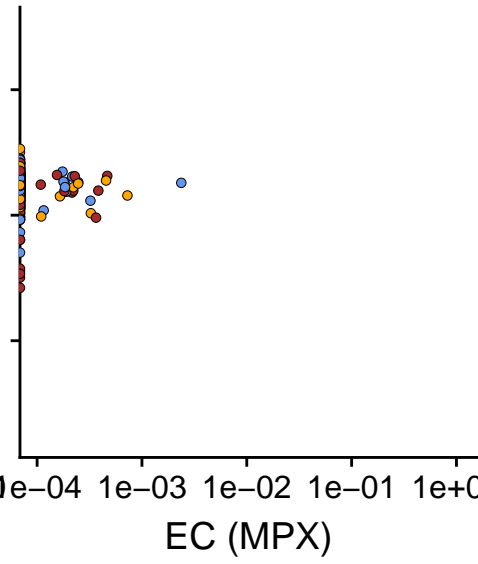
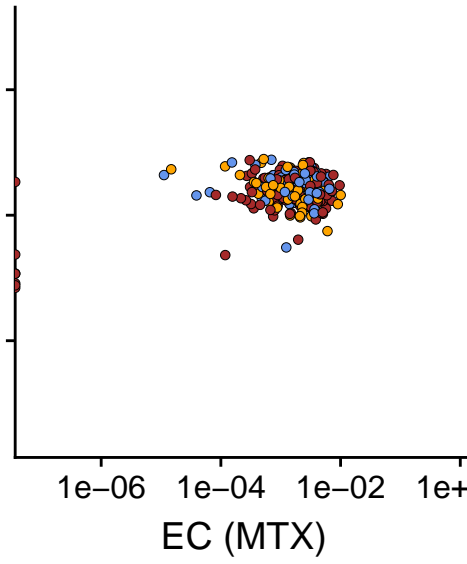
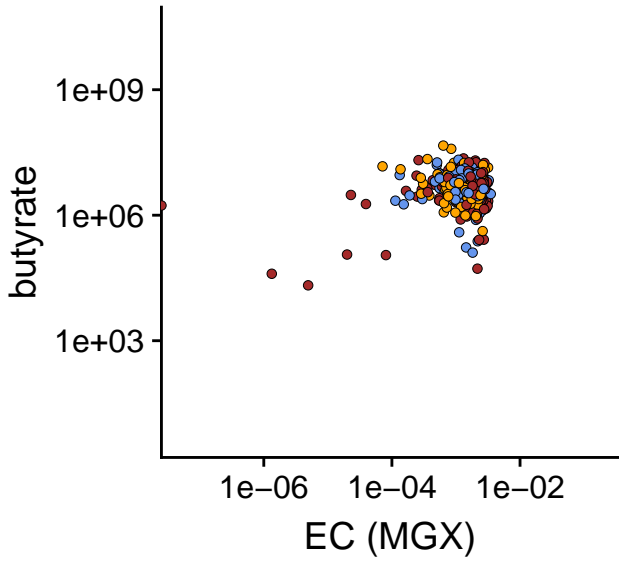
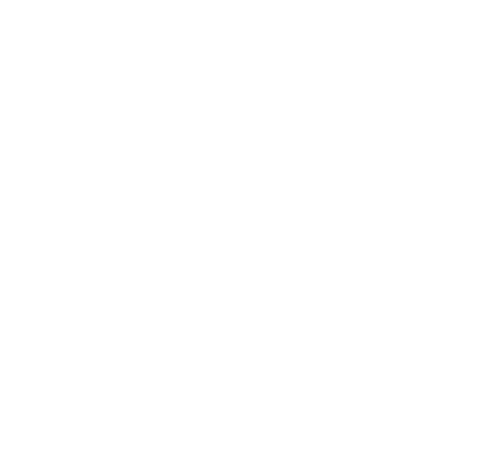
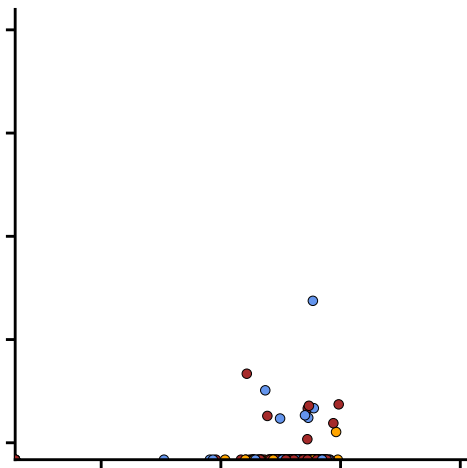
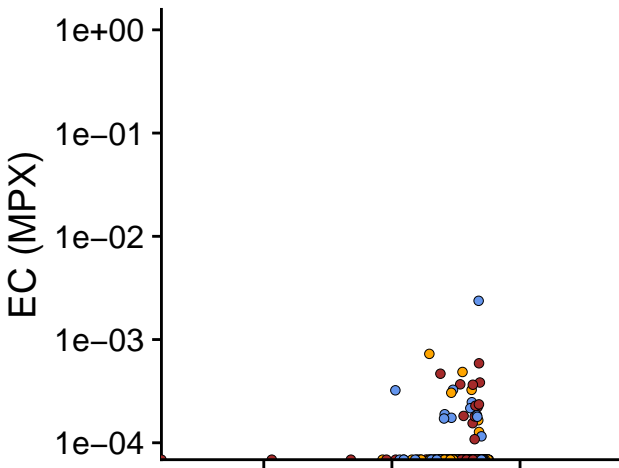
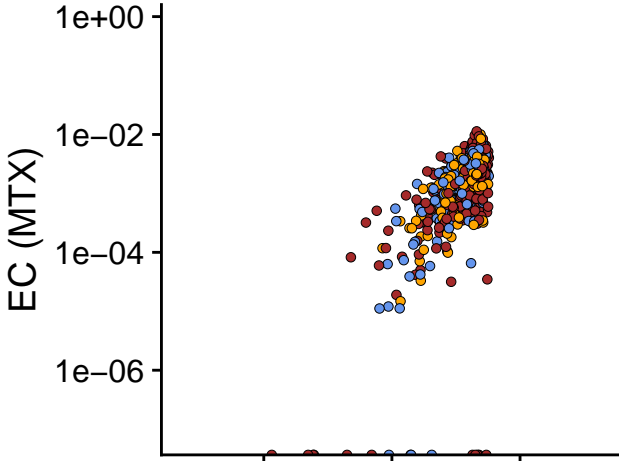
**3.5.1.1: Asparaginase  
[ASPARAGHYD-RXN]  
vs.  
aspartate [L-ASPARTATE]**



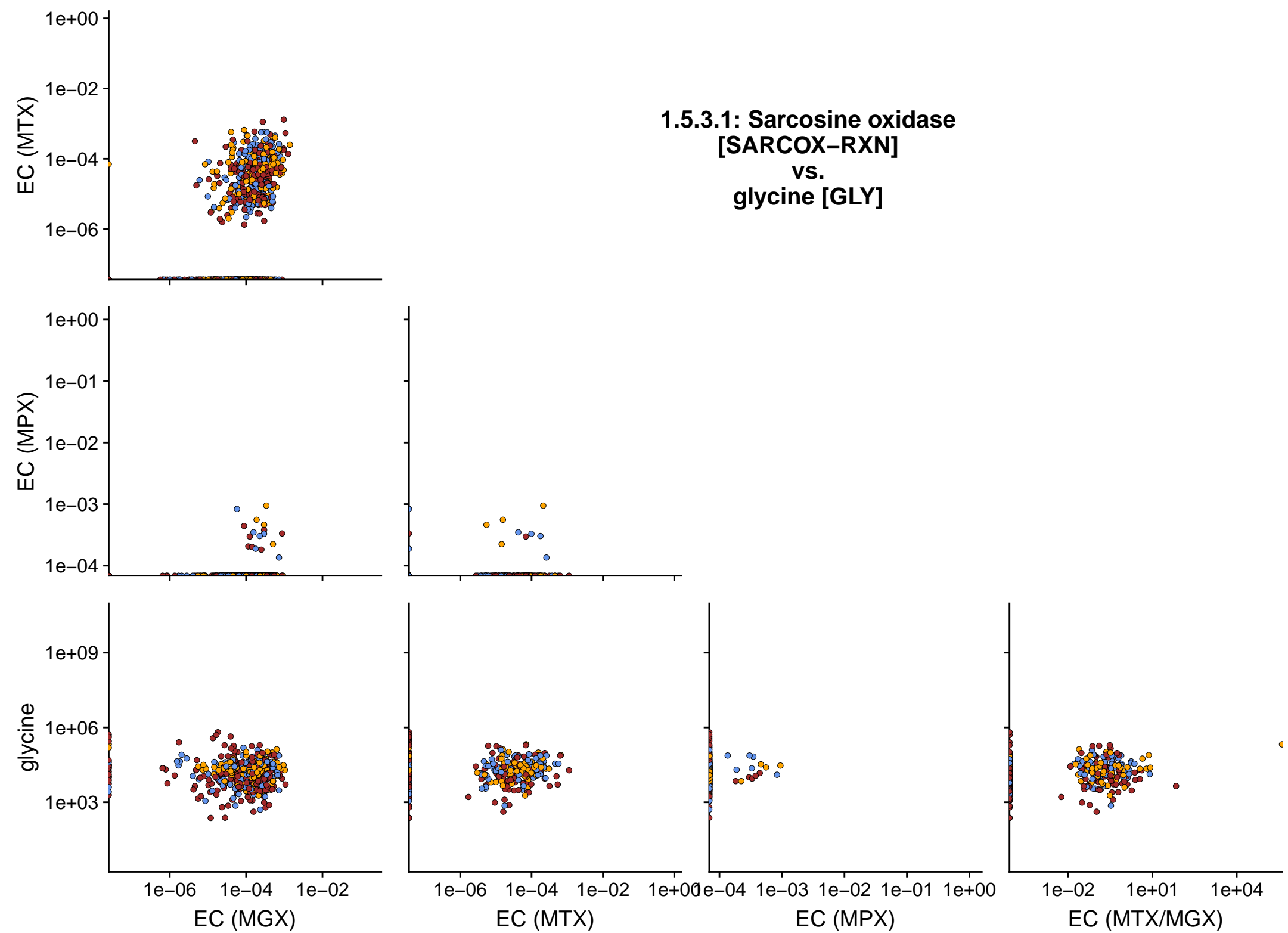
**2.4.2.10: Orotate phosphoribosyltransferase  
[OROPRIBTRANS-RXN]  
vs.  
orotate [OROTATE]**



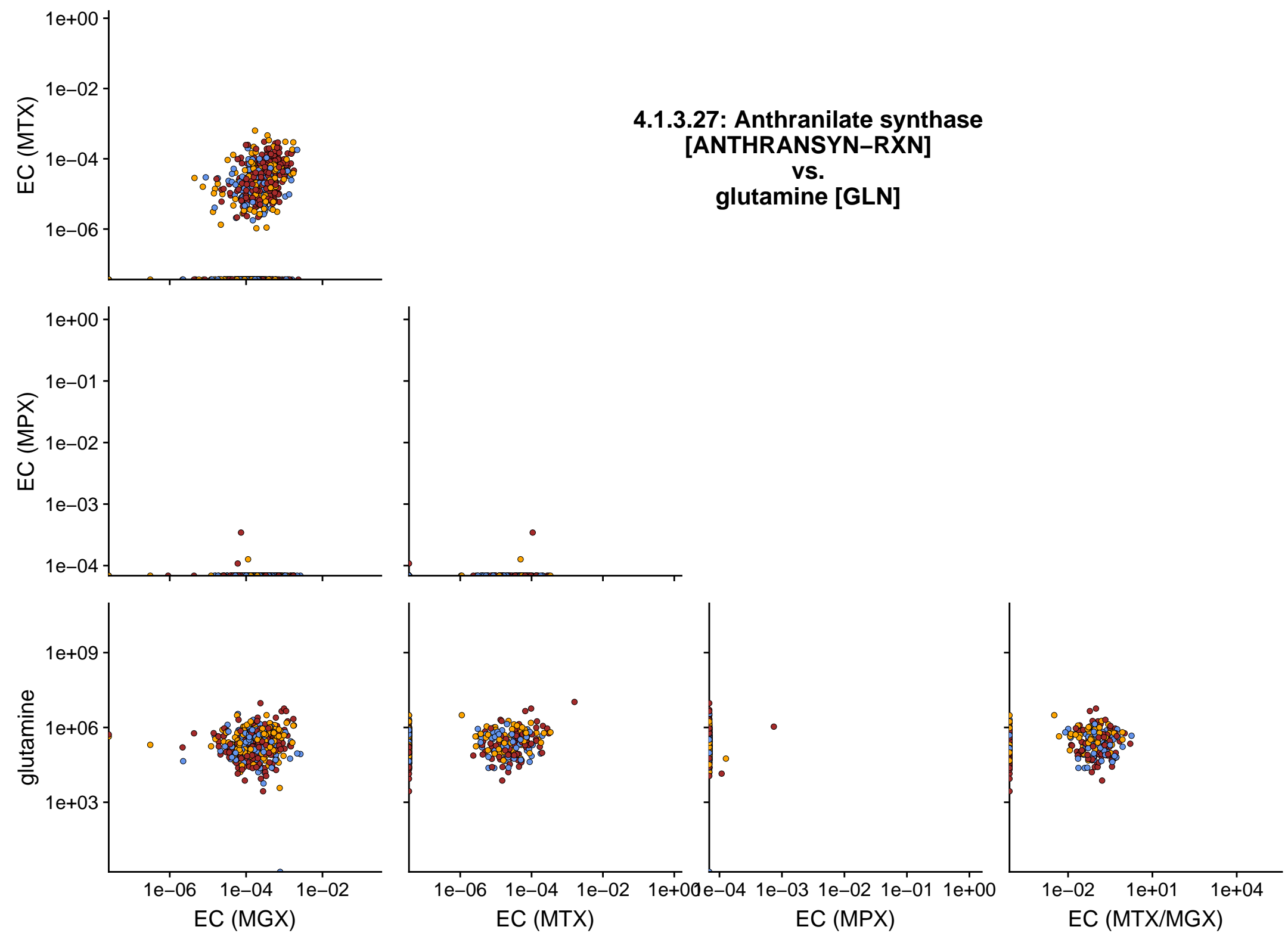
**2.7.2.7: Butyrate kinase  
[BUTYRATE-KINASE-RXN]  
vs.  
butyrate [BUTYRIC\_ACID]**



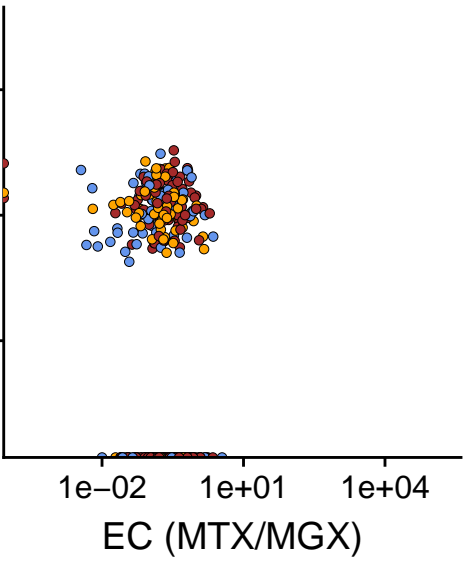
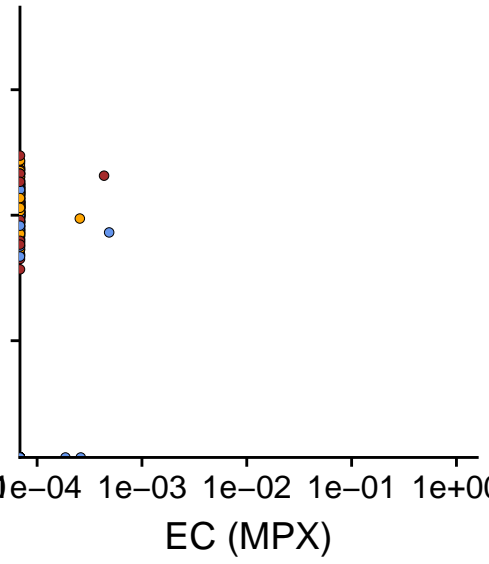
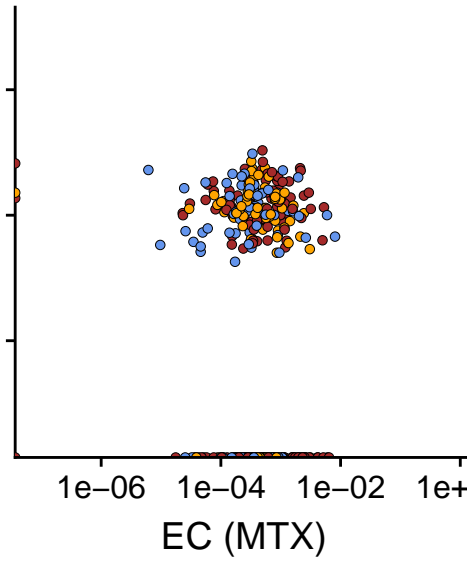
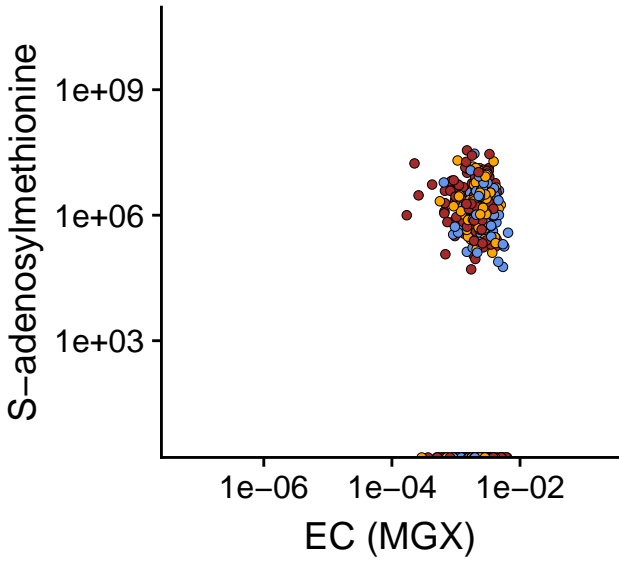
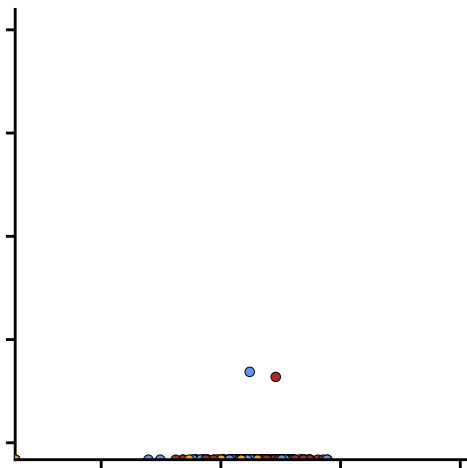
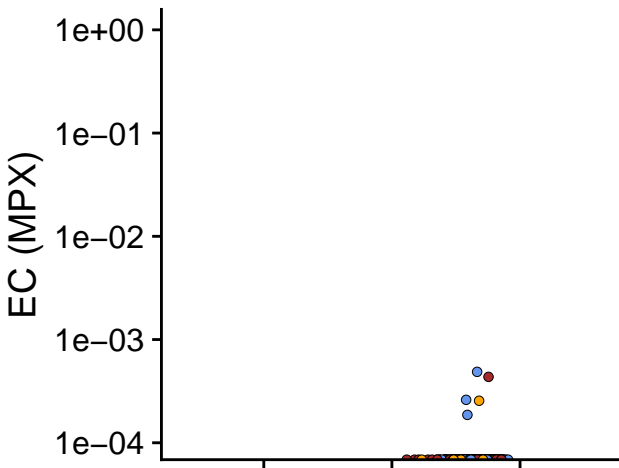
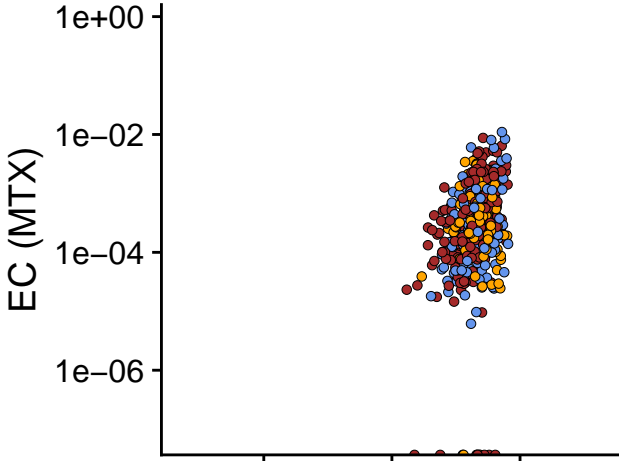
**1.5.3.1: Sarcosine oxidase  
[SARCOX-RXN]  
vs.  
glycine [GLY]**



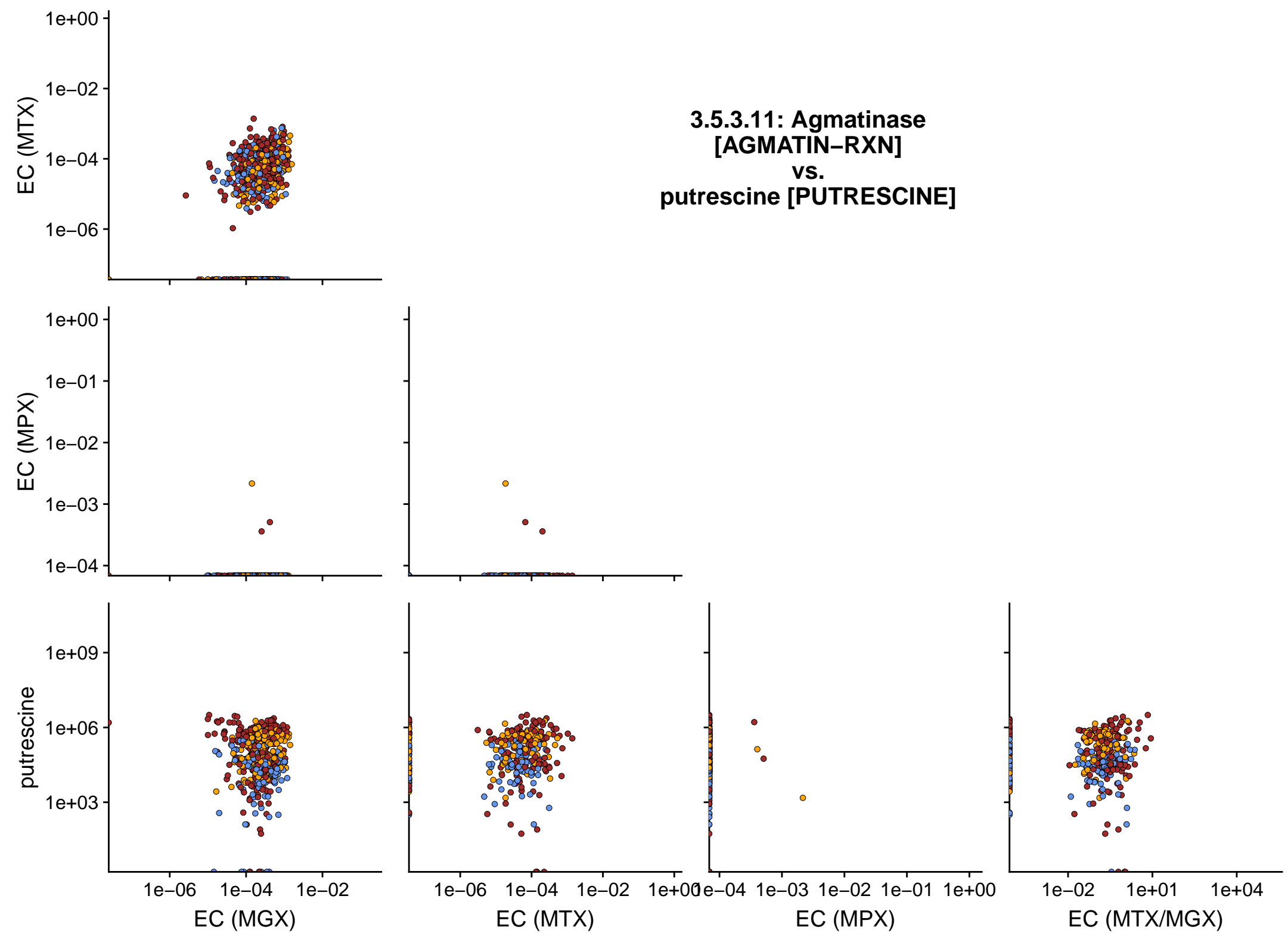
**4.1.3.27: Anthranilate synthase  
[ANTHRANSYN-RXN]  
vs.  
glutamine [GLN]**



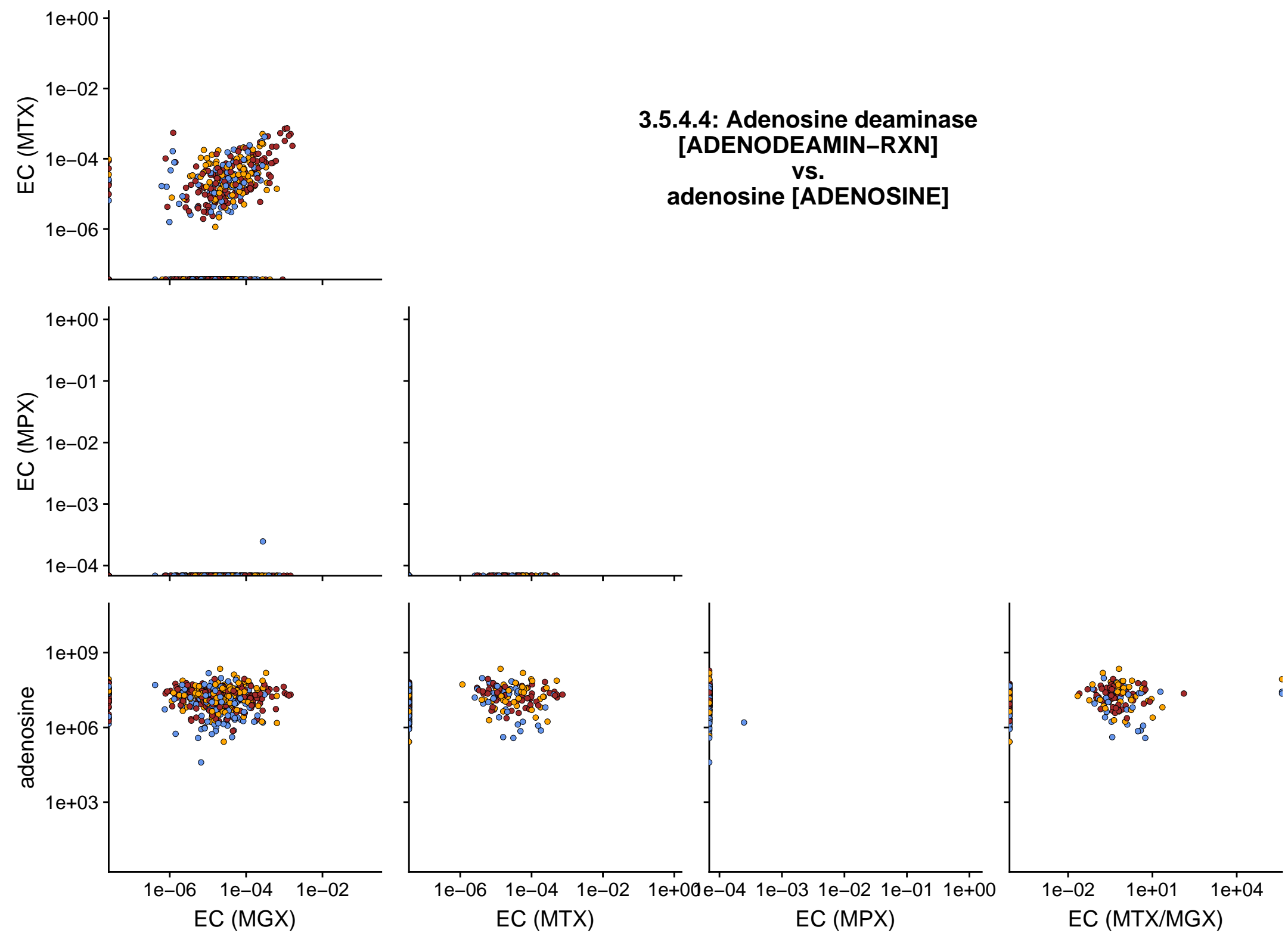
**2.1.1.37: DNA (cytosine-5-)-methyltransferase  
[DNA-CYTOSINE-5--METHYLTRANSFERASE-RXN]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**



**3.5.3.11: Agmatinase  
[AGMATIN-RXN]  
vs.  
putrescine [PUTRESCINE]**

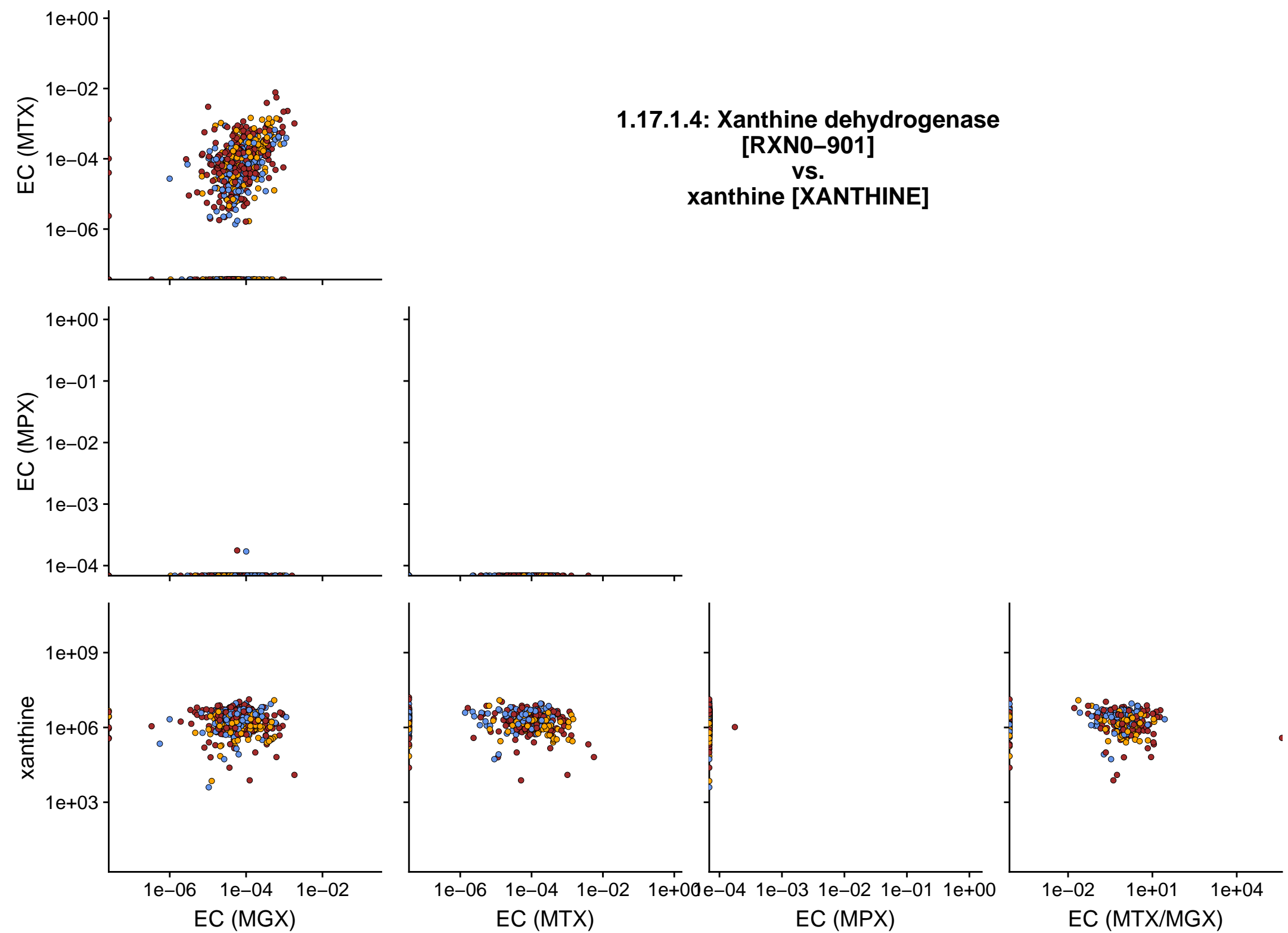


**3.5.4.4: Adenosine deaminase  
[ADENODEAMIN-RXN]  
vs.  
adenosine [ADENOSINE]**

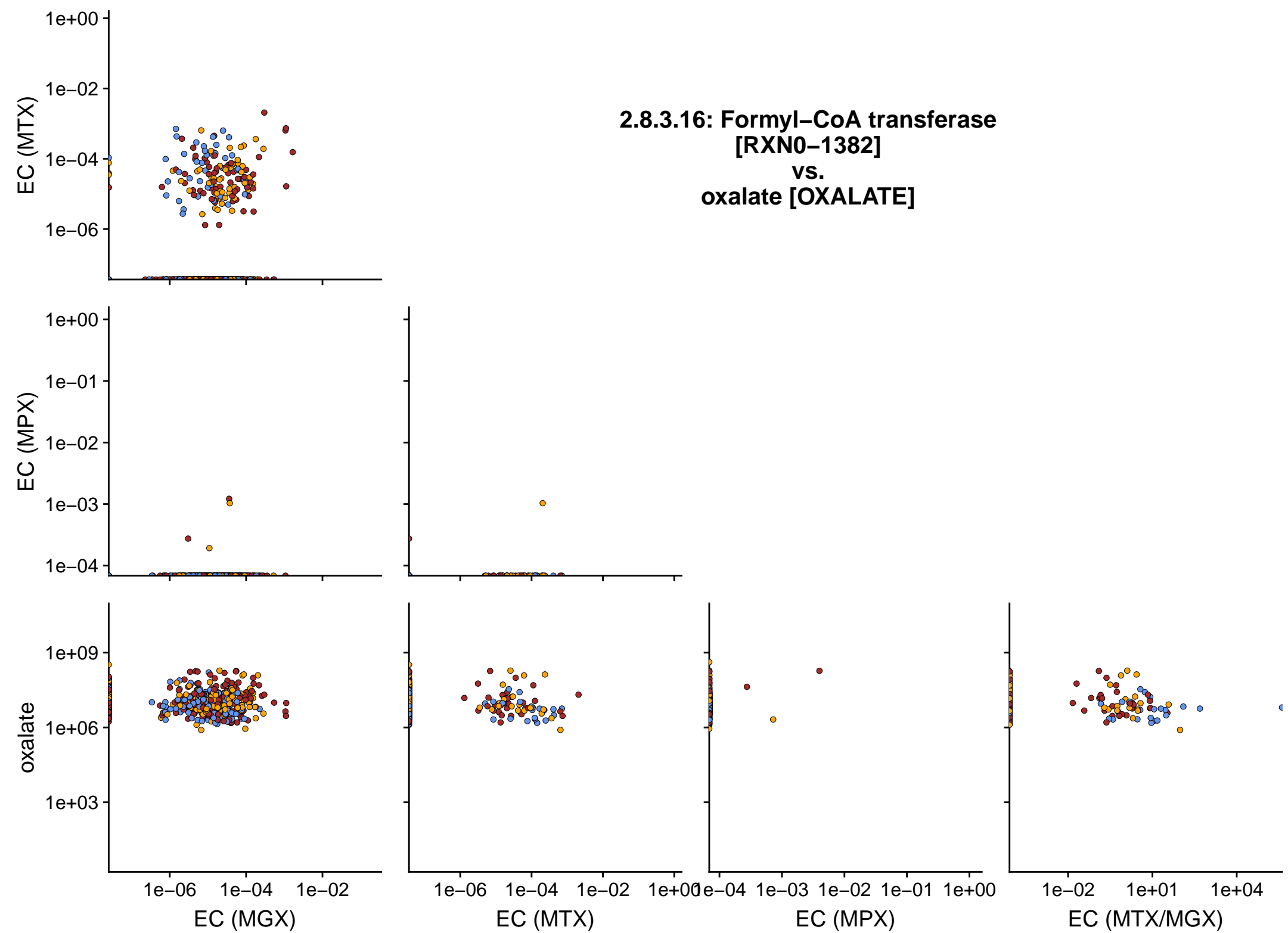




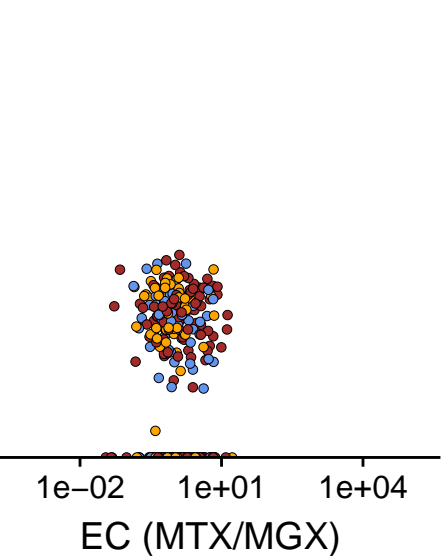
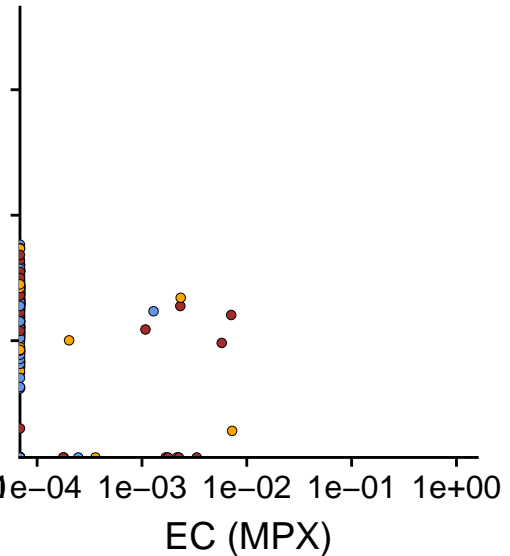
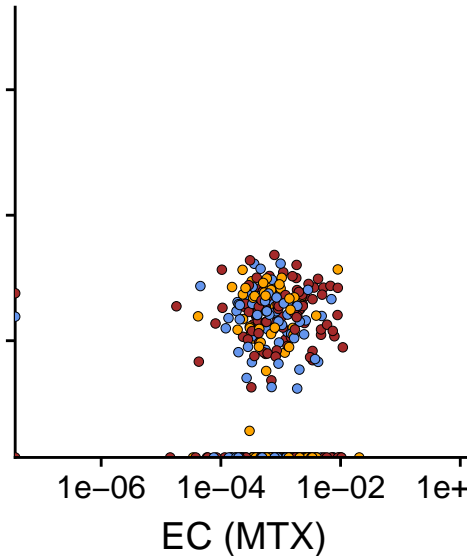
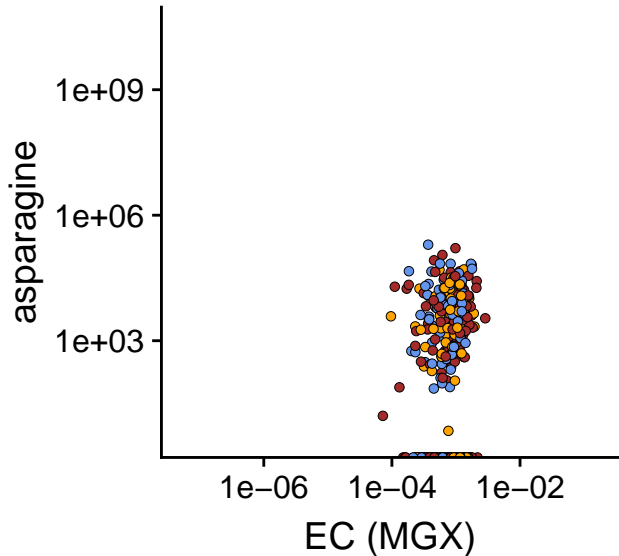
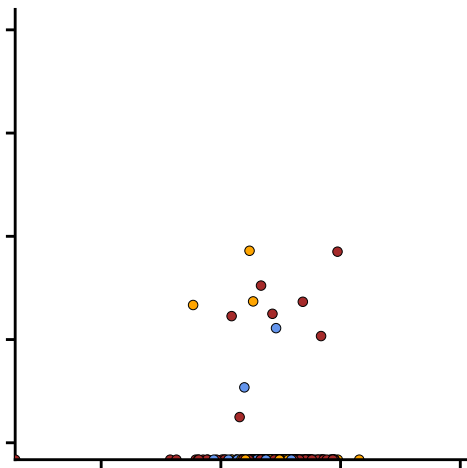
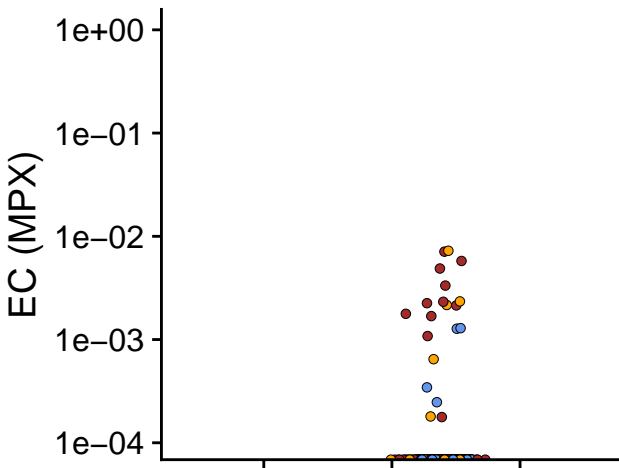
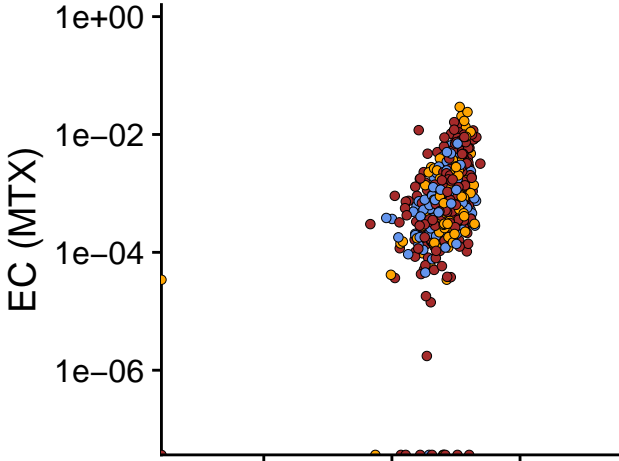
**1.17.1.4: Xanthine dehydrogenase  
[RXN0-901]  
vs.  
xanthine [XANTHINE]**



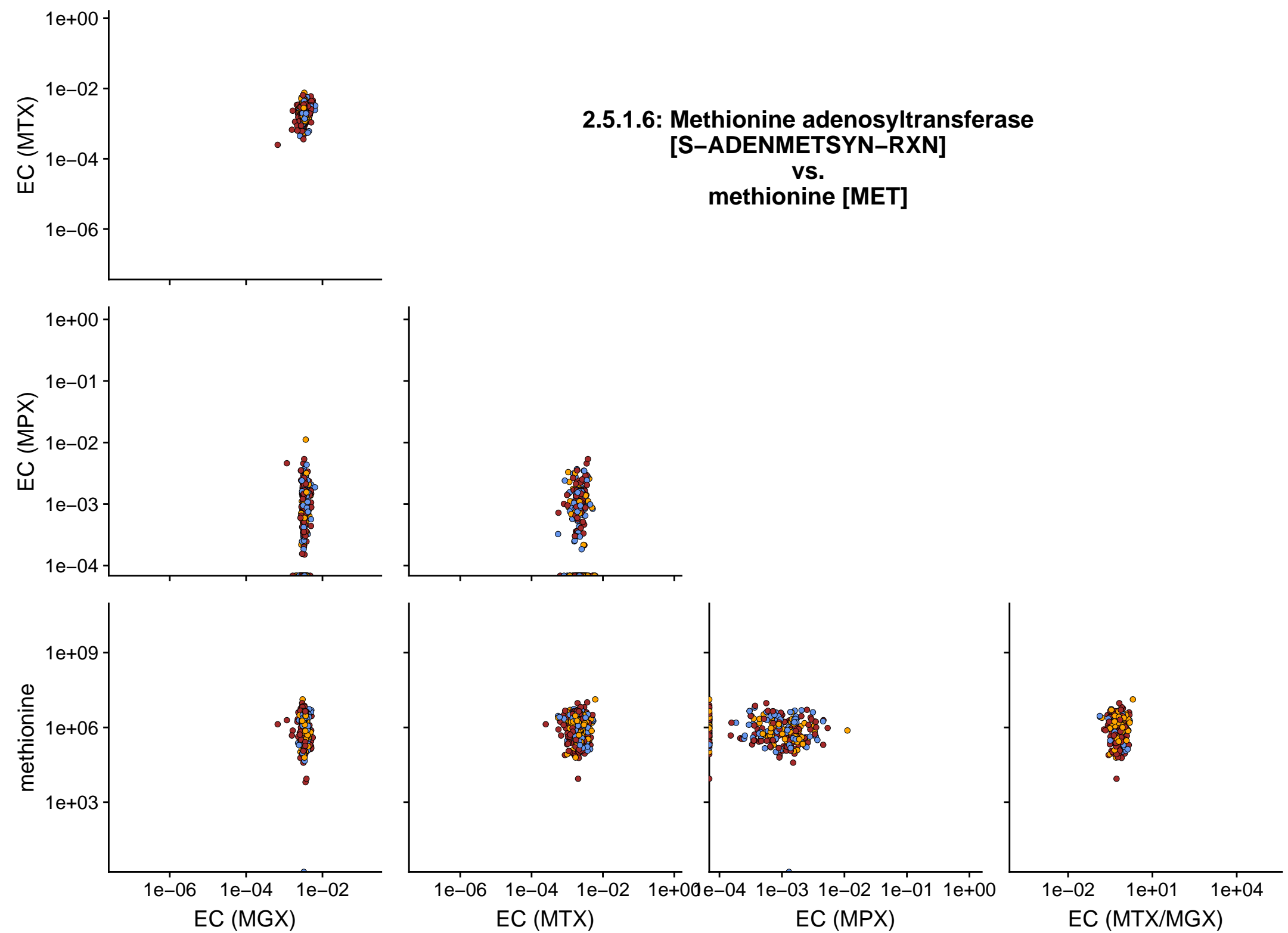
**2.8.3.16: Formyl-CoA transferase  
[RXN0-1382]  
vs.  
oxalate [OXALATE]**



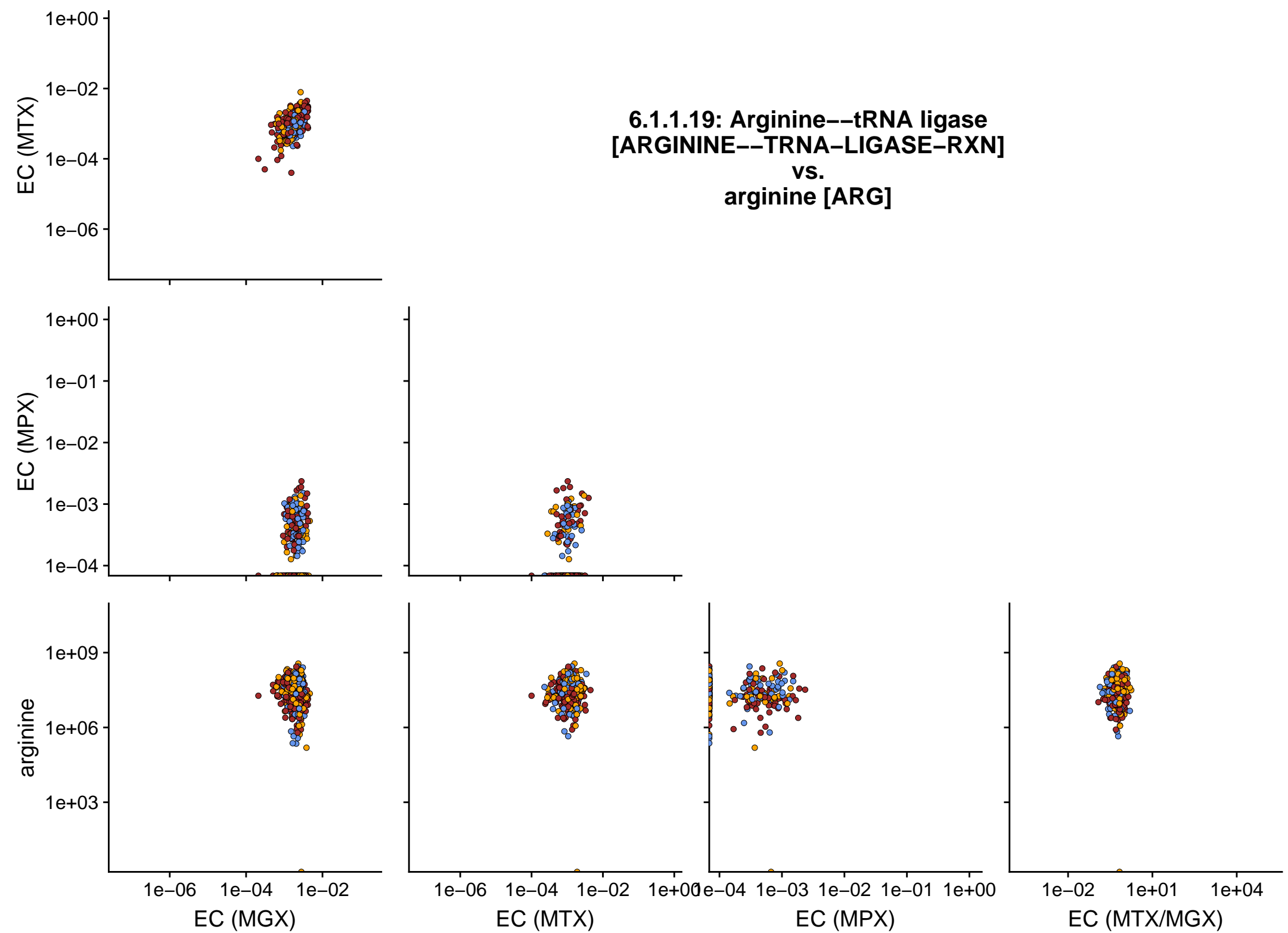
**3.5.1.1: Asparaginase  
[ASPARAGHYD-RXN]  
vs.  
asparagine [ASN]**



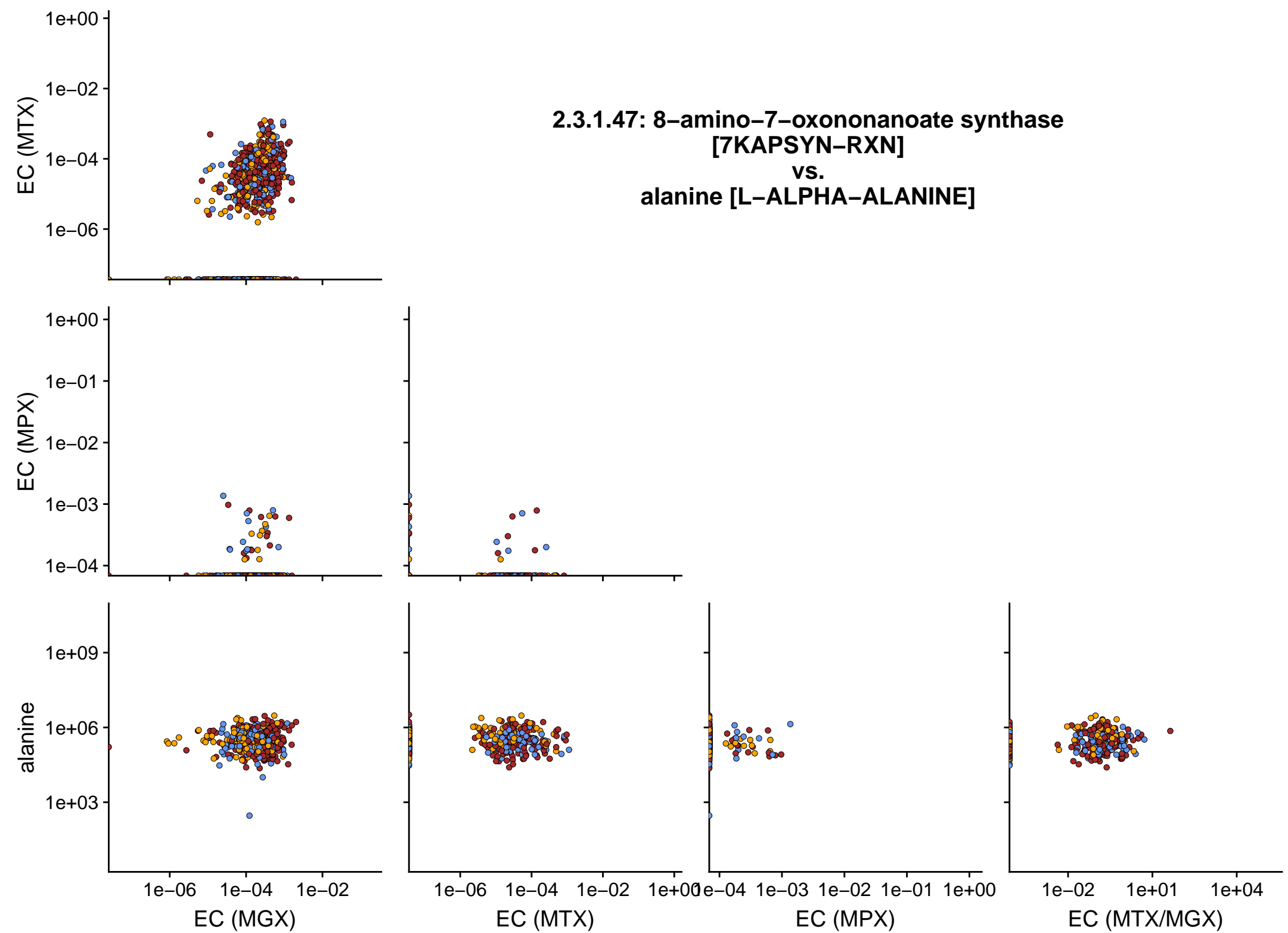
**2.5.1.6: Methionine adenosyltransferase  
[S-ADENMETSYN-RXN]  
vs.  
methionine [MET]**



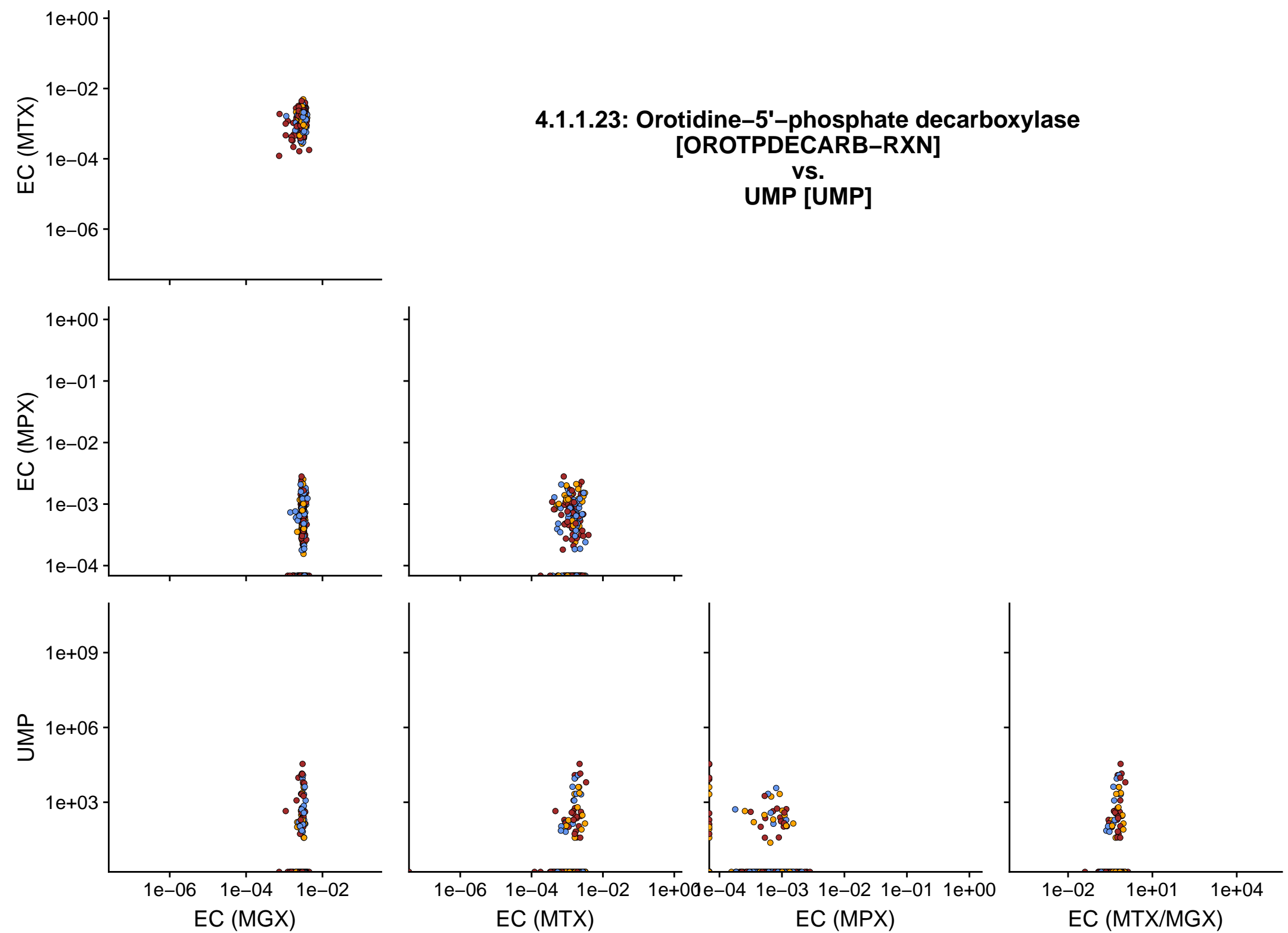
**6.1.1.19: Arginine--tRNA ligase  
[ARGININE--TRNA-LIGASE-RXN]  
vs.  
arginine [ARG]**



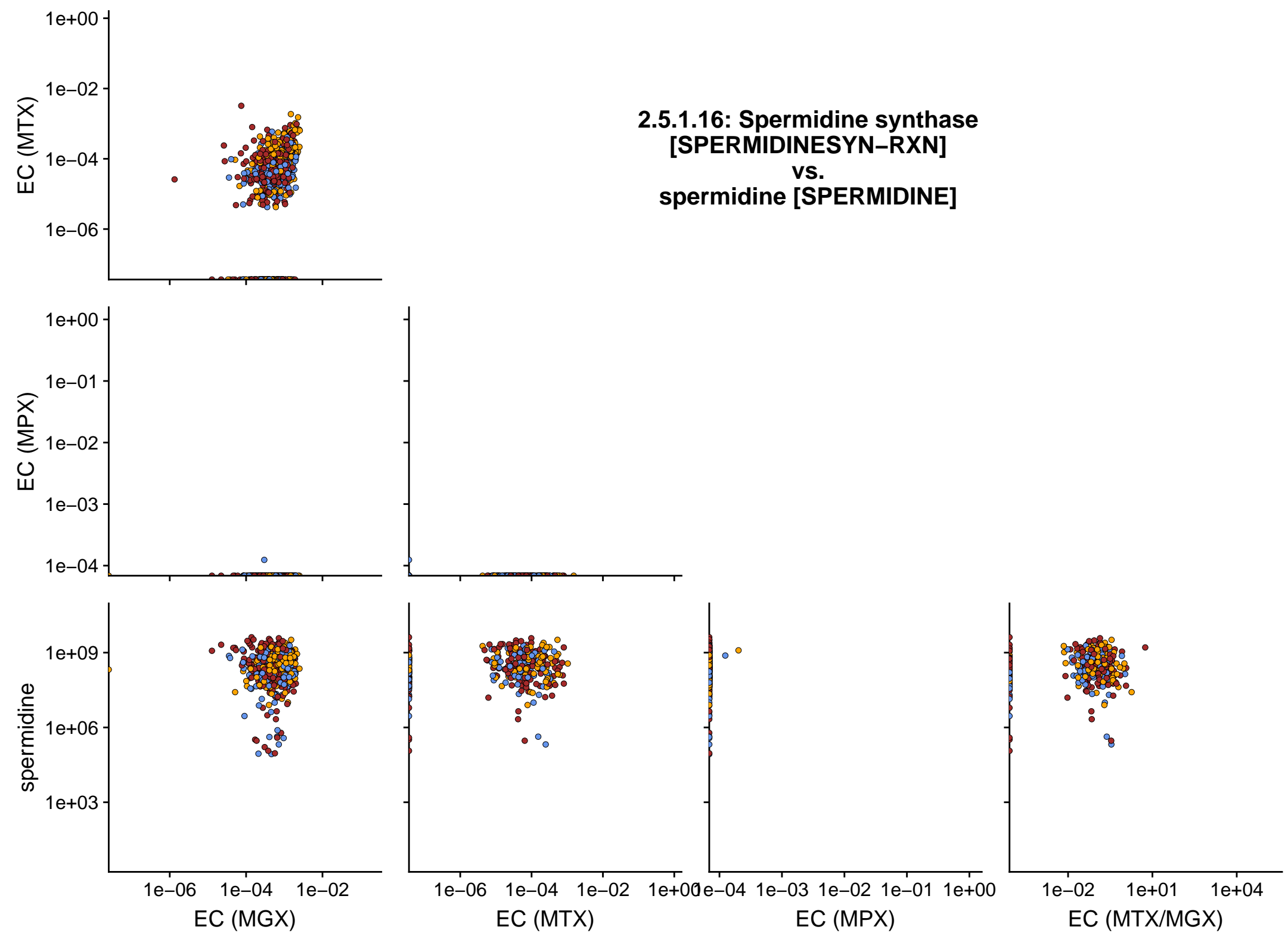
**2.3.1.47: 8-amino-7-oxononanoate synthase  
[7KAPSYN-RXN]  
vs.  
alanine [L-ALPHA-ALANINE]**



**4.1.1.23: Orotidine-5'-phosphate decarboxylase  
[OROTPDECARB-RXN]  
vs.  
UMP [UMP]**

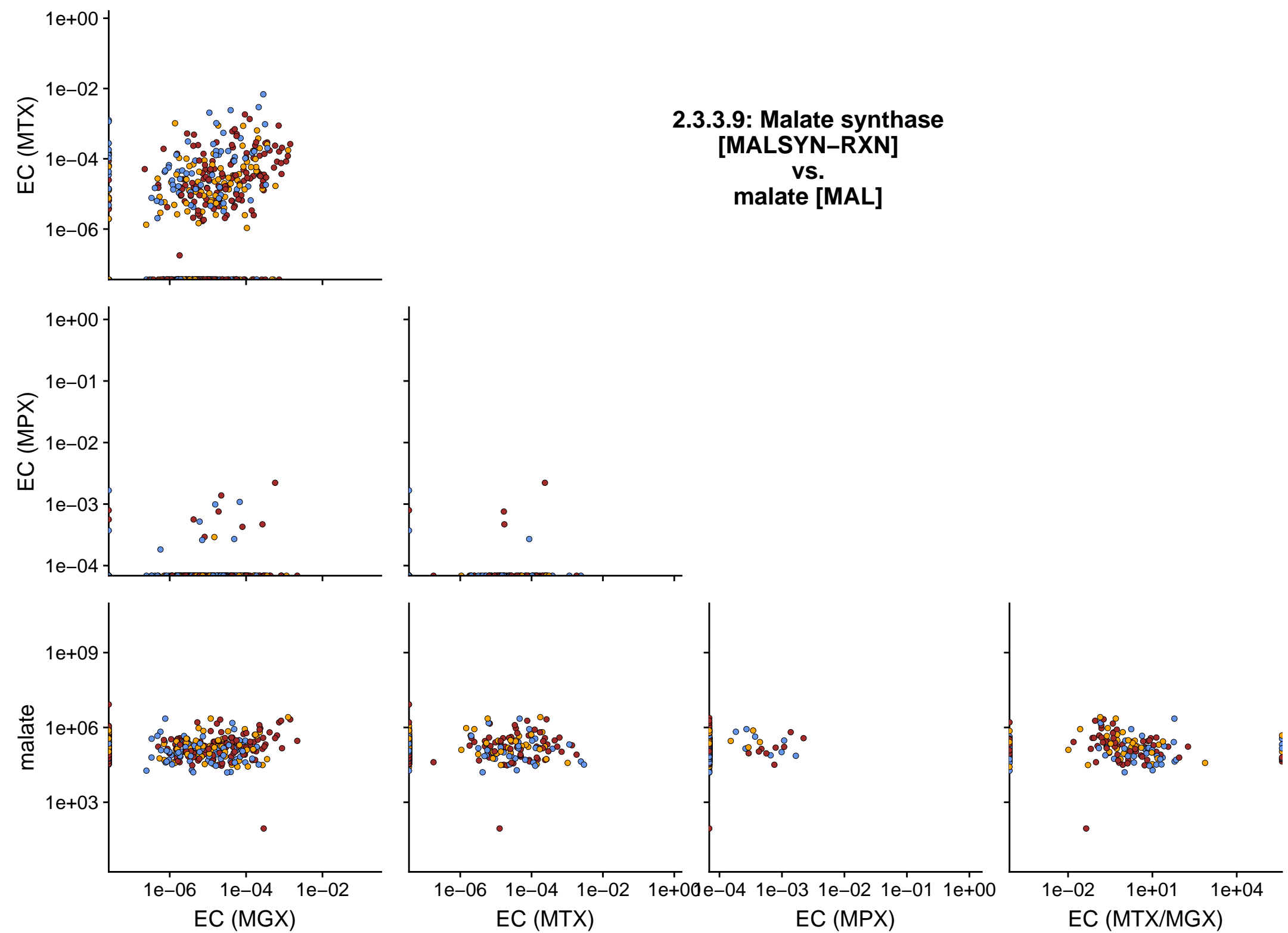


**2.5.1.16: Spermidine synthase  
[SPERMIDINESYN-RXN]  
vs.  
spermidine [SPERMIDINE]**

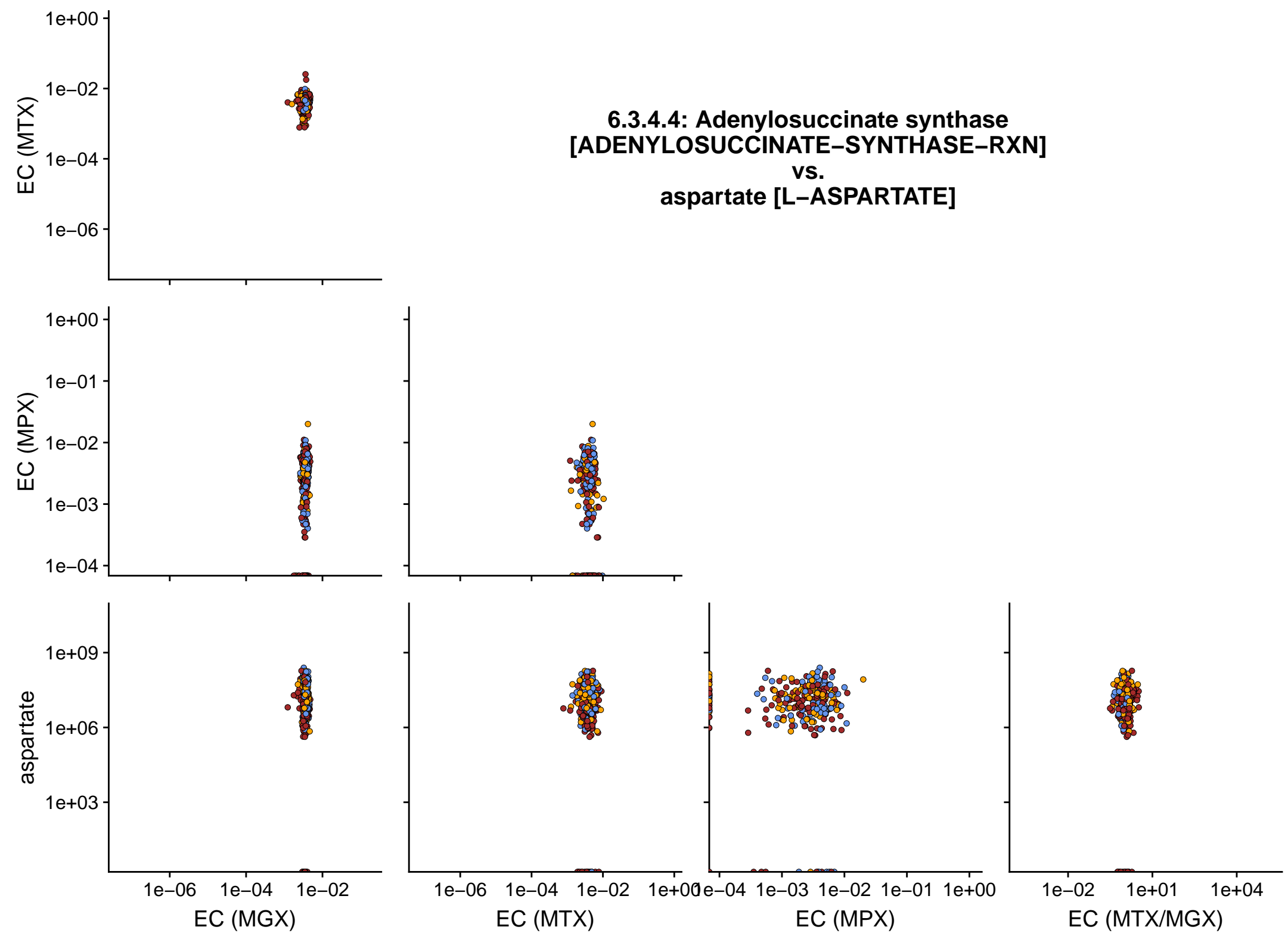




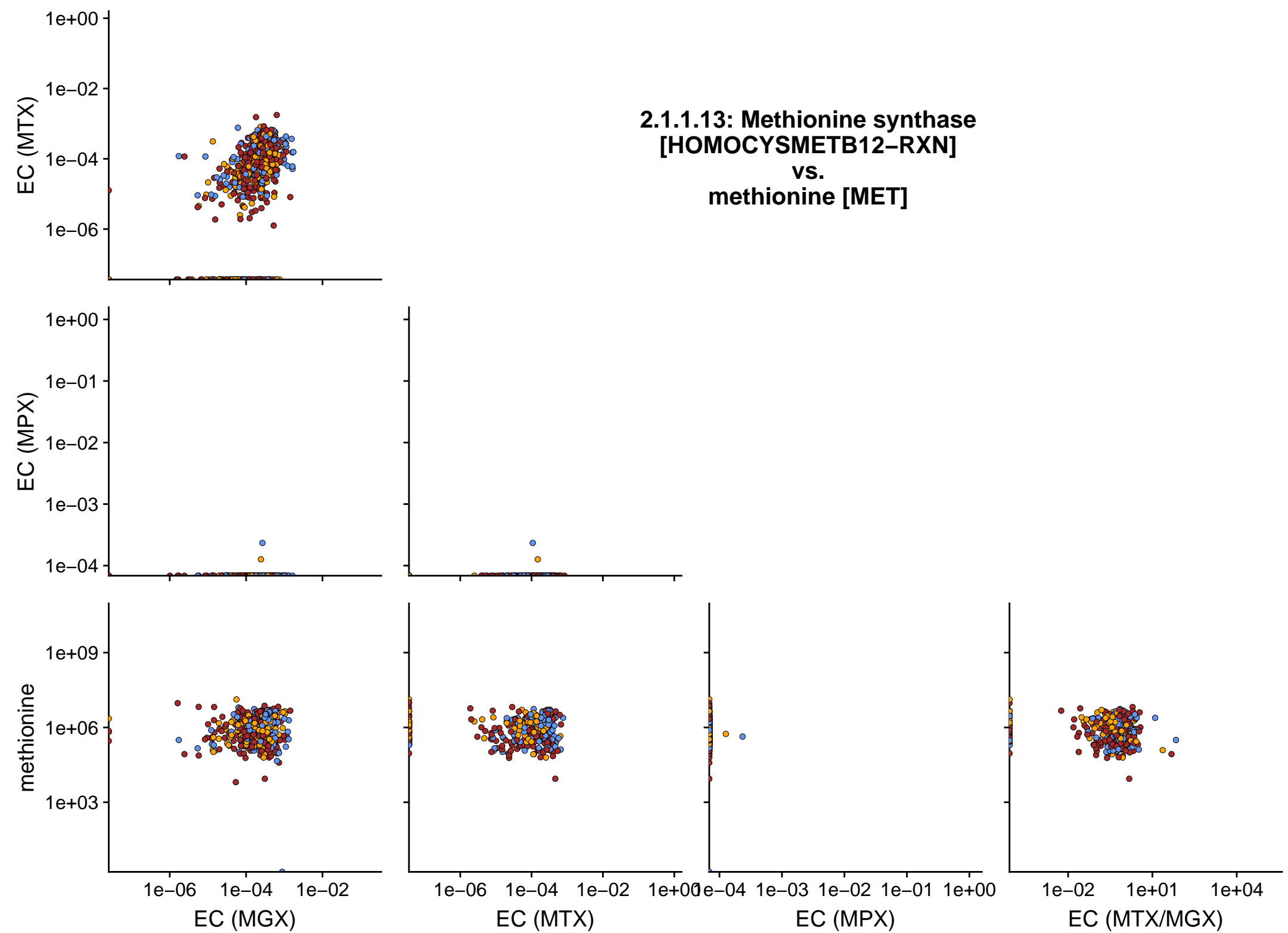
**2.3.3.9: Malate synthase  
[MALSYN-RXN]  
vs.  
malate [MAL]**



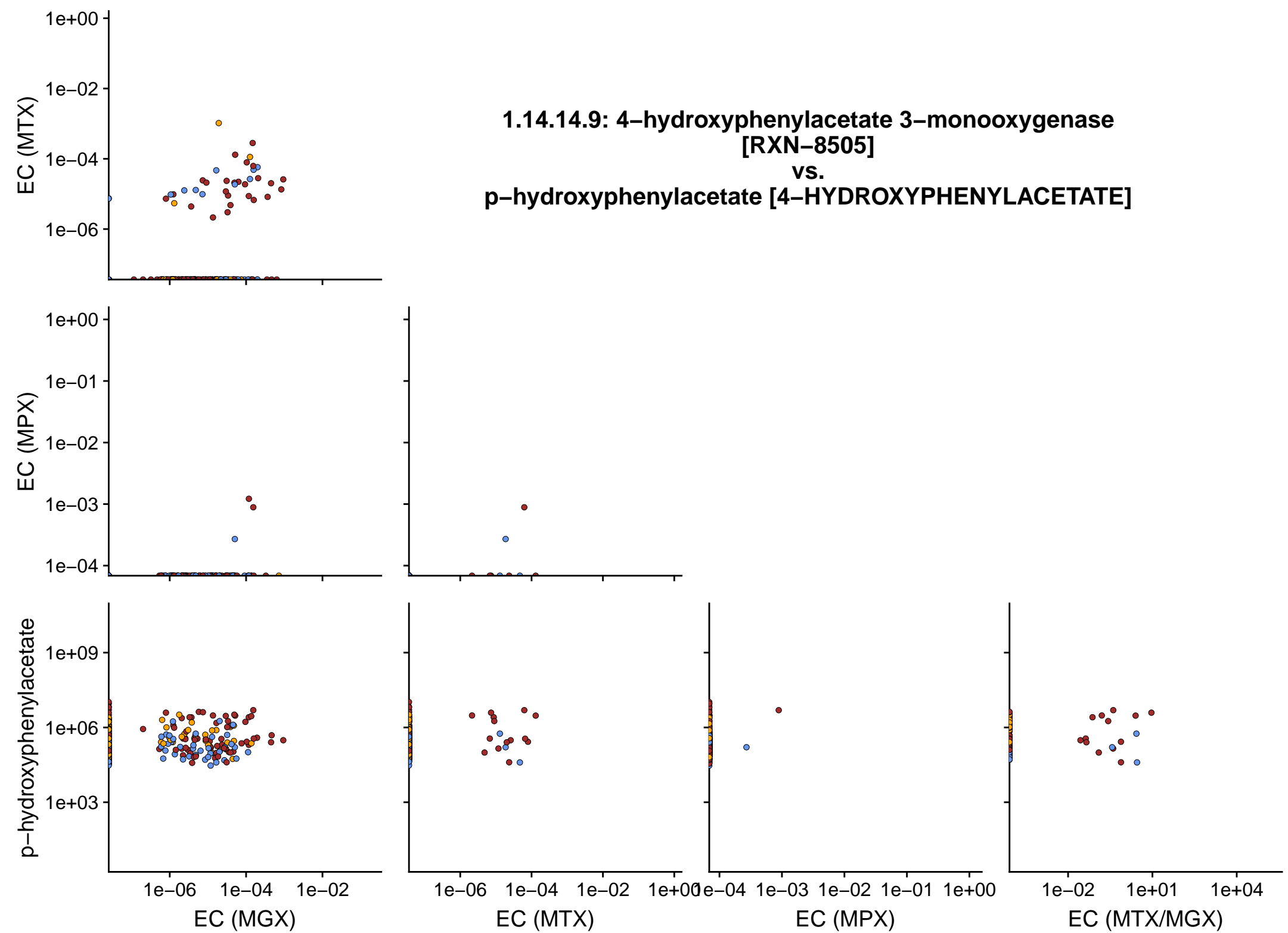
**6.3.4.4: Adenylosuccinate synthase  
[ADENYLOSUCCINATE-SYNTHASE-RXN]  
vs.  
aspartate [L-ASPARTATE]**



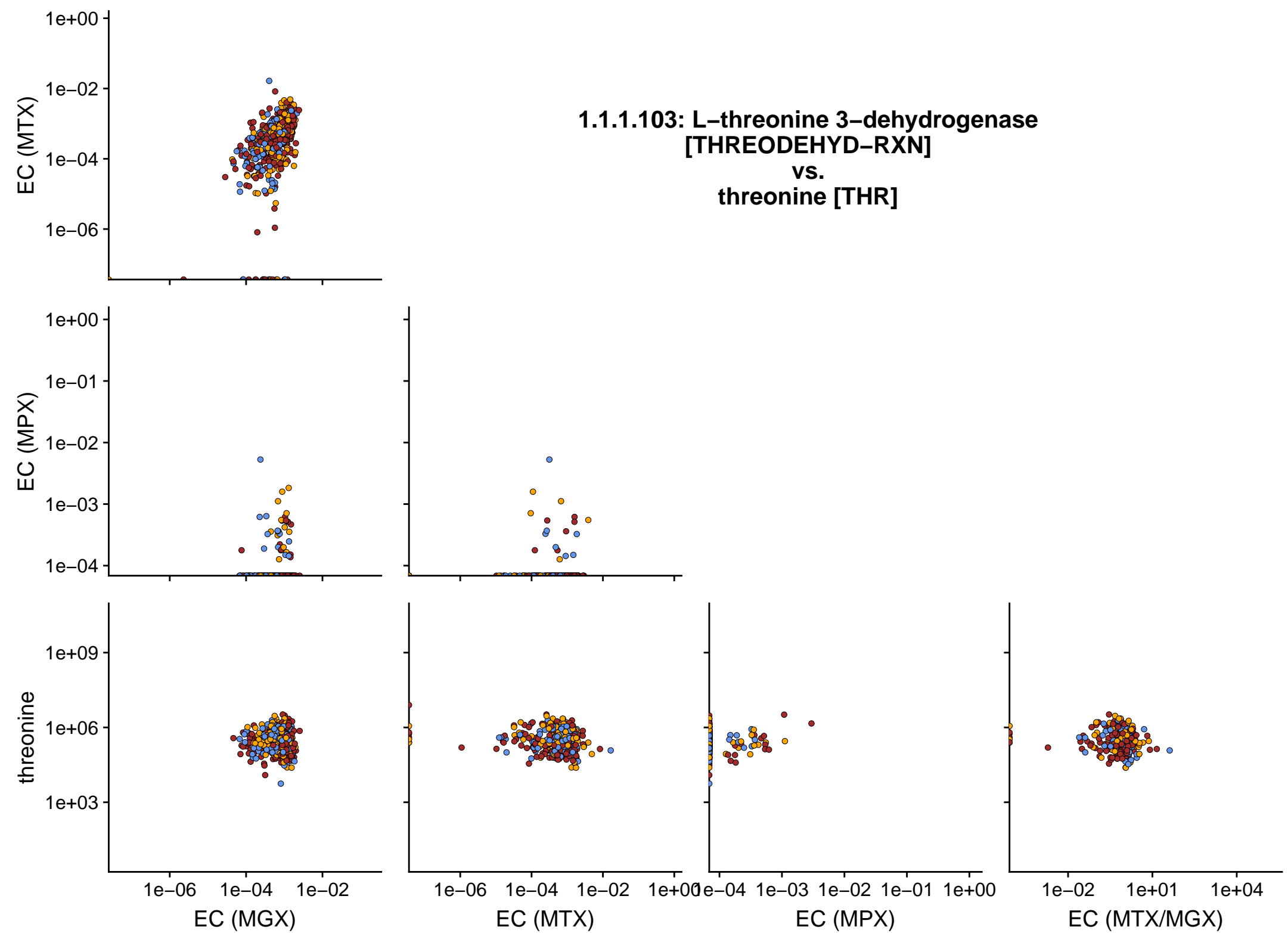
**2.1.1.13: Methionine synthase  
[HOMOCYSMETB12-RXN]  
vs.  
methionine [MET]**



**1.14.14.9: 4-hydroxyphenylacetate 3-monoxygenase  
[RXN-8505]  
vs.  
p-hydroxyphenylacetate [4-HYDROXYPHENYLACETATE]**

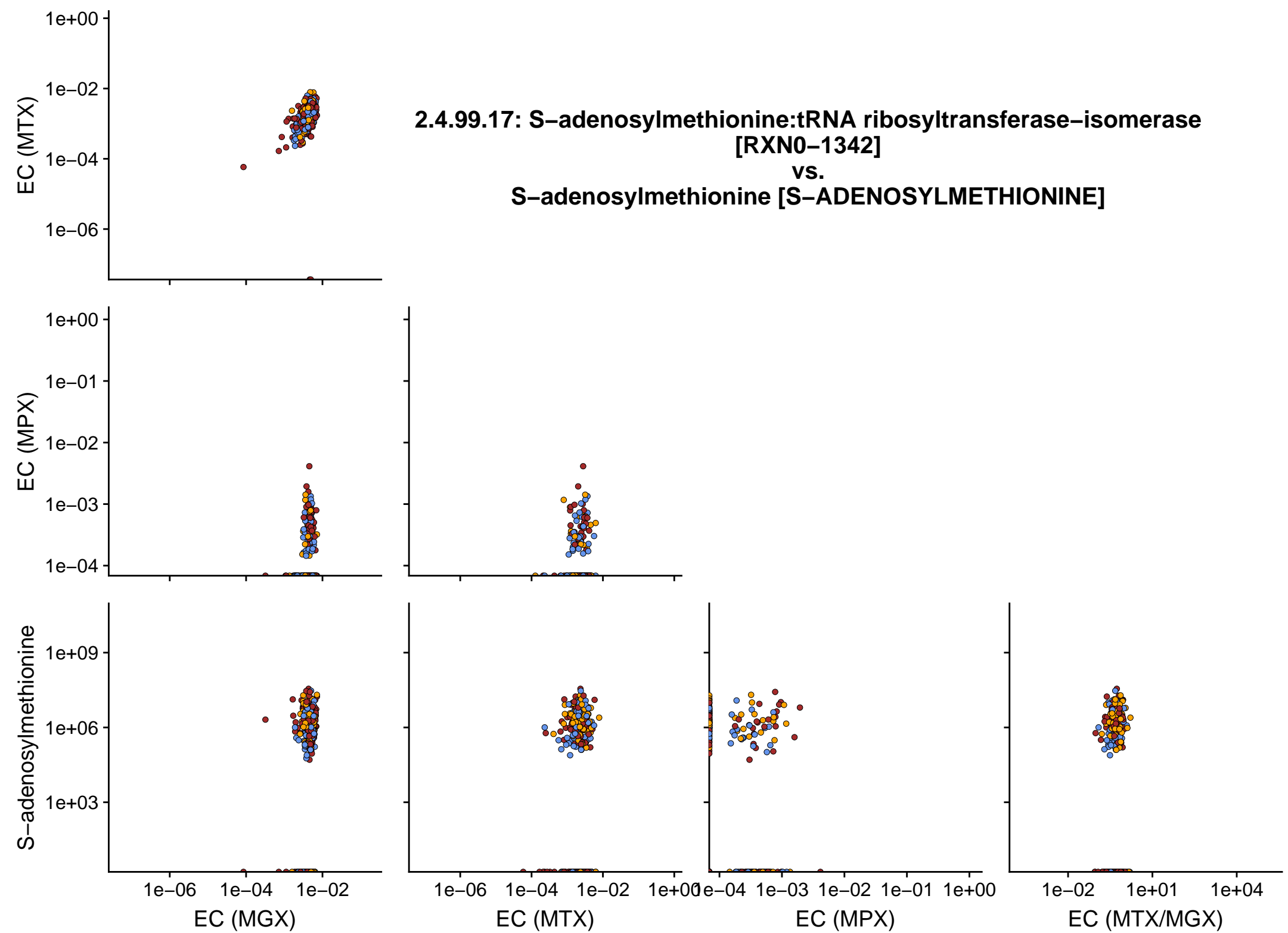


**1.1.1.103: L-threonine 3-dehydrogenase  
[THREODEHYD-RXN]  
vs.  
threonine [THR]**

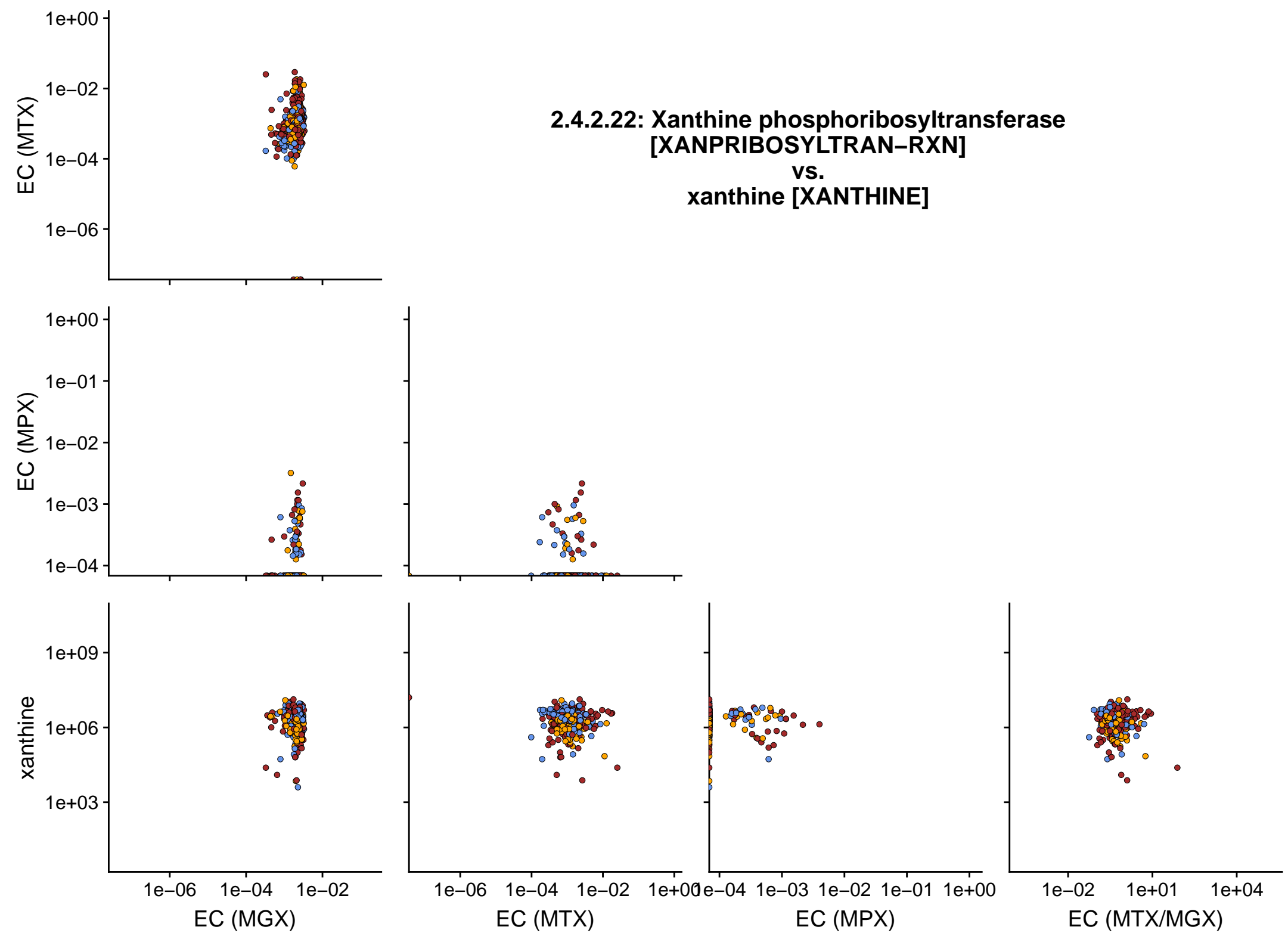




**2.4.99.17: S-adenosylmethionine:tRNA ribosyltransferase-isomerase  
[RXN0-1342]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**

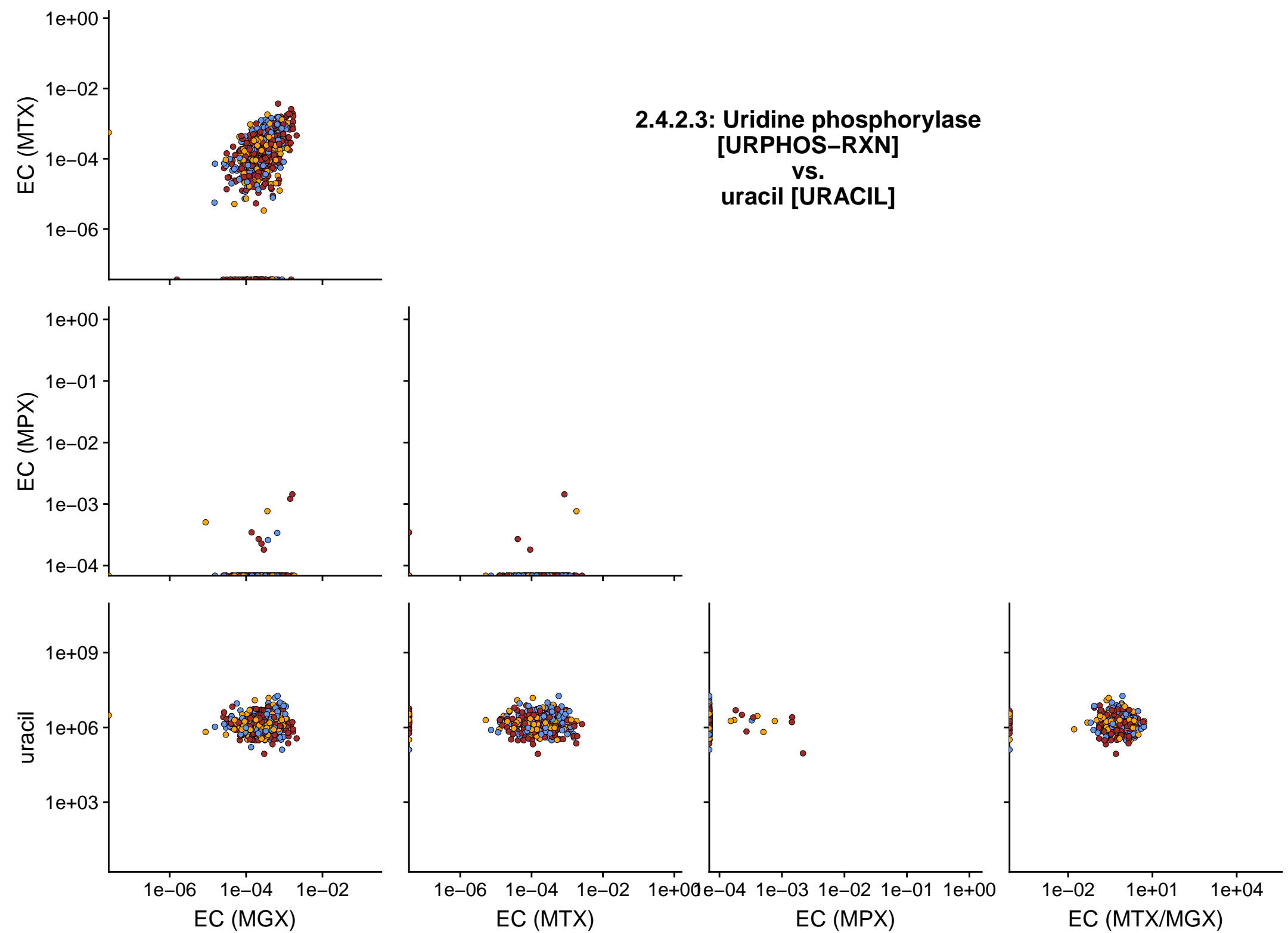


**2.4.2.22: Xanthine phosphoribosyltransferase  
[XANPRIBOSYLTRAN-RXN]  
vs.  
xanthine [XANTHINE]**

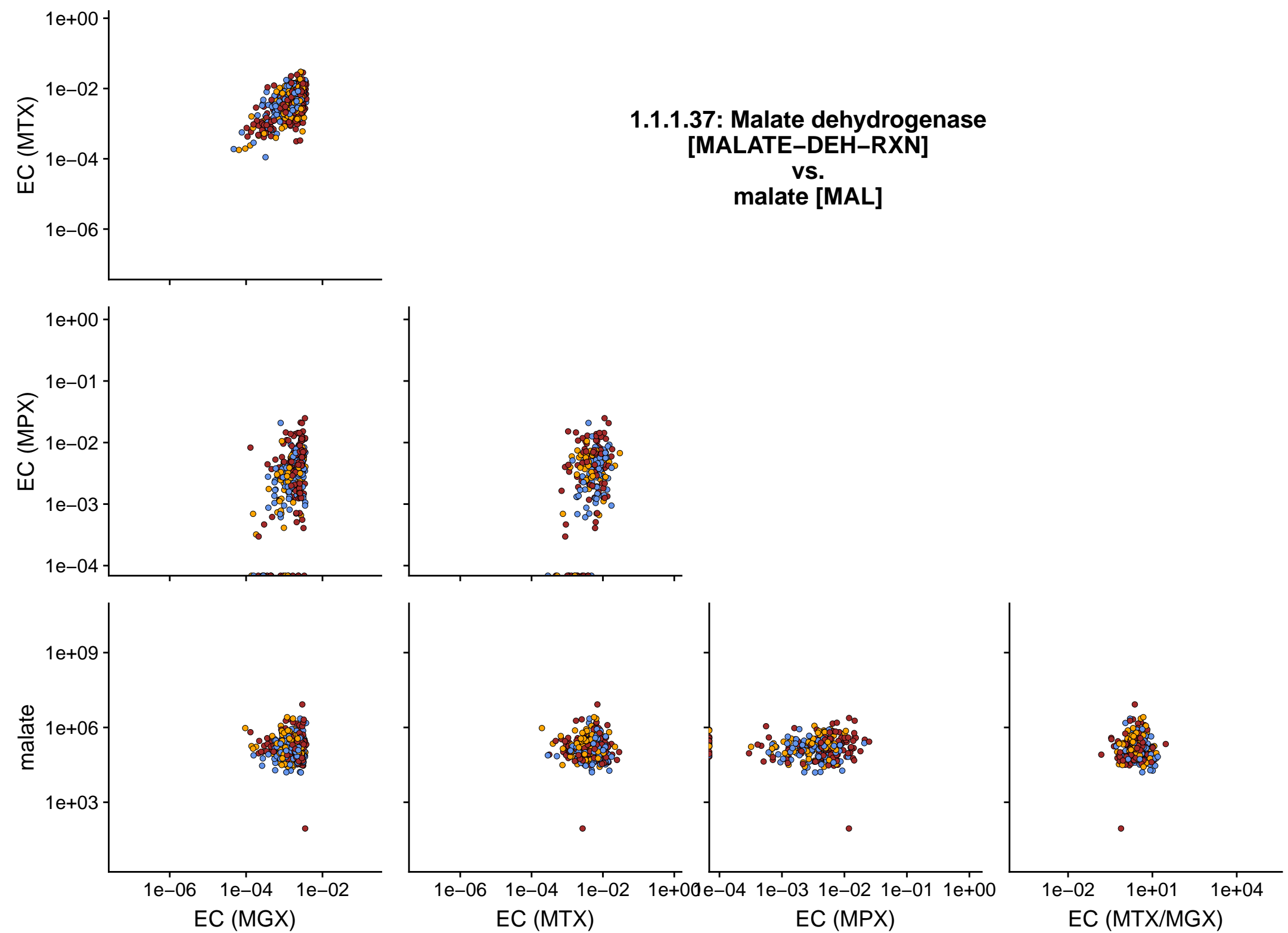




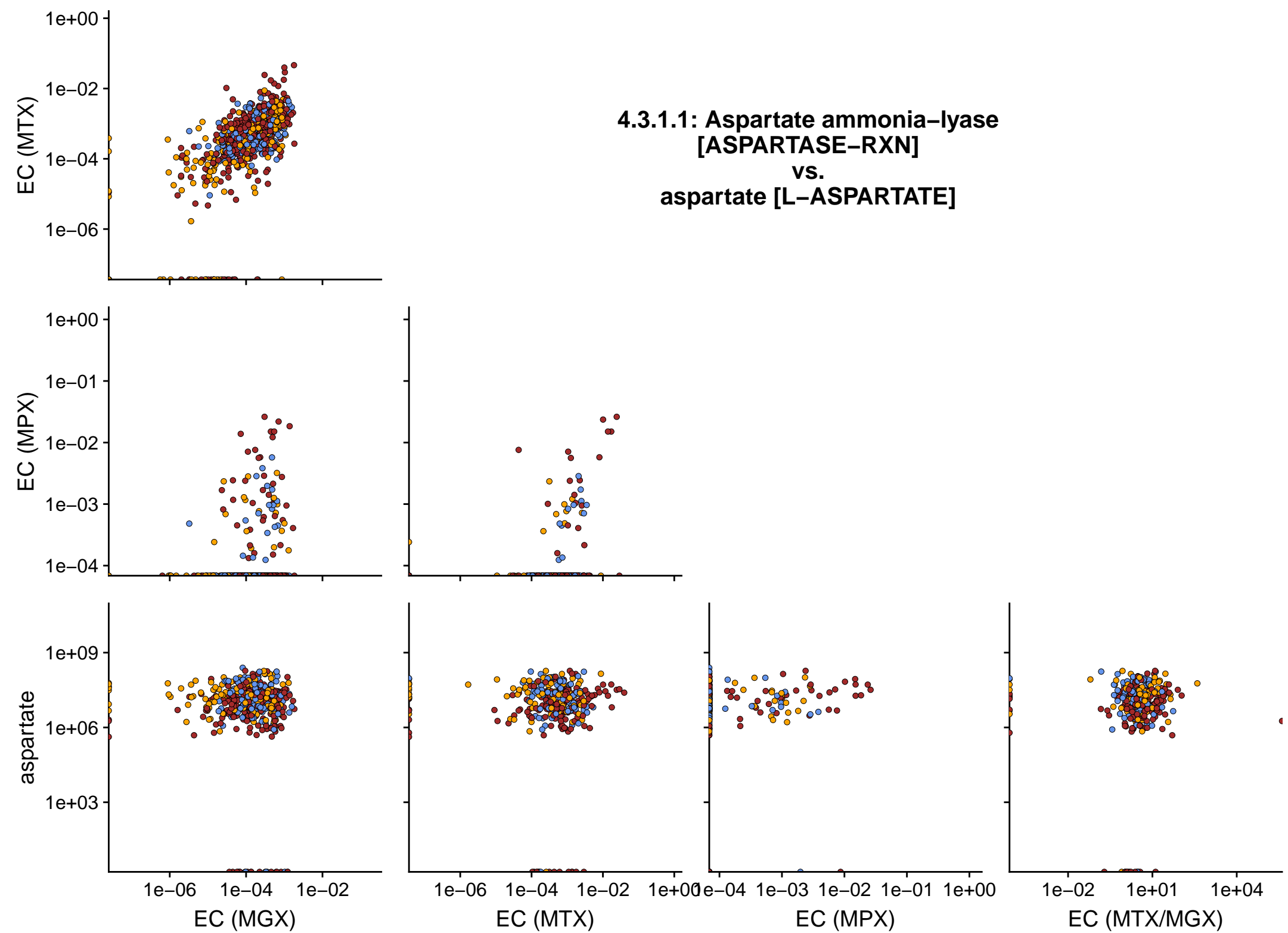
**2.4.2.3: Uridine phosphorylase  
[URPHOS-RXN]  
vs.  
uracil [URACIL]**



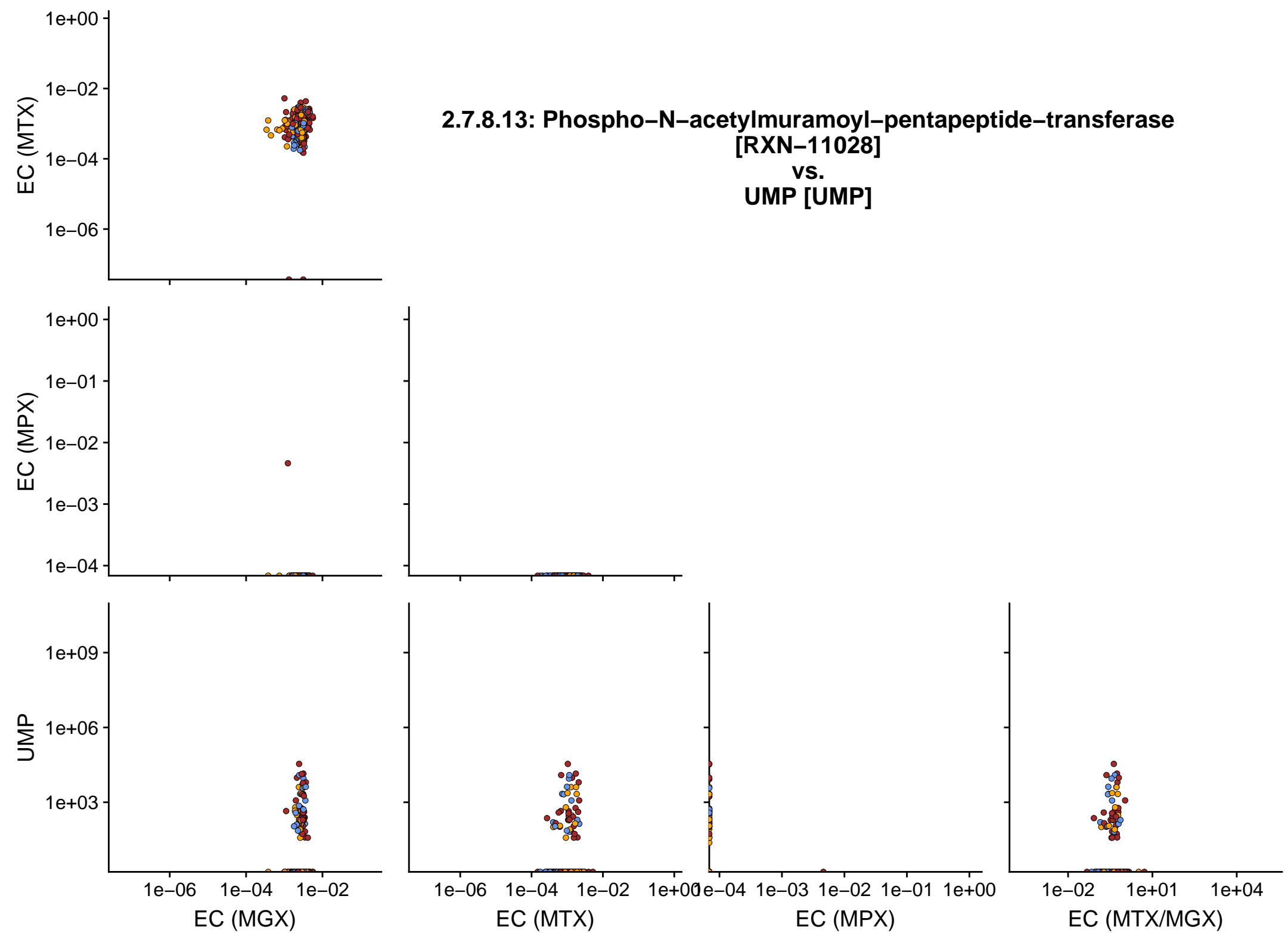
**1.1.1.37: Malate dehydrogenase  
[MALATE-DEH-RXN]  
vs.  
malate [MAL]**



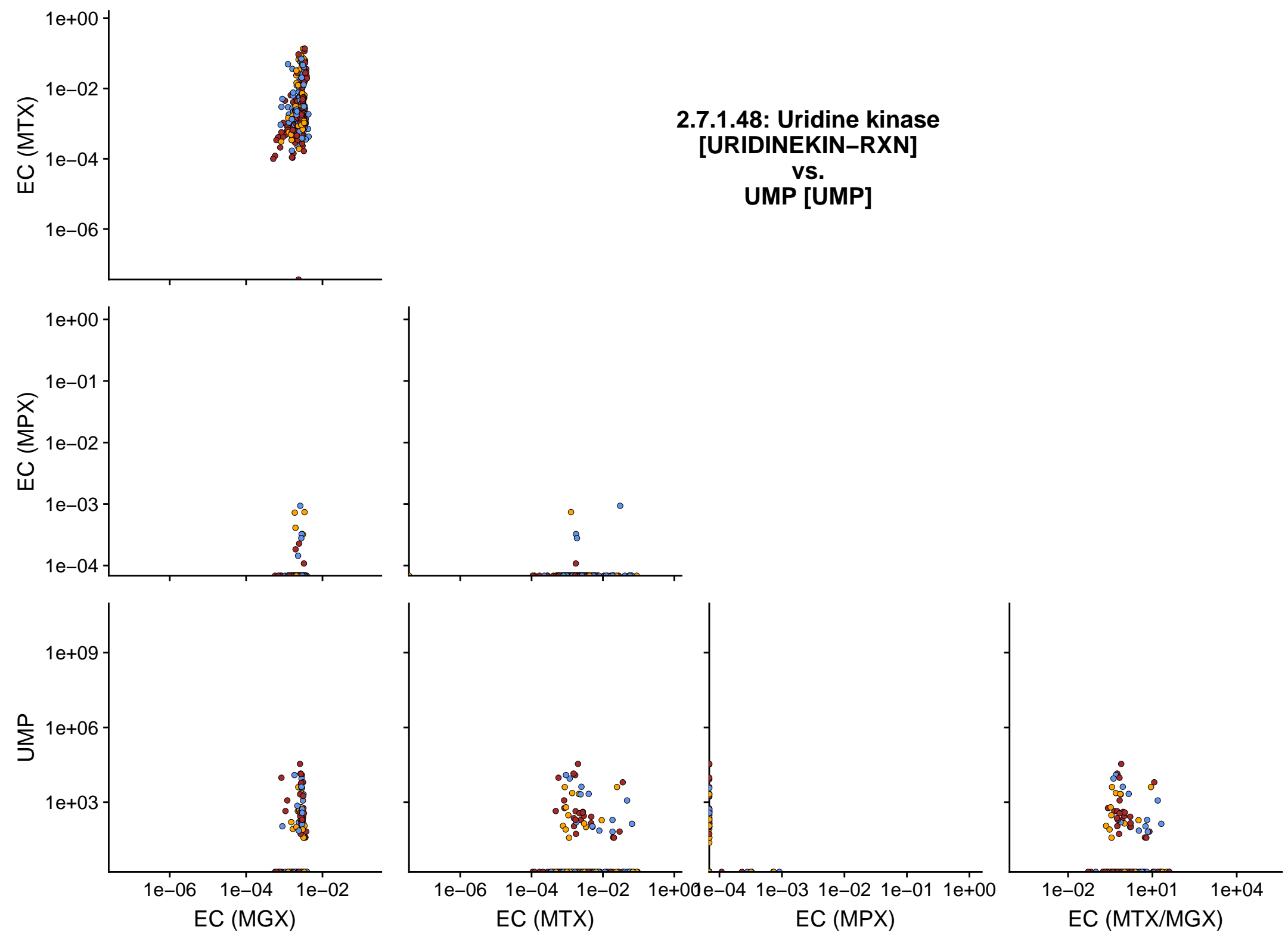
**4.3.1.1: Aspartate ammonia-lyase  
[ASPARTASE-RXN]  
vs.  
aspartate [L-ASPARTATE]**



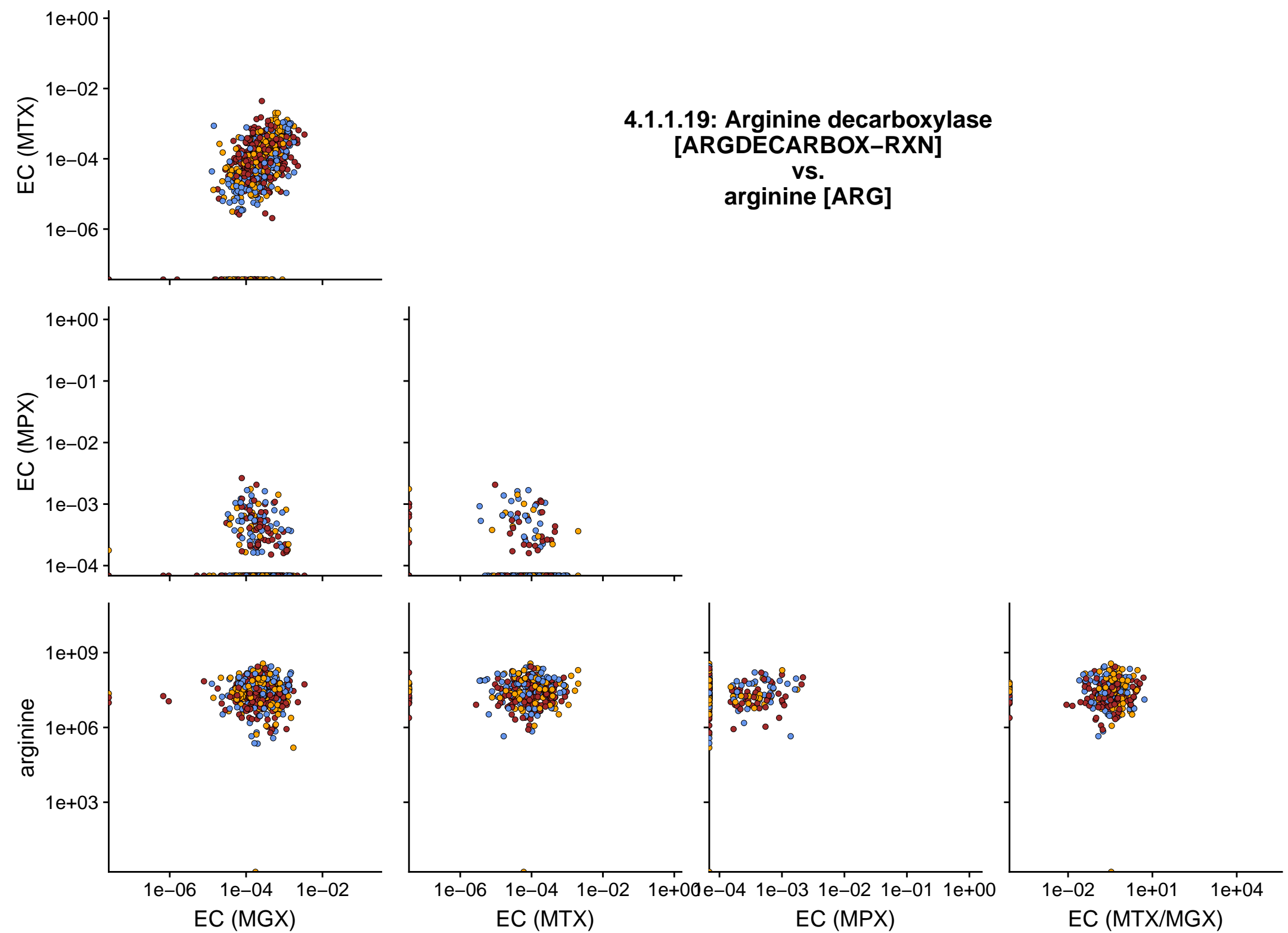
**2.7.8.13: Phospho-N-acetylmuramoyl-pentapeptide-transferase  
[RXN-11028]  
vs.  
UMP [UMP]**



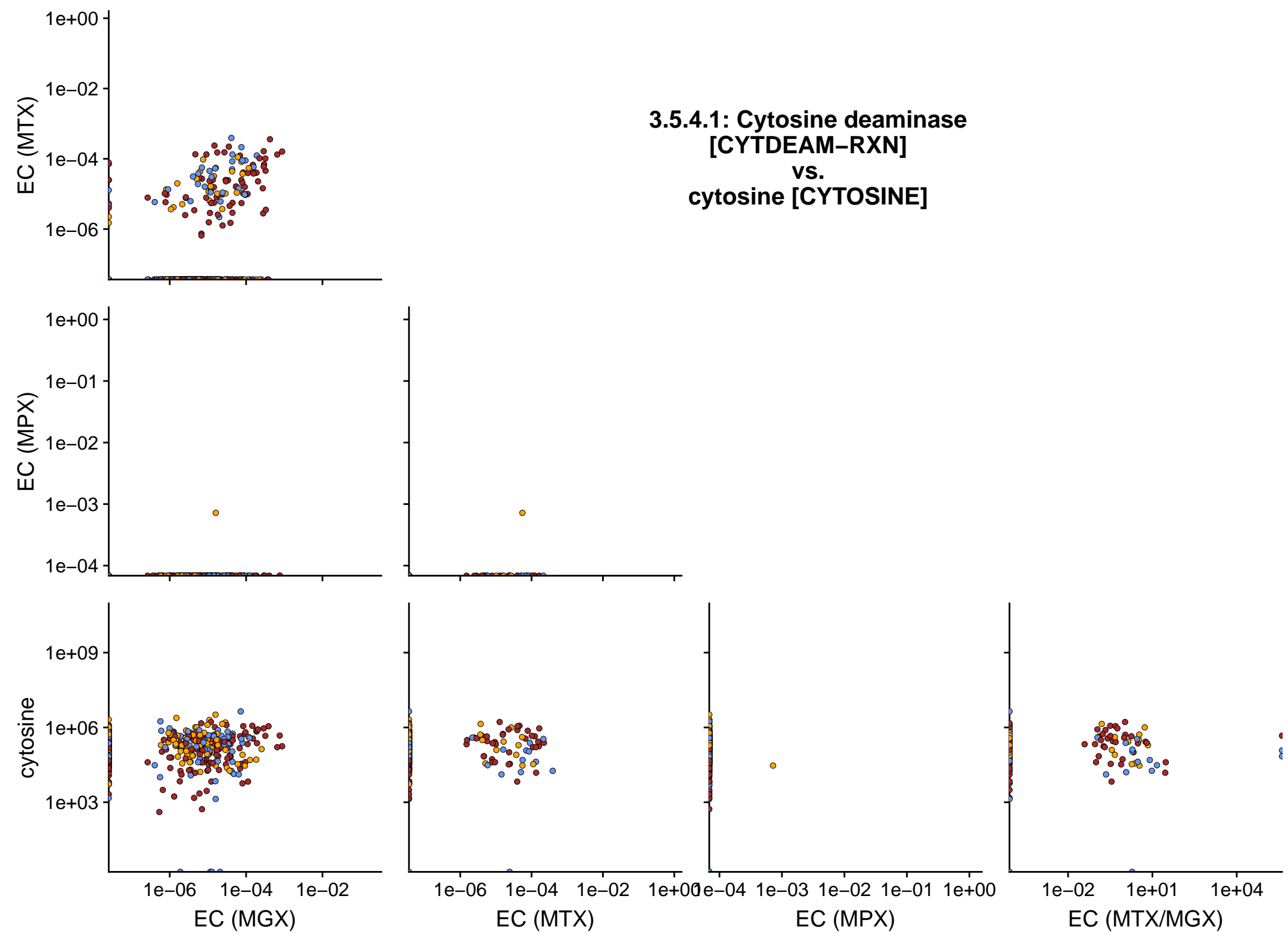
**2.7.1.48: Uridine kinase  
[URIDINEKIN-RXN]  
vs.  
UMP [UMP]**



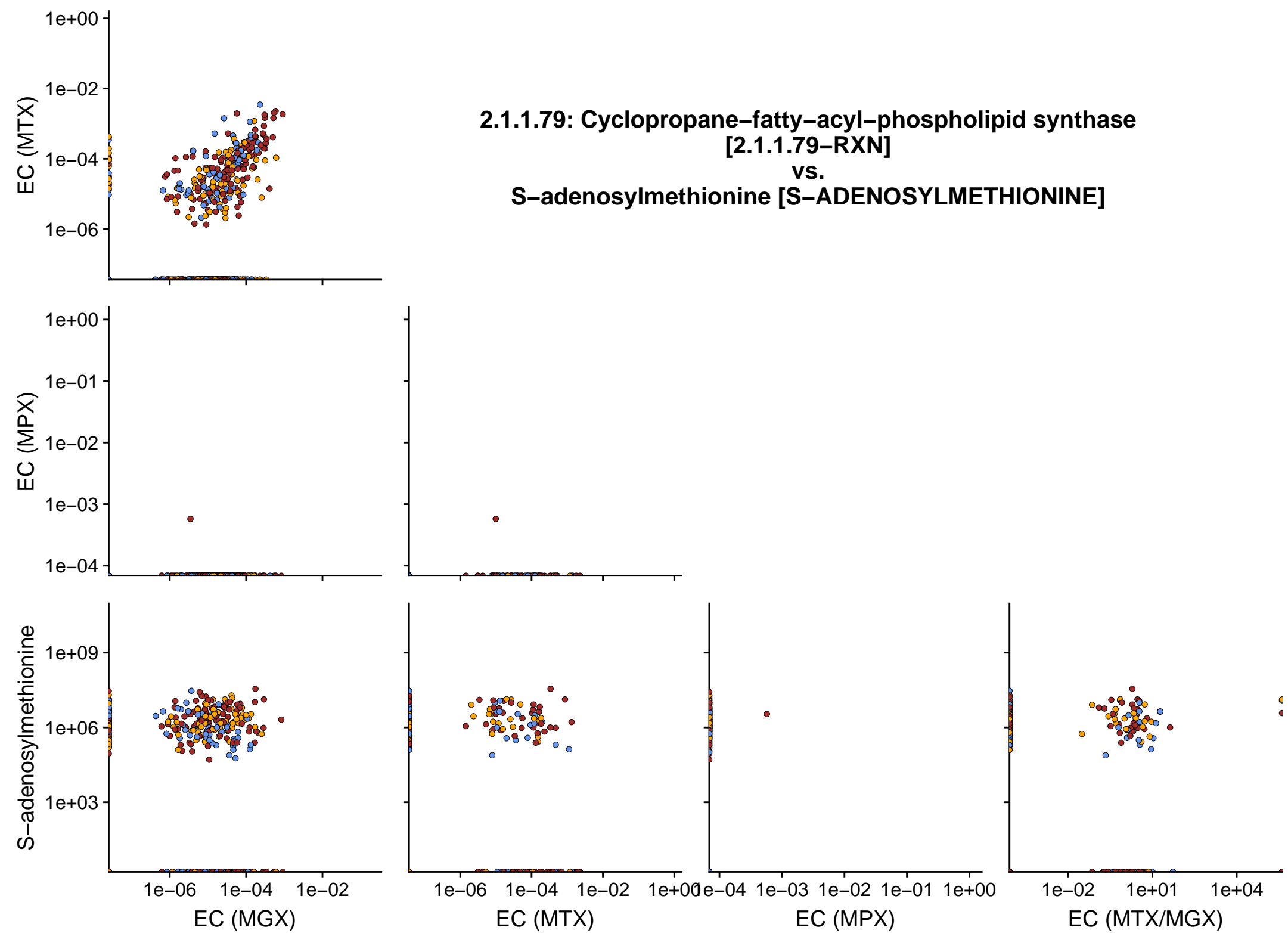
**4.1.1.19: Arginine decarboxylase  
[ARGDECARBOX-RXN]  
vs.  
arginine [ARG]**



**3.5.4.1: Cytosine deaminase  
[CYTDEAM-RXN]  
vs.  
cytosine [CYTOSINE]**

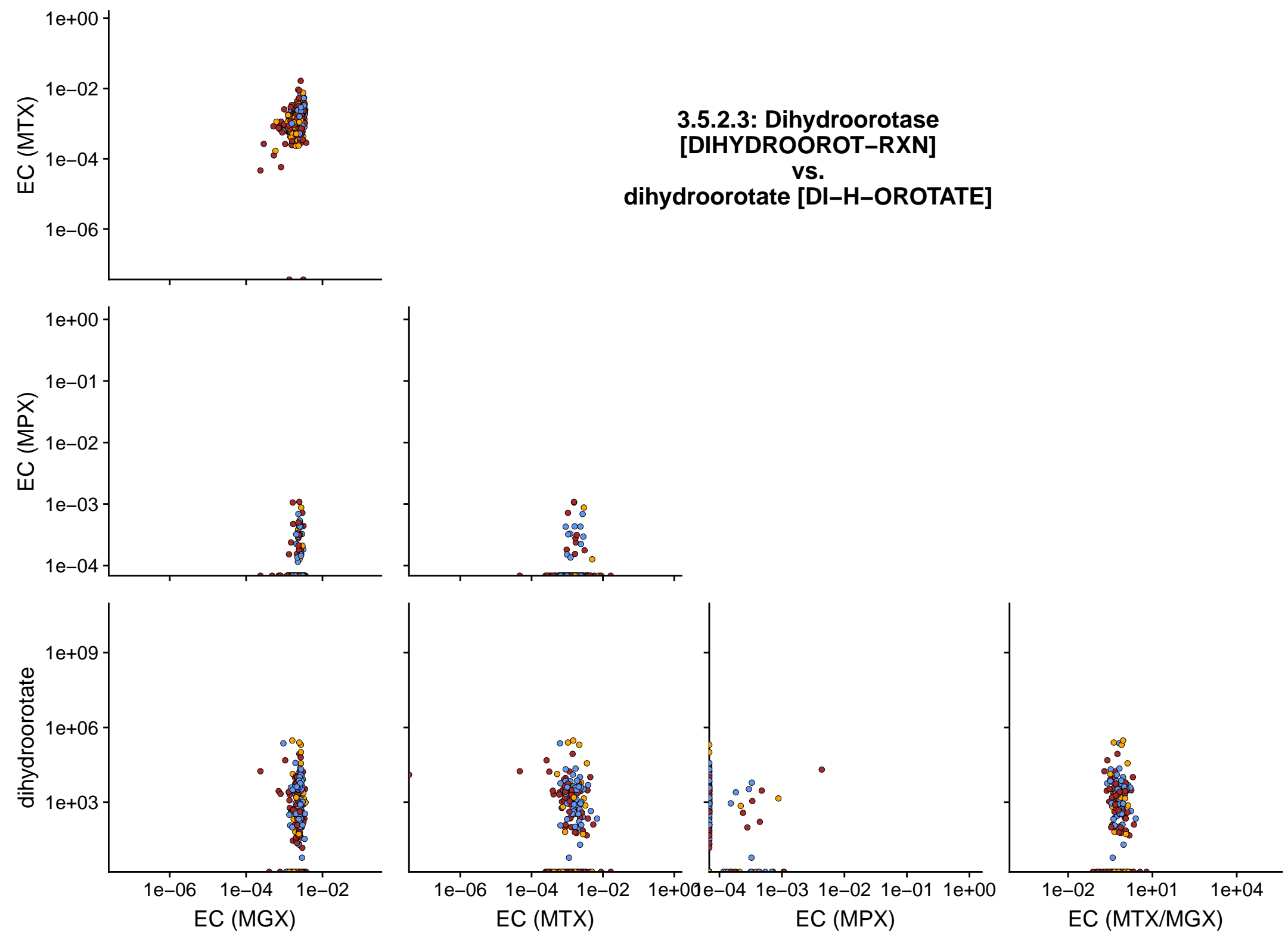


**2.1.1.79: Cyclopropane-fatty-acyl-phospholipid synthase  
[2.1.1.79-RXN]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**

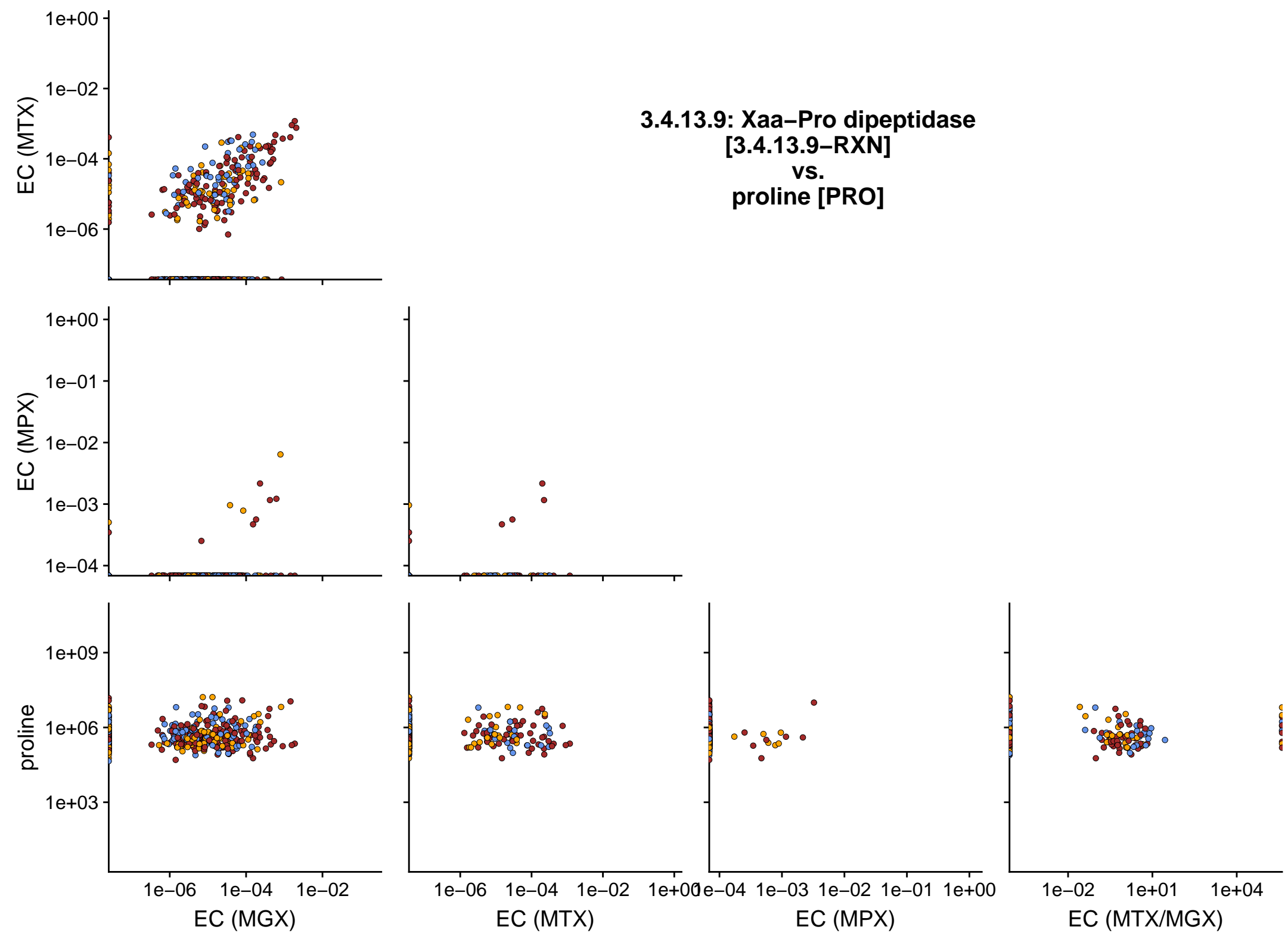




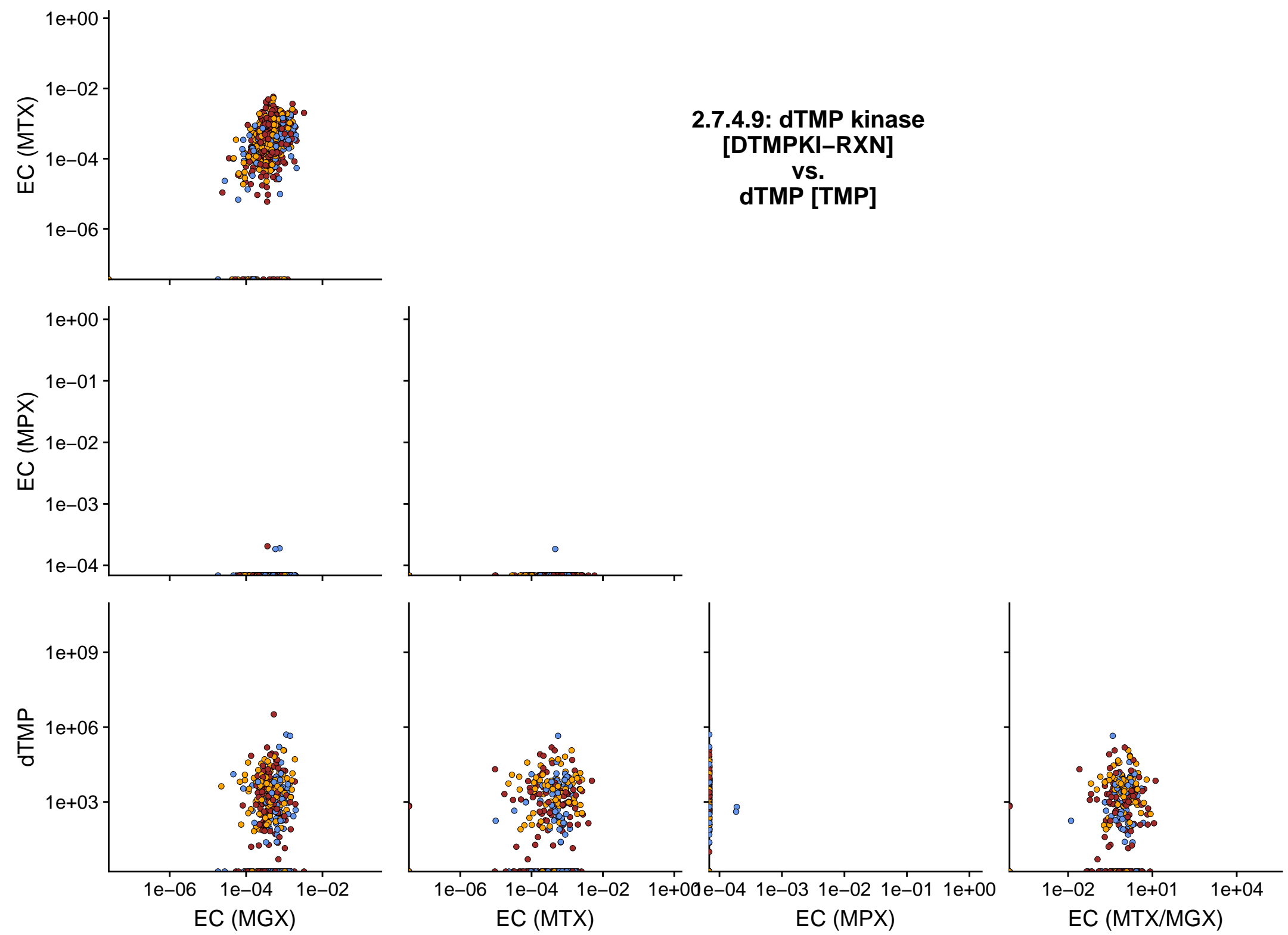
**3.5.2.3: Dihydroorotase  
[DIHYDROOROT-RXN]  
vs.  
dihydroorotate [DI-H-OROTATE]**



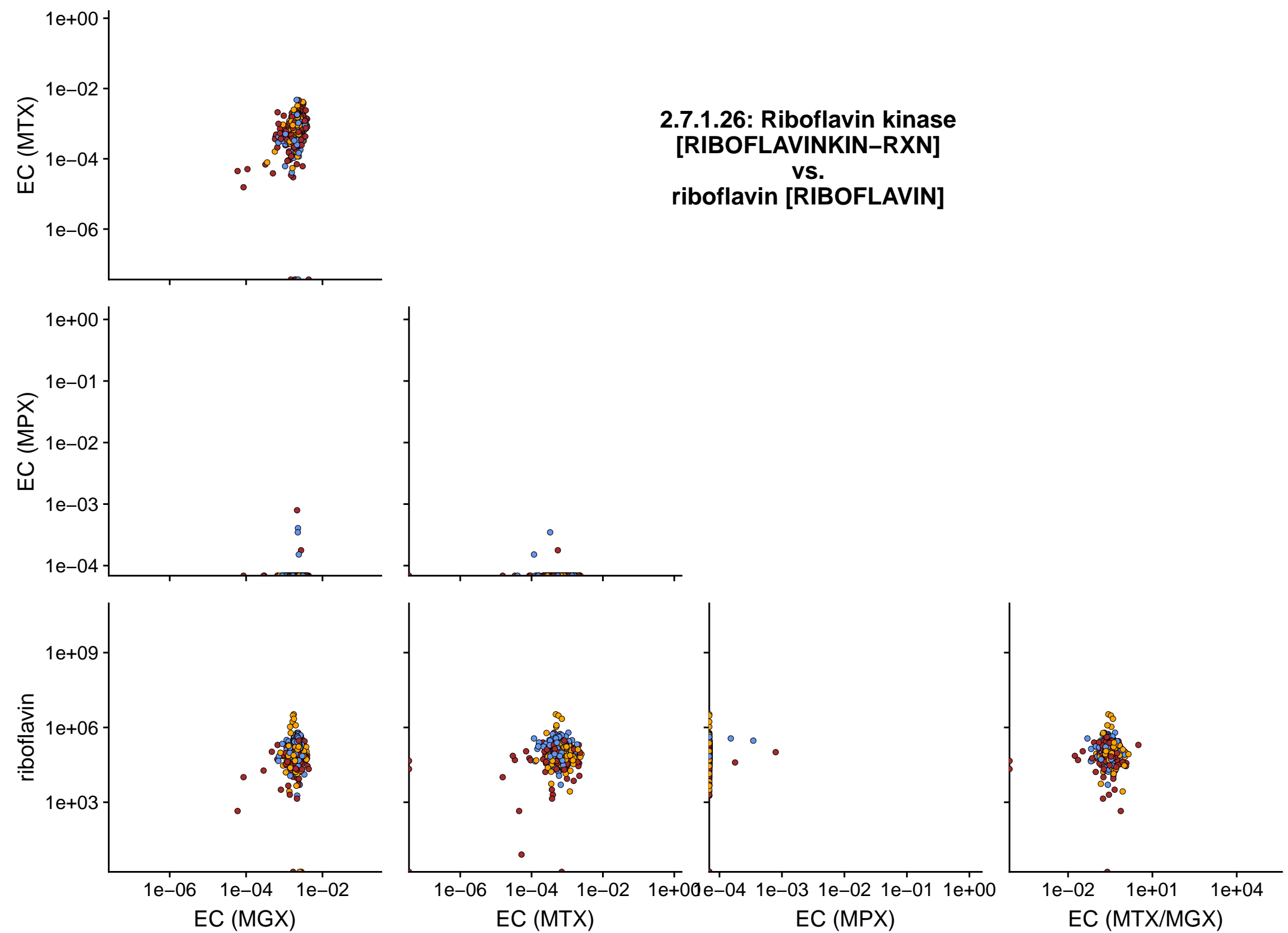
**3.4.13.9: Xaa-Pro dipeptidase  
[3.4.13.9-RXN]  
vs.  
proline [PRO]**



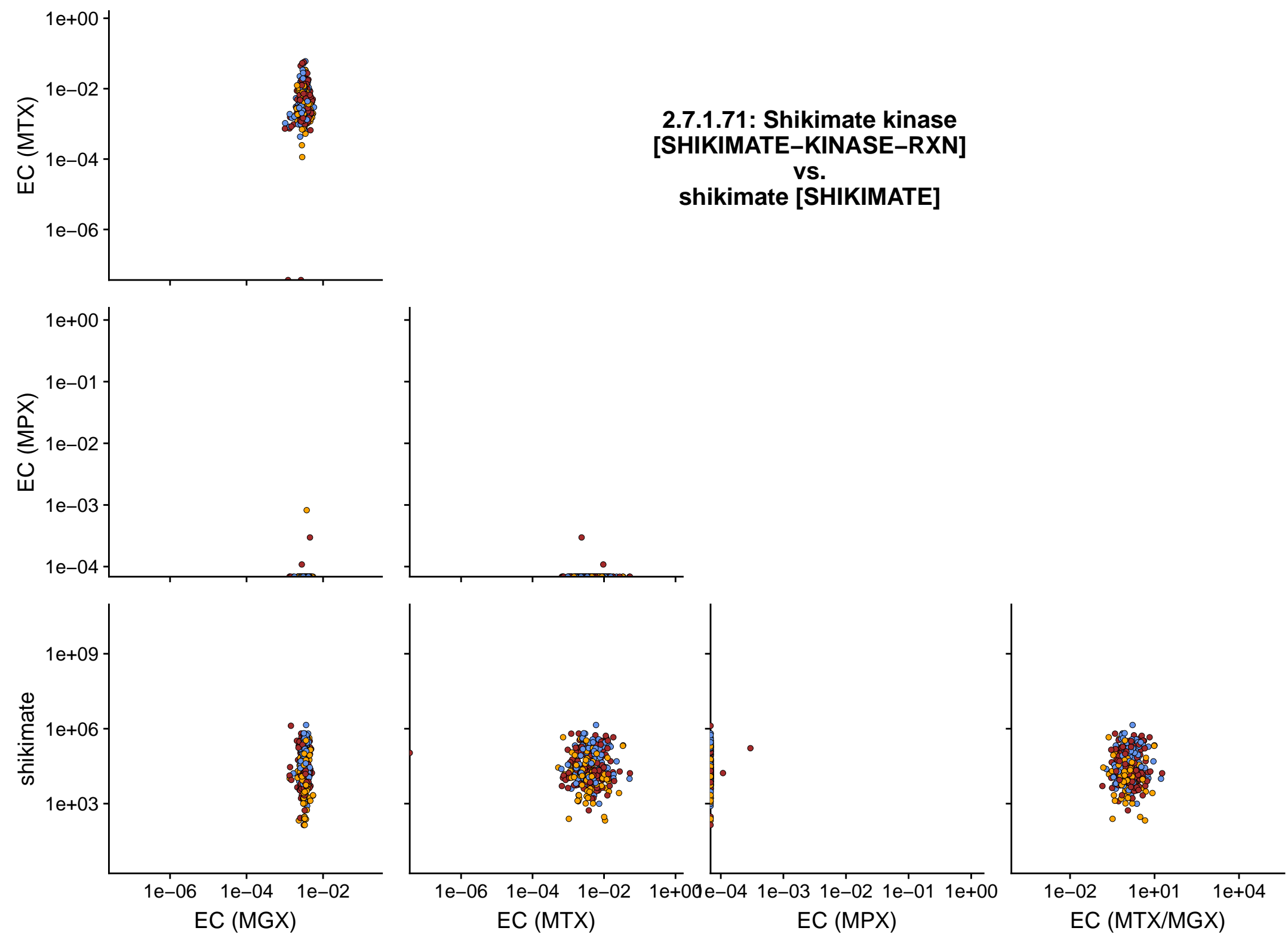
**2.7.4.9: dTMP kinase  
[DTMPKI-RXN]  
vs.  
dTMP [TMP]**



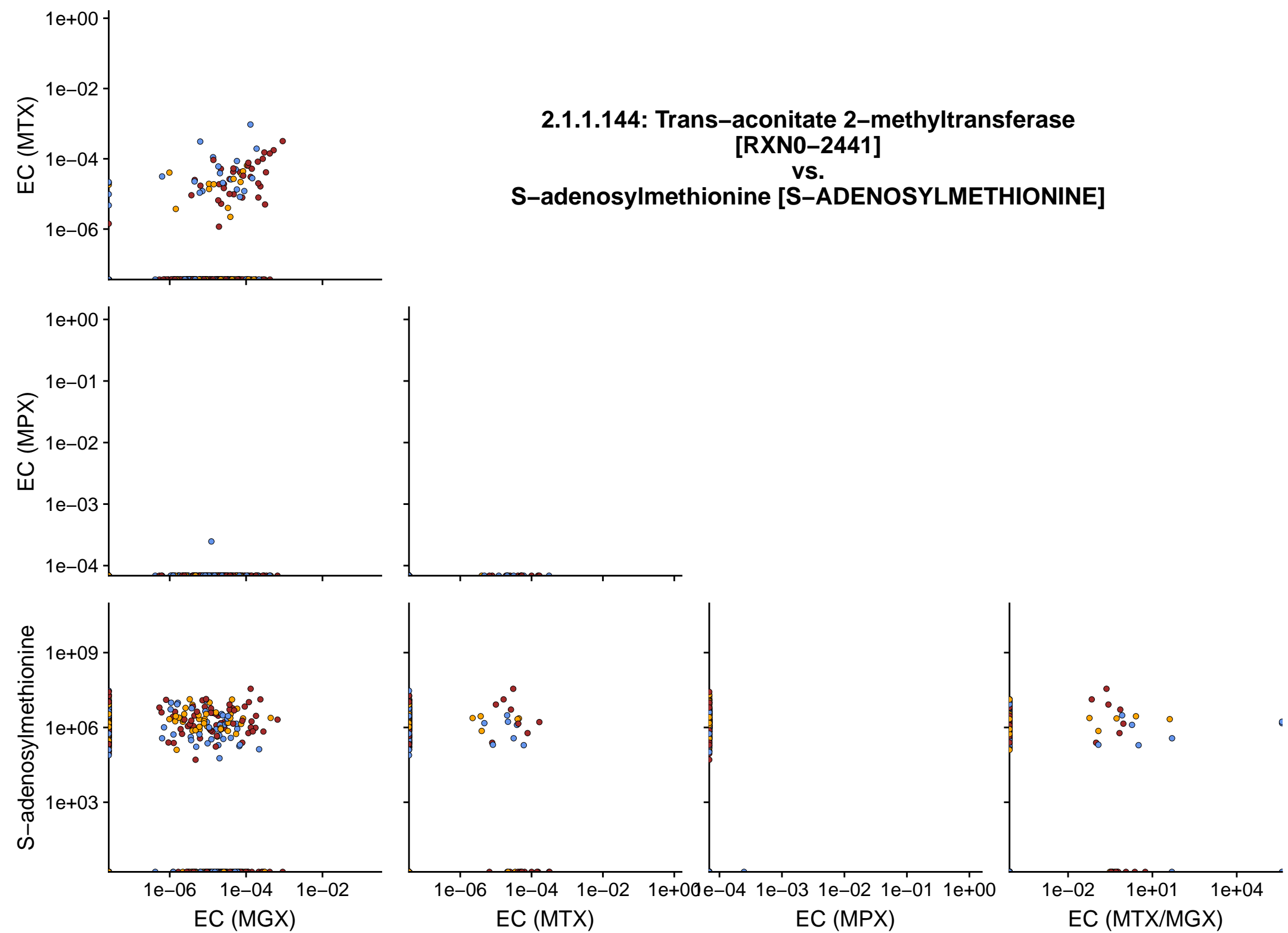
**2.7.1.26: Riboflavin kinase  
[RIBOFLAVINKIN-RXN]  
vs.  
riboflavin [RIBOFLAVIN]**



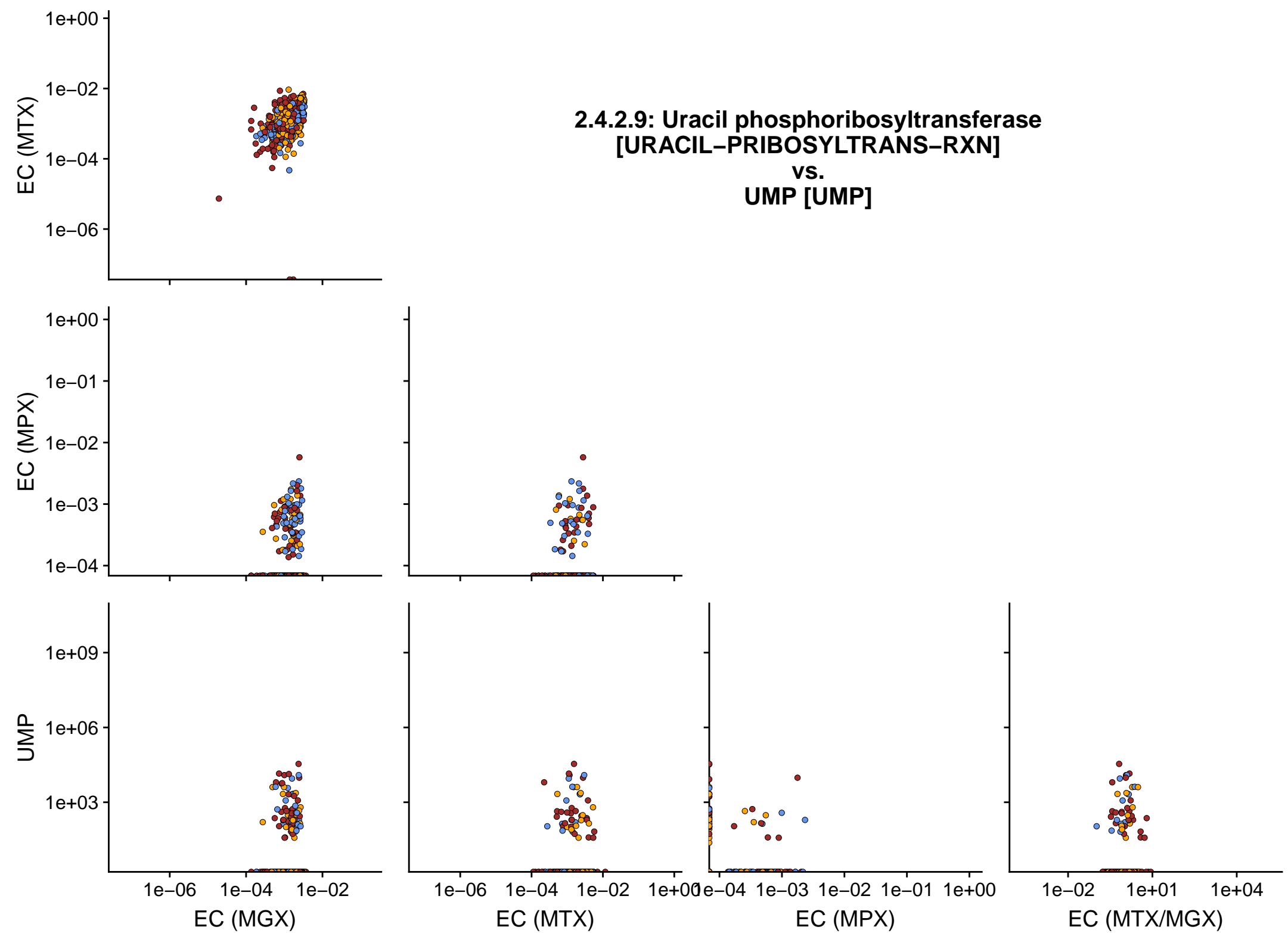
**2.7.1.71: Shikimate kinase  
[SHIKIMATE-KINASE-RXN]  
vs.  
shikimate [SHIKIMATE]**



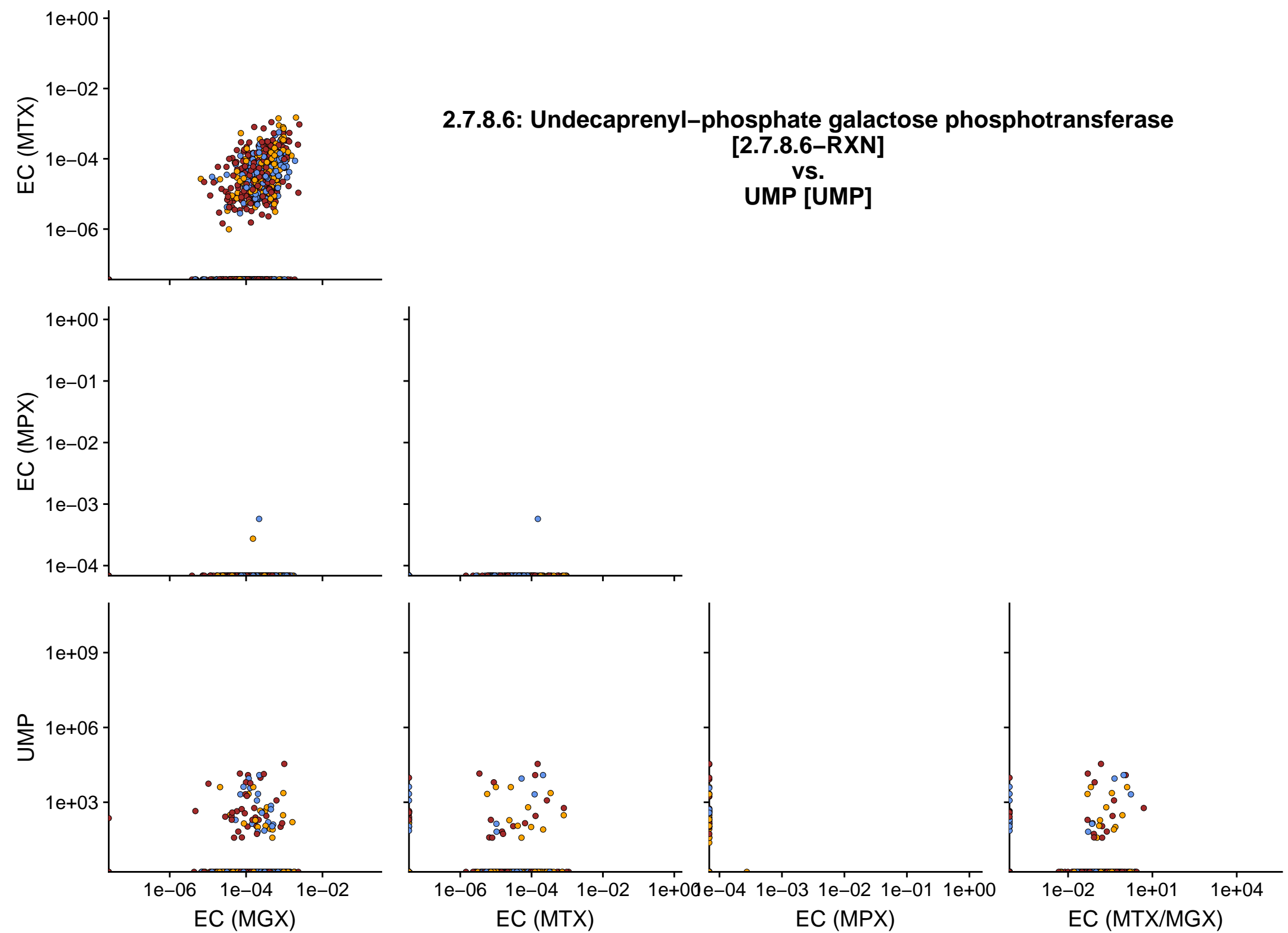
**2.1.1.144: Trans-aconitate 2-methyltransferase  
[RXN0-2441]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**



**2.4.2.9: Uracil phosphoribosyltransferase  
[URACIL-PRIBOSYLTRANS-RXN]  
vs.  
UMP [UMP]**

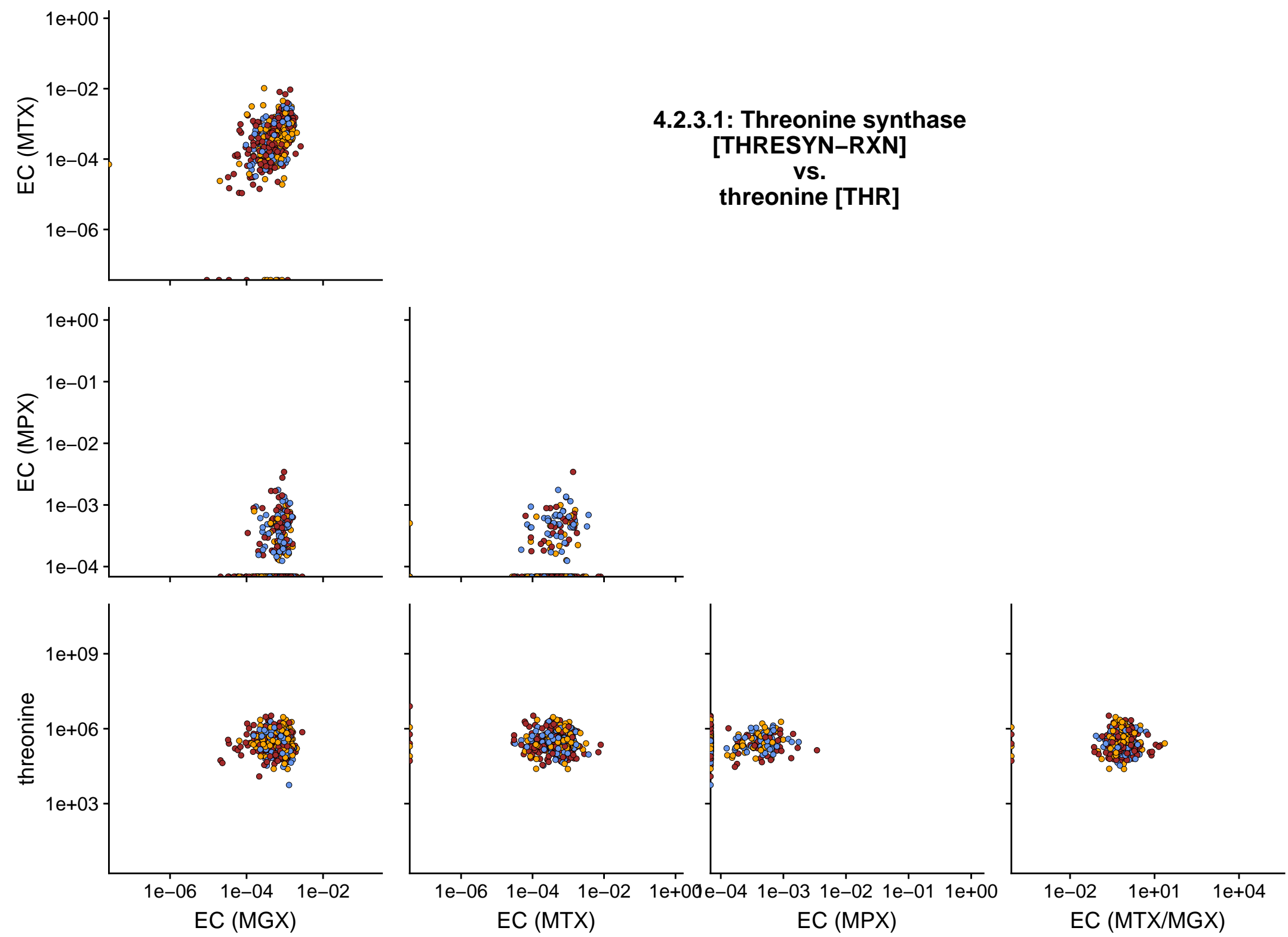


**2.7.8.6: Undecaprenyl-phosphate galactose phosphotransferase  
[2.7.8.6-RXN]  
vs.  
UMP [UMP]**

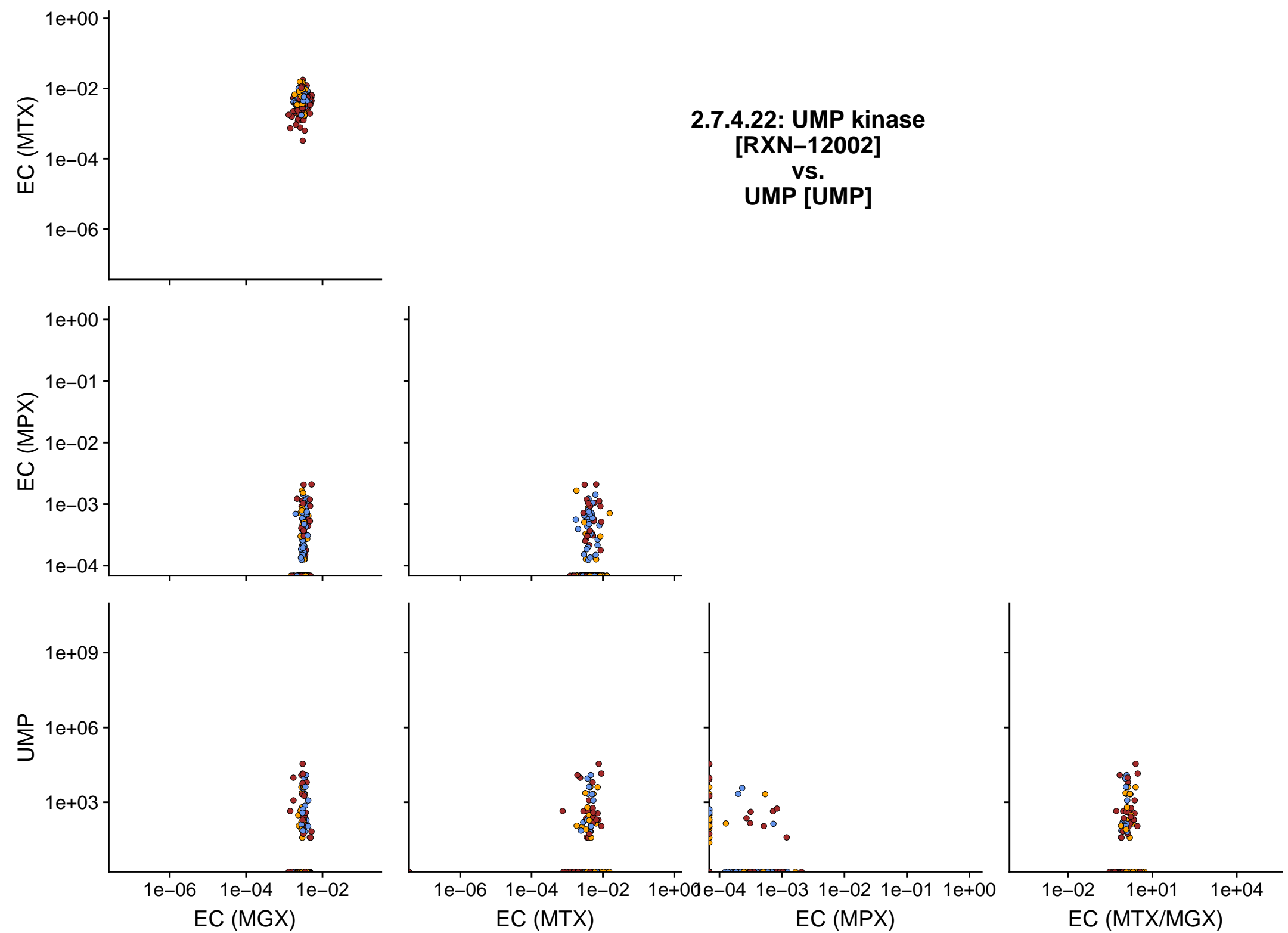




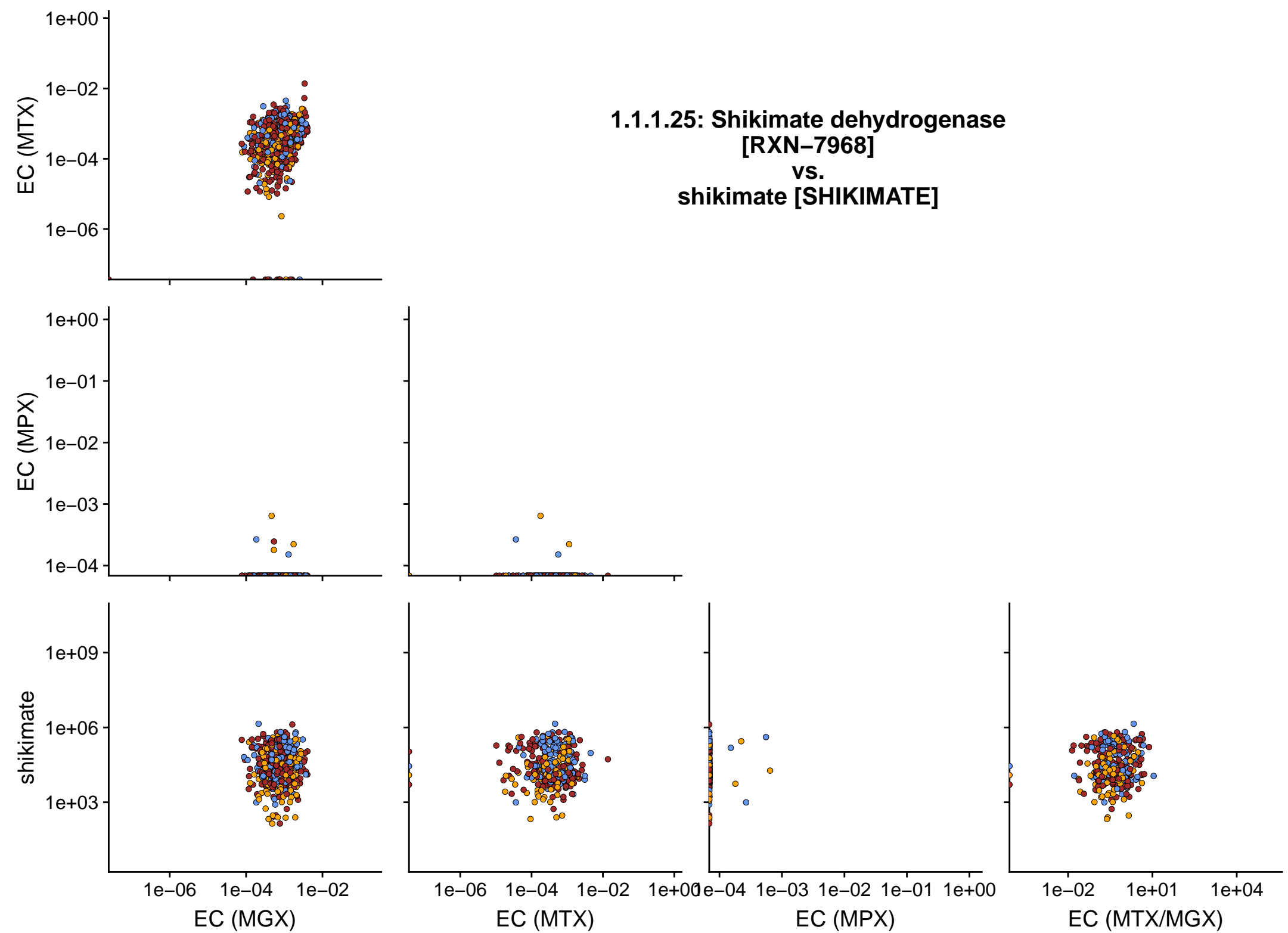
**4.2.3.1: Threonine synthase  
[THRESYN-RXN]  
vs.  
threonine [THR]**



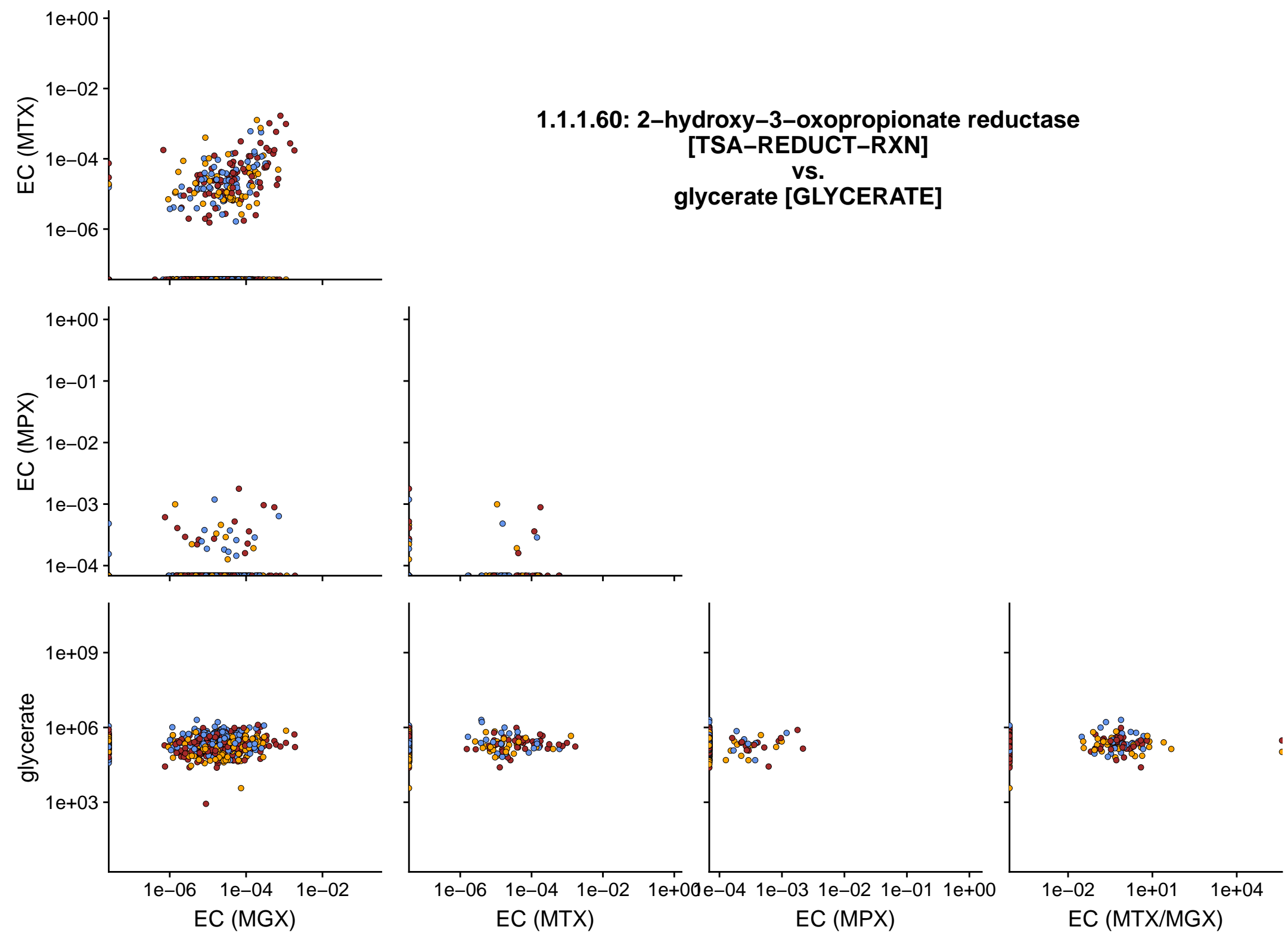
**2.7.4.22: UMP kinase  
[RXN-12002]  
vs.  
UMP [UMP]**



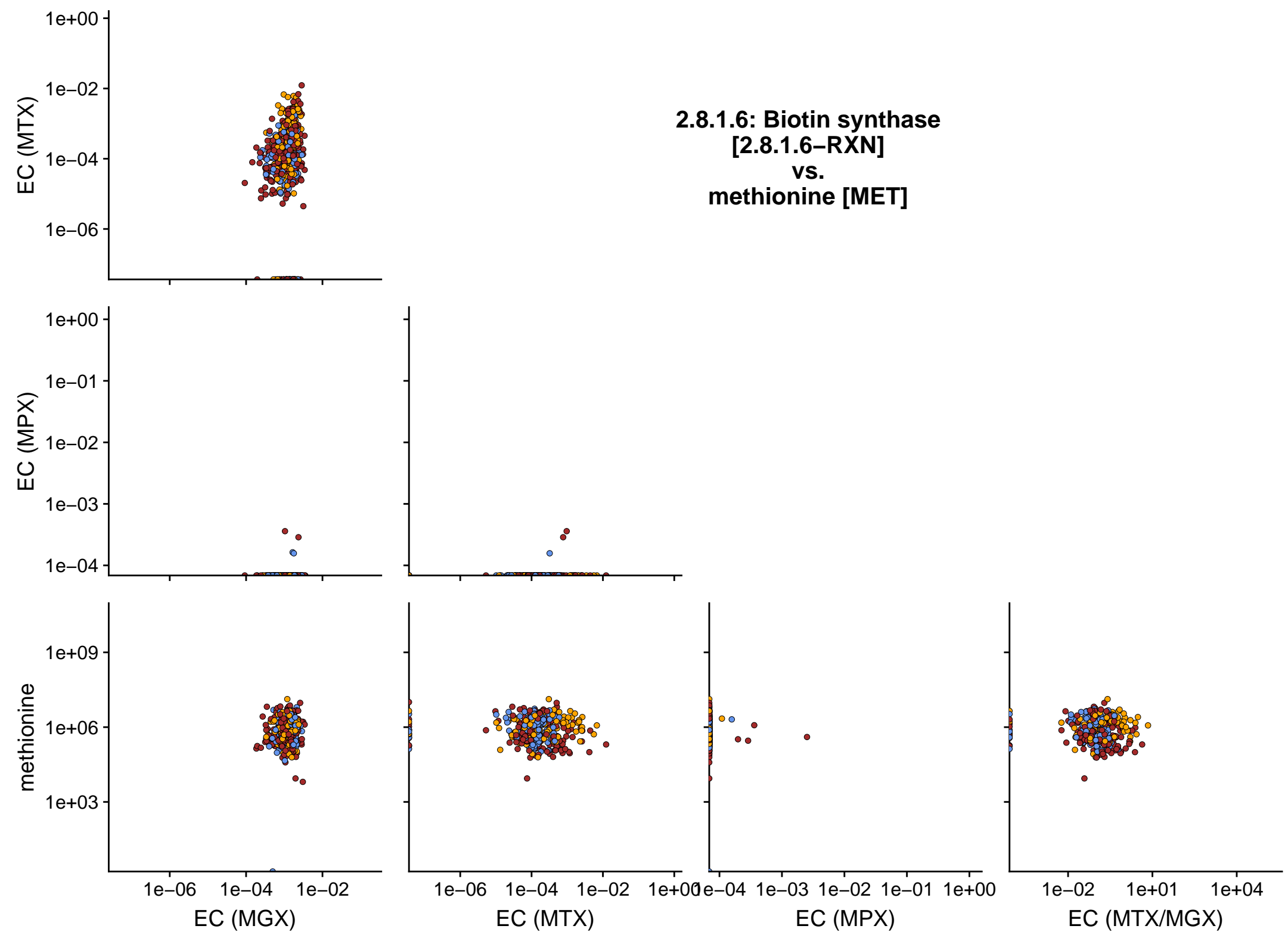
**1.1.1.25: Shikimate dehydrogenase  
[RXN-7968]  
vs.  
shikimate [SHIKIMATE]**



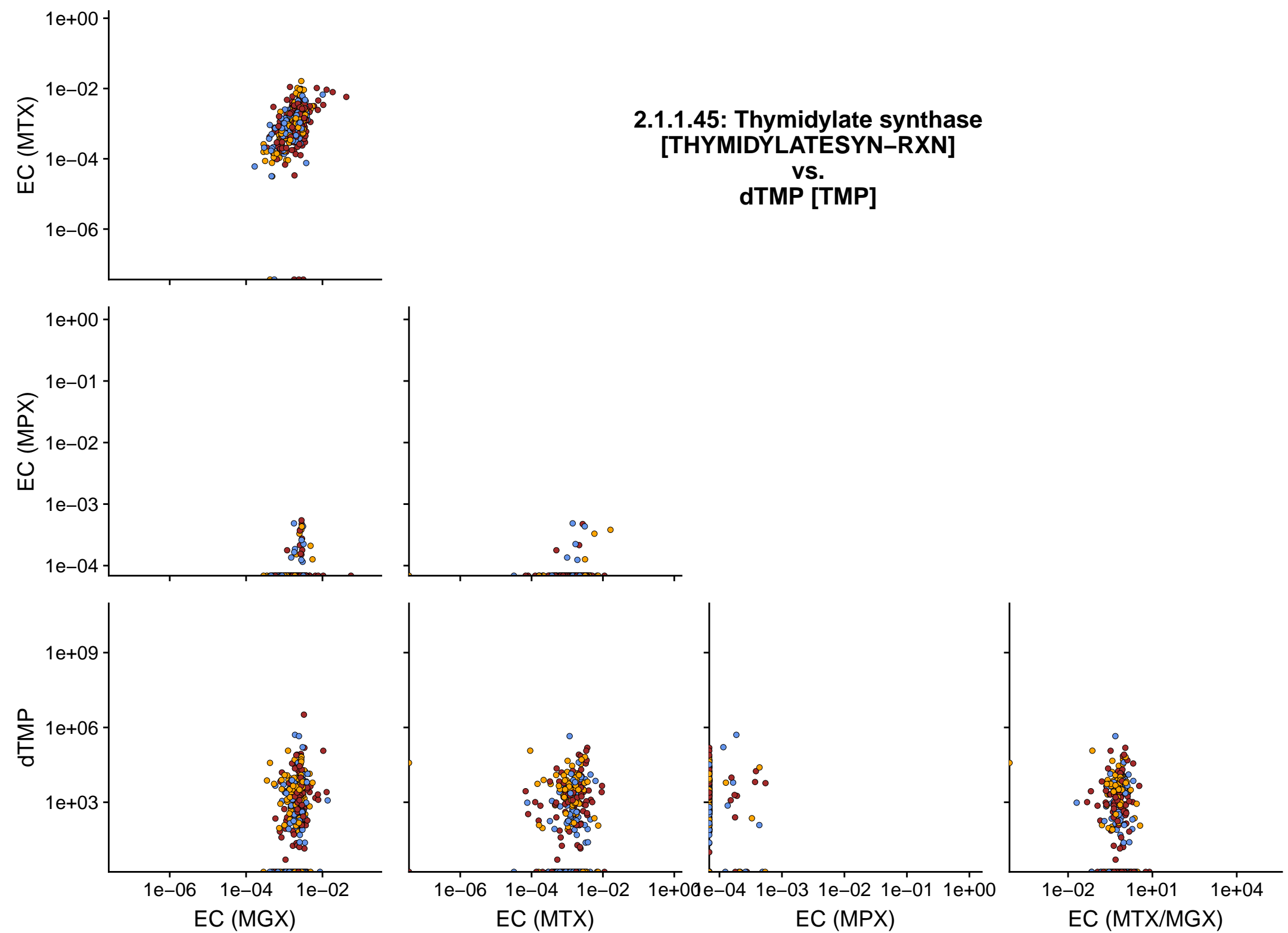
**1.1.1.60: 2-hydroxy-3-oxopropionate reductase  
[TSA-REDUCT-RXN]  
vs.  
glycerate [GLYCERATE]**



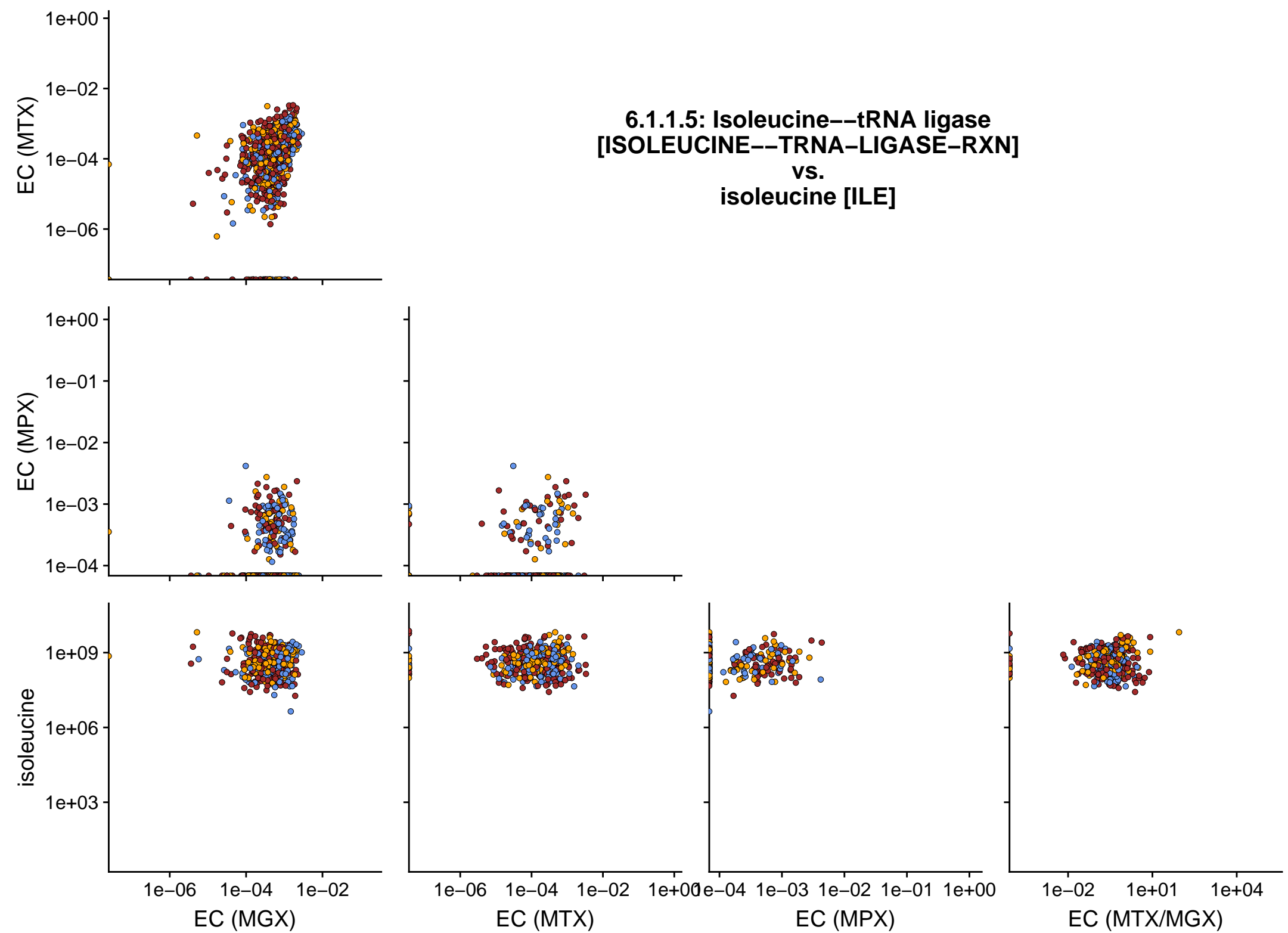
**2.8.1.6: Biotin synthase  
[2.8.1.6-RXN]  
vs.  
methionine [MET]**



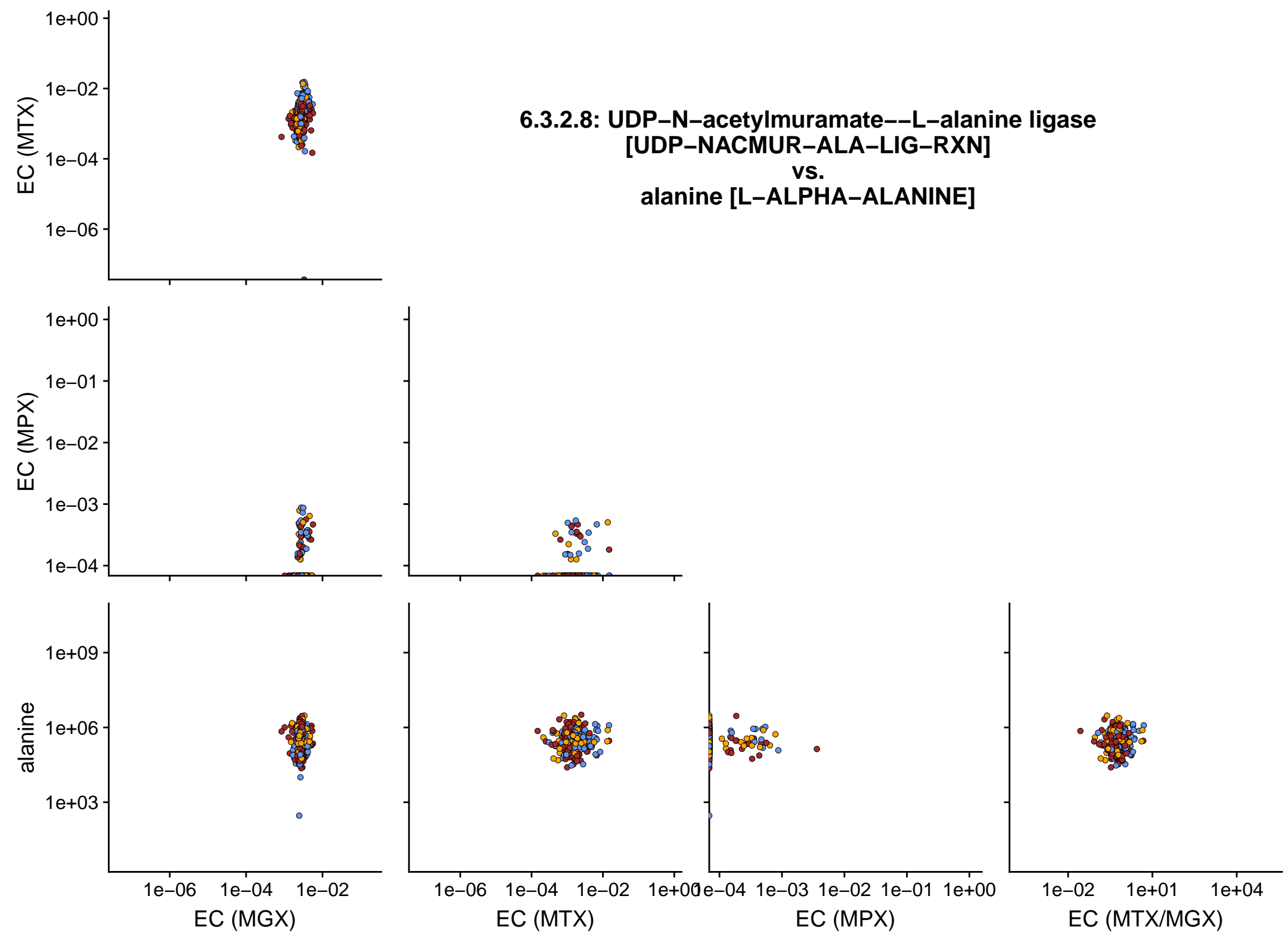
**2.1.1.45: Thymidylate synthase  
[THYMIDYLATESYN-RXN]  
vs.  
dTMP [TMP]**



**6.1.1.5: Isoleucine--tRNA ligase  
[ISOLEUCINE--TRNA-LIGASE-RXN]  
vs.  
isoleucine [ILE]**

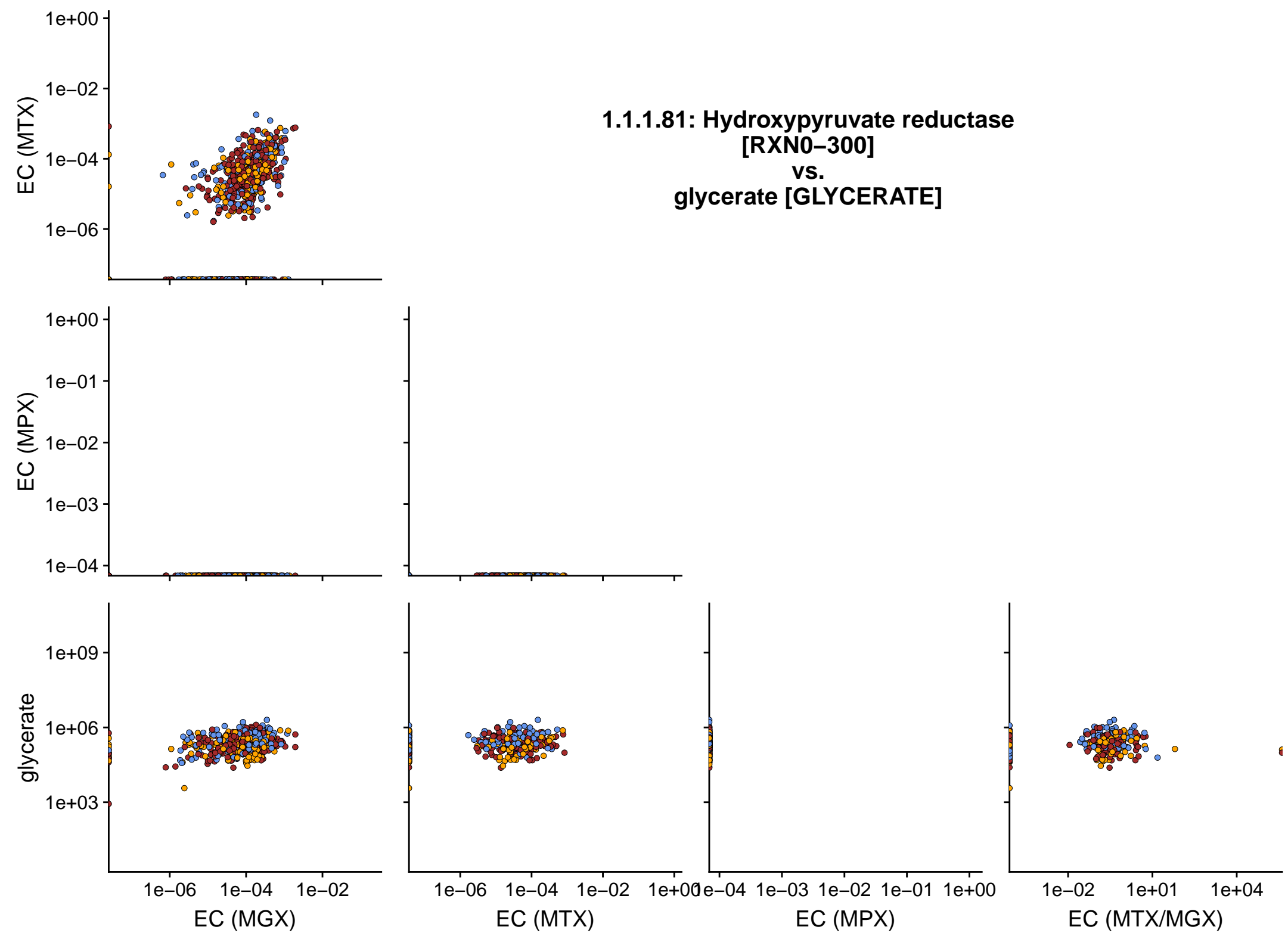


**6.3.2.8: UDP-N-acetylmuramate--L-alanine ligase  
[UDP-NACMUR-ALA-LIG-RXN]  
vs.  
alanine [L-ALPHA-ALANINE]**

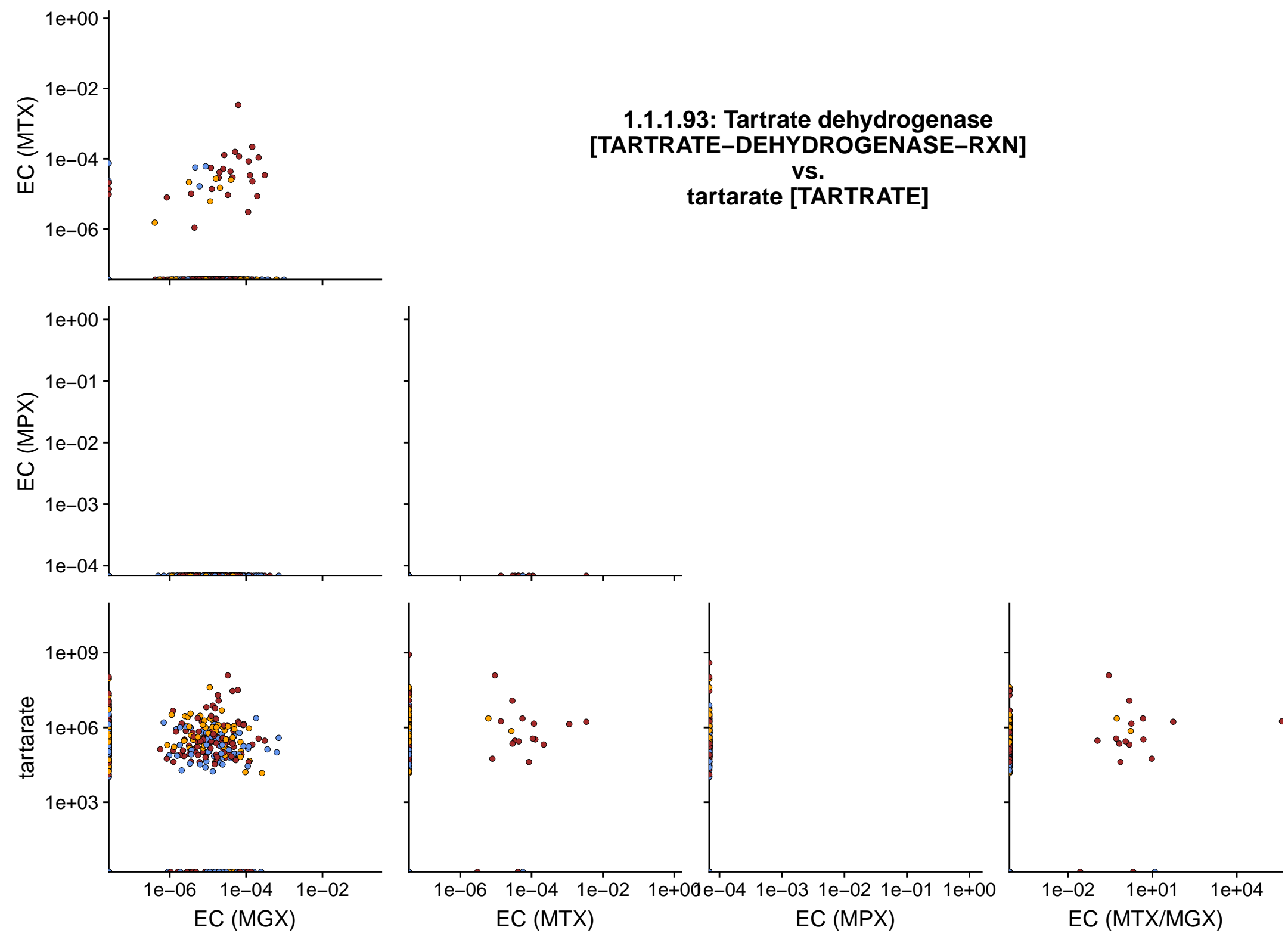




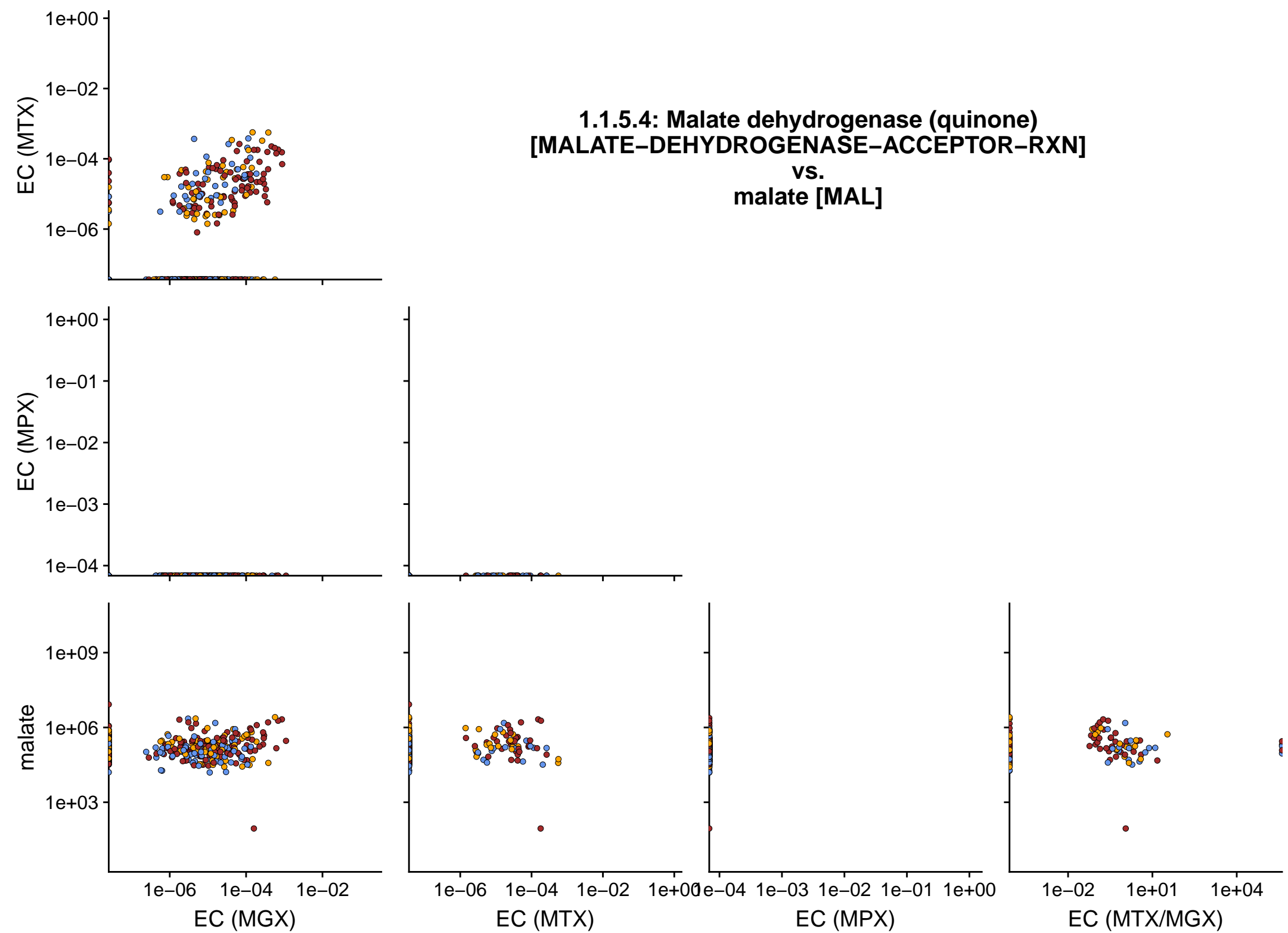
**1.1.1.81: Hydroxypyruvate reductase  
[RXN0-300]  
vs.  
glycerate [GLYCERATE]**



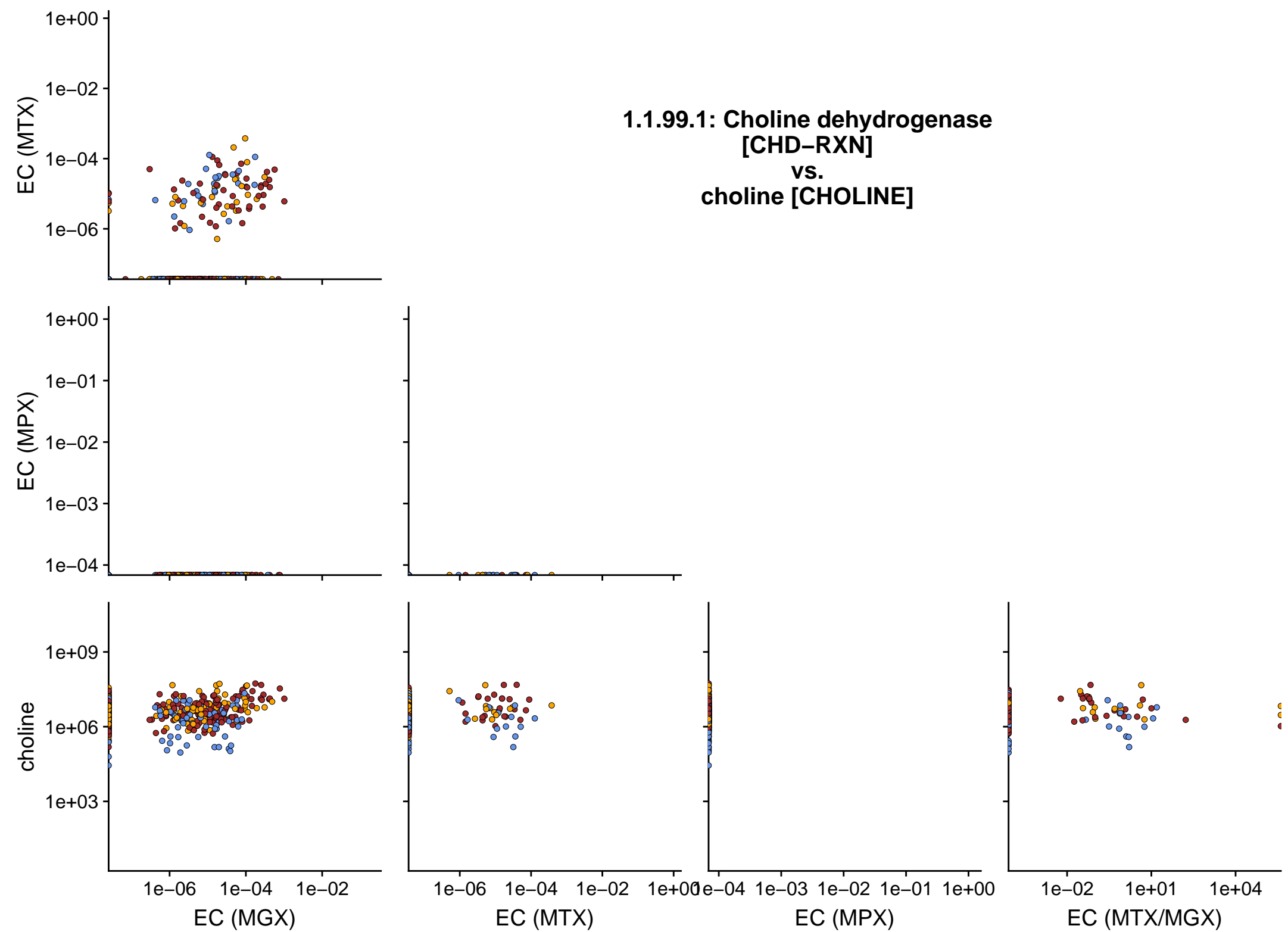
**1.1.1.93: Tartrate dehydrogenase  
[TARTRATE-DEHYDROGENASE-RXN]  
vs.  
tartarate [TARTRATE]**



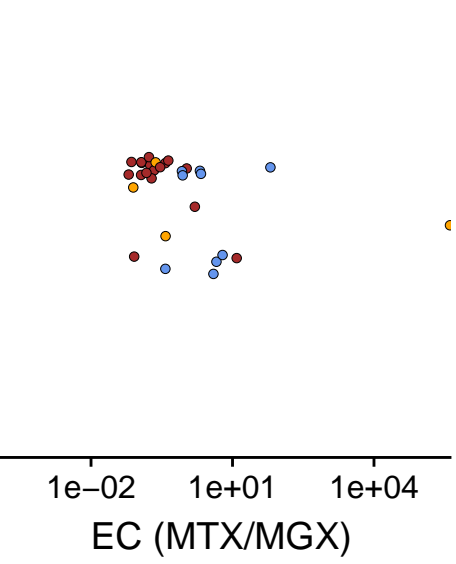
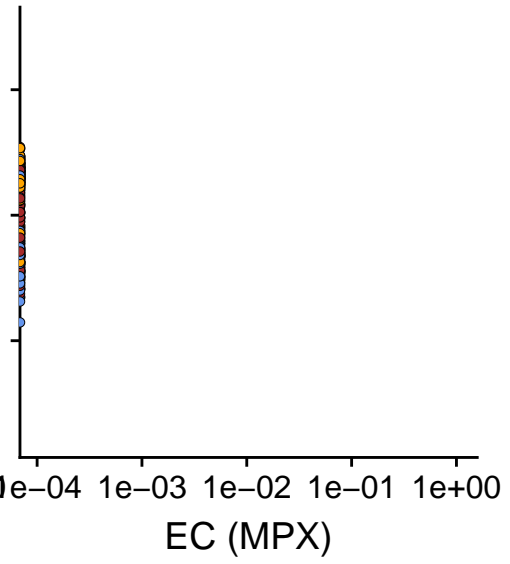
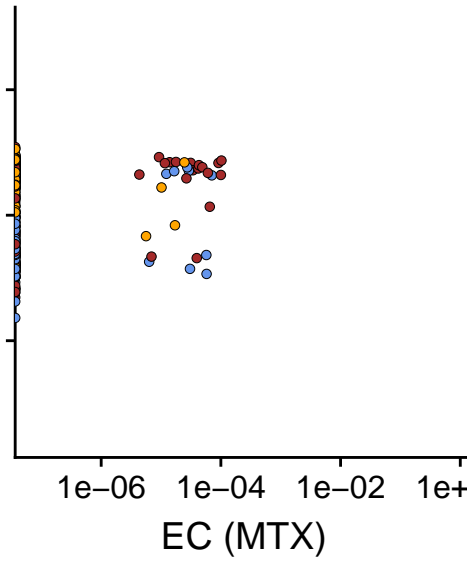
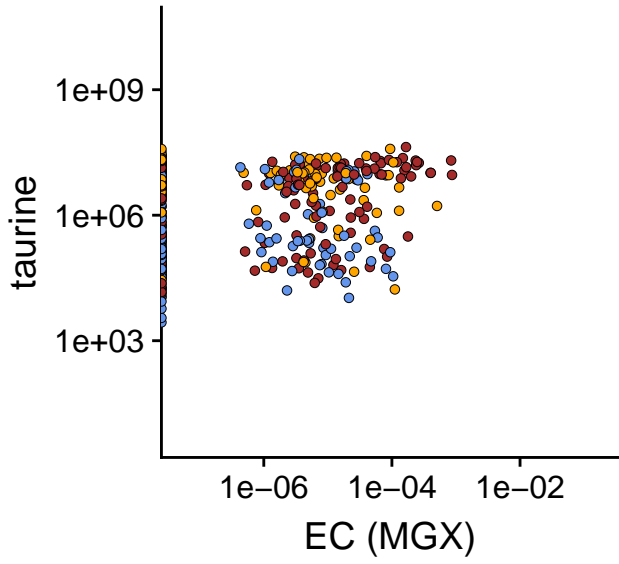
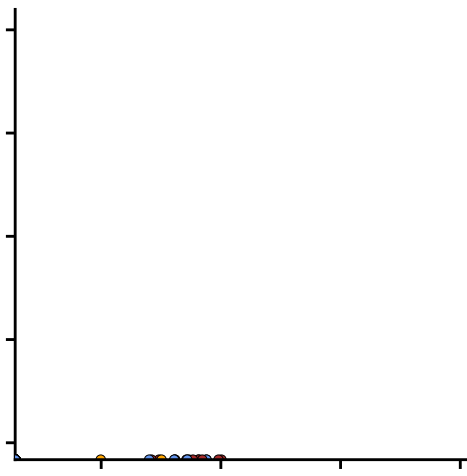
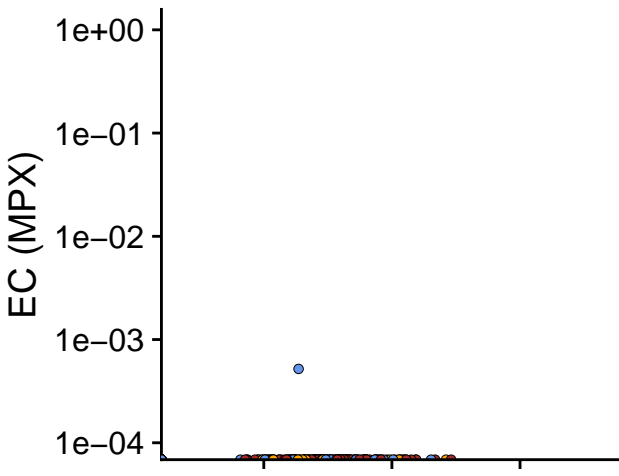
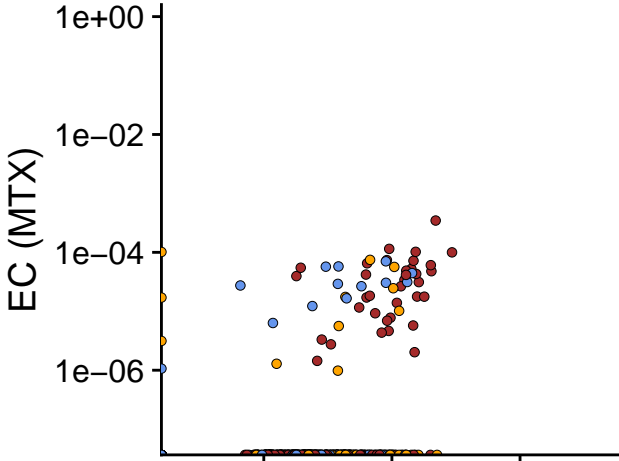
**1.1.5.4: Malate dehydrogenase (quinone)  
[MALATE-DEHYDROGENASE-ACCEPTOR-RXN]  
vs.  
malate [MAL]**



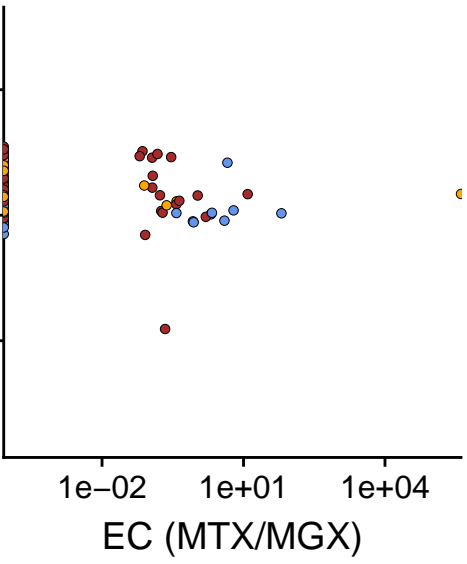
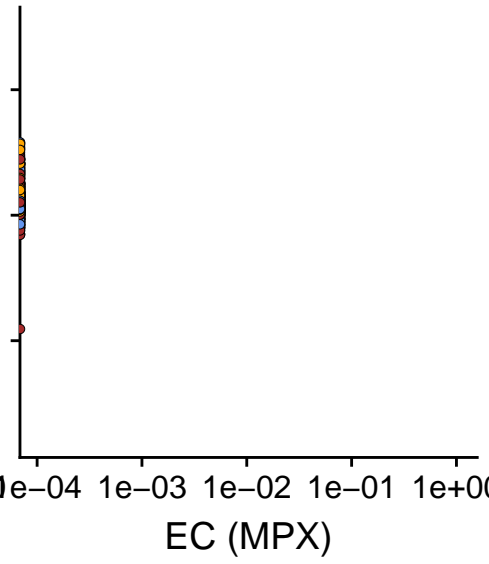
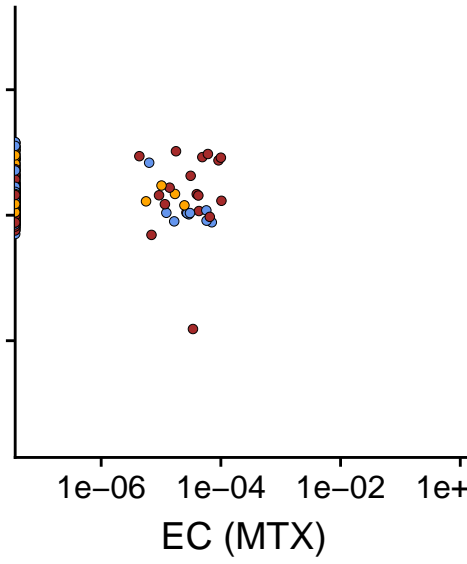
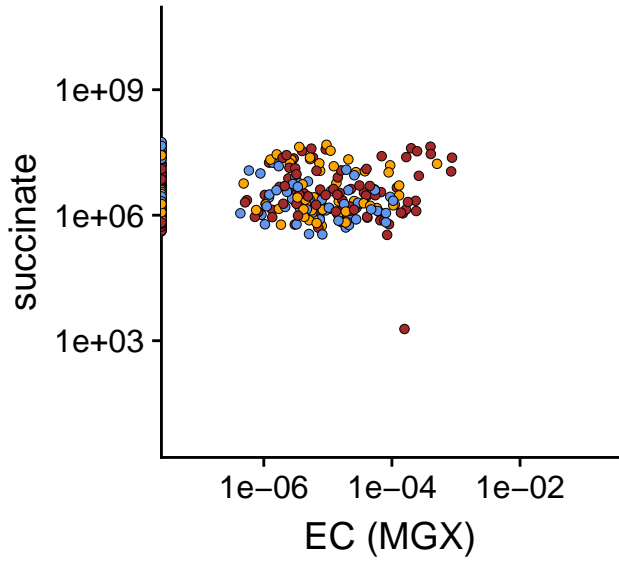
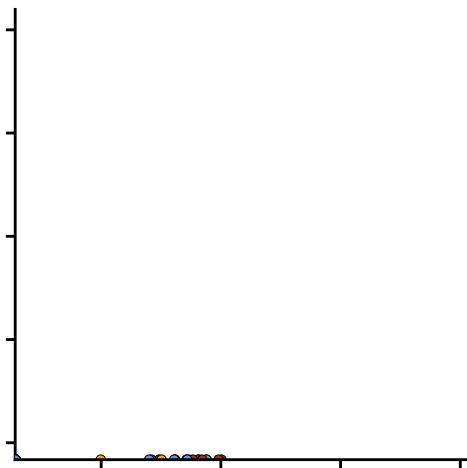
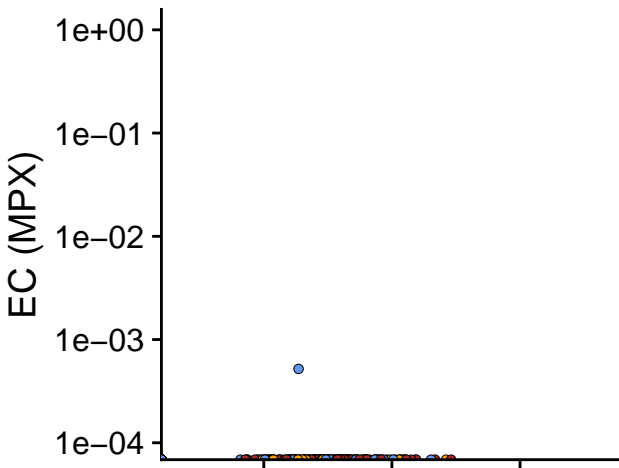
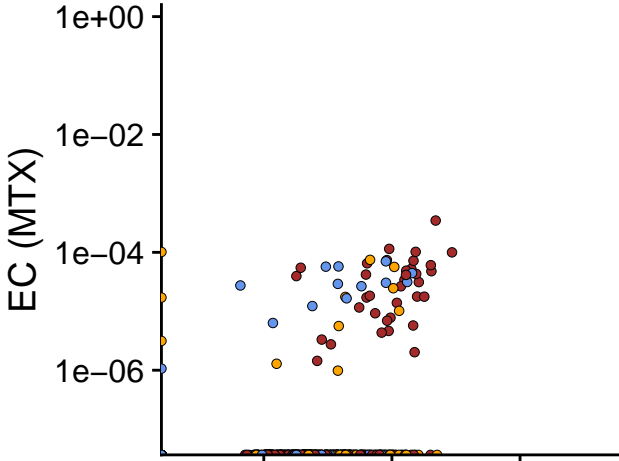
**1.1.99.1: Choline dehydrogenase  
[CHD-RXN]  
vs.  
choline [CHOLINE]**



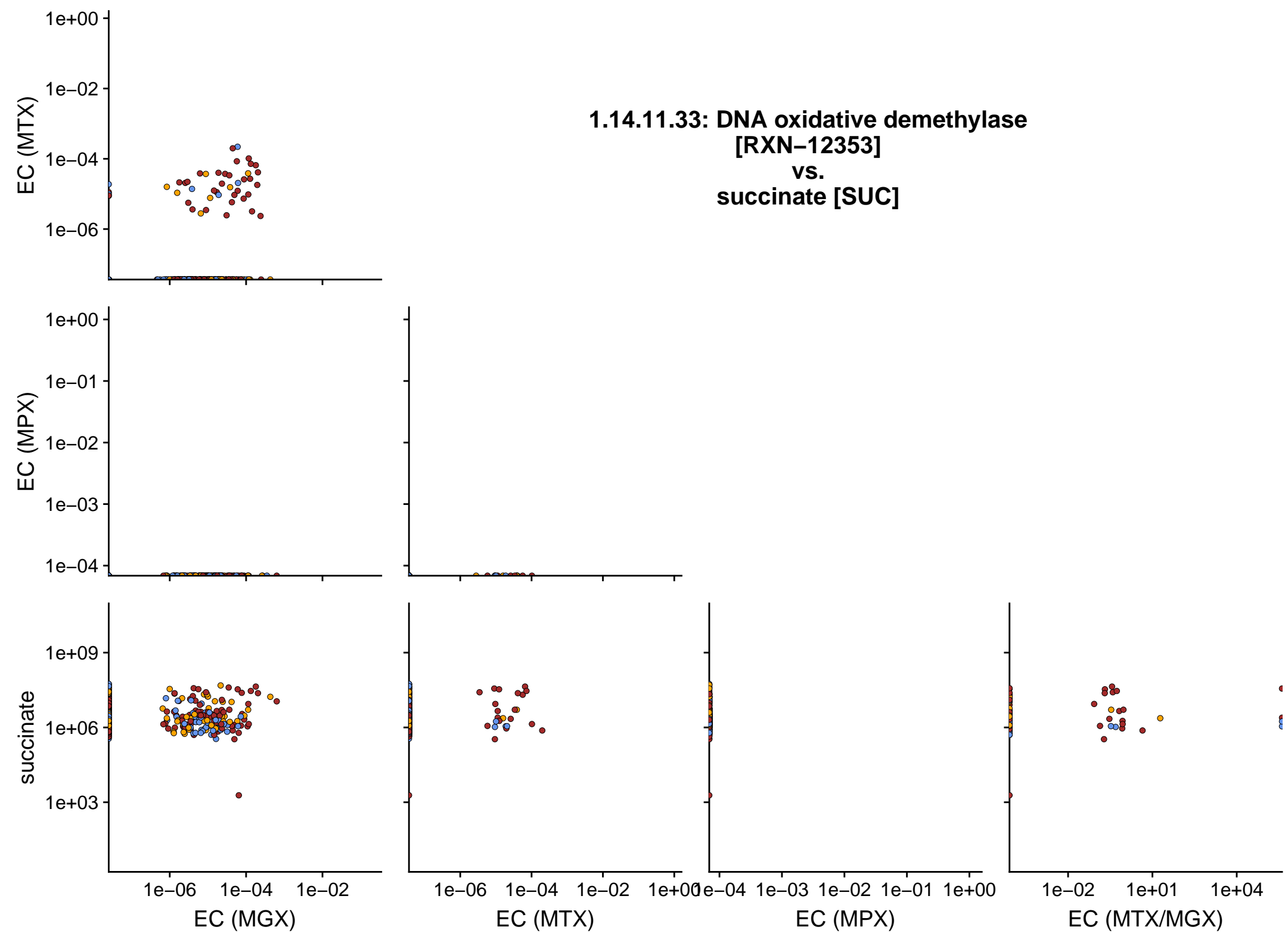
**1.14.11.17: Taurine dioxygenase  
[RXN0-299]  
vs.  
taurine [TAURINE]**



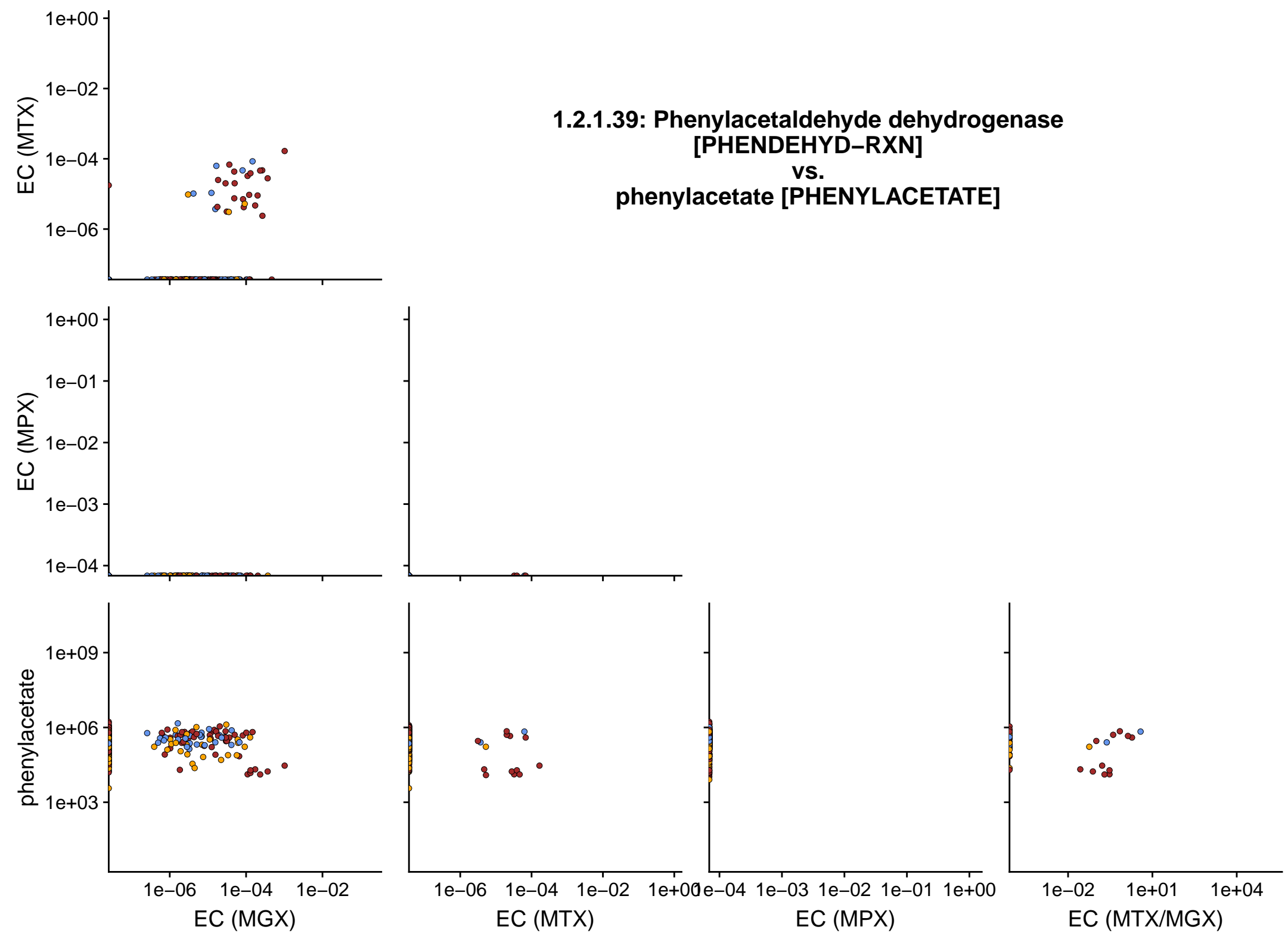
**1.14.11.17: Taurine dioxygenase  
[RXN0-299]  
vs.  
succinate [SUC]**



**1.14.11.33: DNA oxidative demethylase  
[RXN-12353]  
vs.  
succinate [SUC]**

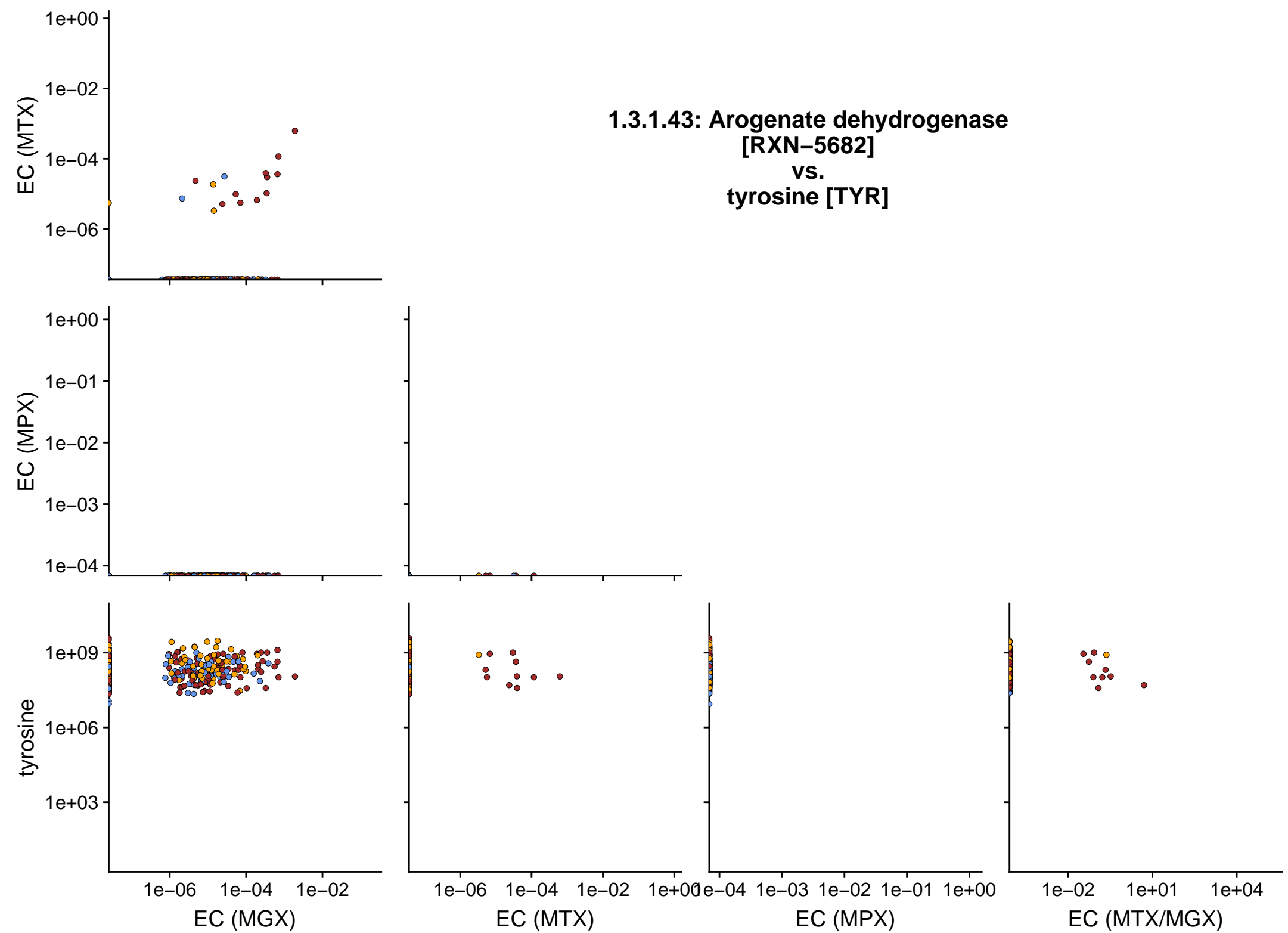


**1.2.1.39: Phenylacetaldehyde dehydrogenase  
[PHENDEHYD-RXN]  
vs.  
phenylacetate [PHENYLACETATE]**

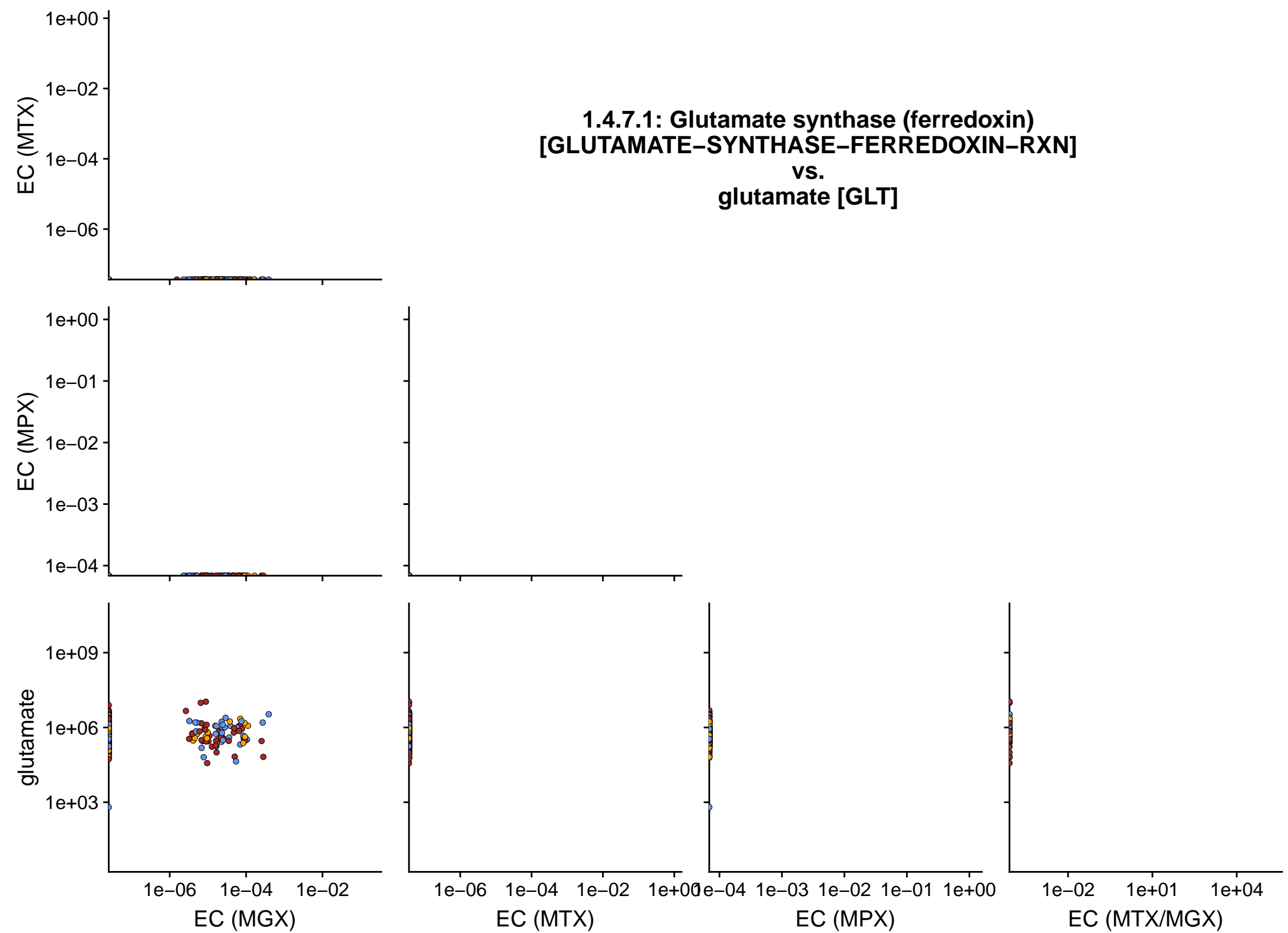




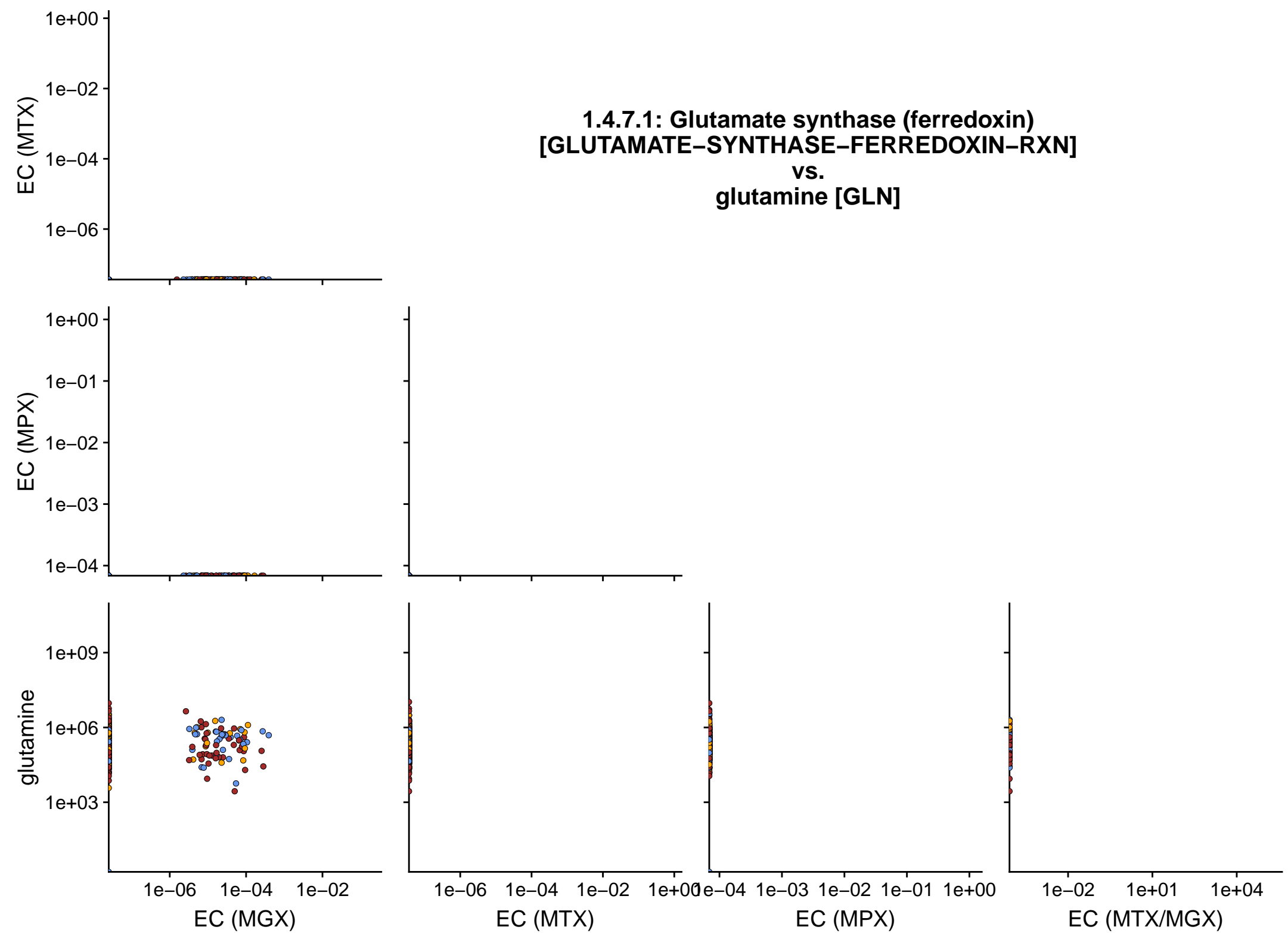
**1.3.1.43: Arogenate dehydrogenase  
[RXN-5682]  
vs.  
tyrosine [TYR]**



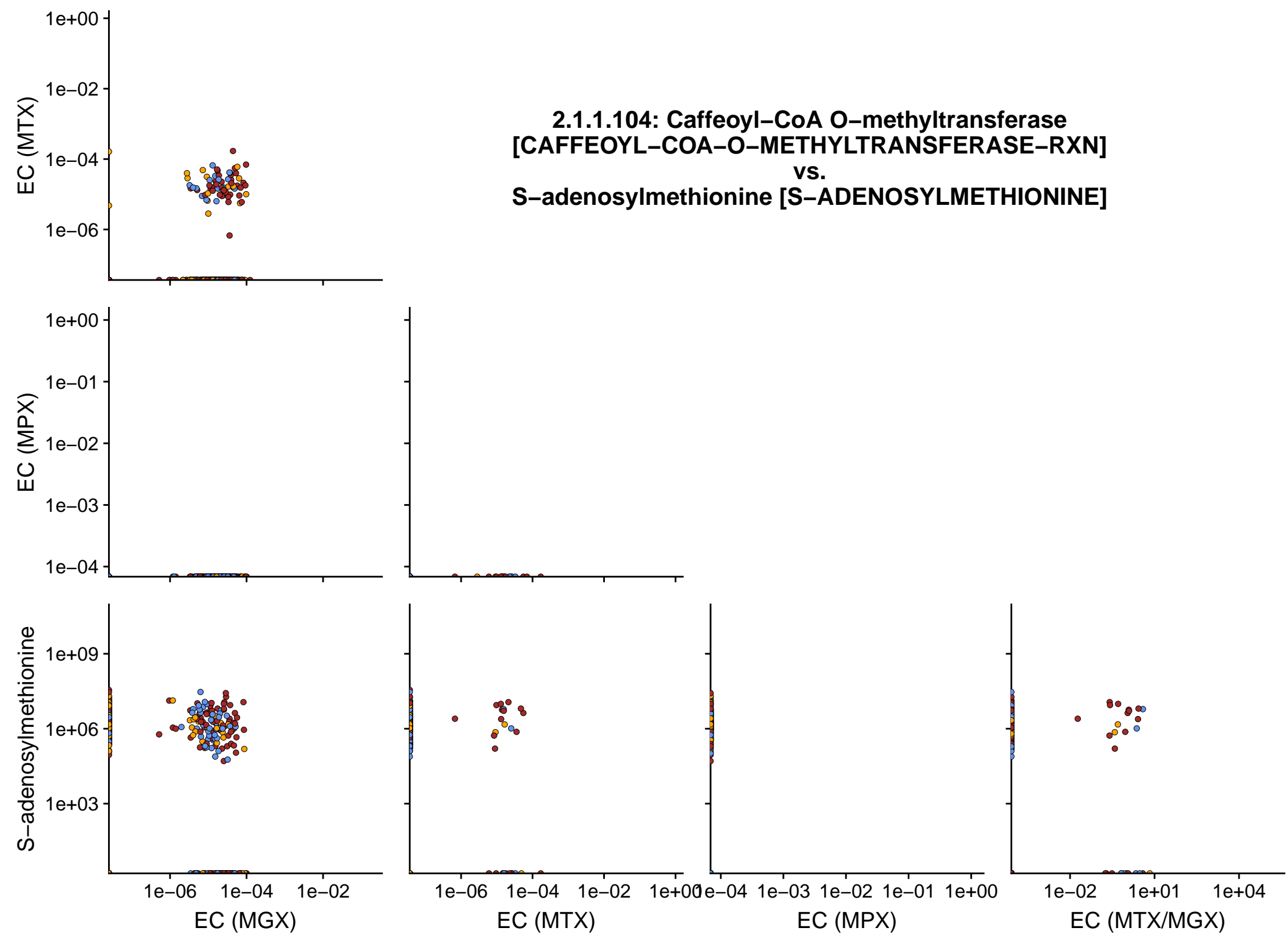
**1.4.7.1: Glutamate synthase (ferredoxin)  
[GLUTAMATE-SYNTHASE-FERREDOXIN-RXN]  
vs.  
glutamate [GLT]**



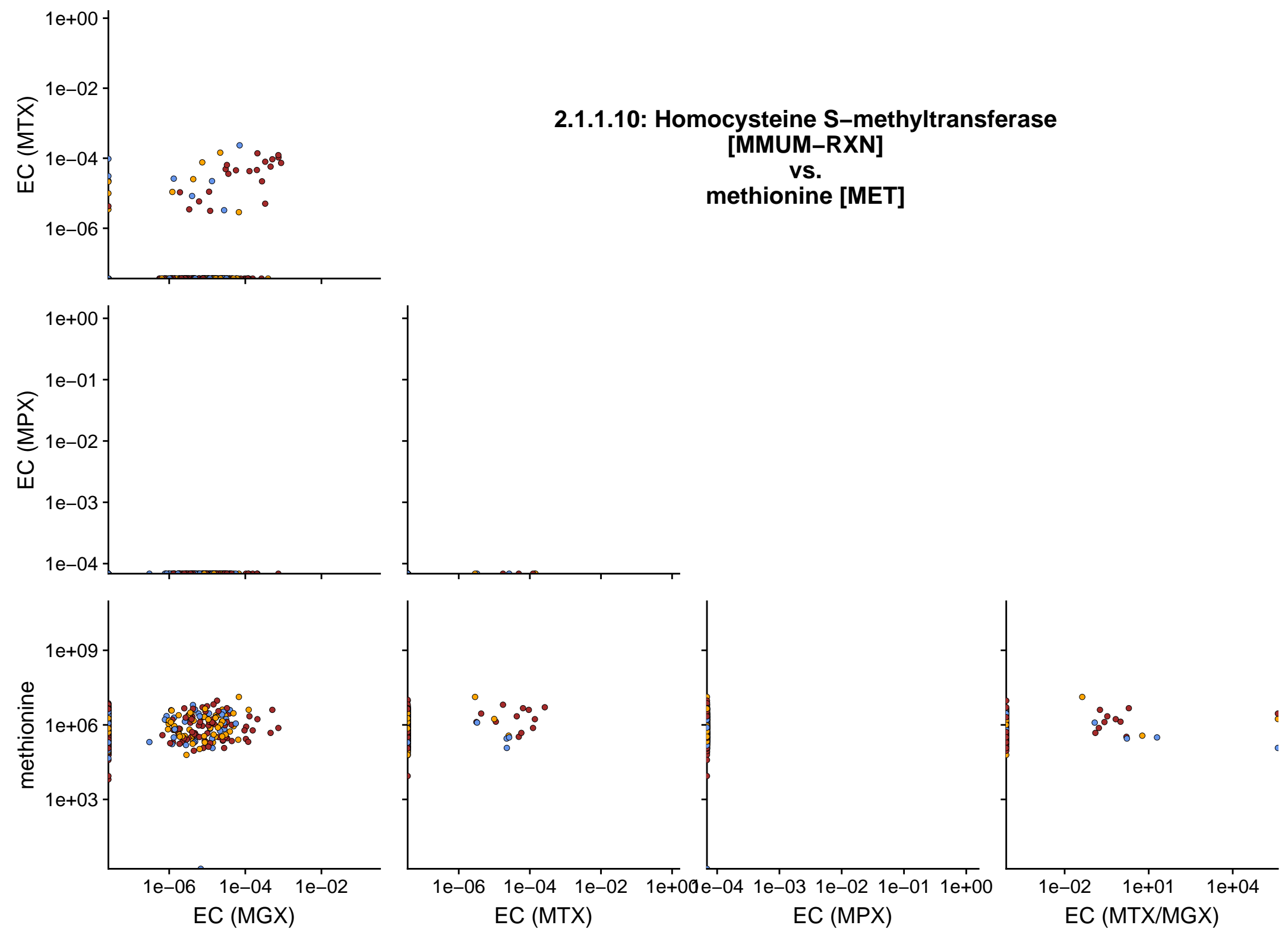
**1.4.7.1: Glutamate synthase (ferredoxin)  
[GLUTAMATE-SYNTHASE-FERREDOXIN-RXN]  
vs.  
glutamine [GLN]**



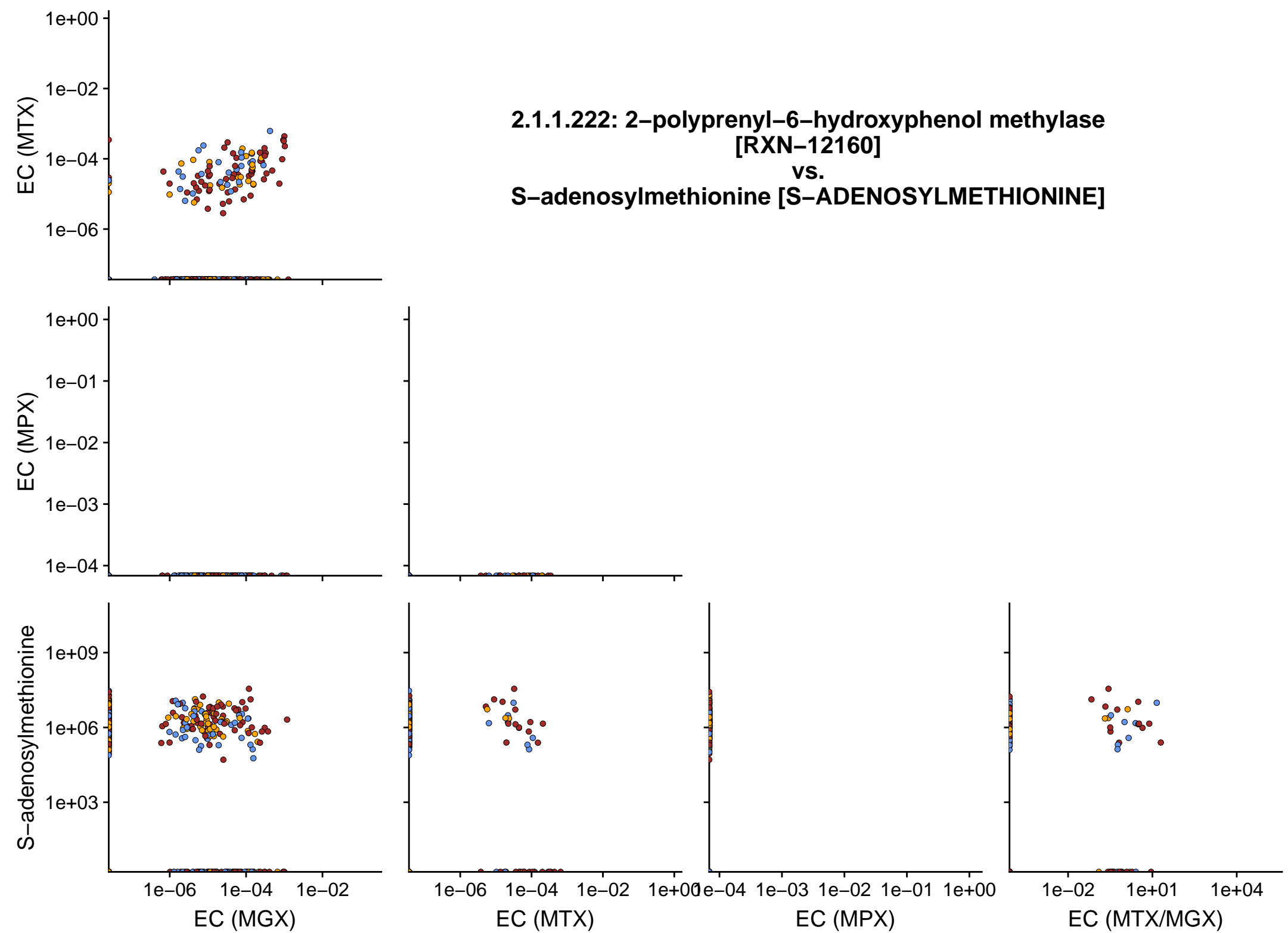
**2.1.1.104: Caffeoyl-CoA O-methyltransferase  
[CAFFEOYL-COA-O-METHYLTRANSFERASE-RXN]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**



**2.1.1.10: Homocysteine S-methyltransferase  
[MMUM-RXN]  
vs.  
methionine [MET]**



**2.1.1.222: 2-polyprenyl-6-hydroxyphenol methylase  
[RXN-12160]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**

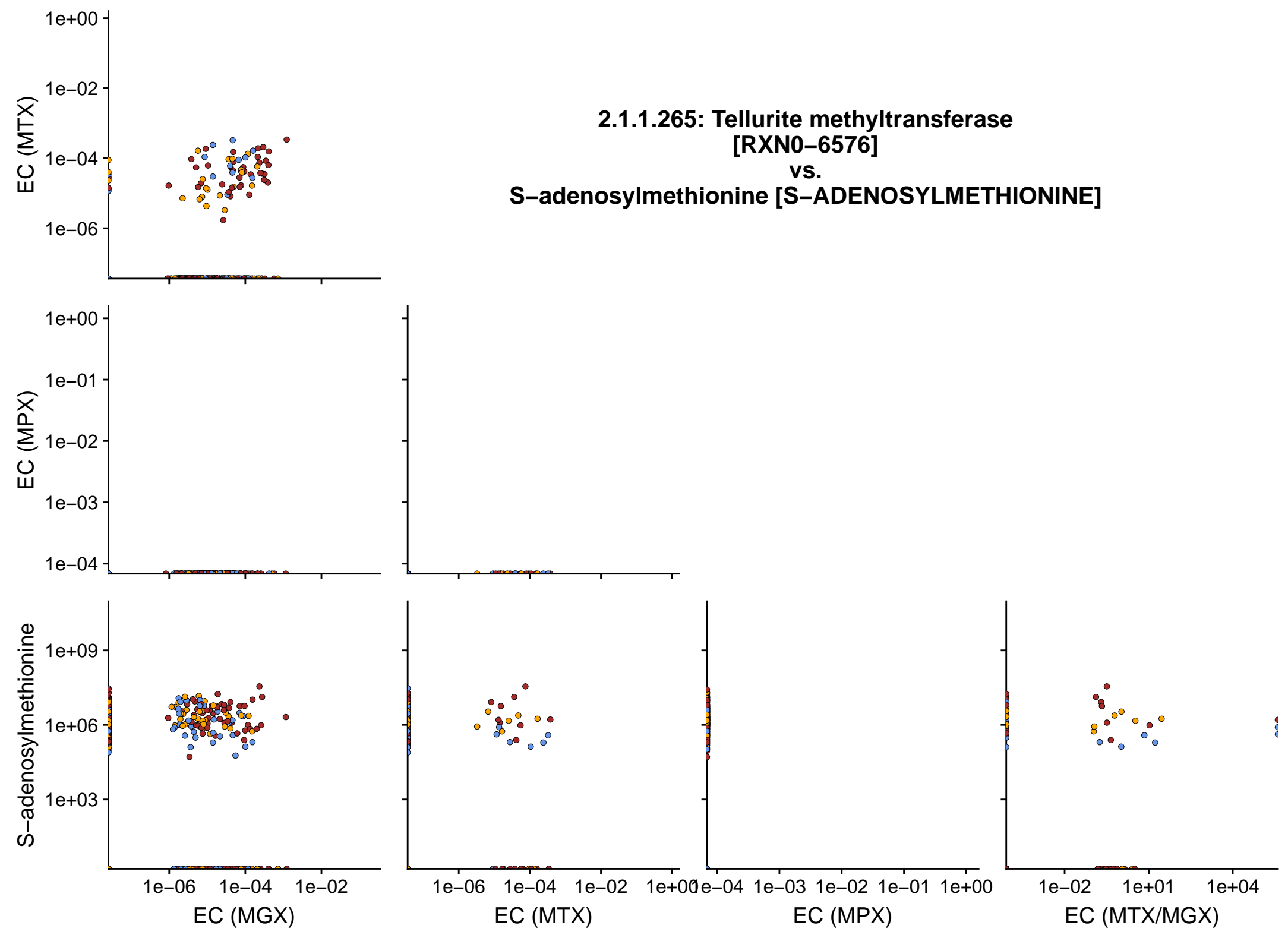


**2.1.1.265: Tellurite methyltransferase**

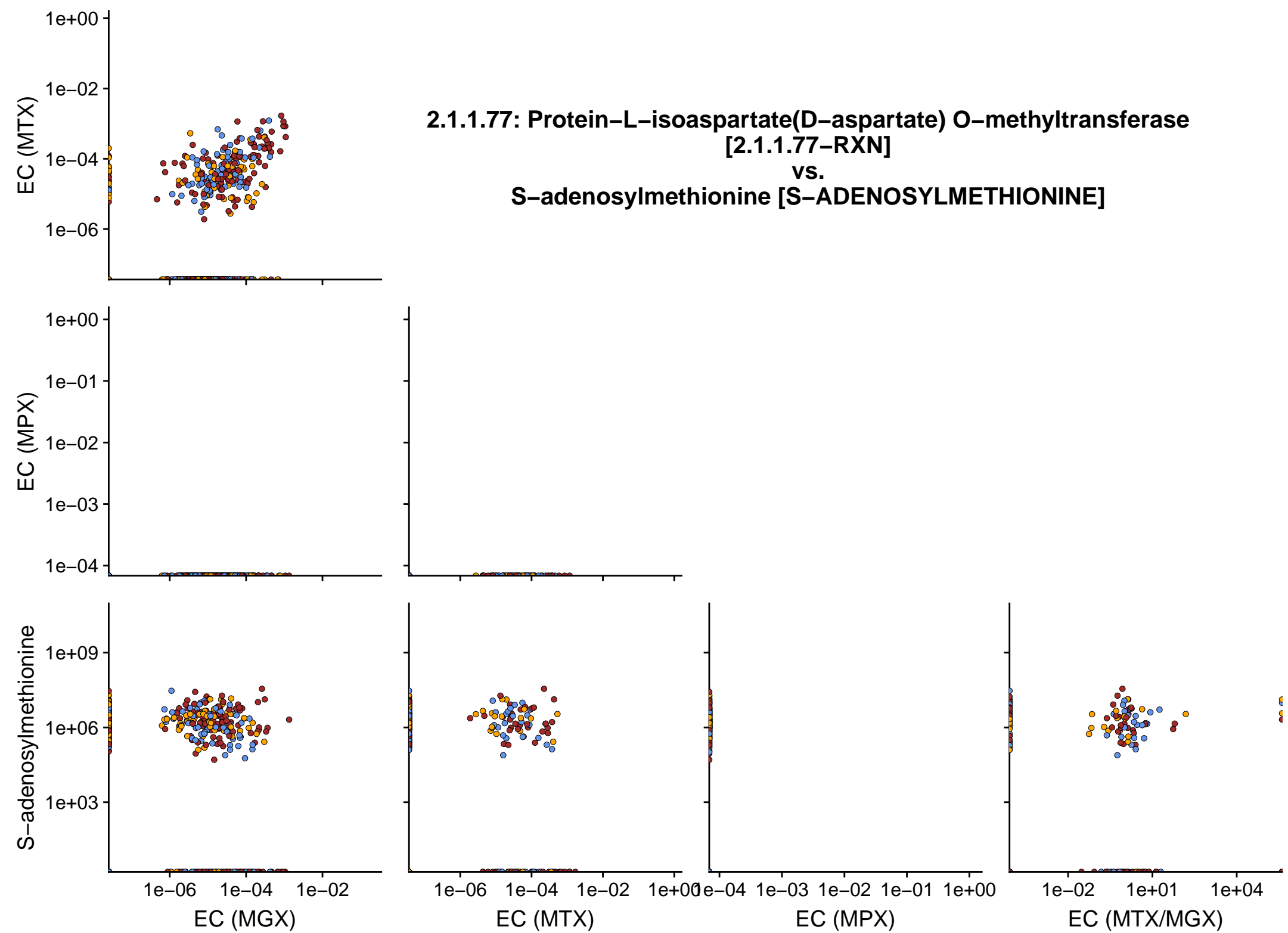
**[RXN0-6576]**

**vs.**

**S-adenosylmethionine [S-ADENOSYLMETHIONINE]**

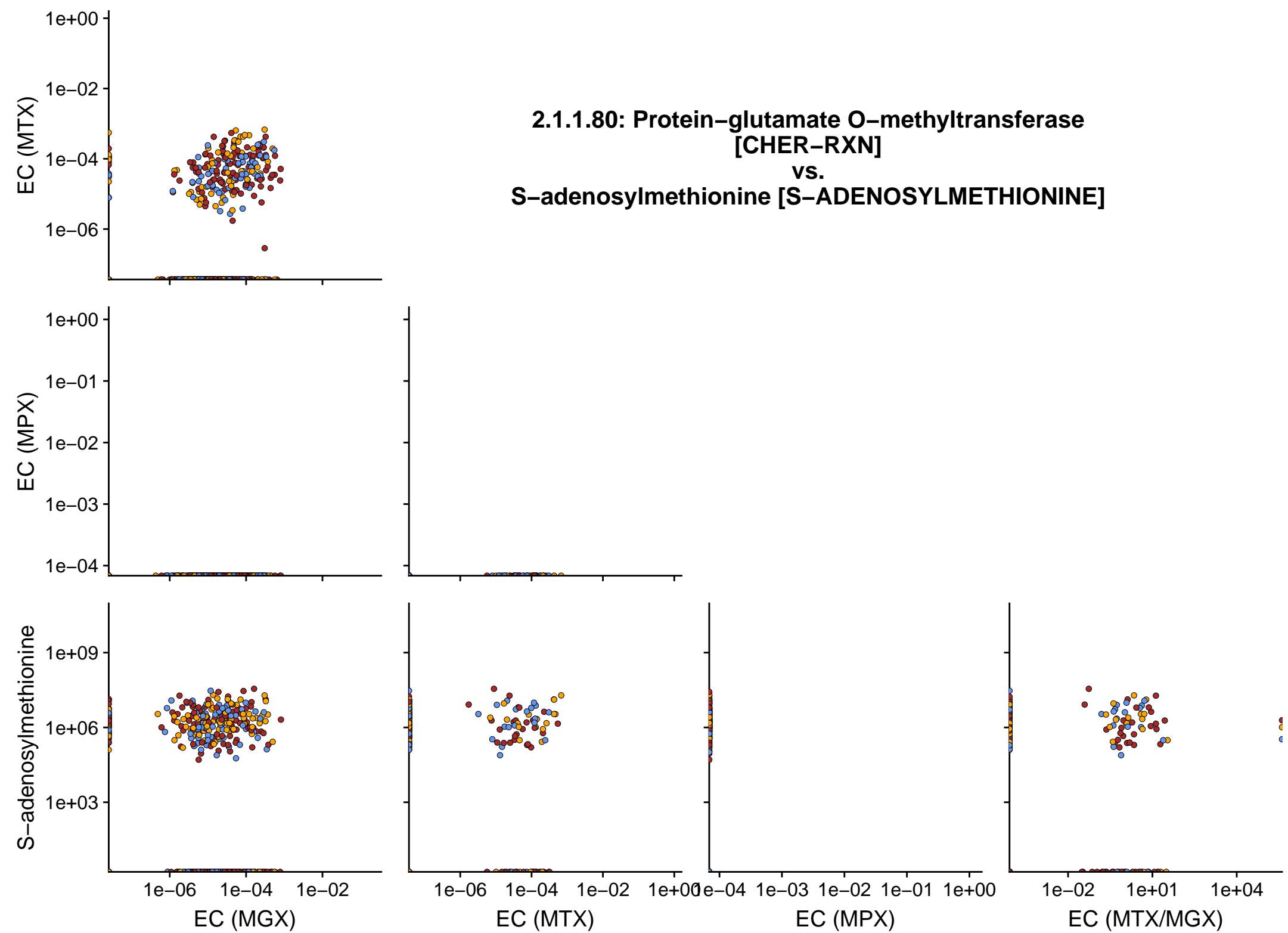


**2.1.1.77: Protein-L-isoaspartate(D-aspartate) O-methyltransferase  
[2.1.1.77-RXN]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**

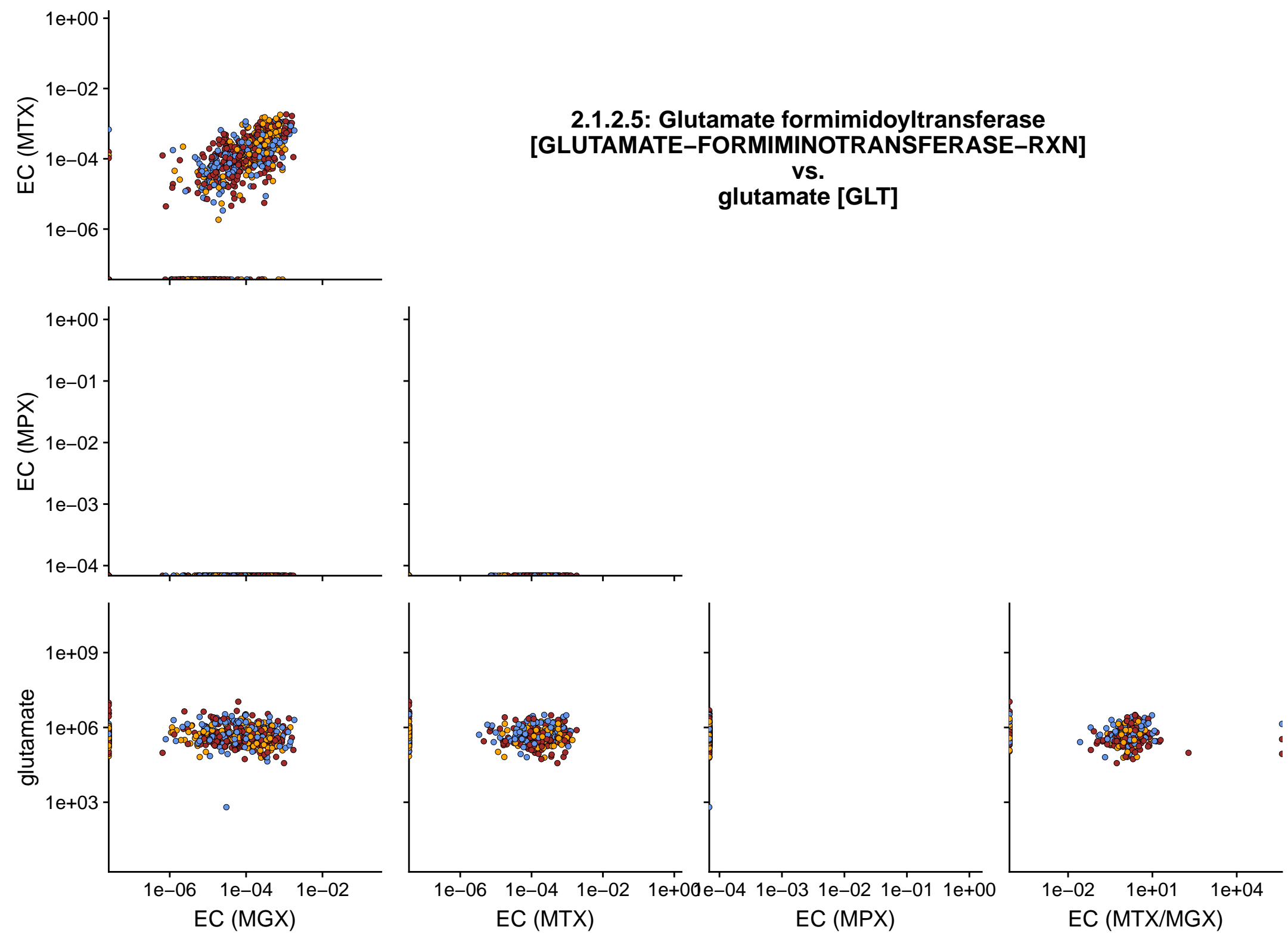




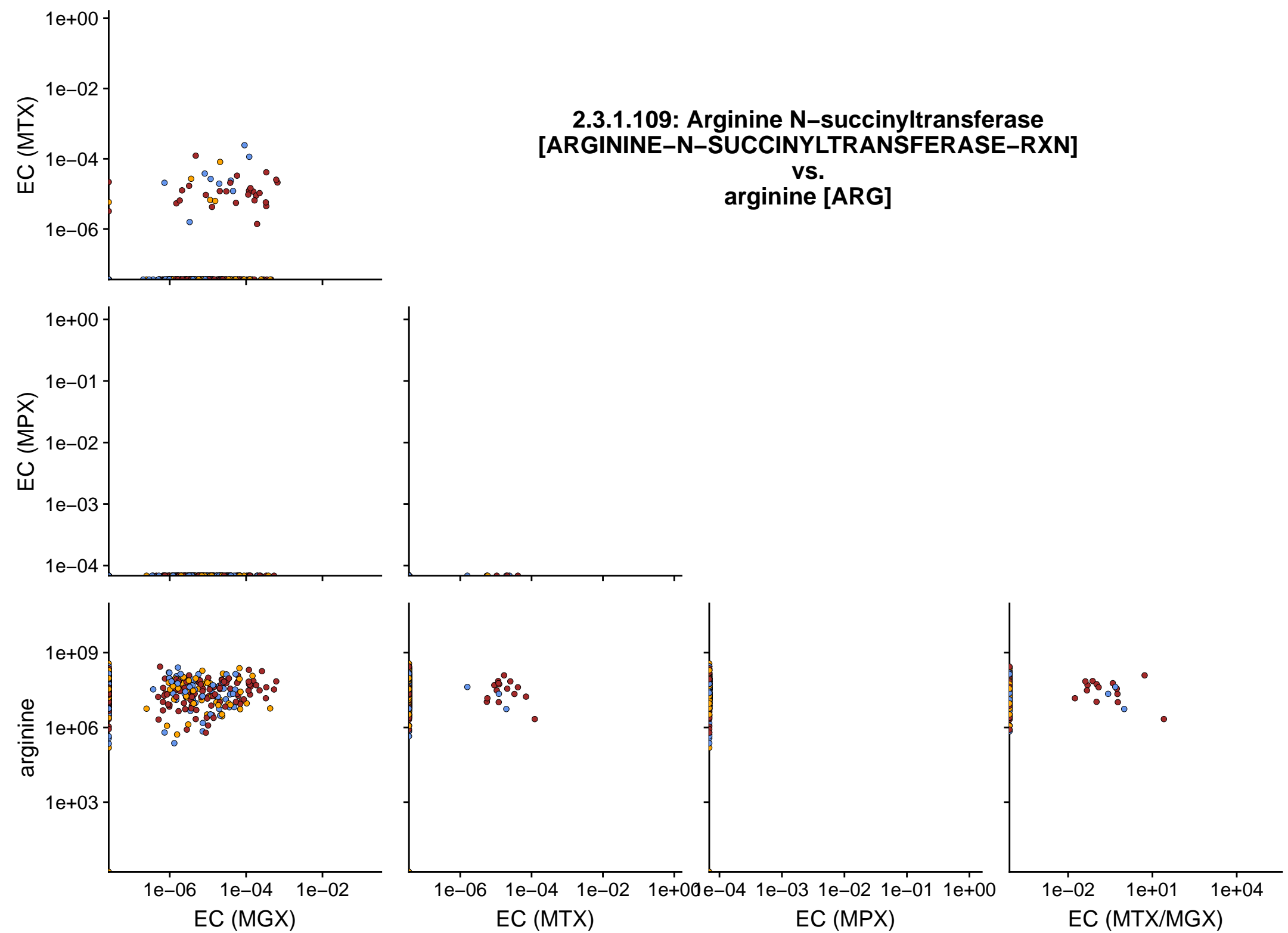
**2.1.1.80: Protein-glutamate O-methyltransferase  
[CHER-RXN]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**



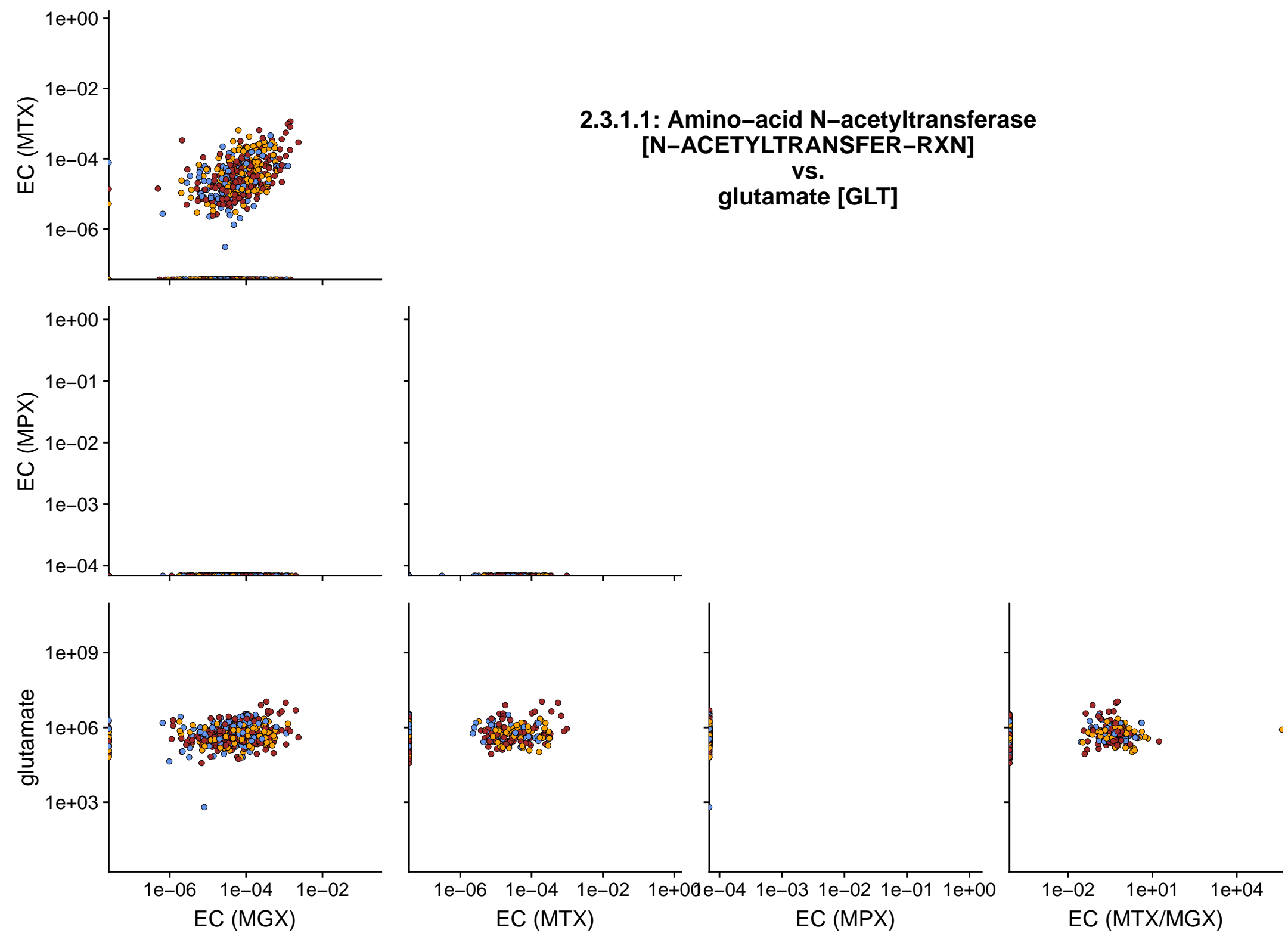
**2.1.2.5: Glutamate formimidoyltransferase  
[GLUTAMATE-FORMIMINOTRANSFERASE-RXN]  
vs.  
glutamate [GLT]**



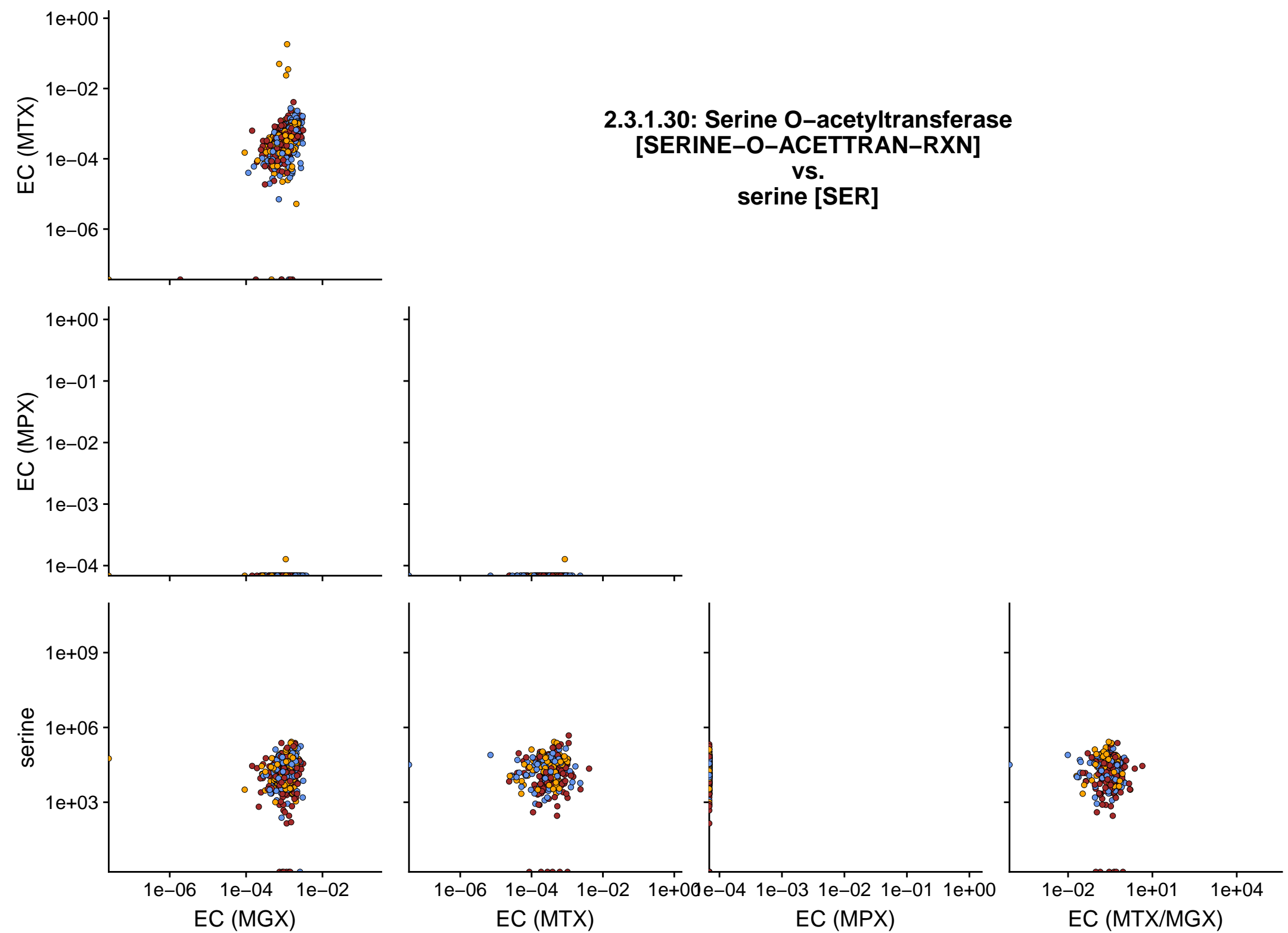
**2.3.1.109: Arginine N-succinyltransferase  
[ARGININE-N-SUCCINYLTRANSFERASE-RXN]  
vs.  
arginine [ARG]**



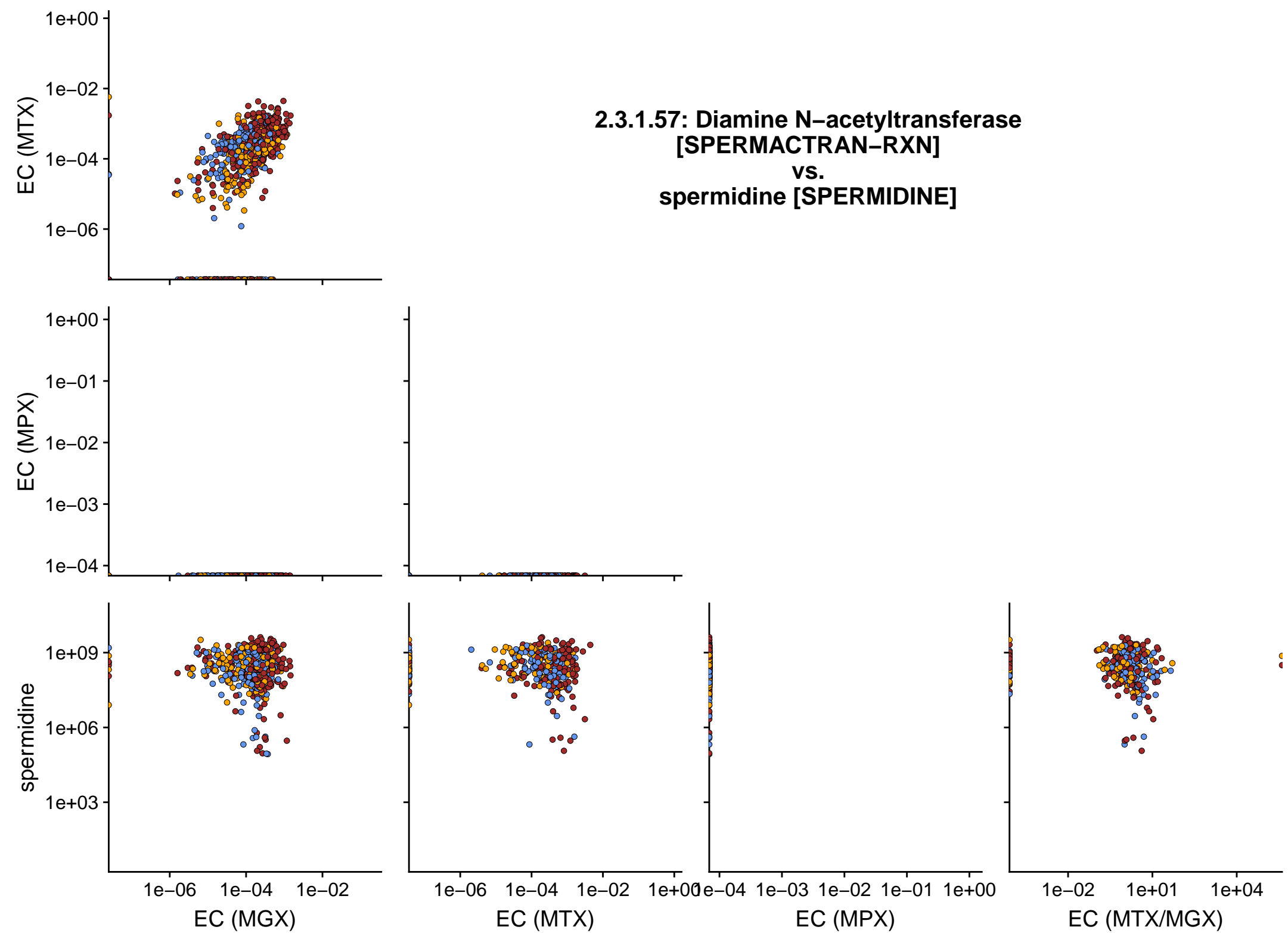
**2.3.1.1: Amino-acid N-acetyltransferase  
[N-ACETYLTRANSFER-RXN]  
vs.  
glutamate [GLT]**



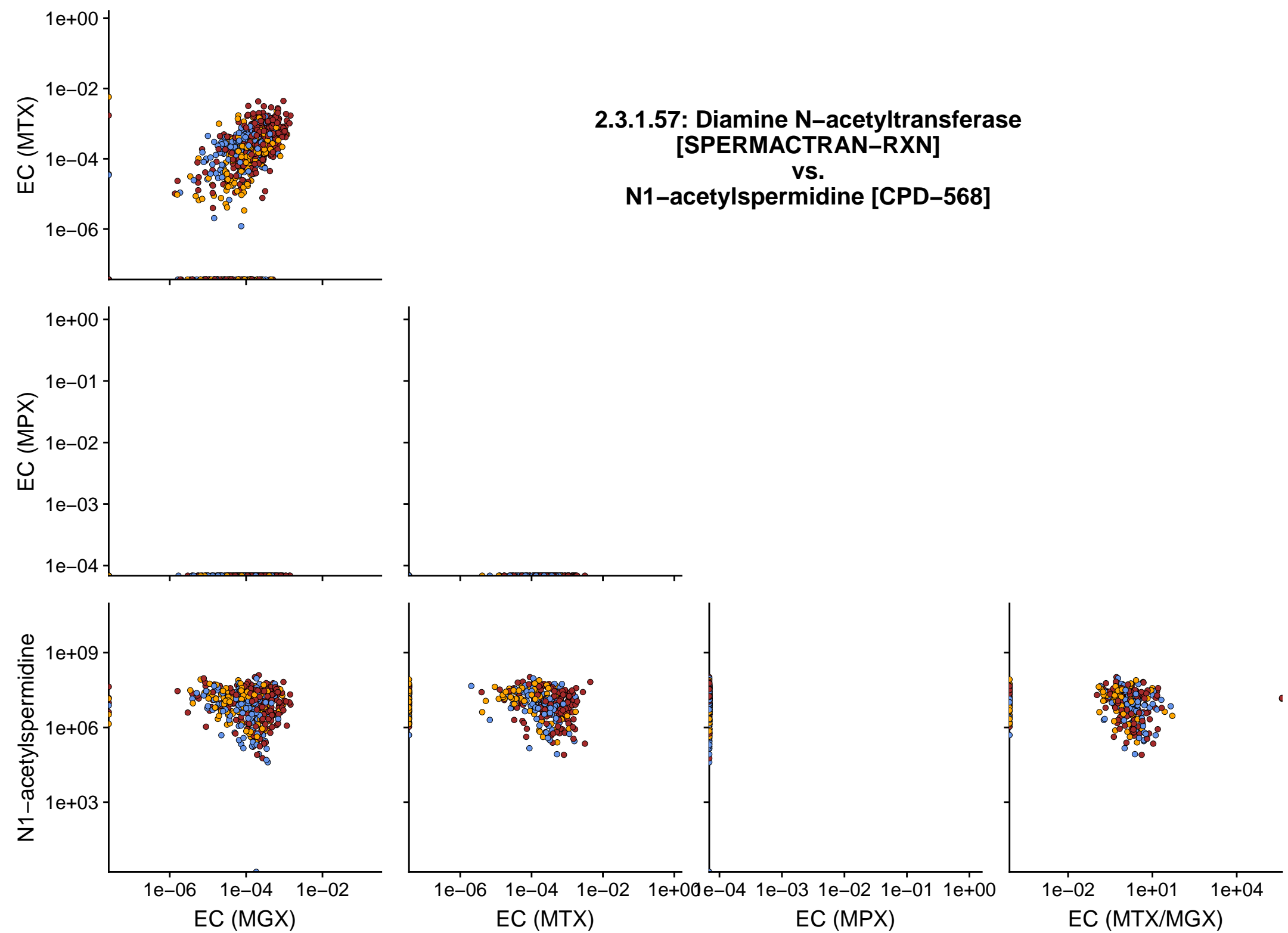
**2.3.1.30: Serine O-acetyltransferase  
[SERINE-O-ACETTRAN-RXN]  
vs.  
serine [SER]**



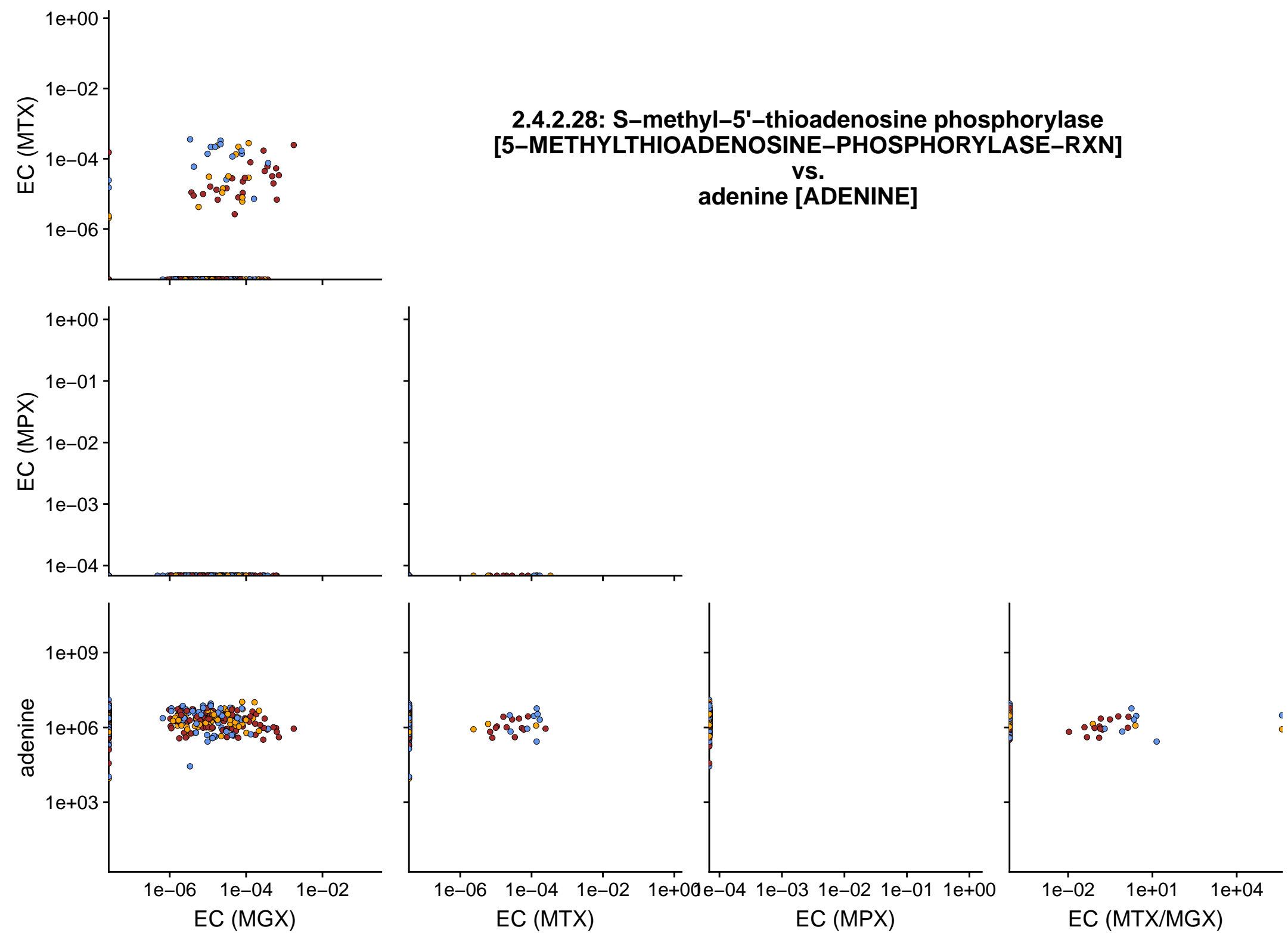
**2.3.1.57: Diamine N-acetyltransferase  
[SPERMACTRAN-RXN]  
vs.  
spermidine [SPERMIDINE]**



**2.3.1.57: Diamine N-acetyltransferase  
[SPERMACTRAN-RXN]  
vs.  
N1-acetylspermidine [CPD-568]**

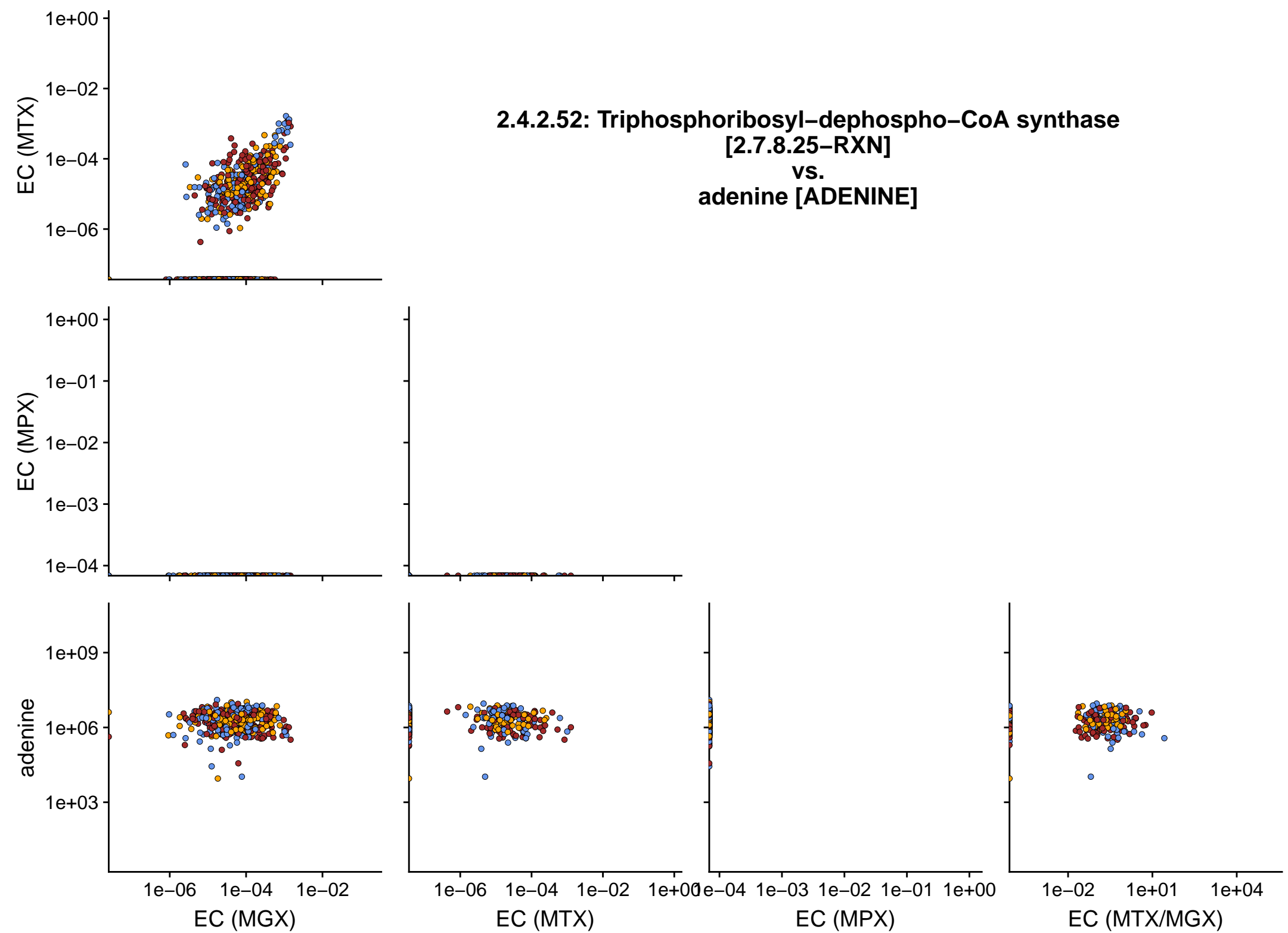


**2.4.2.28: S-methyl-5'-thioadenosine phosphorylase  
[5-METHYLTHIOADENOSINE-PHOSPHORYLASE-RXN]  
vs.  
adenine [ADENINE]**

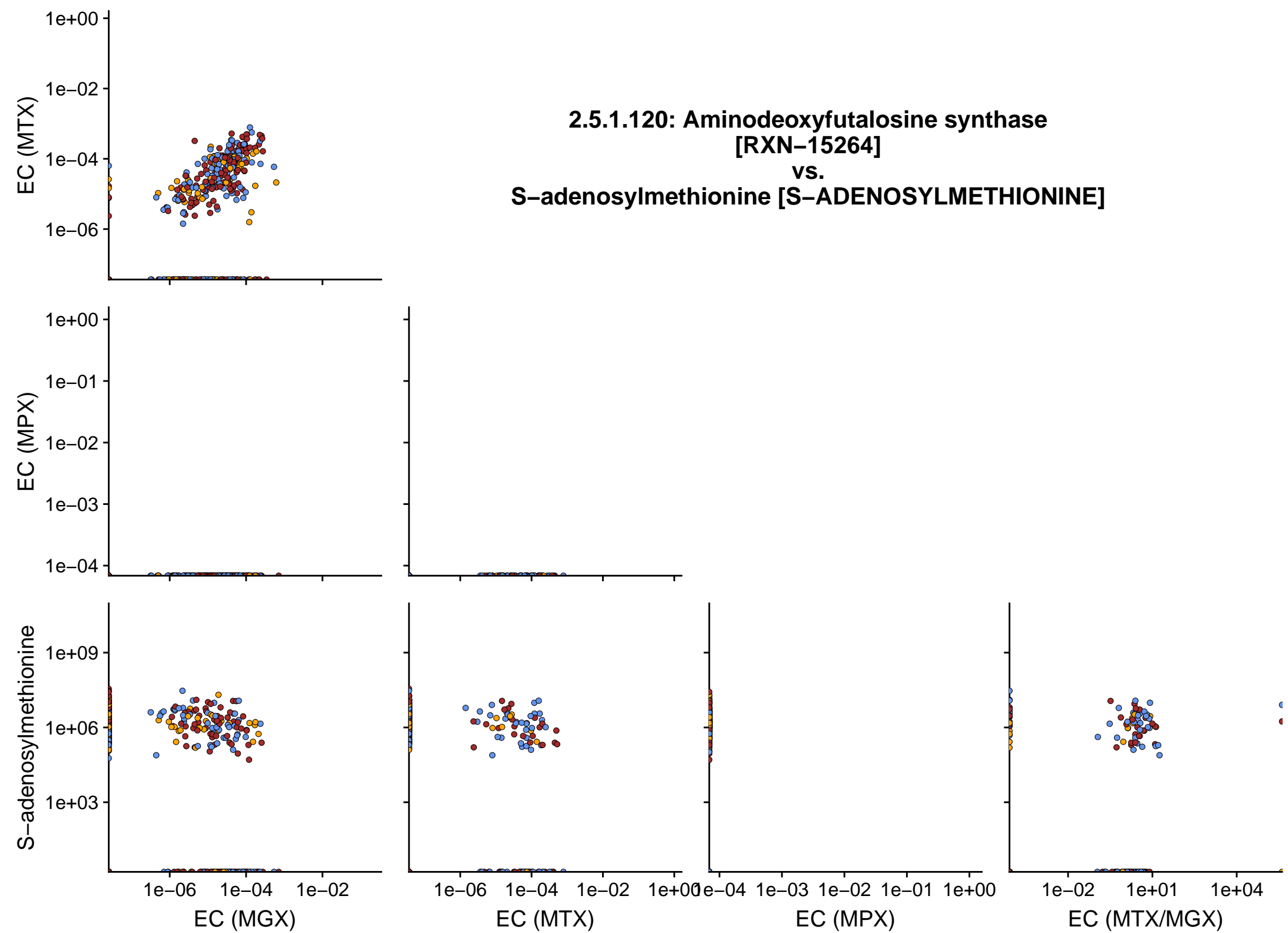




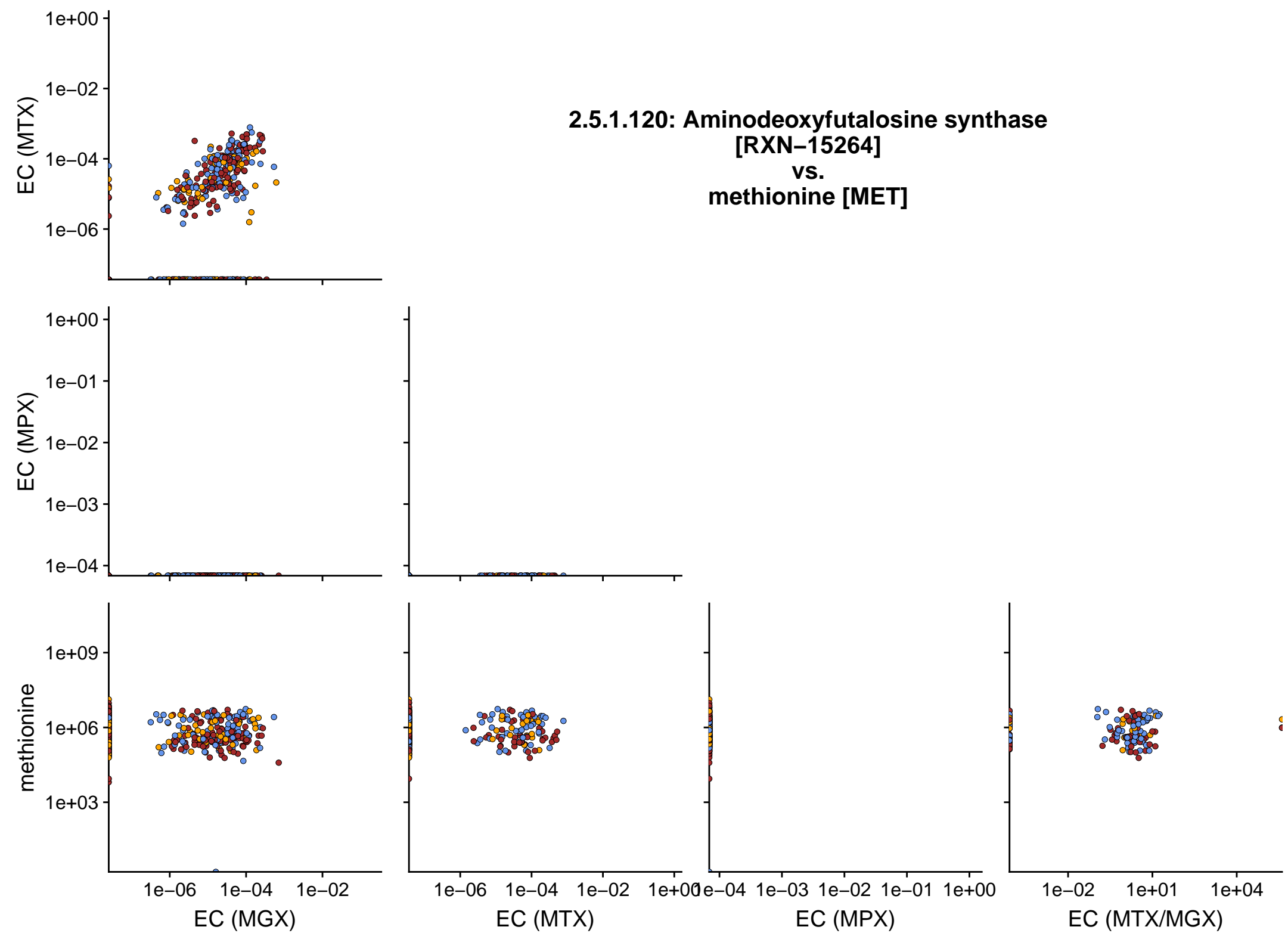
**2.4.2.52: Triphosphoribosyl–dephospho–CoA synthase  
[2.7.8.25–RXN]  
vs.  
adenine [ADENINE]**



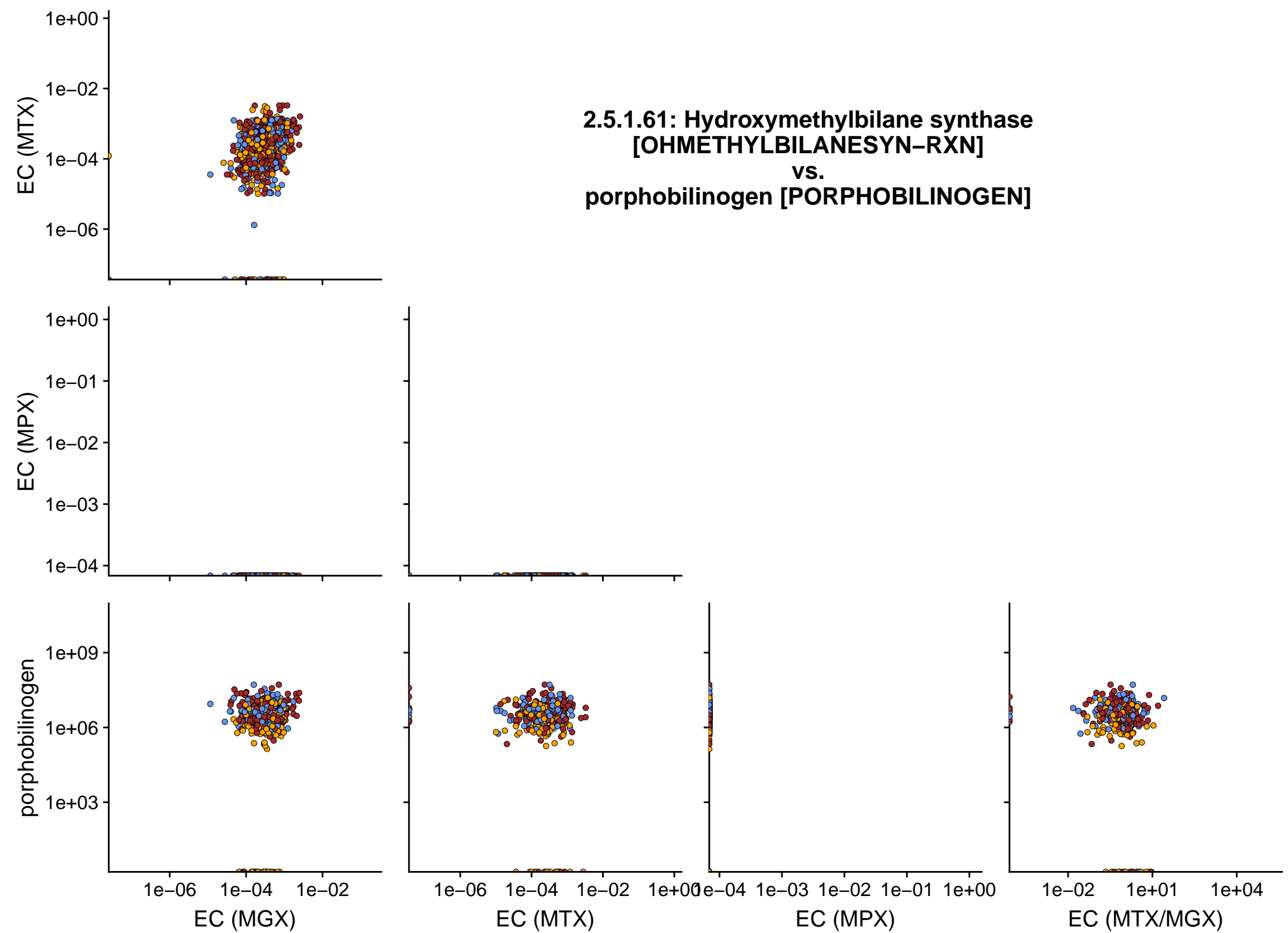
**2.5.1.120: Aminodeoxyfutalosine synthase  
[RXN-15264]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**



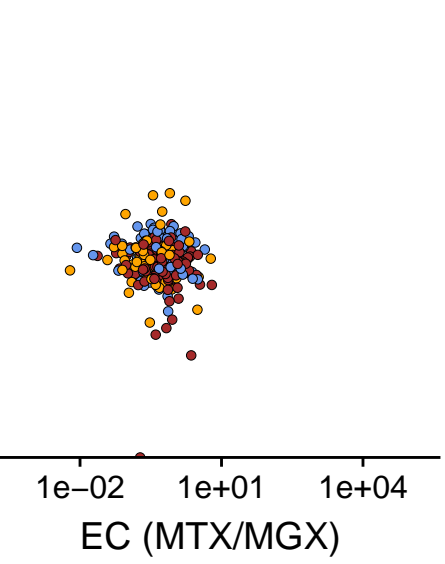
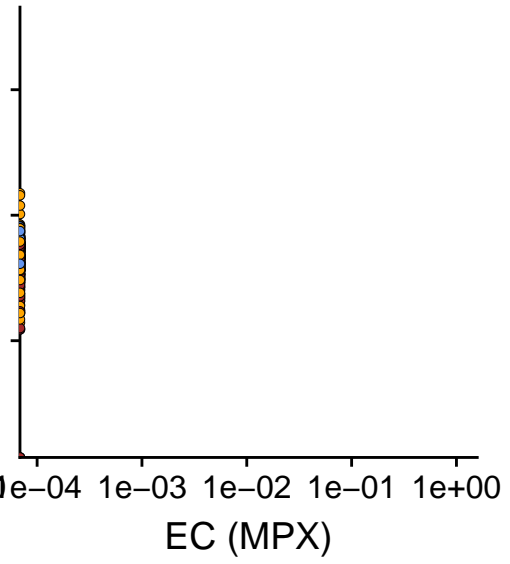
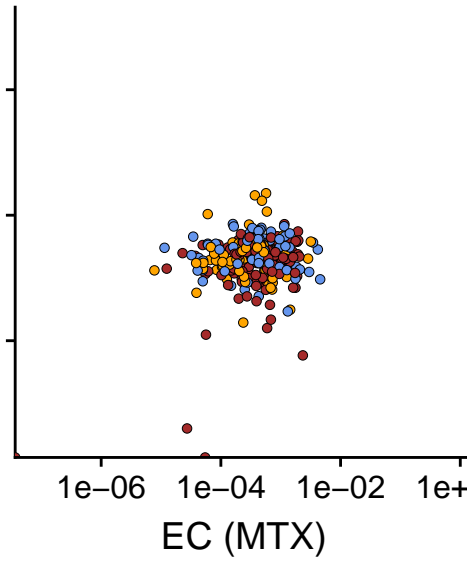
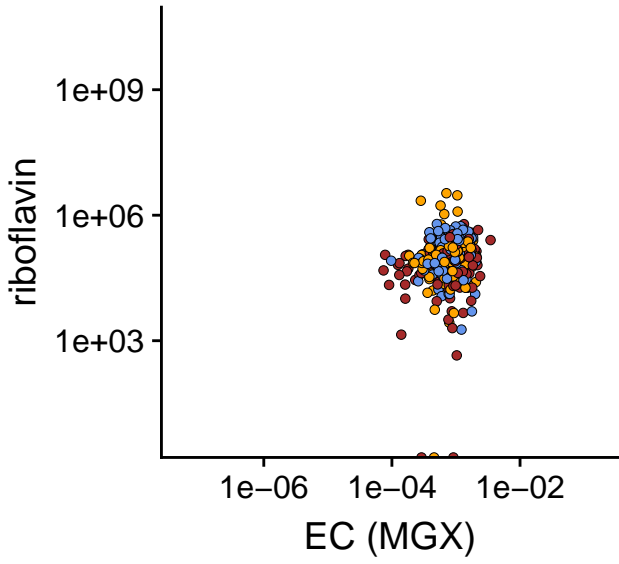
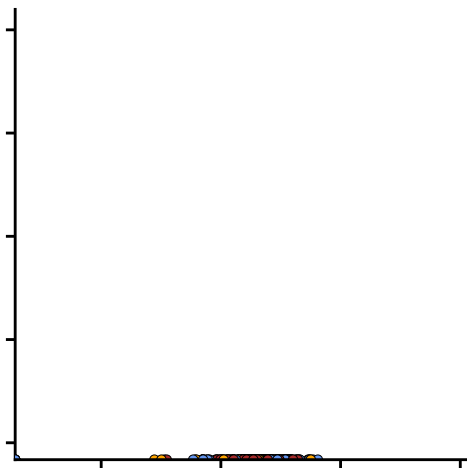
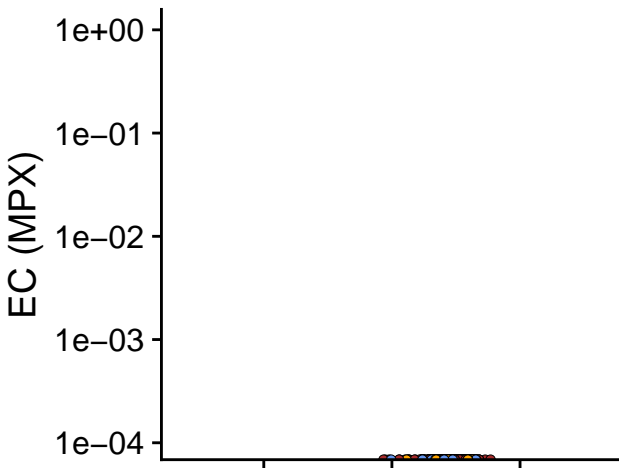
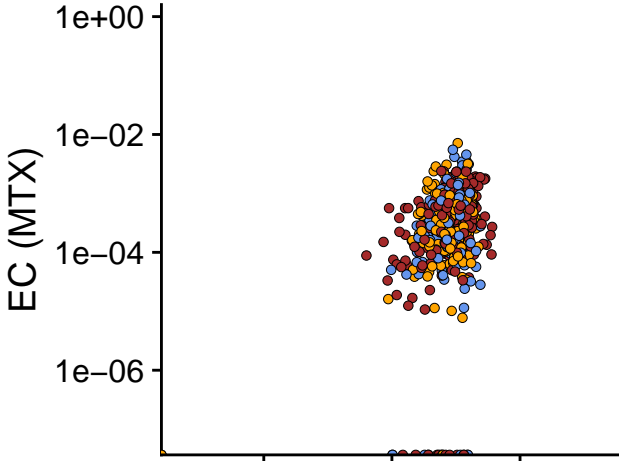
**2.5.1.120: Aminodeoxyfutalosine synthase  
[RXN-15264]  
vs.  
methionine [MET]**



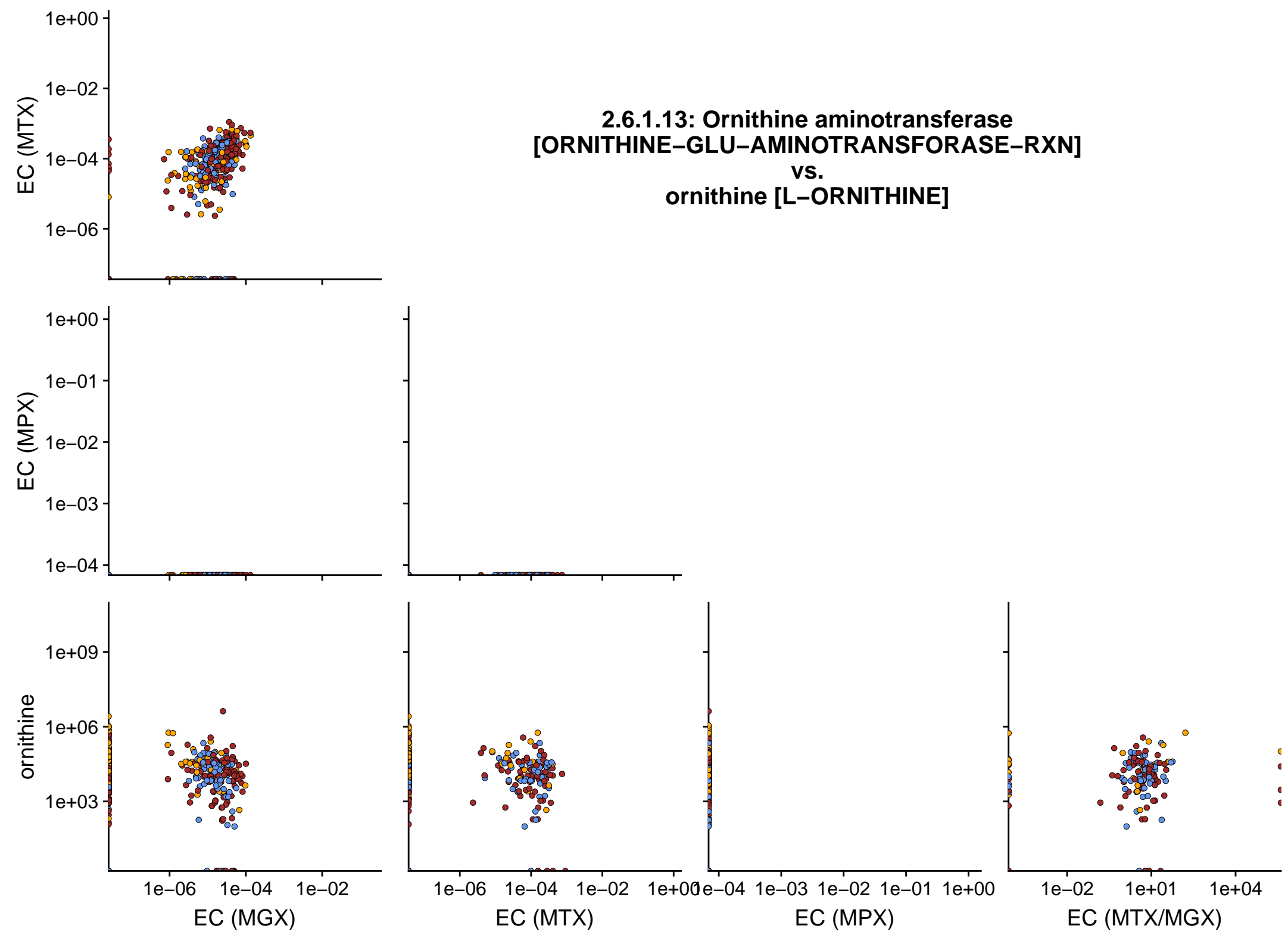
**2.5.1.61: Hydroxymethylbilane synthase  
[OHMETHYLBILANESYN-RXN]  
vs.  
porphobilinogen [PORPHOBILINOGEN]**



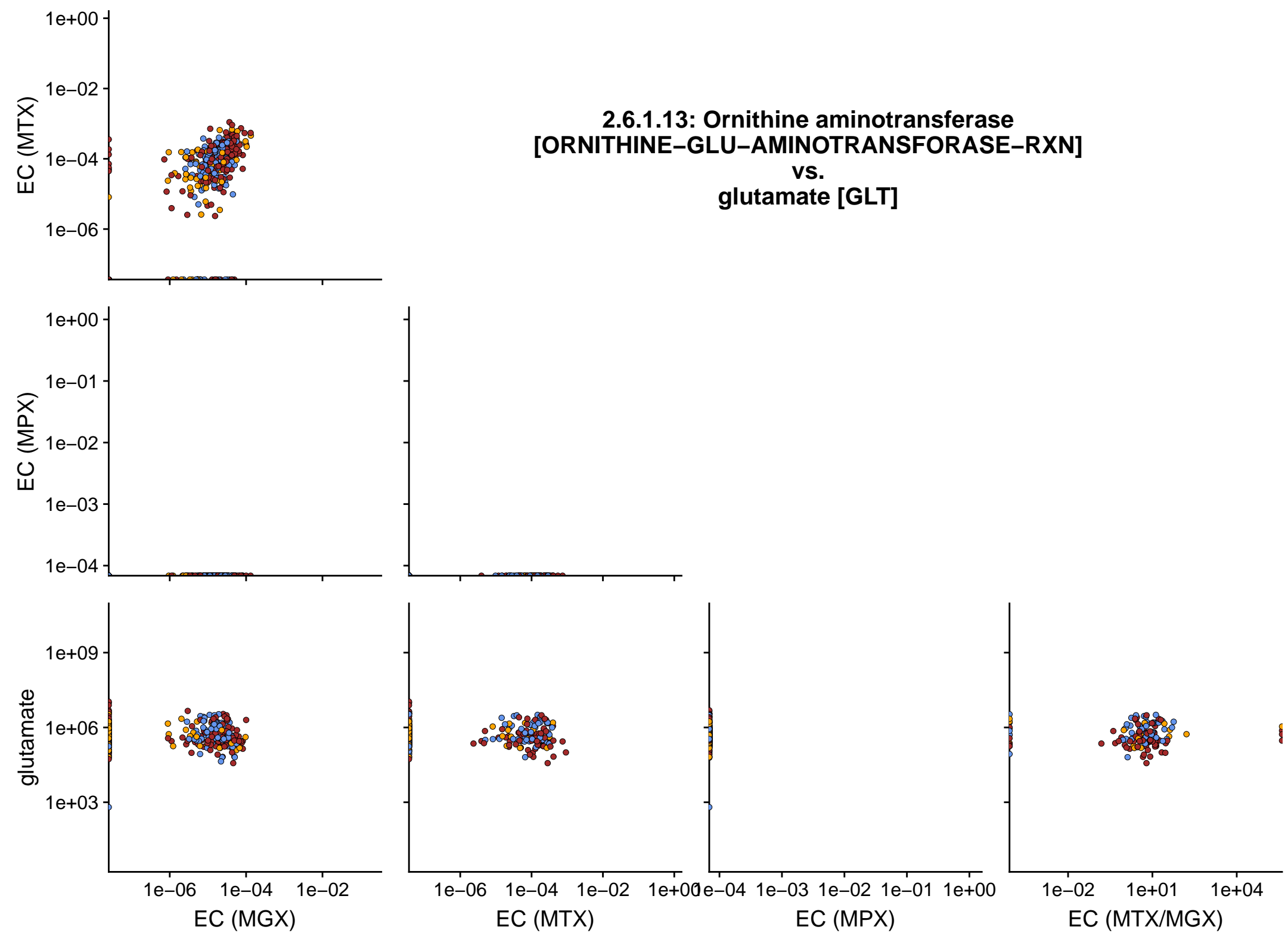
**2.5.1.9: Riboflavin synthase  
[RIBOFLAVIN-SYN-RXN]  
vs.  
riboflavin [RIBOFLAVIN]**



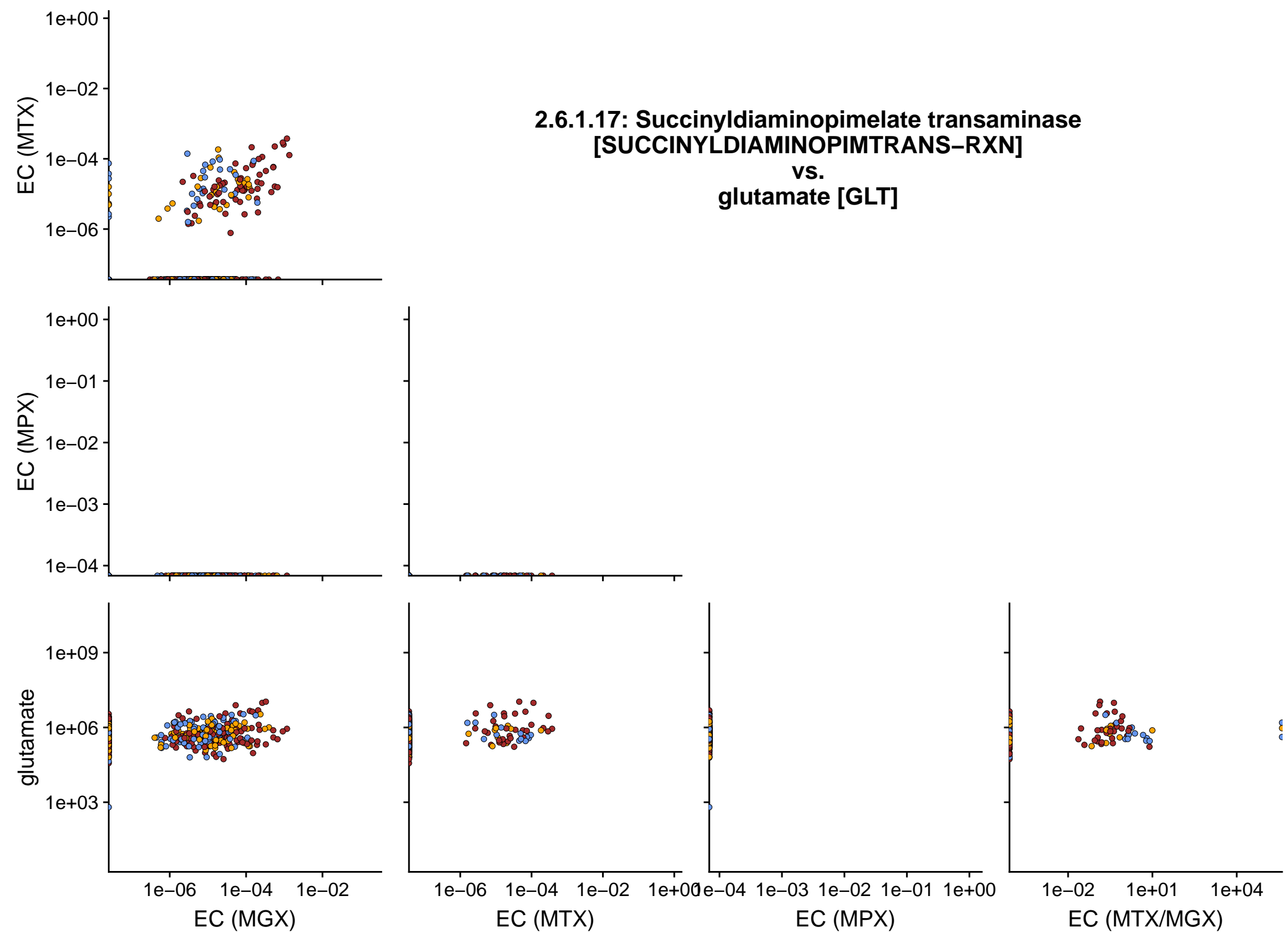
**2.6.1.13: Ornithine aminotransferase  
[ORNITHINE-GLU-AMINOTRANSFORASE-RXN]  
vs.  
ornithine [L-ORNITHINE]**



**2.6.1.13: Ornithine aminotransferase  
[ORNITHINE-GLU-AMINOTRANSFORASE-RXN]  
vs.  
glutamate [GLT]**

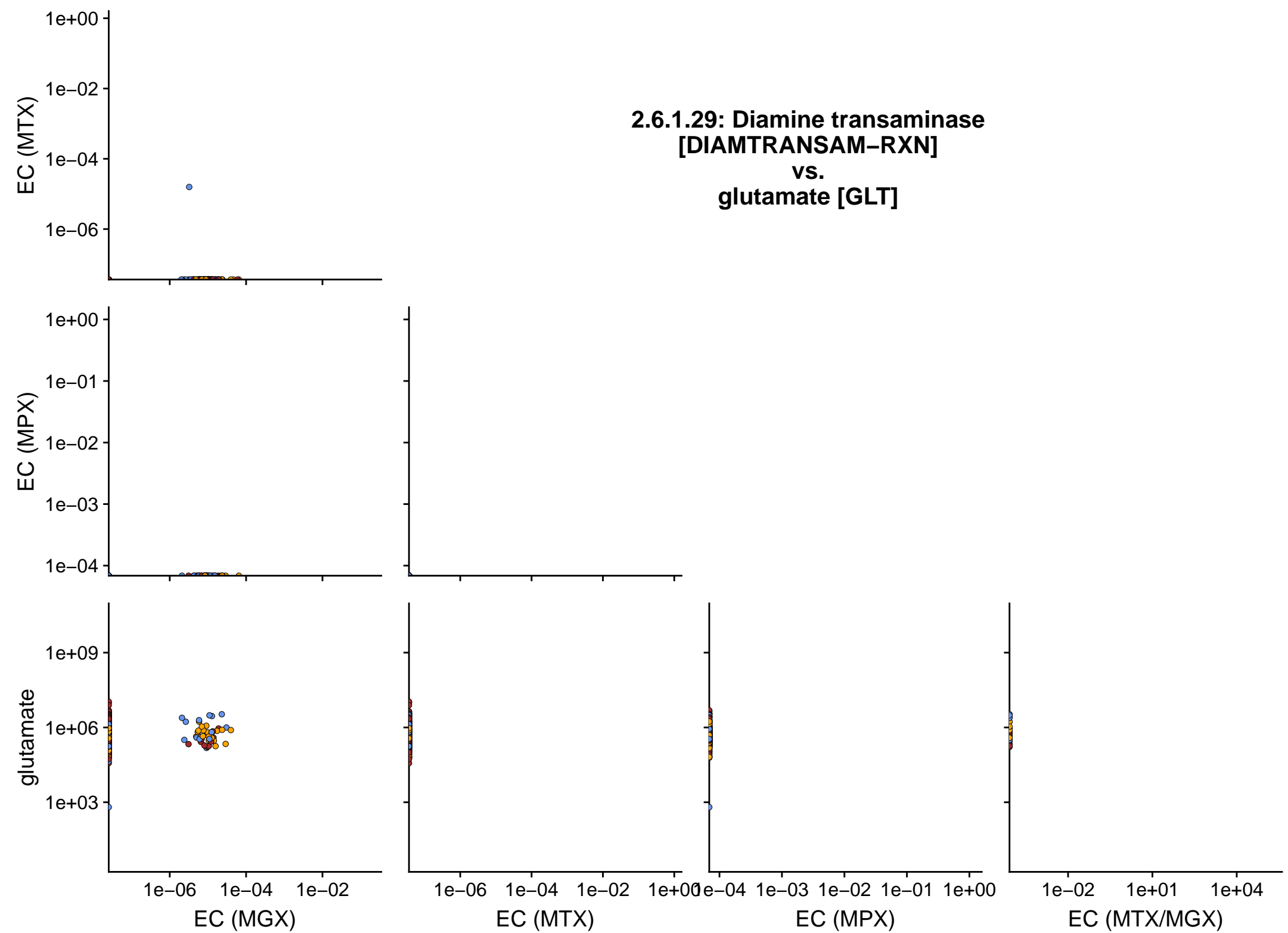


**2.6.1.17: Succinyldiaminopimelate transaminase  
[SUCCINYLDIAMINOPIMTRANS-RXN]  
vs.  
glutamate [GLT]**

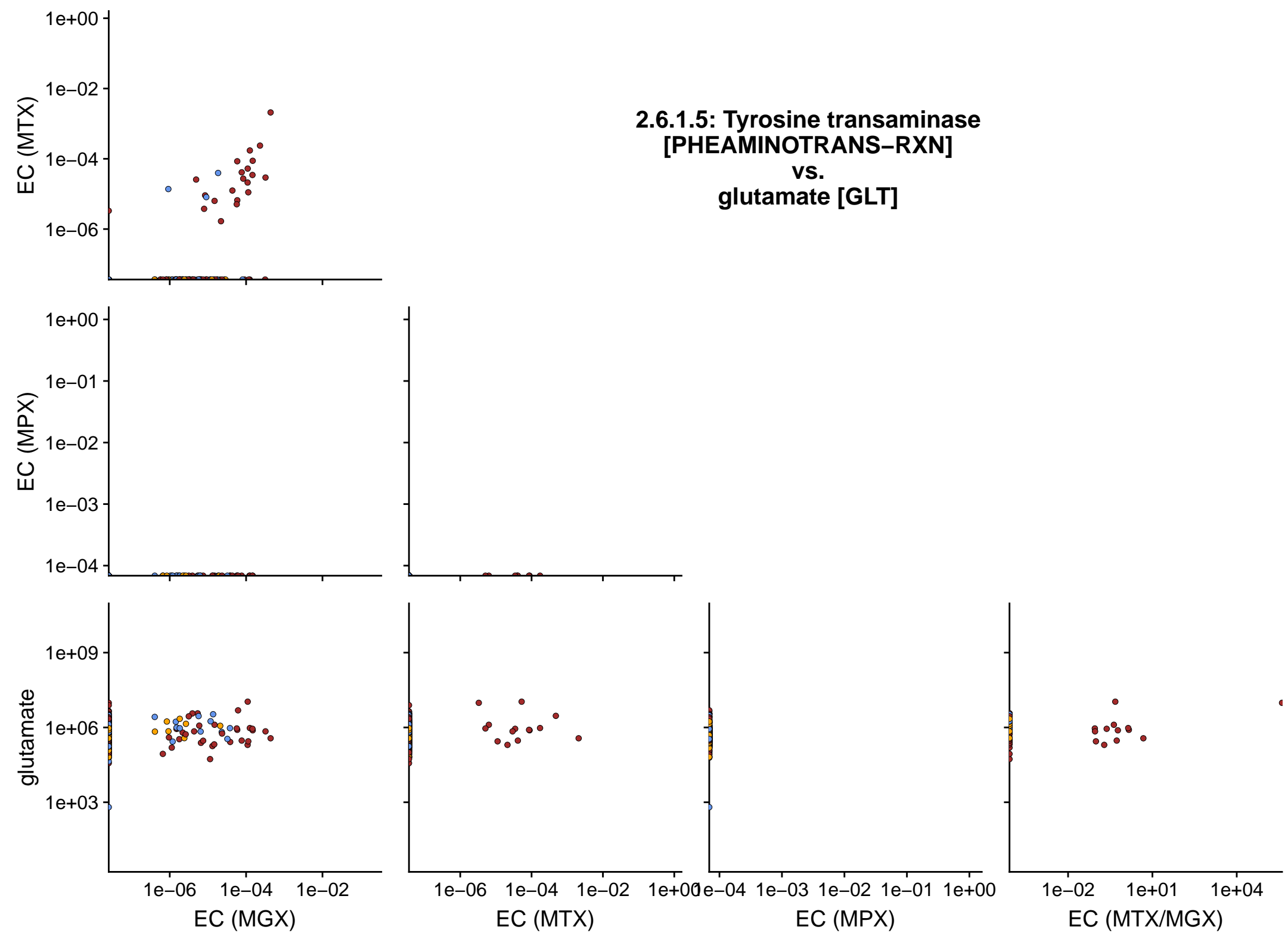




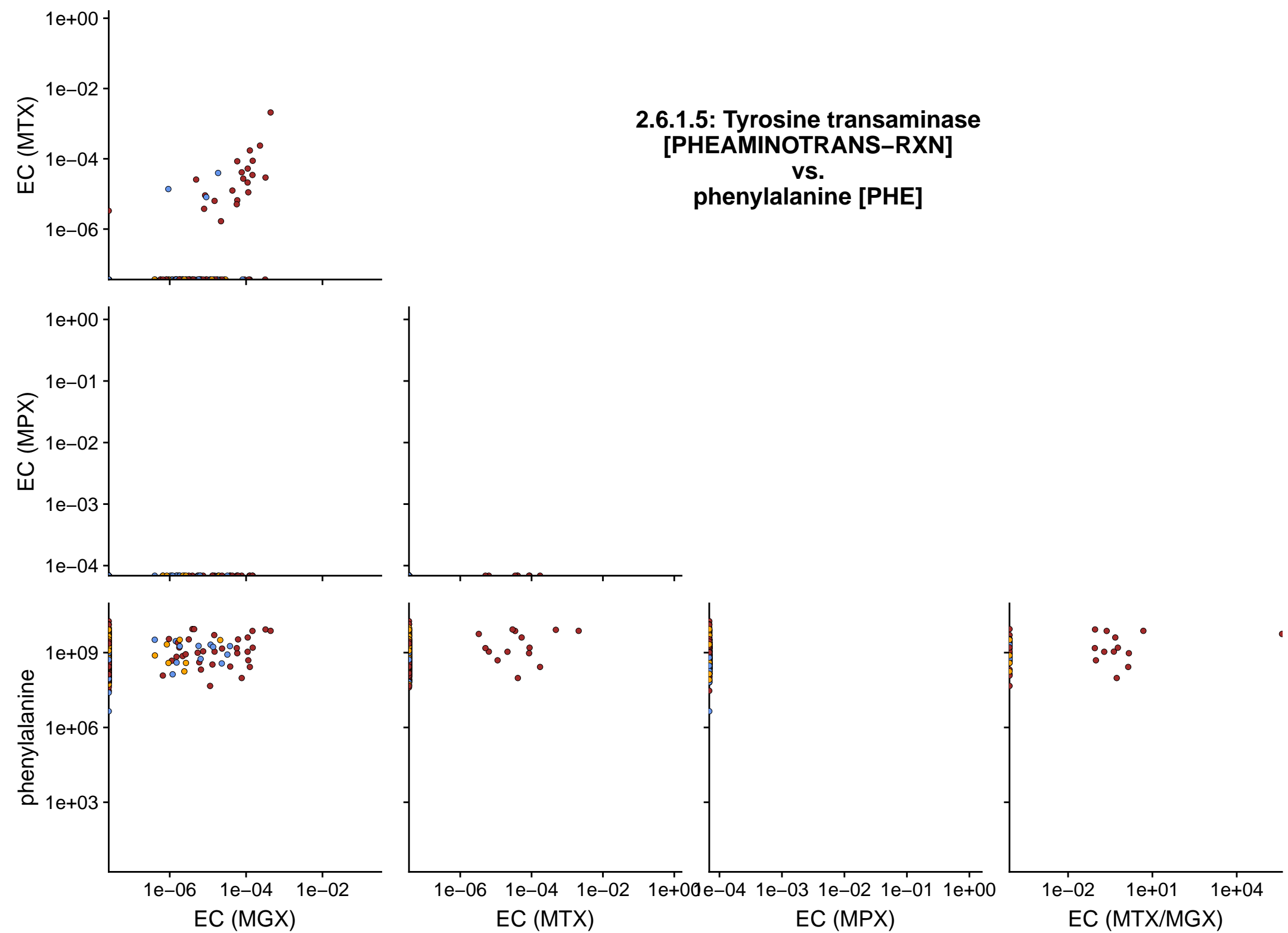
**2.6.1.29: Diamine transaminase  
[DIAMTRANSAM-RXN]  
vs.  
glutamate [GLT]**



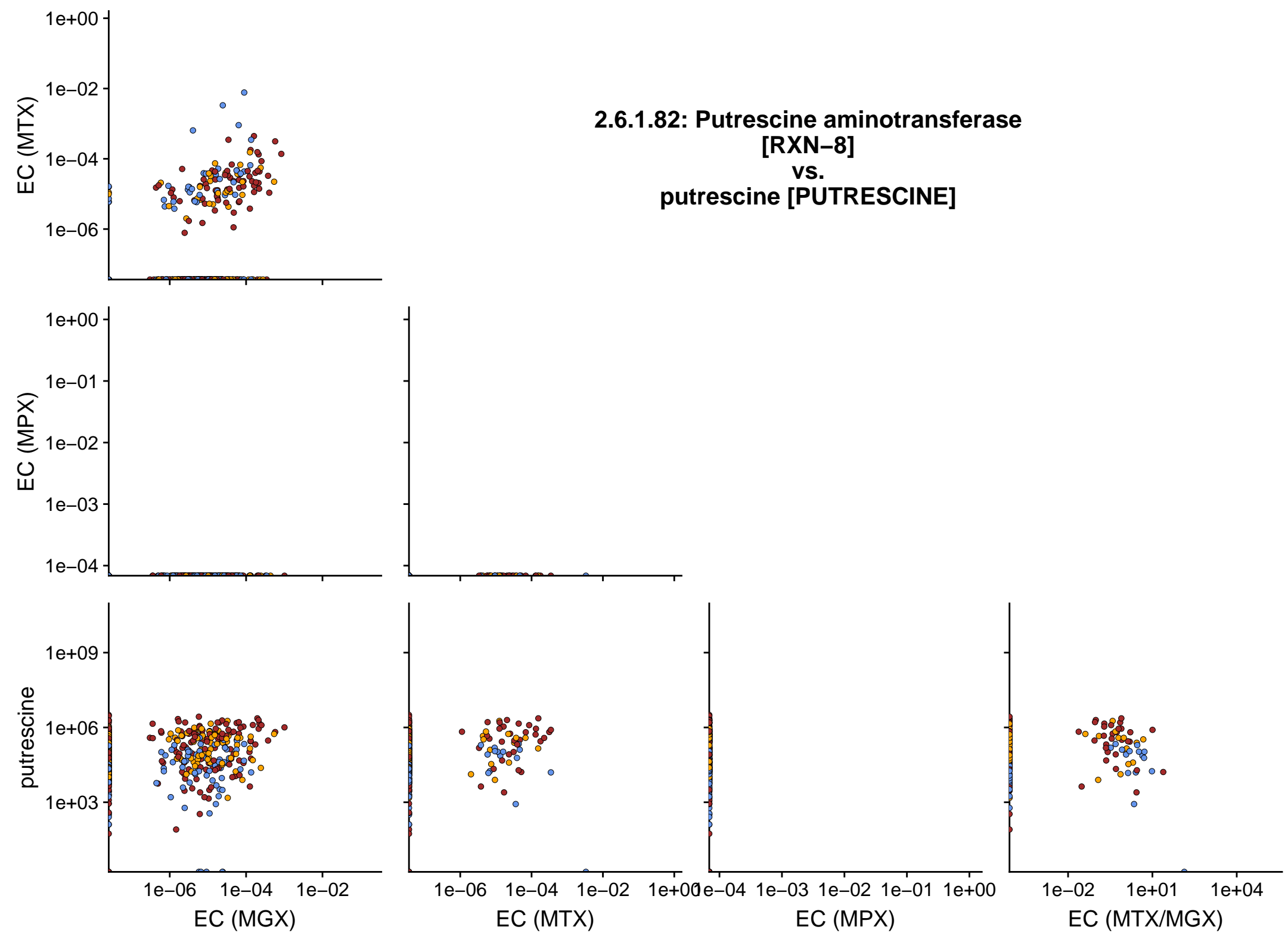
**2.6.1.5: Tyrosine transaminase  
[PHEAMINOTRANS-RXN]  
vs.  
glutamate [GLT]**



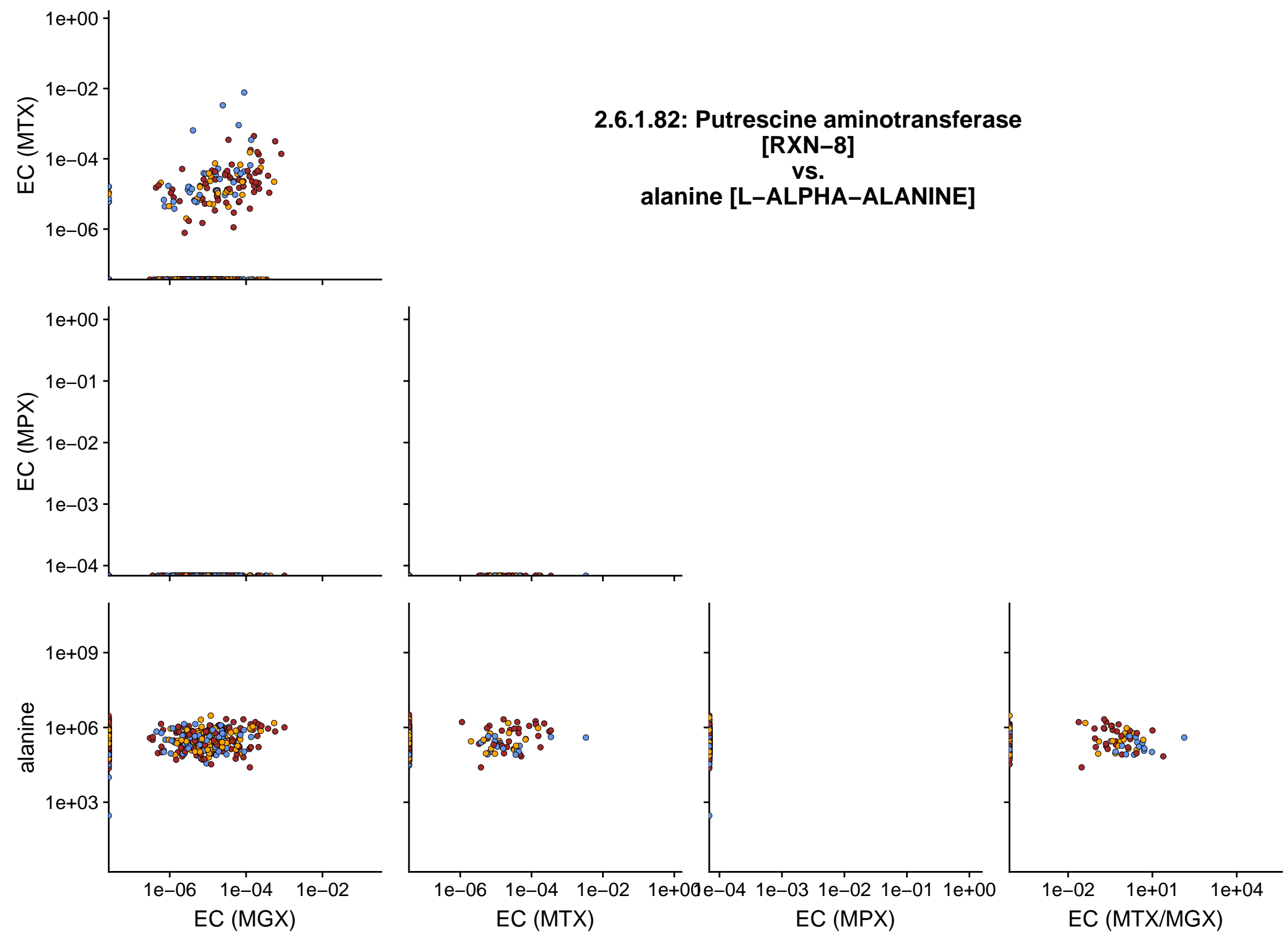
**2.6.1.5: Tyrosine transaminase  
[PHEAMINOTRANS-RXN]  
vs.  
phenylalanine [PHE]**



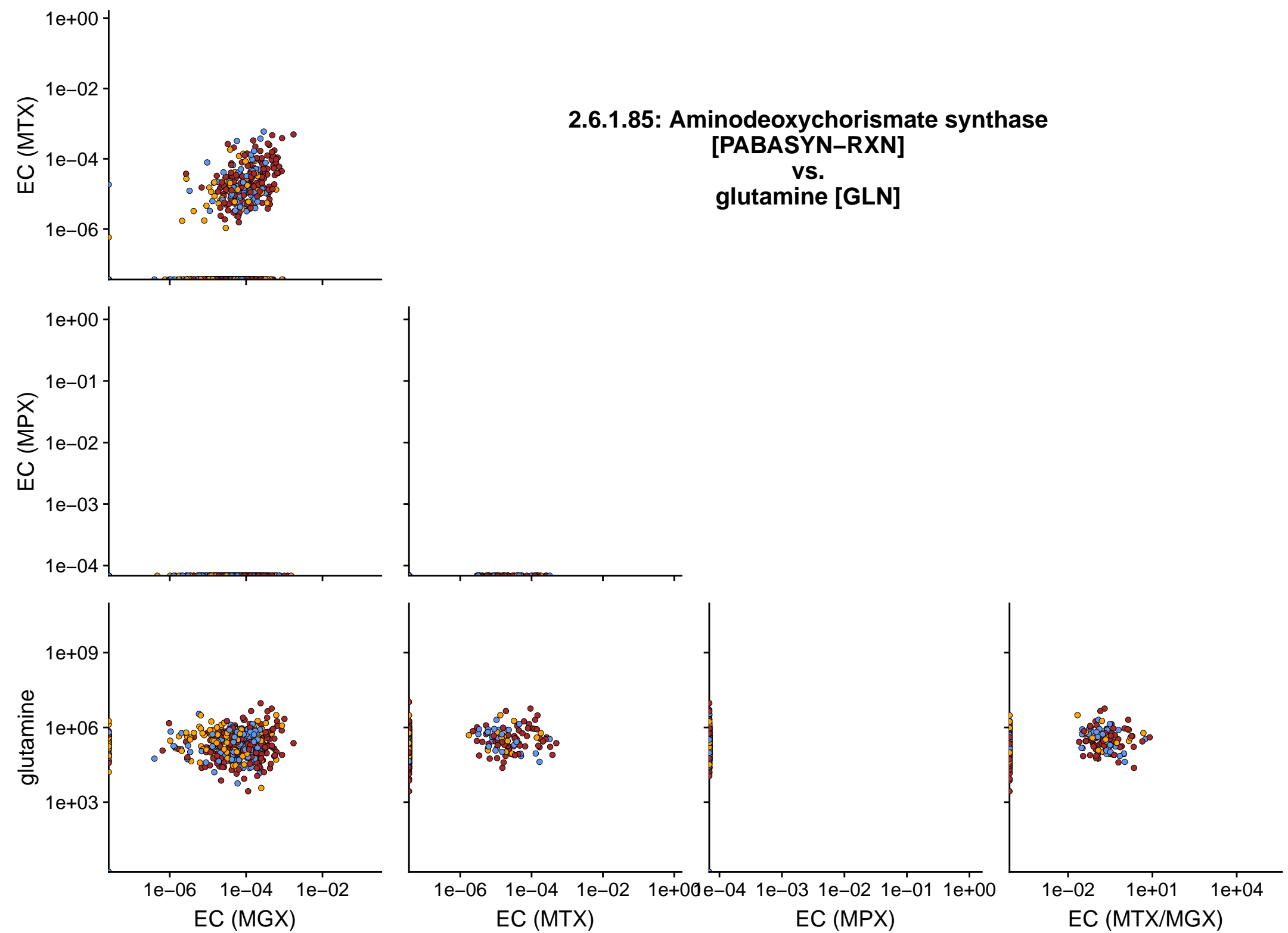
**2.6.1.82: Putrescine aminotransferase  
[RXN-8]  
vs.  
putrescine [PUTRESCINE]**



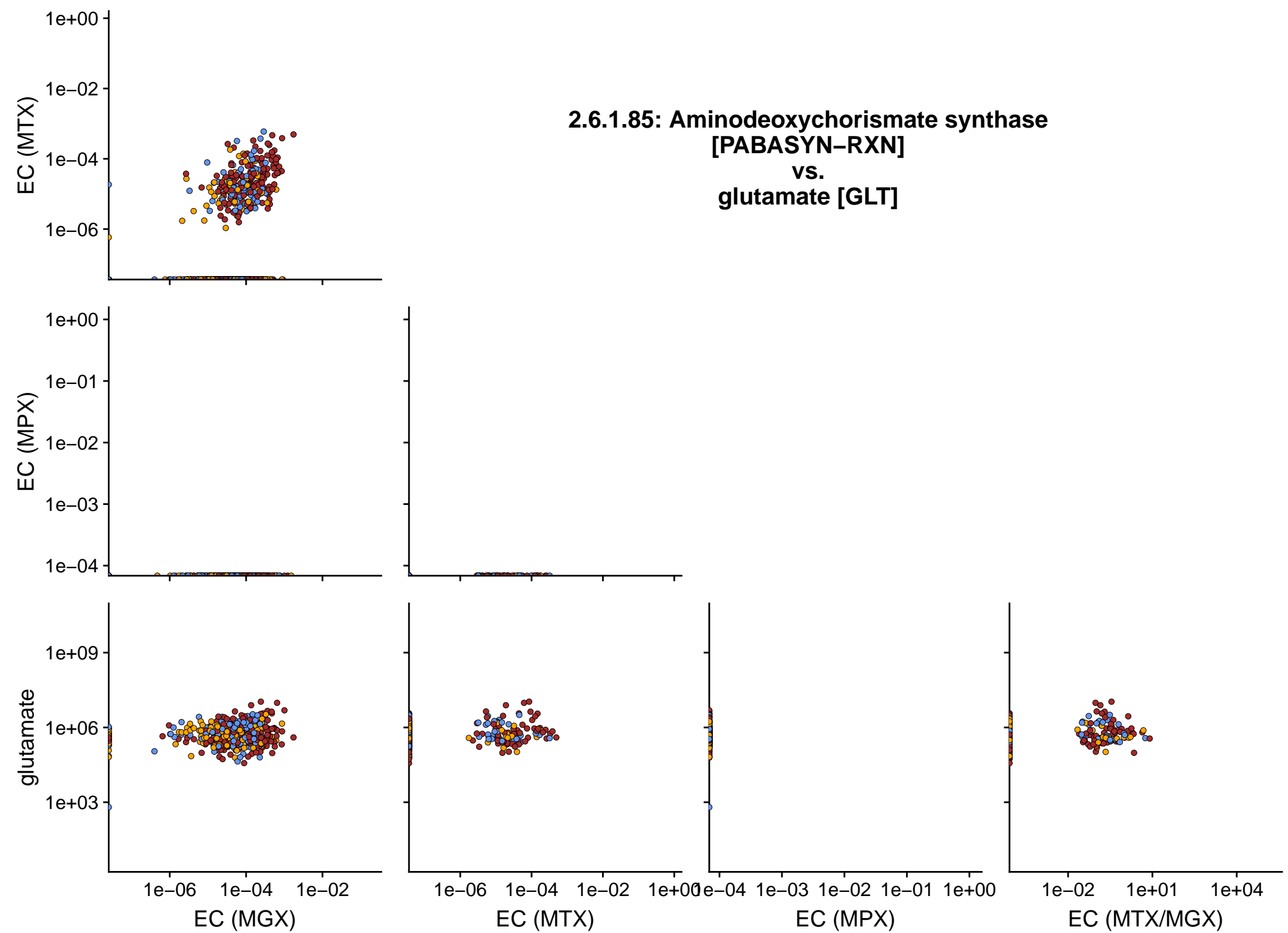
**2.6.1.82: Putrescine aminotransferase  
[RXN-8]  
vs.  
alanine [L-ALPHA-ALANINE]**



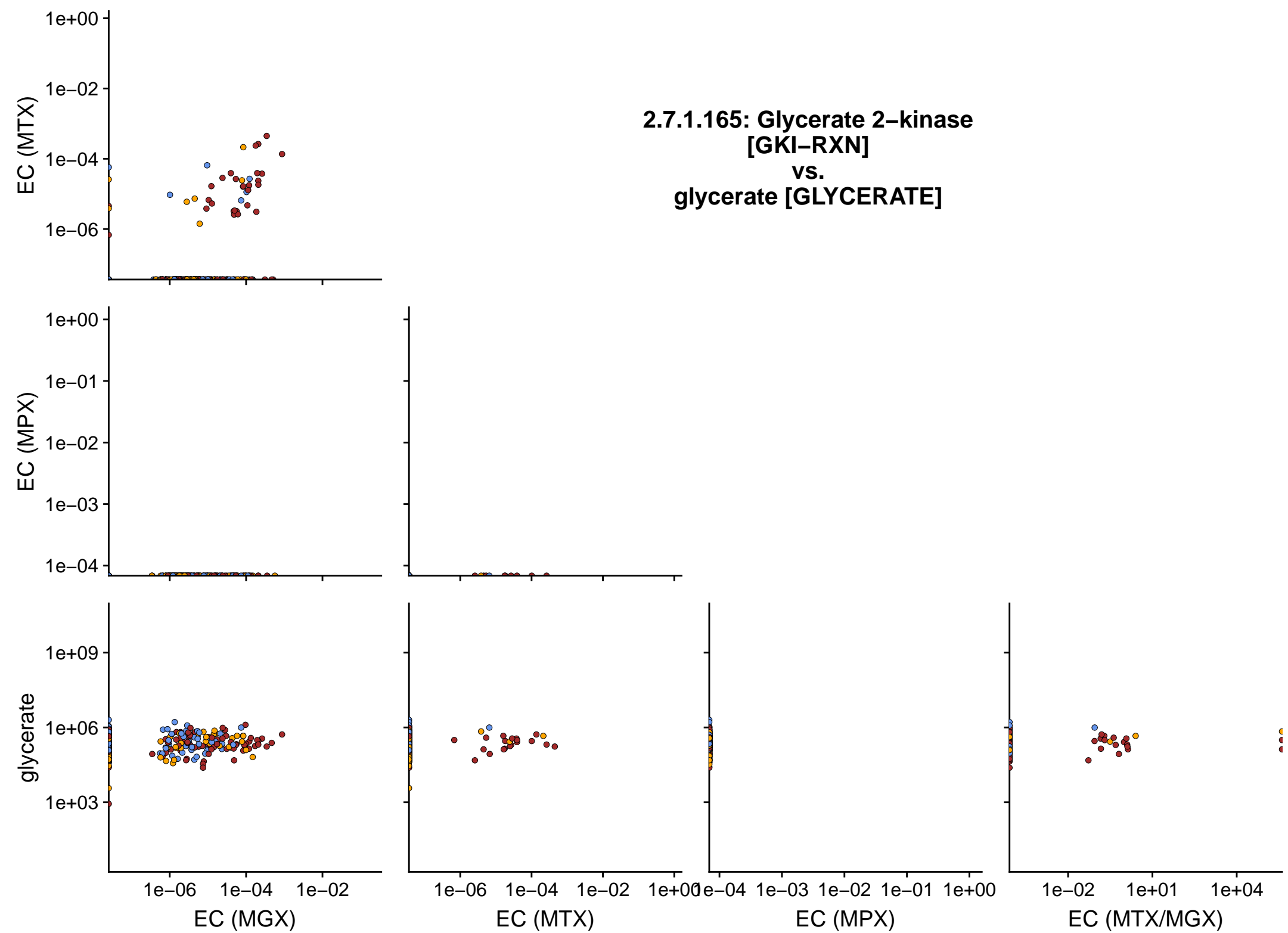
**2.6.1.85: Aminodeoxychorismate synthase  
[PABASYN-RXN]  
vs.  
glutamine [GLN]**



**2.6.1.85: Aminodeoxychorismate synthase  
[PABASYN-RXN]  
vs.  
glutamate [GLT]**

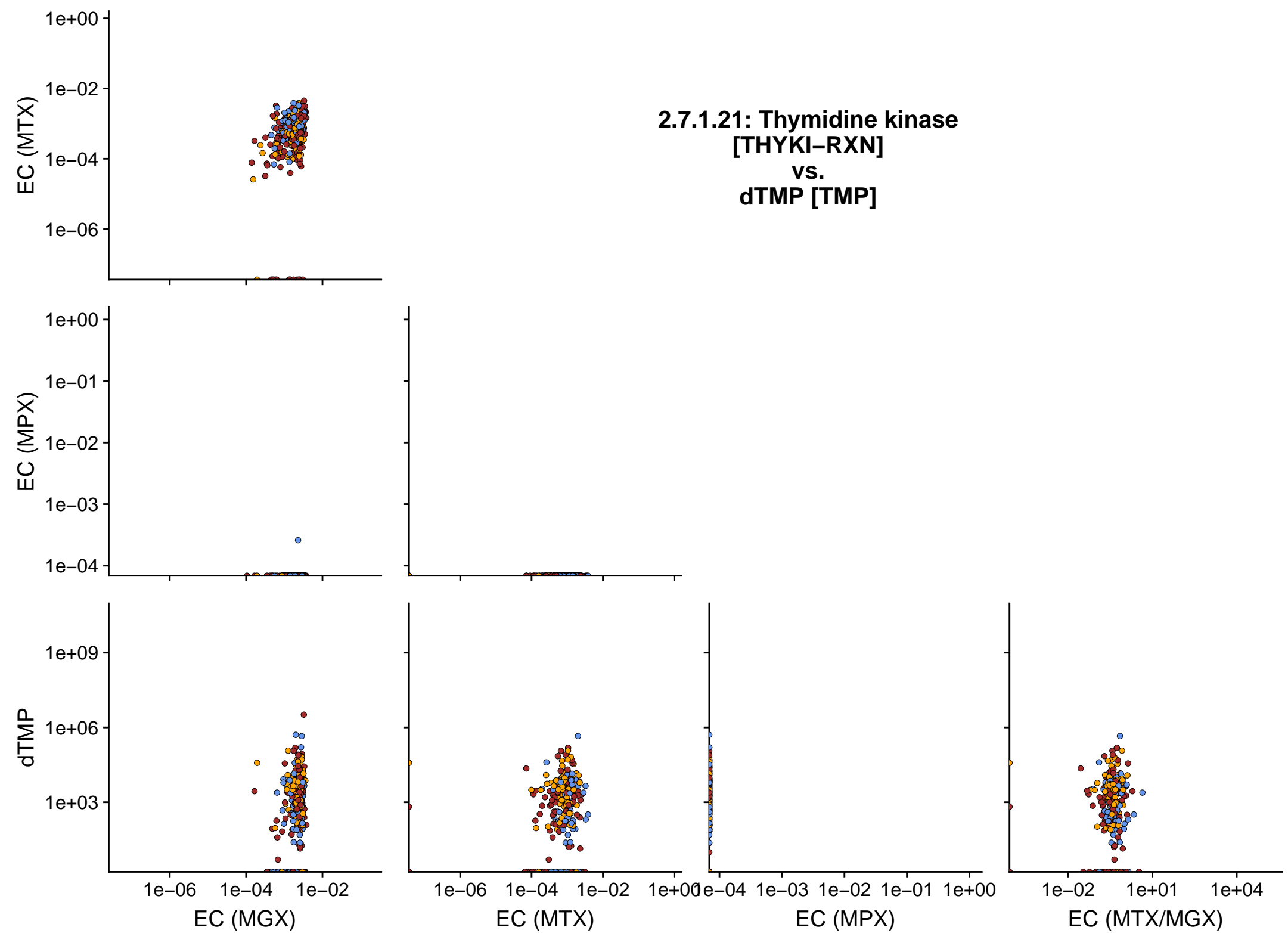


**2.7.1.165: Glycerate 2-kinase  
[GKI-RXN]  
vs.  
glycerate [GLYCERATE]**

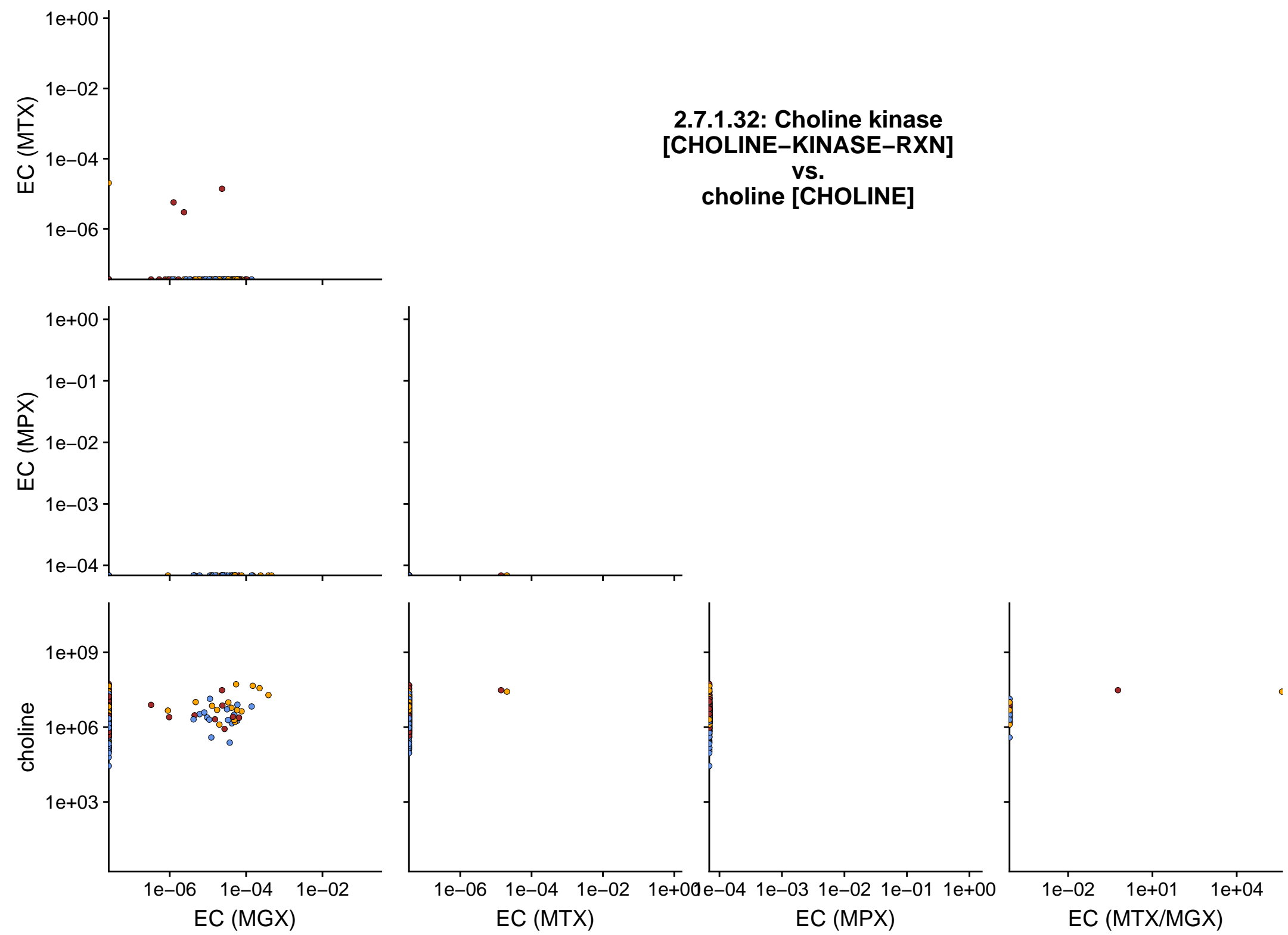




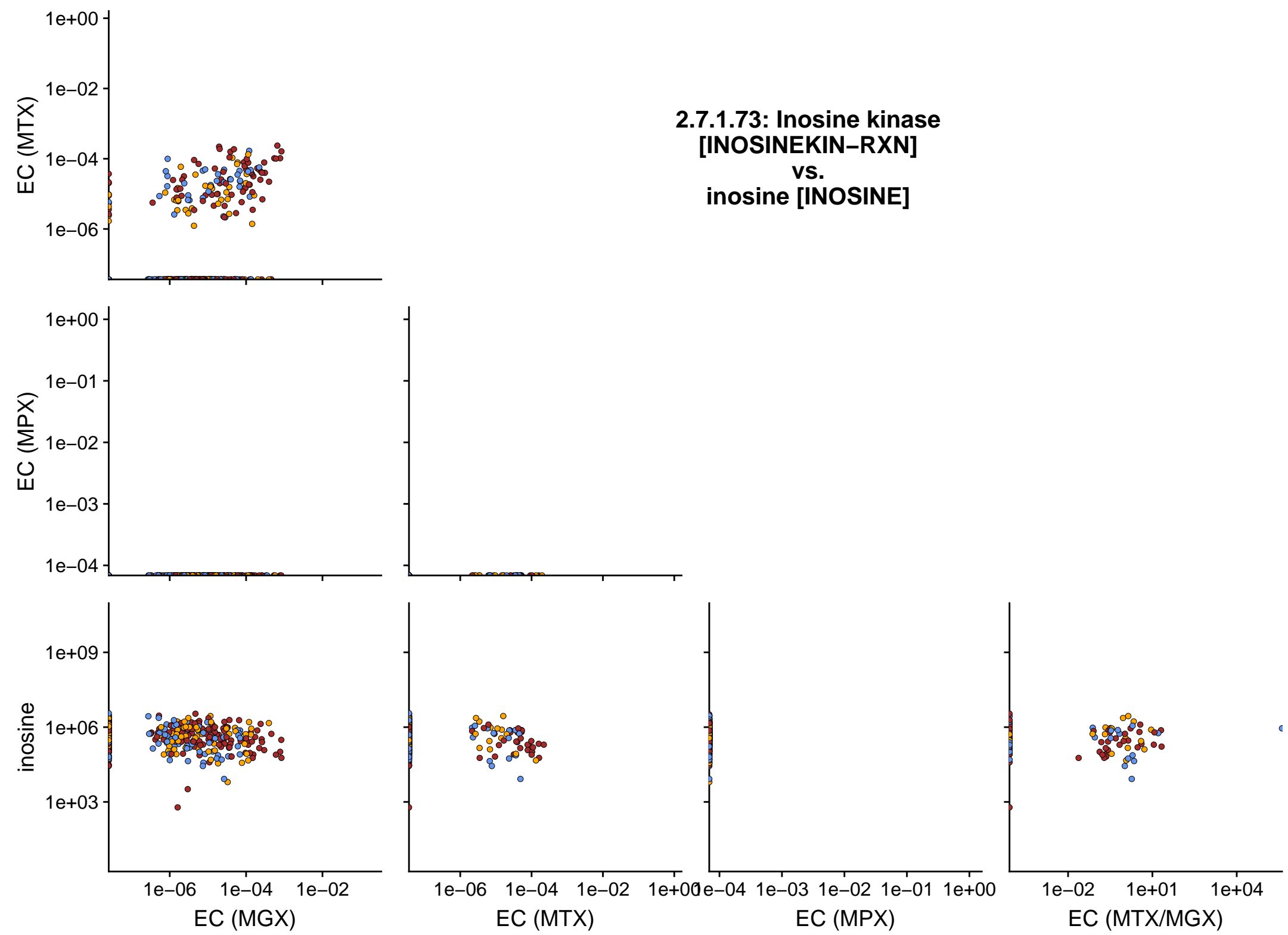
**2.7.1.21: Thymidine kinase  
[THYKI-RXN]  
vs.  
dTMP [TMP]**



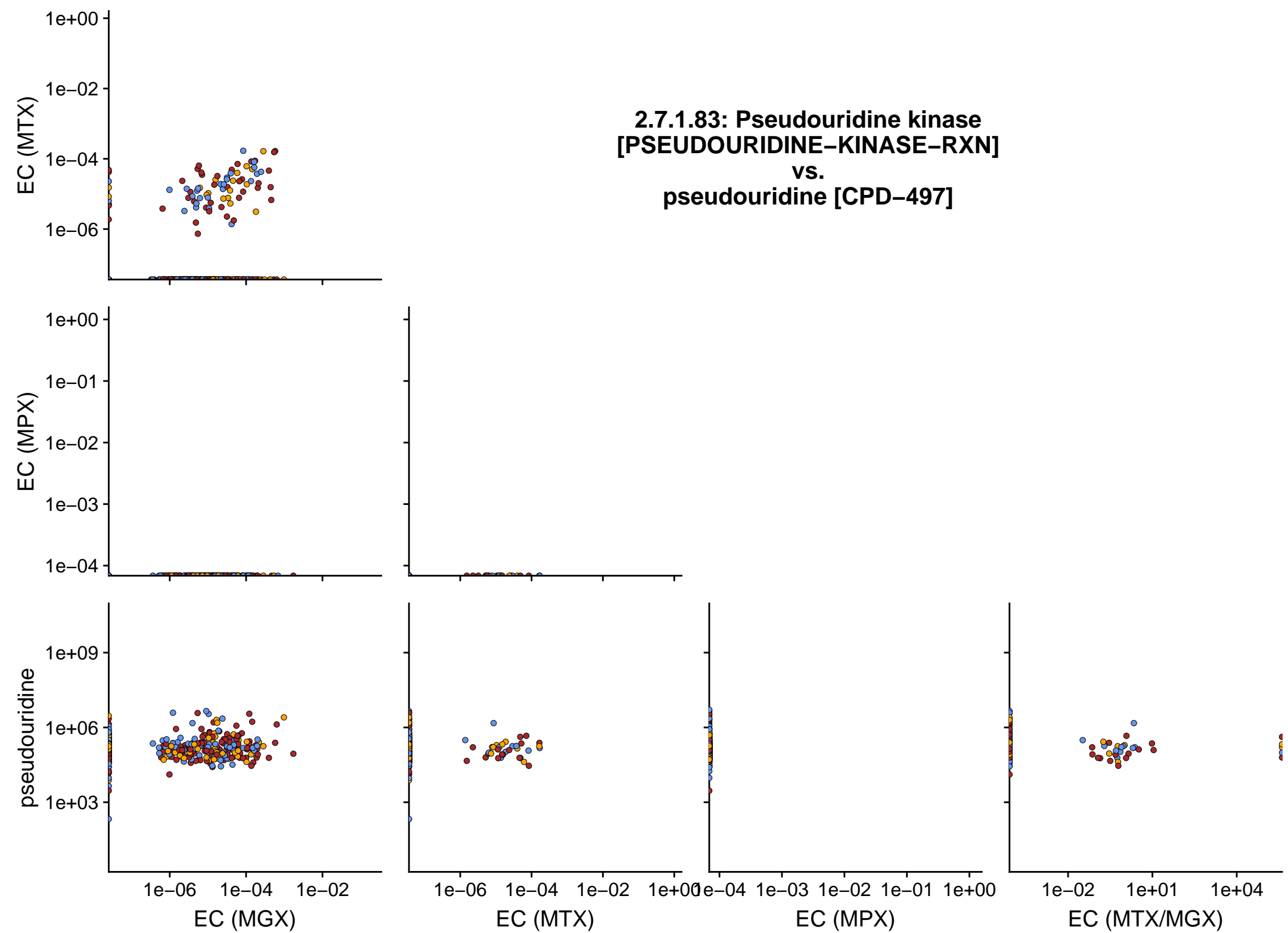
**2.7.1.32: Choline kinase  
[CHOLINE-KINASE-RXN]  
vs.  
choline [CHOLINE]**



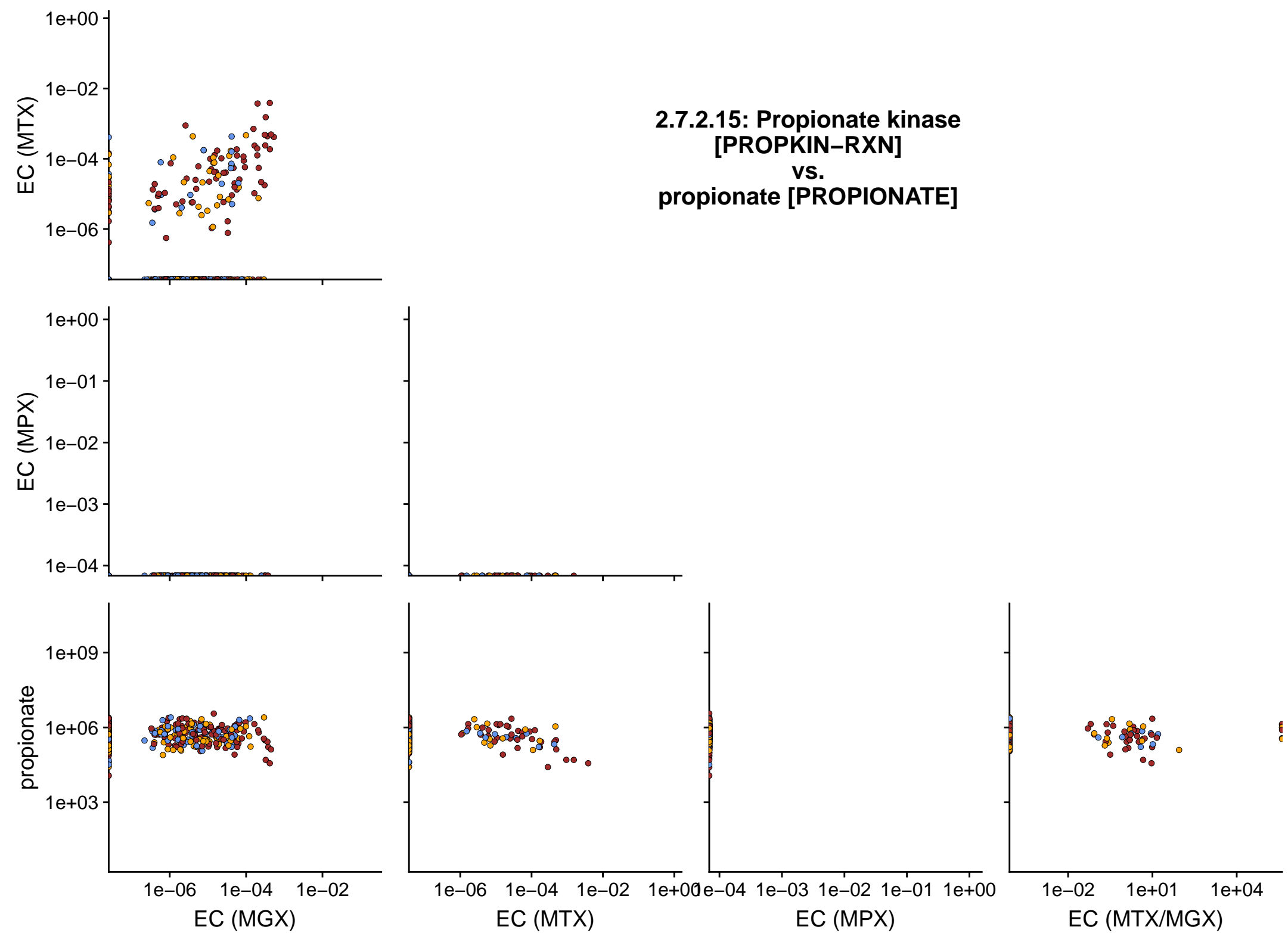
**2.7.1.73: Inosine kinase  
[INOSINEKIN-RXN]  
vs.  
inosine [INOSINE]**



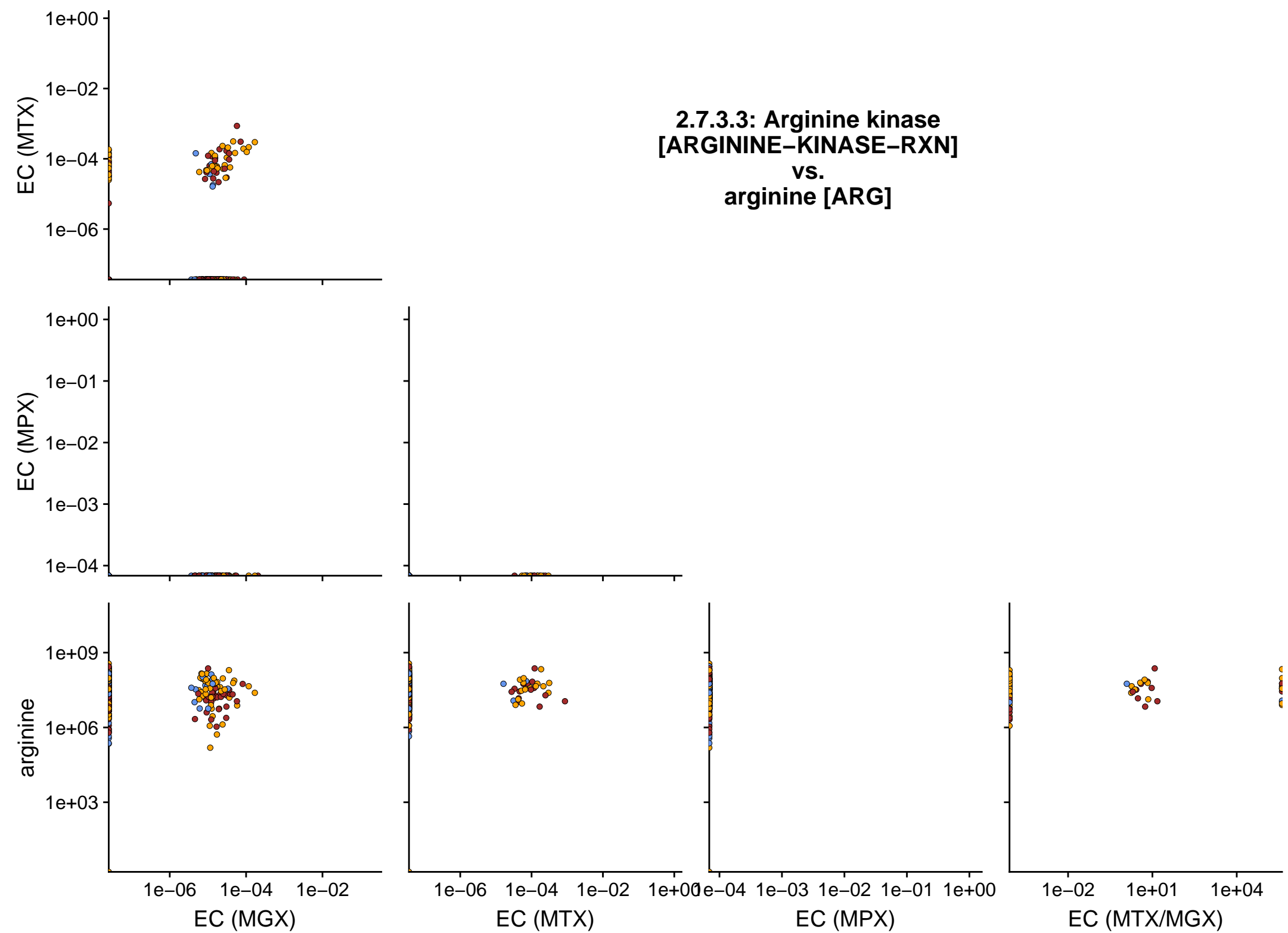
**2.7.1.83: Pseudouridine kinase  
[PSEUDOURIDINE-KINASE-RXN]  
vs.  
pseudouridine [CPD-497]**



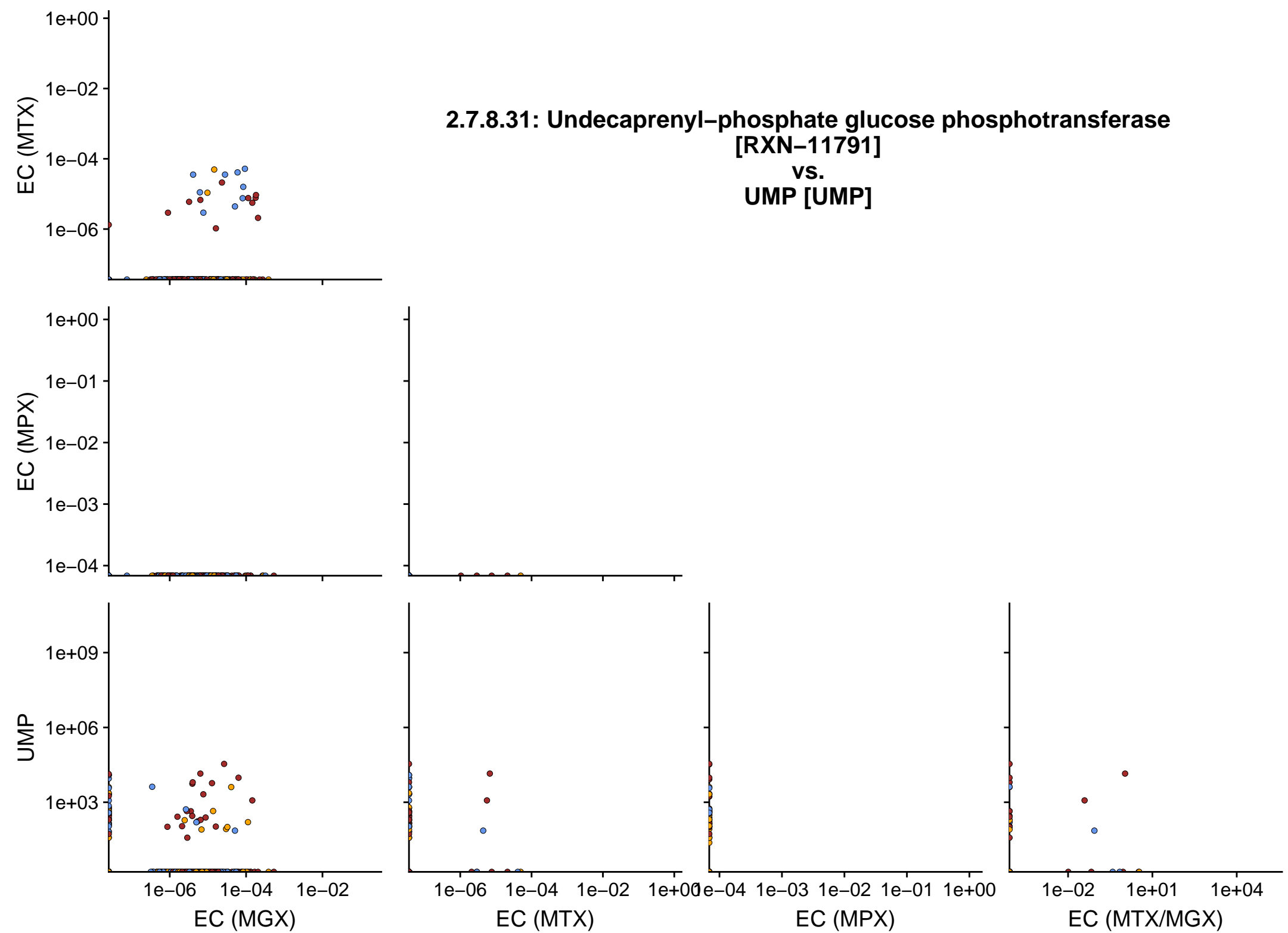
**2.7.2.15: Propionate kinase  
[PROPKIN-RXN]  
vs.  
propionate [PROPIONATE]**



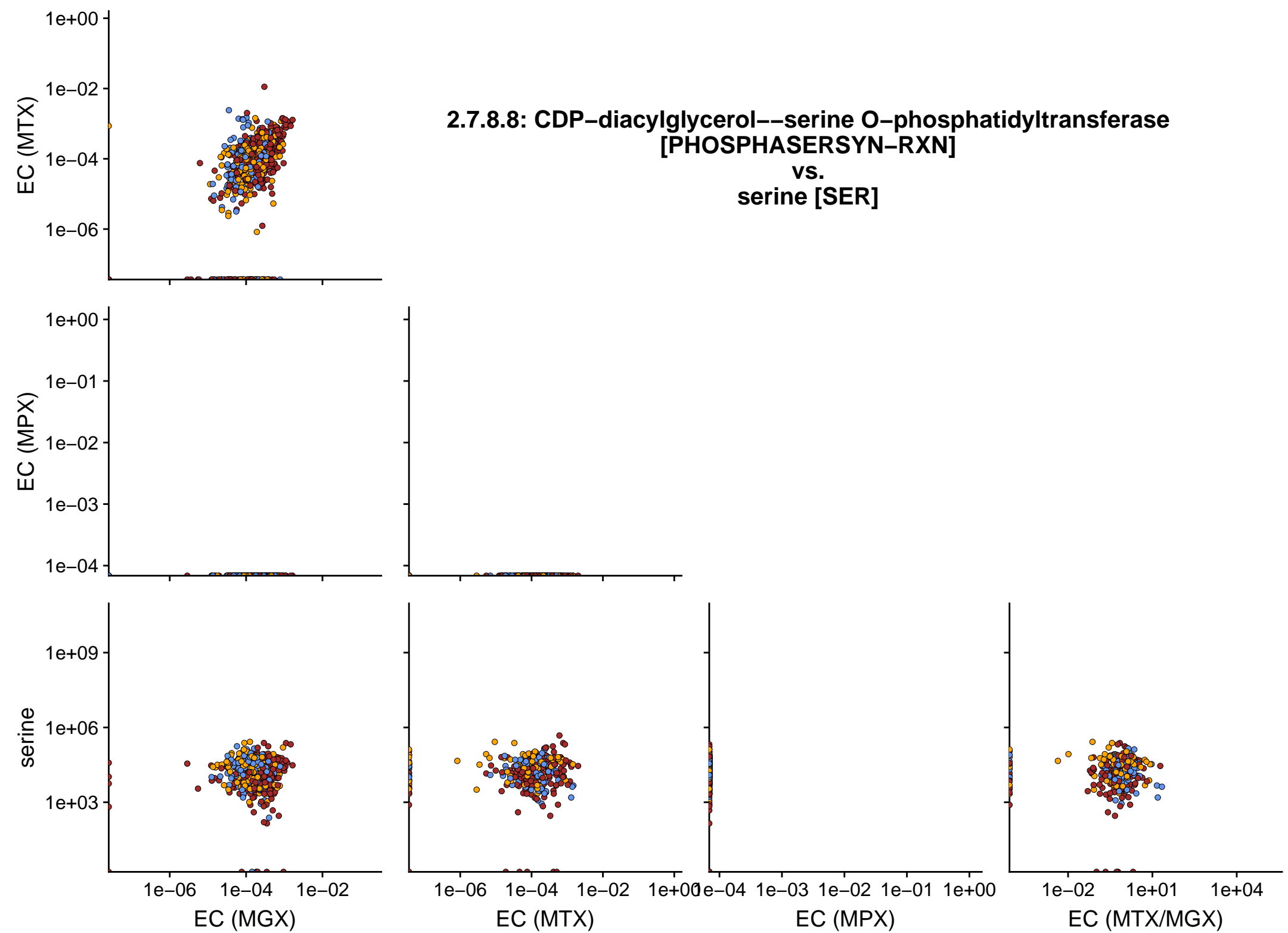
**2.7.3.3: Arginine kinase  
[ARGININE-KINASE-RXN]  
vs.  
arginine [ARG]**



**2.7.8.31: Undecaprenyl-phosphate glucose phosphotransferase  
[RXN-11791]  
vs.  
UMP [UMP]**

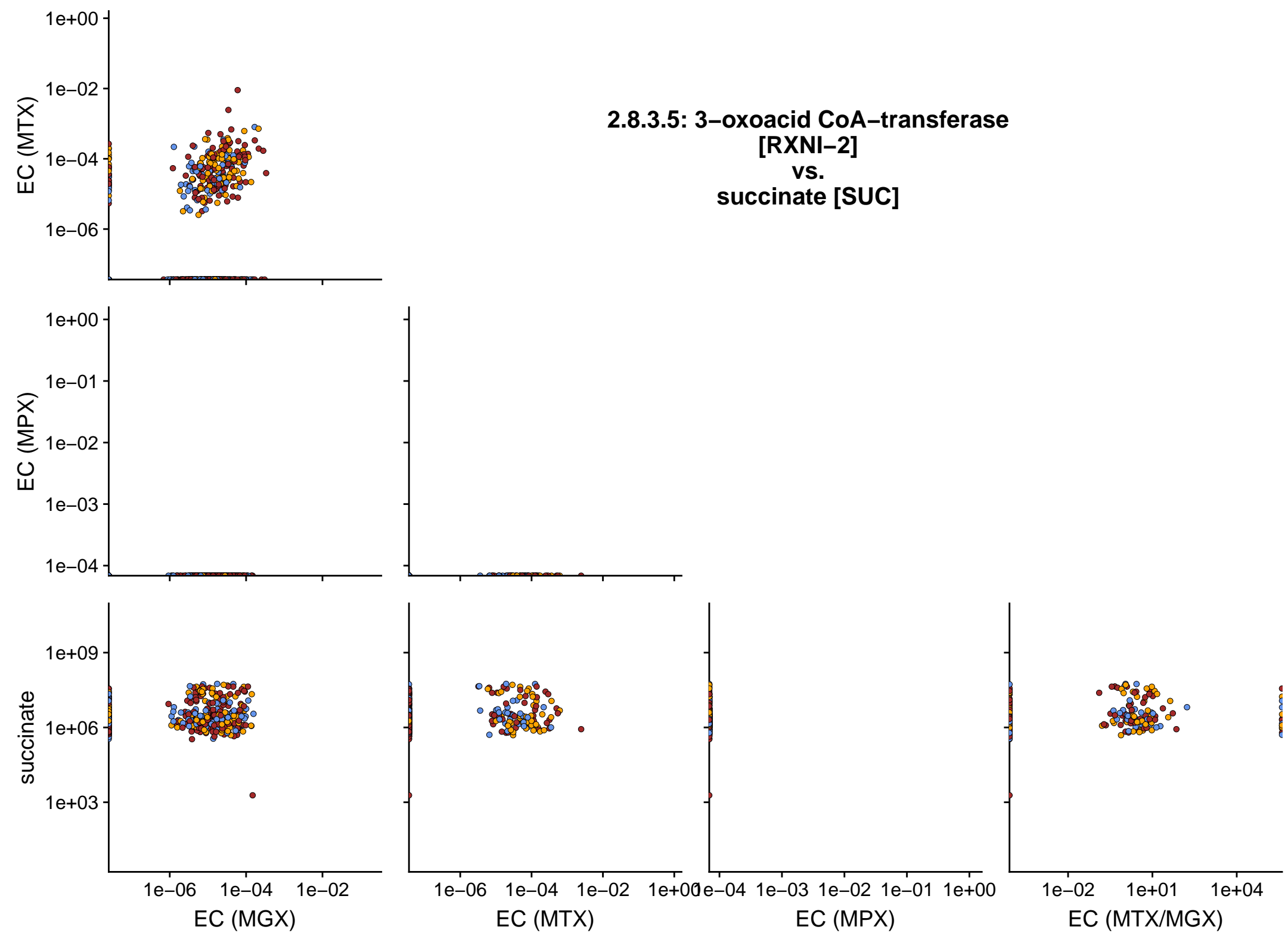


**2.7.8.8: CDP-diacylglycerol--serine O-phosphatidyltransferase  
[PHOSPHASERSYN-RXN]  
vs.  
serine [SER]**

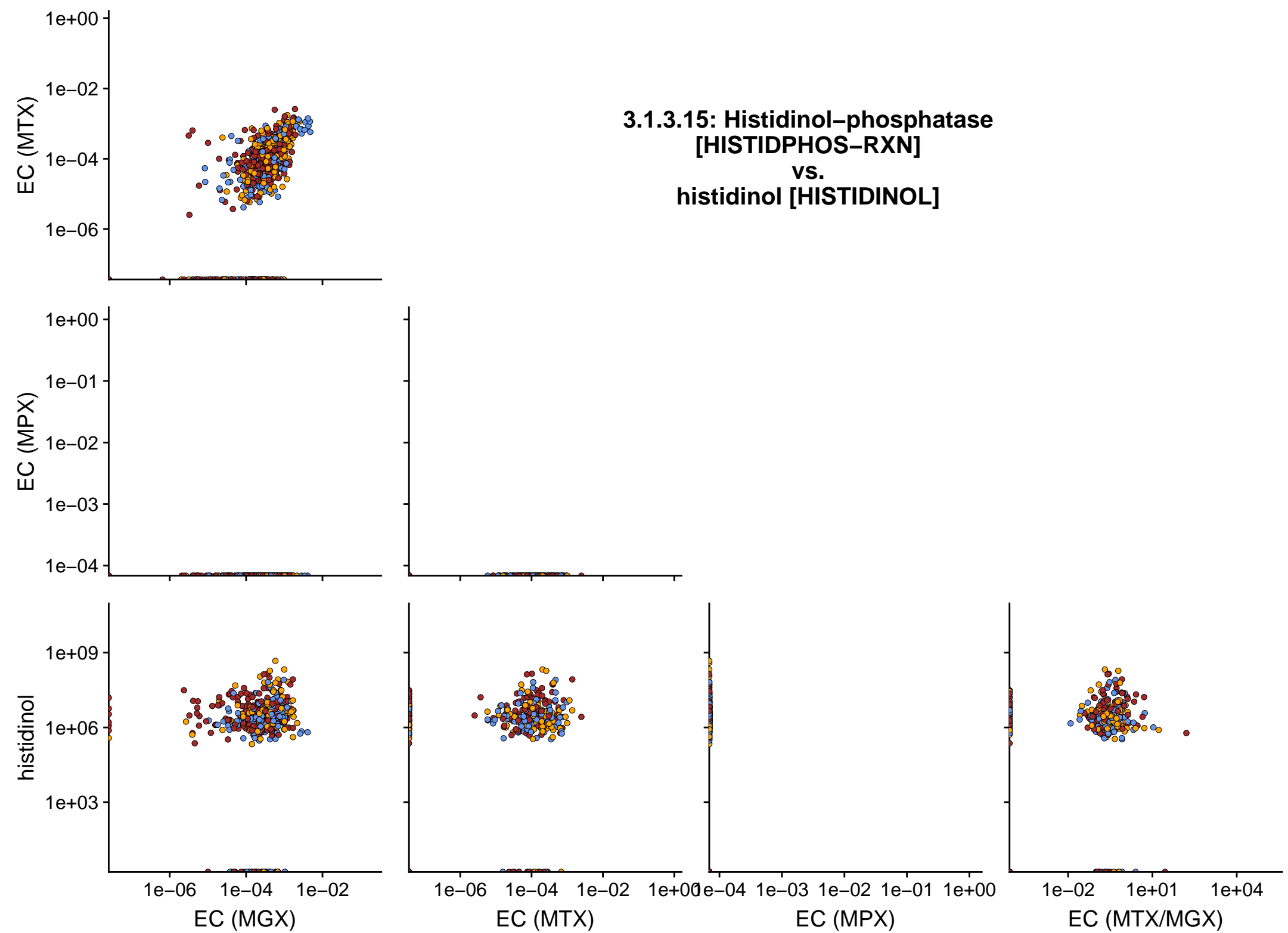




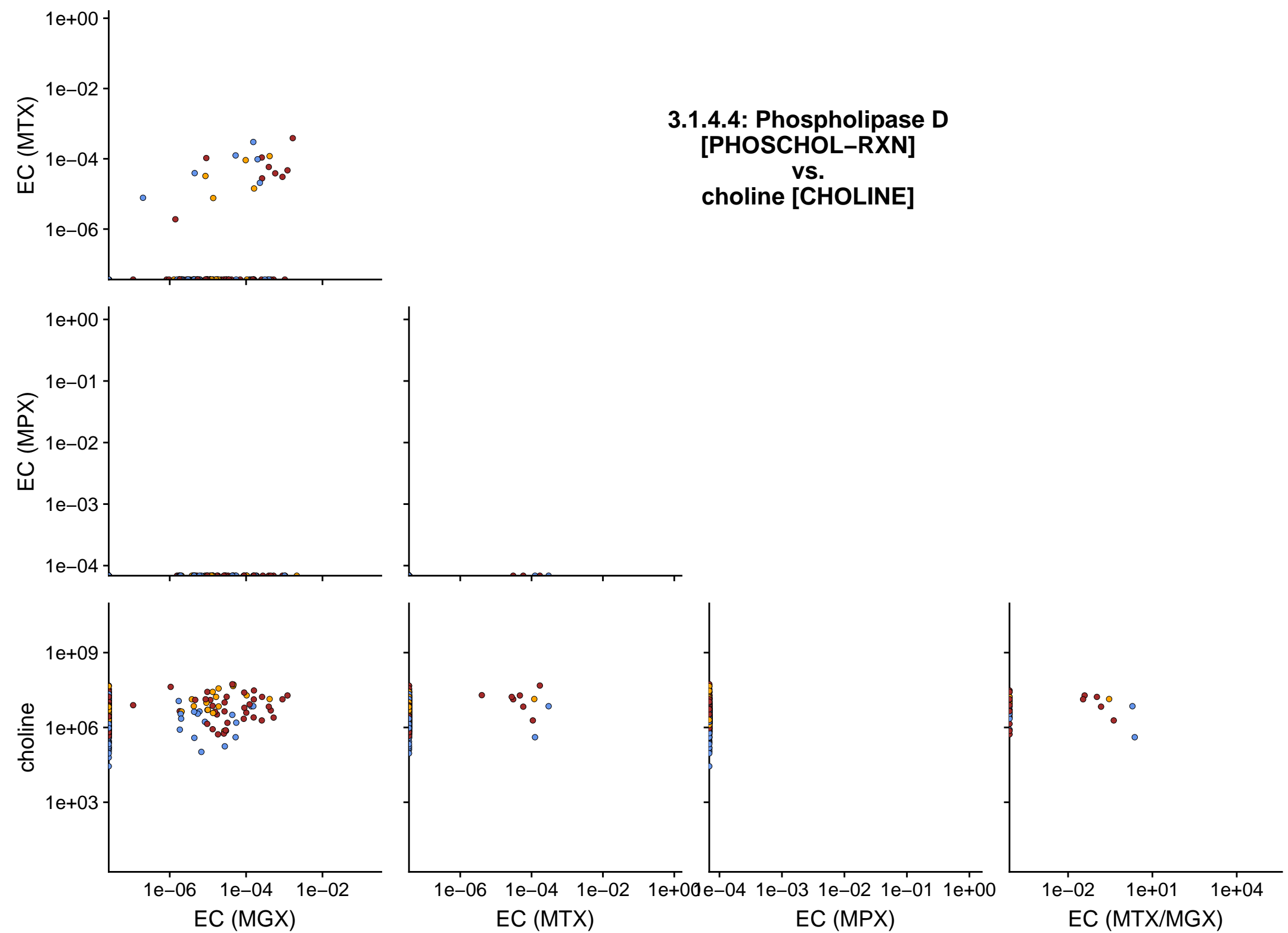
**2.8.3.5: 3-oxoacid CoA-transferase  
[RXNI-2]  
vs.  
succinate [SUC]**



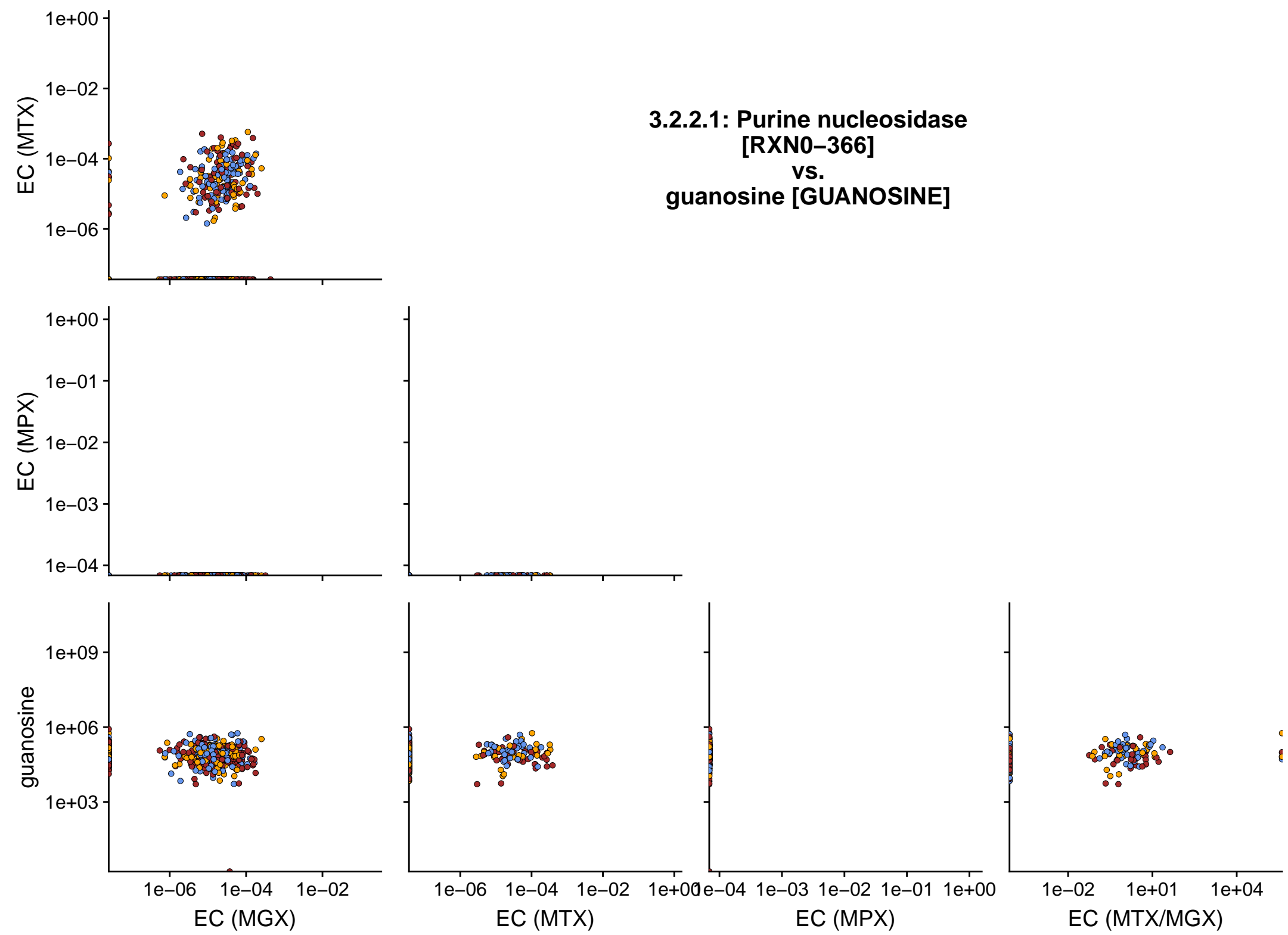
**3.1.3.15: Histidinol-phosphatase  
[HISTIDPHOS-RXN]  
vs.  
histidinol [HISTIDINOL]**



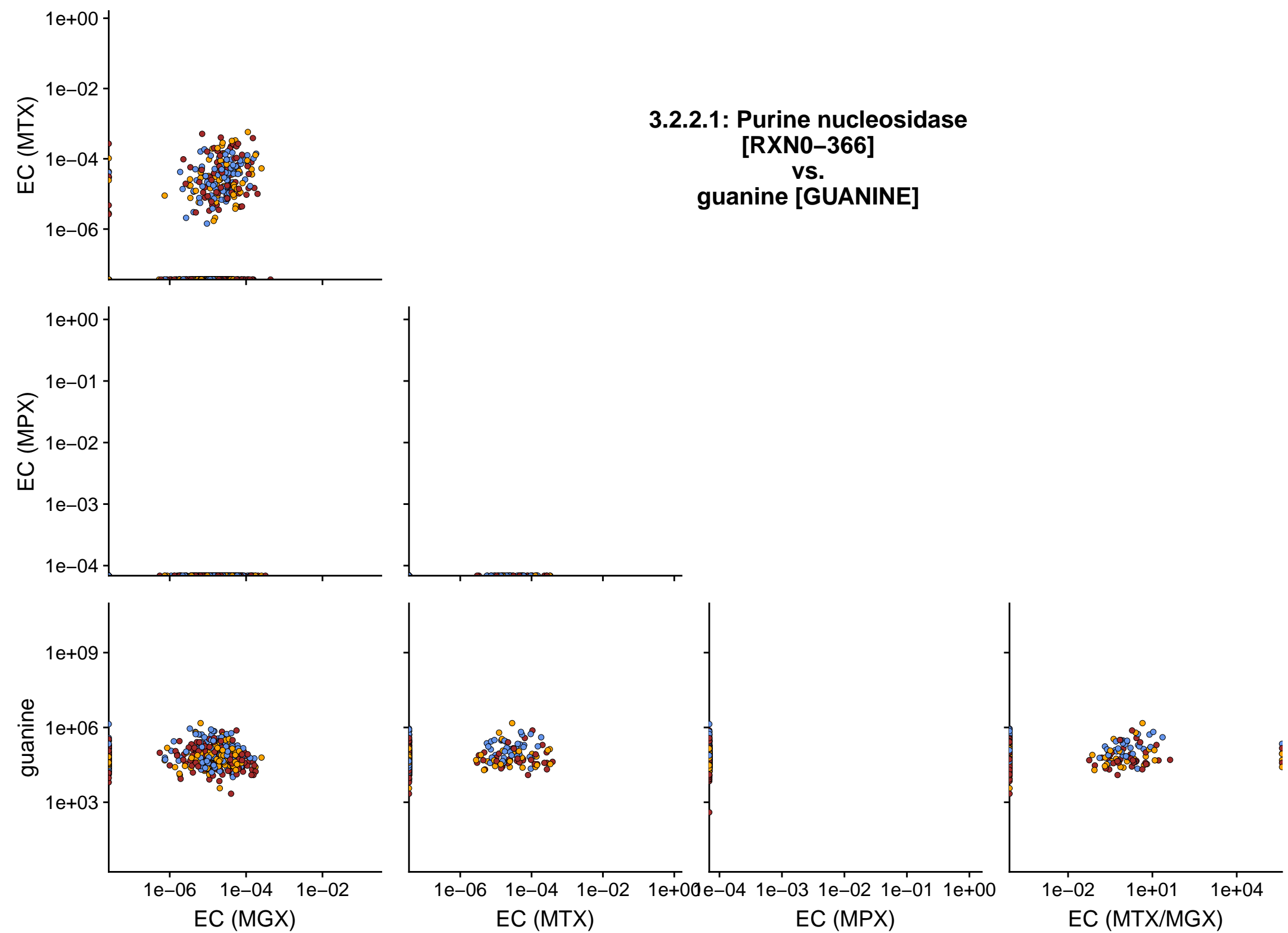
**3.1.4.4: Phospholipase D  
[PHOSCHOL-RXN]  
vs.  
choline [CHOLINE]**



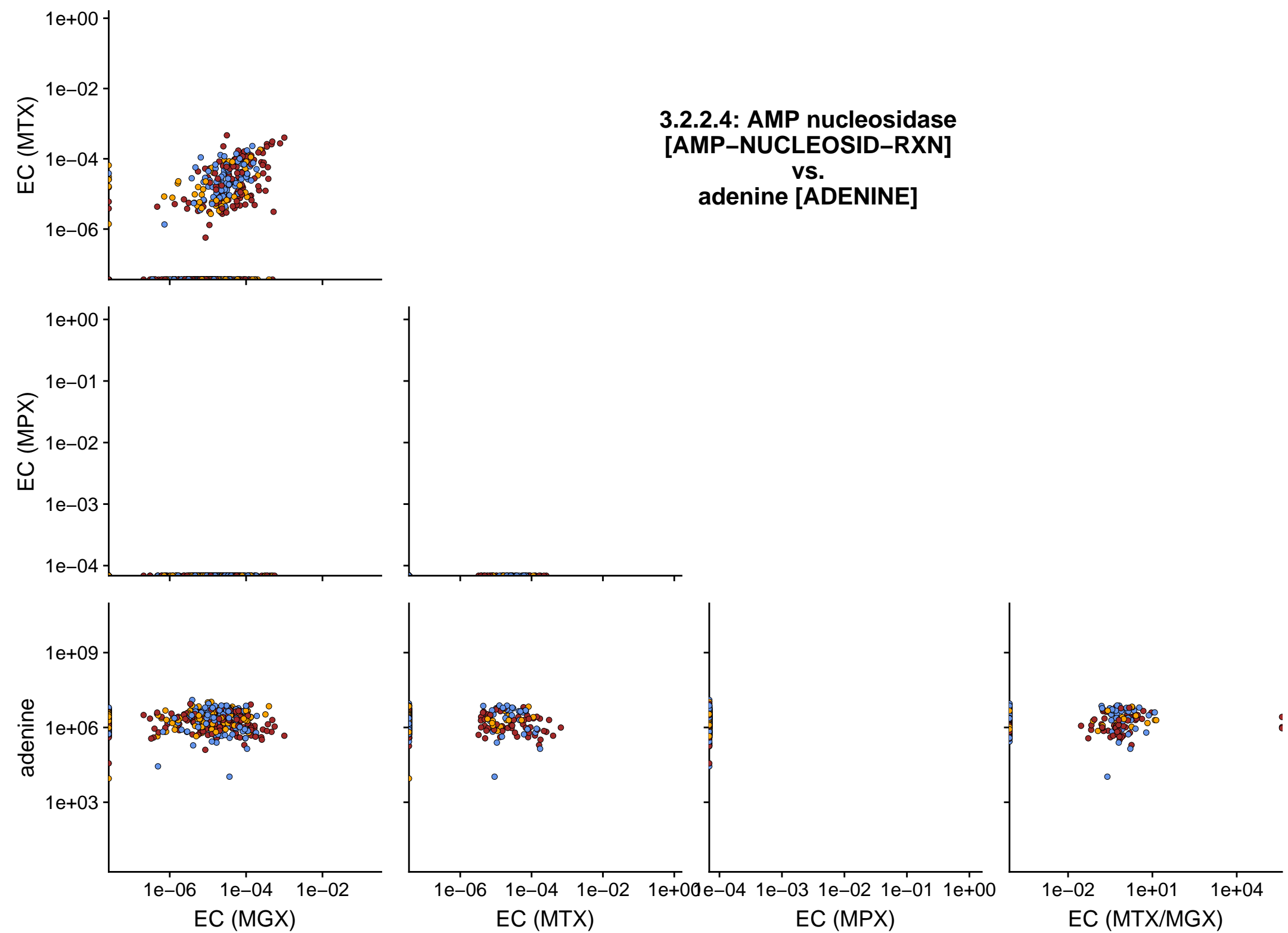
**3.2.2.1: Purine nucleosidase  
[RXN0-366]  
vs.  
guanosine [GUANOSINE]**



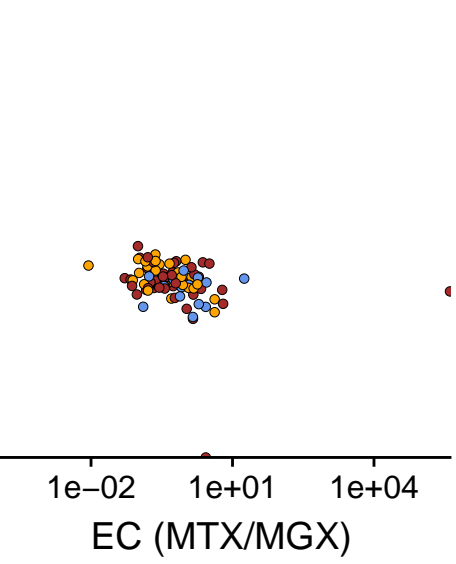
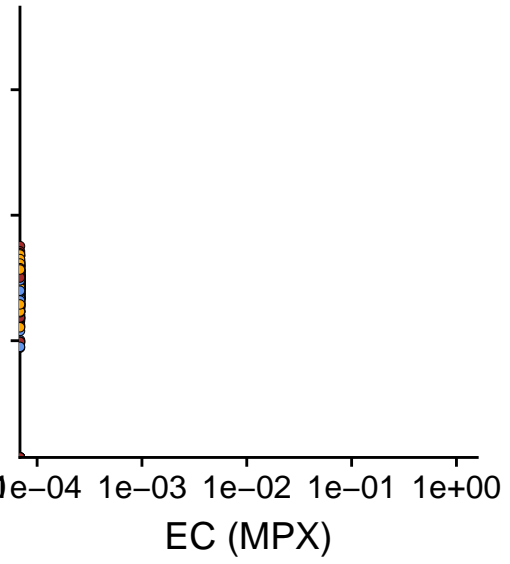
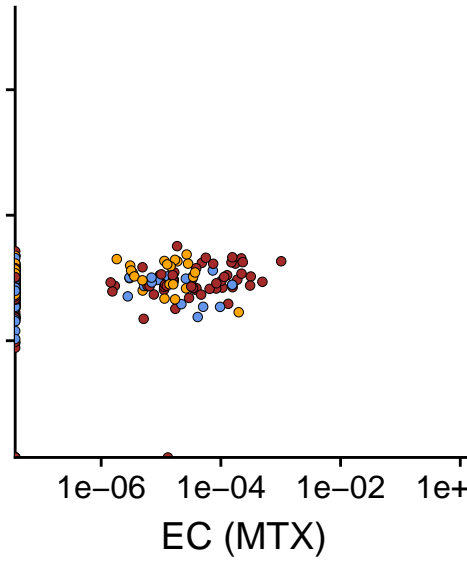
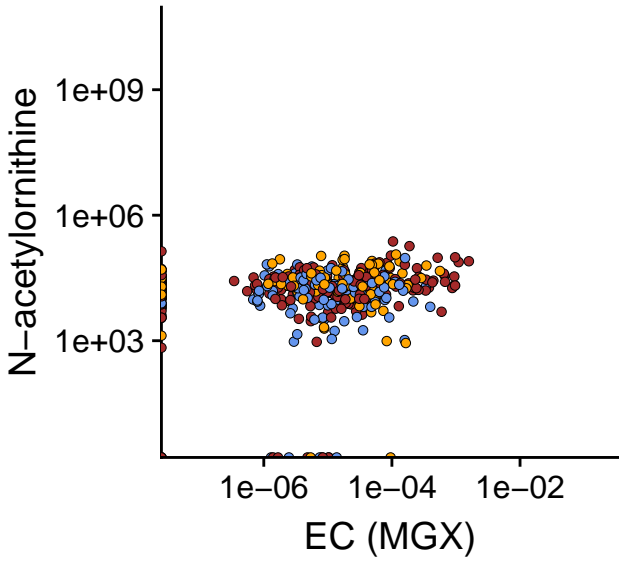
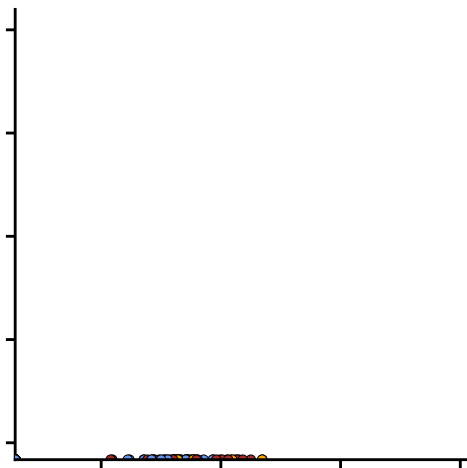
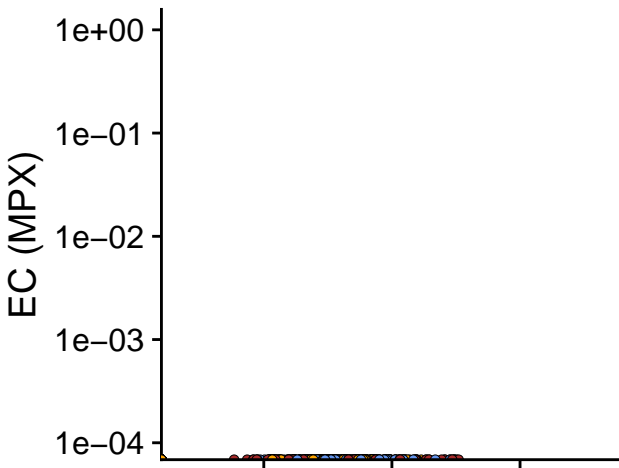
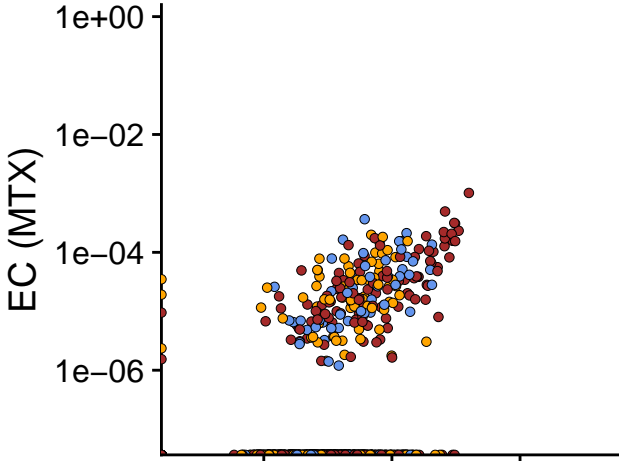
**3.2.2.1: Purine nucleosidase  
[RXN0-366]  
vs.  
guanine [GUANINE]**



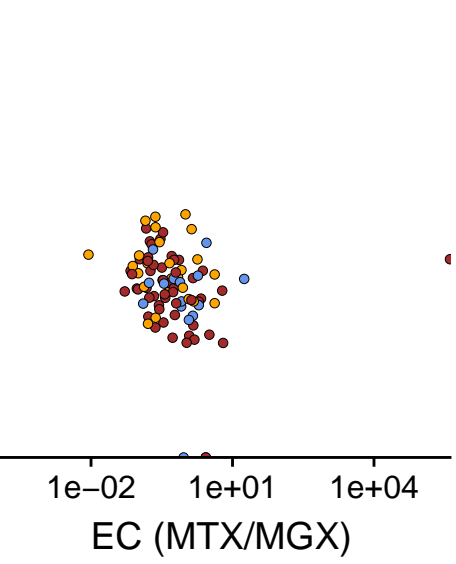
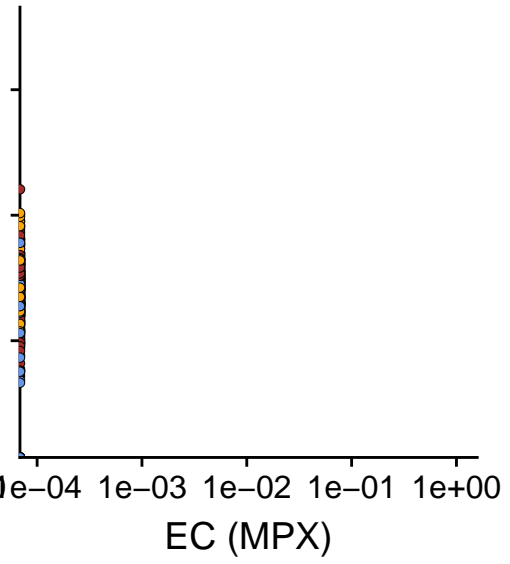
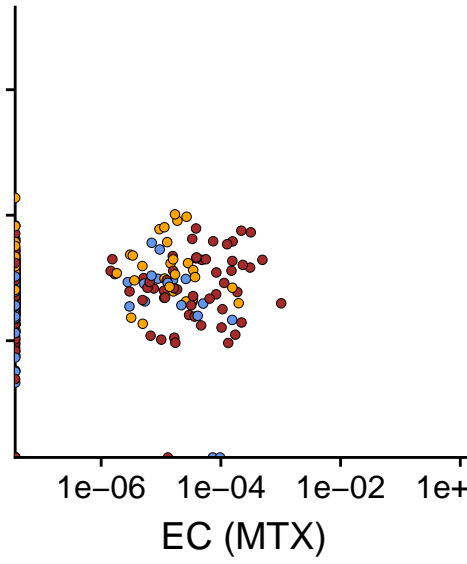
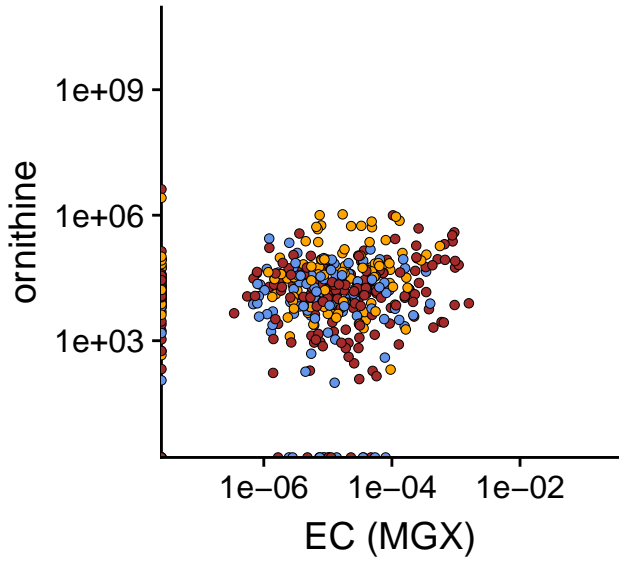
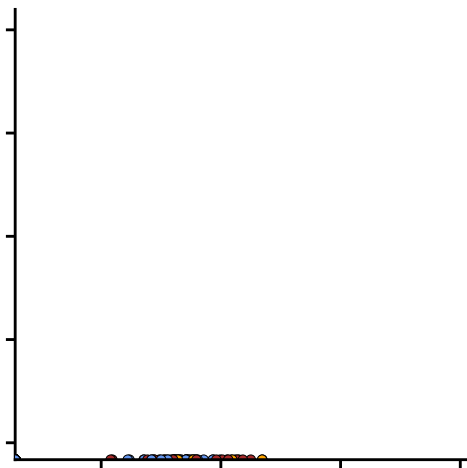
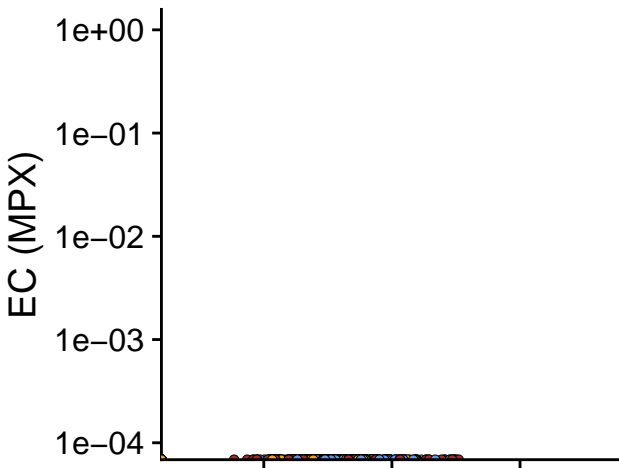
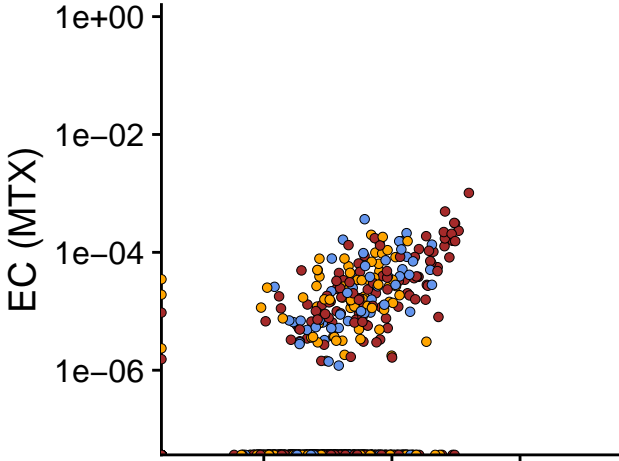
**3.2.2.4: AMP nucleosidase  
[AMP-NUCLEOSID-RXN]  
vs.  
adenine [ADENINE]**



**3.5.1.16: Acetylornithine deacetylase  
[ACETYLORNDEACET-RXN]  
vs.  
N-acetylornithine [N-ALPHA-ACETYLORNITHINE]**

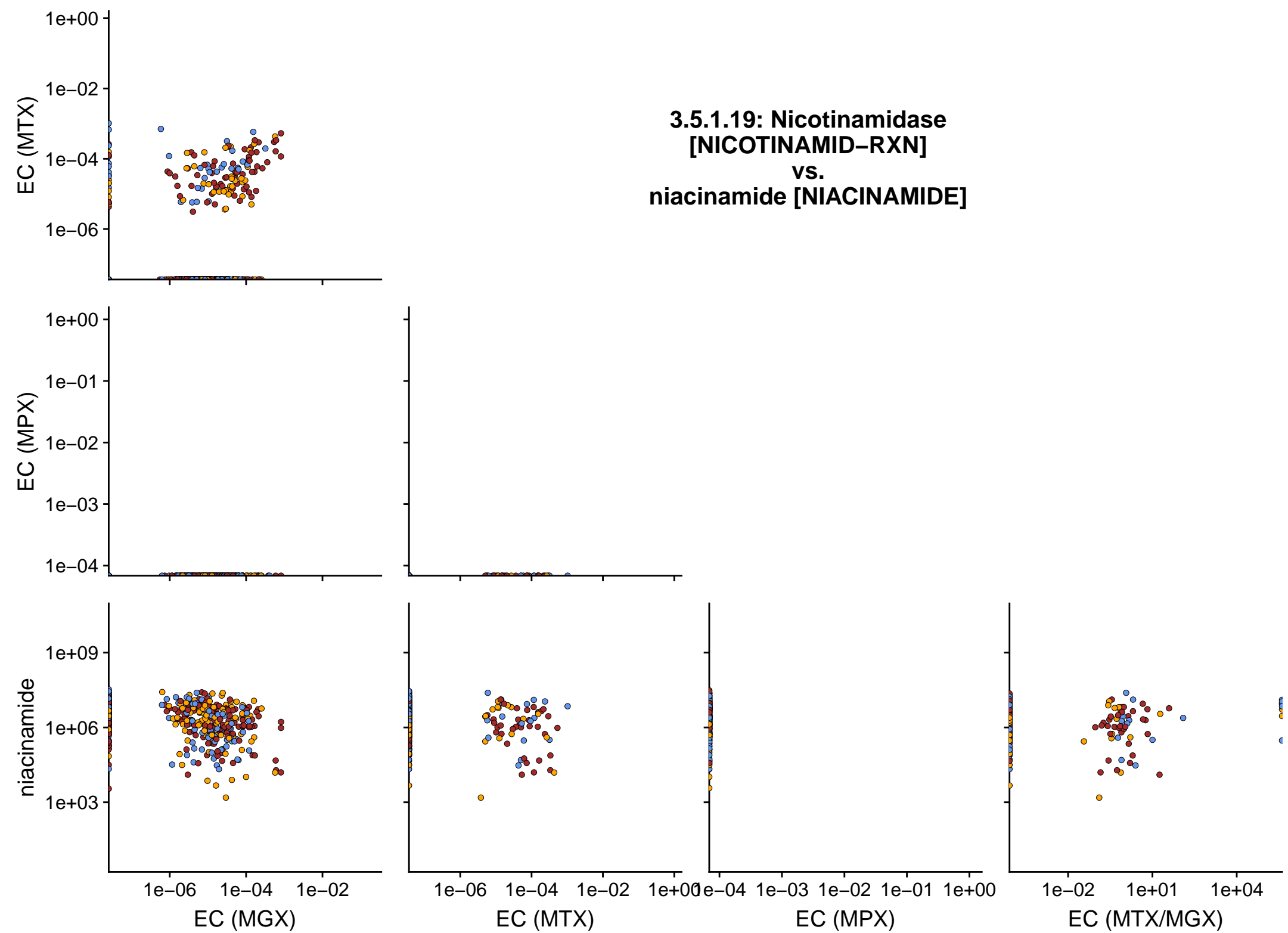


**3.5.1.16: Acetylornithine deacetylase  
[ACETYLORNDEACET-RXN]  
vs.  
ornithine [L-ORNITHINE]**

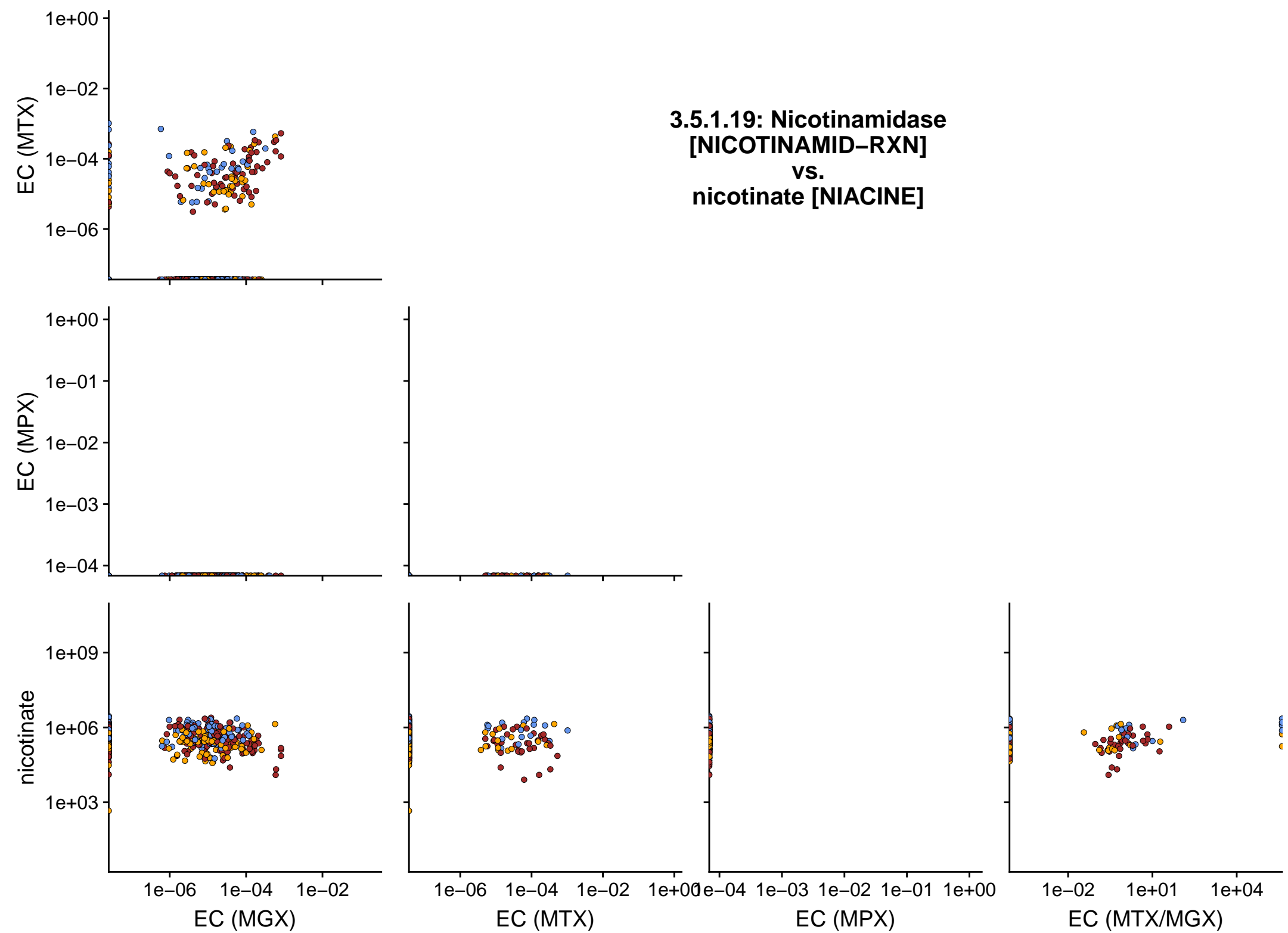




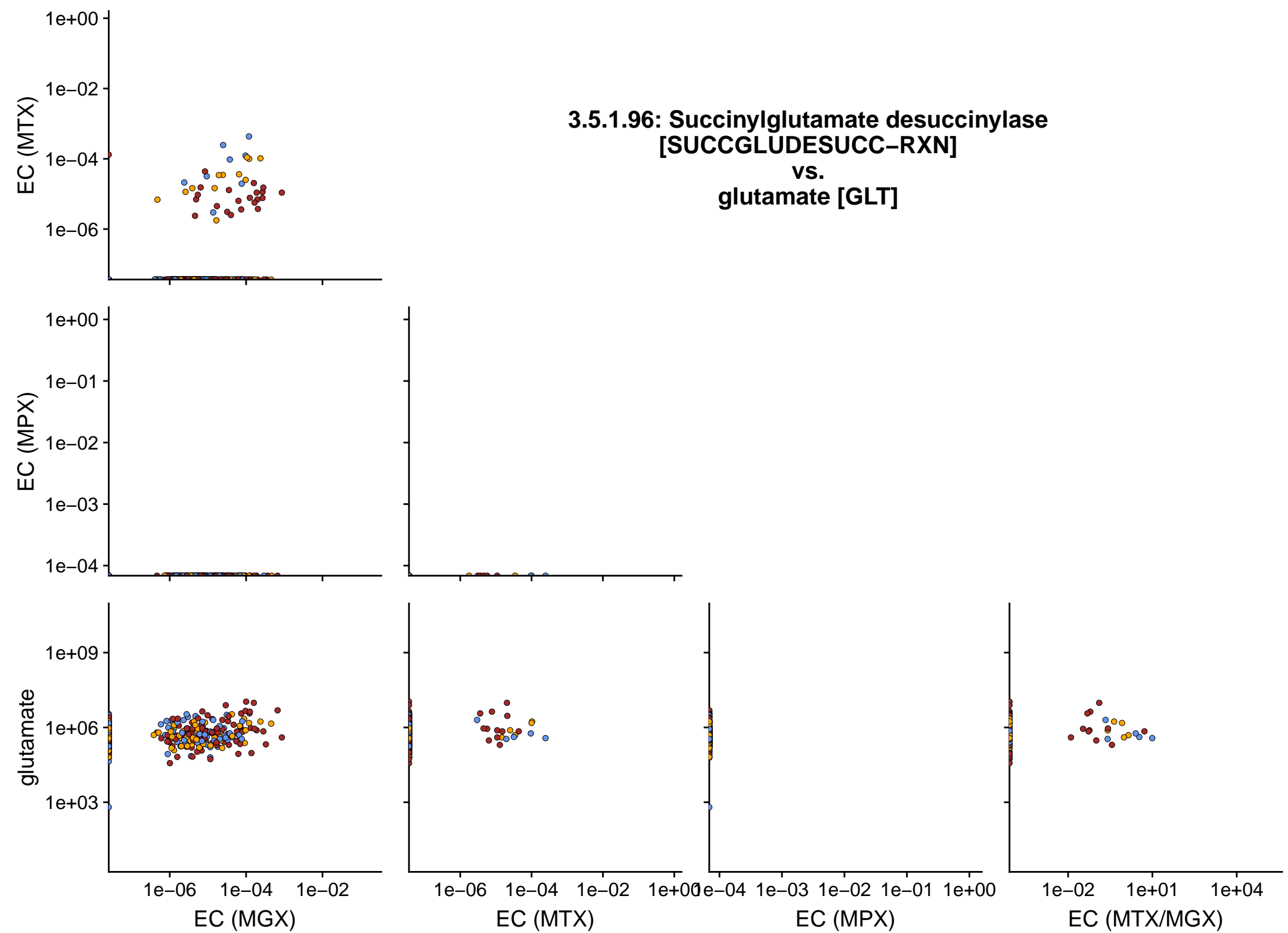
**3.5.1.19: Nicotinamidase  
[NICOTINAMID-RXN]  
vs.  
niacinamide [NIACINAMIDE]**



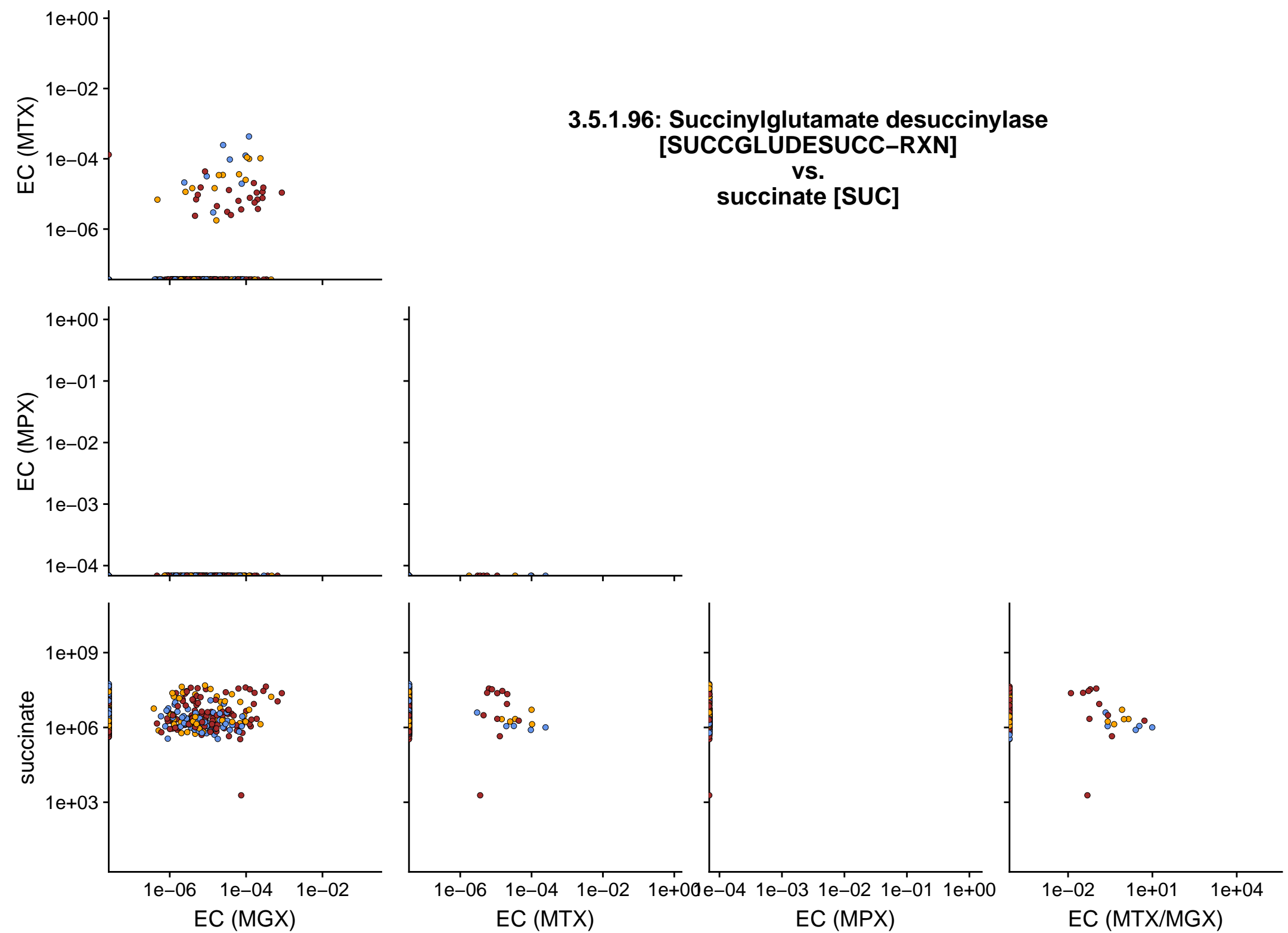
**3.5.1.19: Nicotinamidase  
[NICOTINAMID-RXN]  
vs.  
nicotinate [NIACINE]**



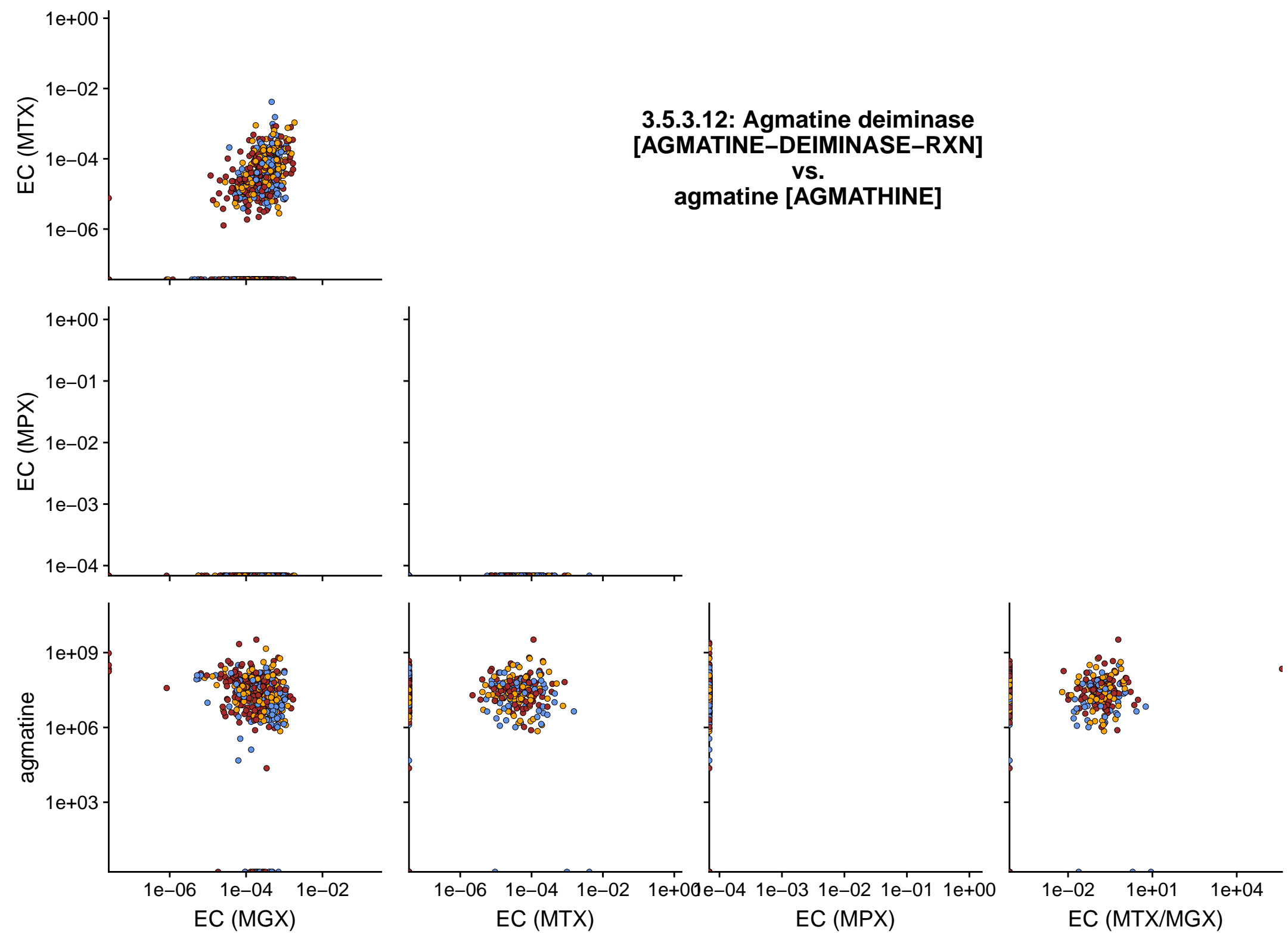
**3.5.1.96: Succinylglutamate desuccinylase  
[SUCCGLUDESUCC-RXN]  
vs.  
glutamate [GLT]**



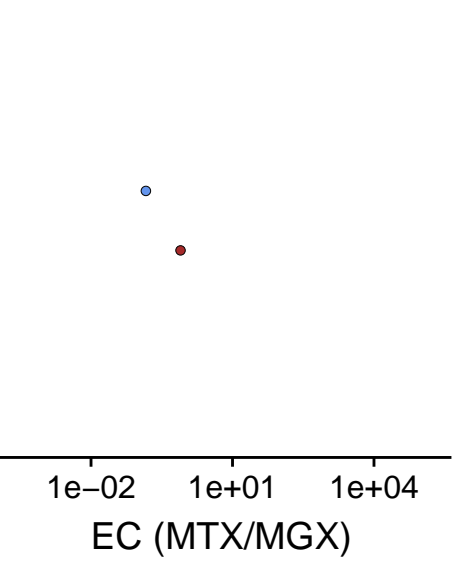
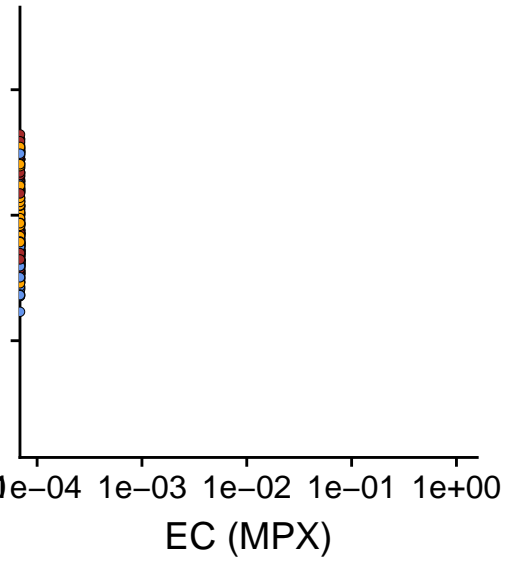
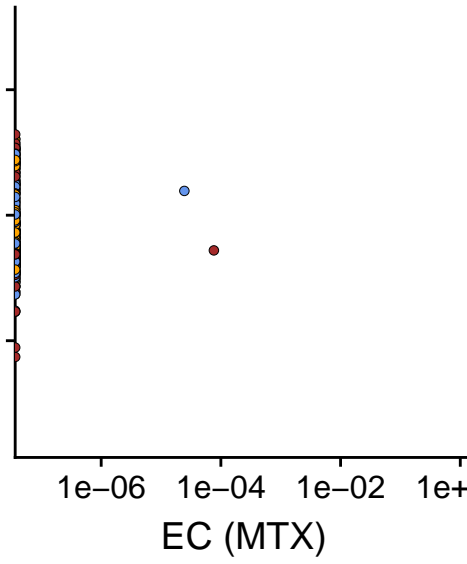
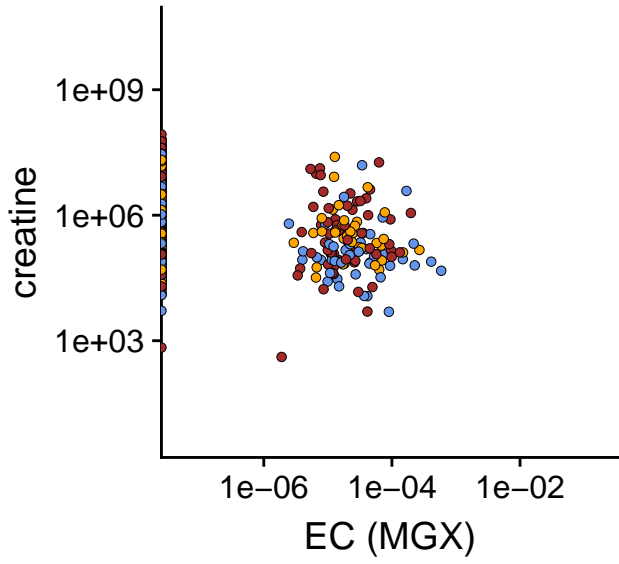
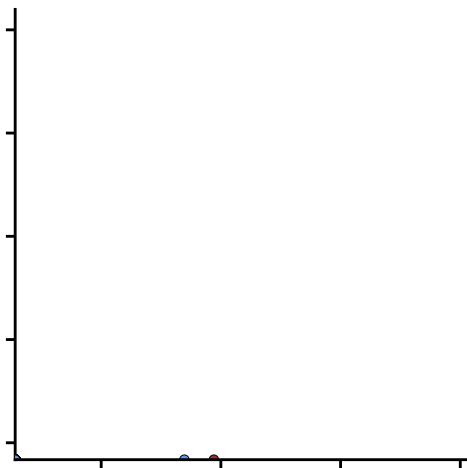
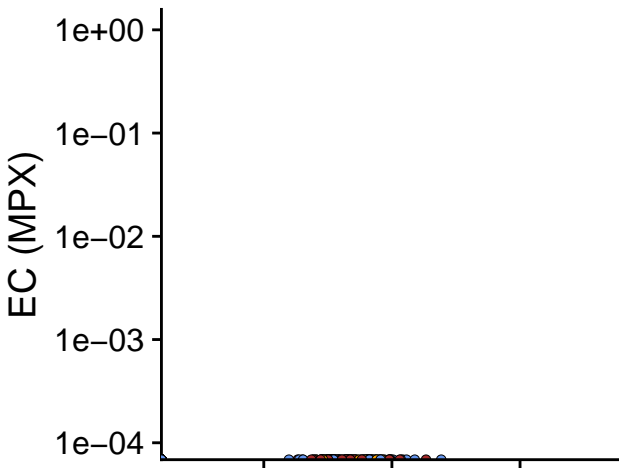
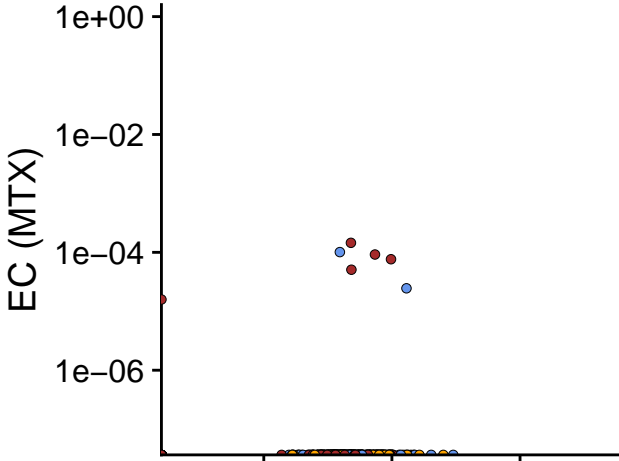
**3.5.1.96: Succinylglutamate desuccinylase  
[SUCCGLUDESUCC-RXN]  
vs.  
succinate [SUC]**



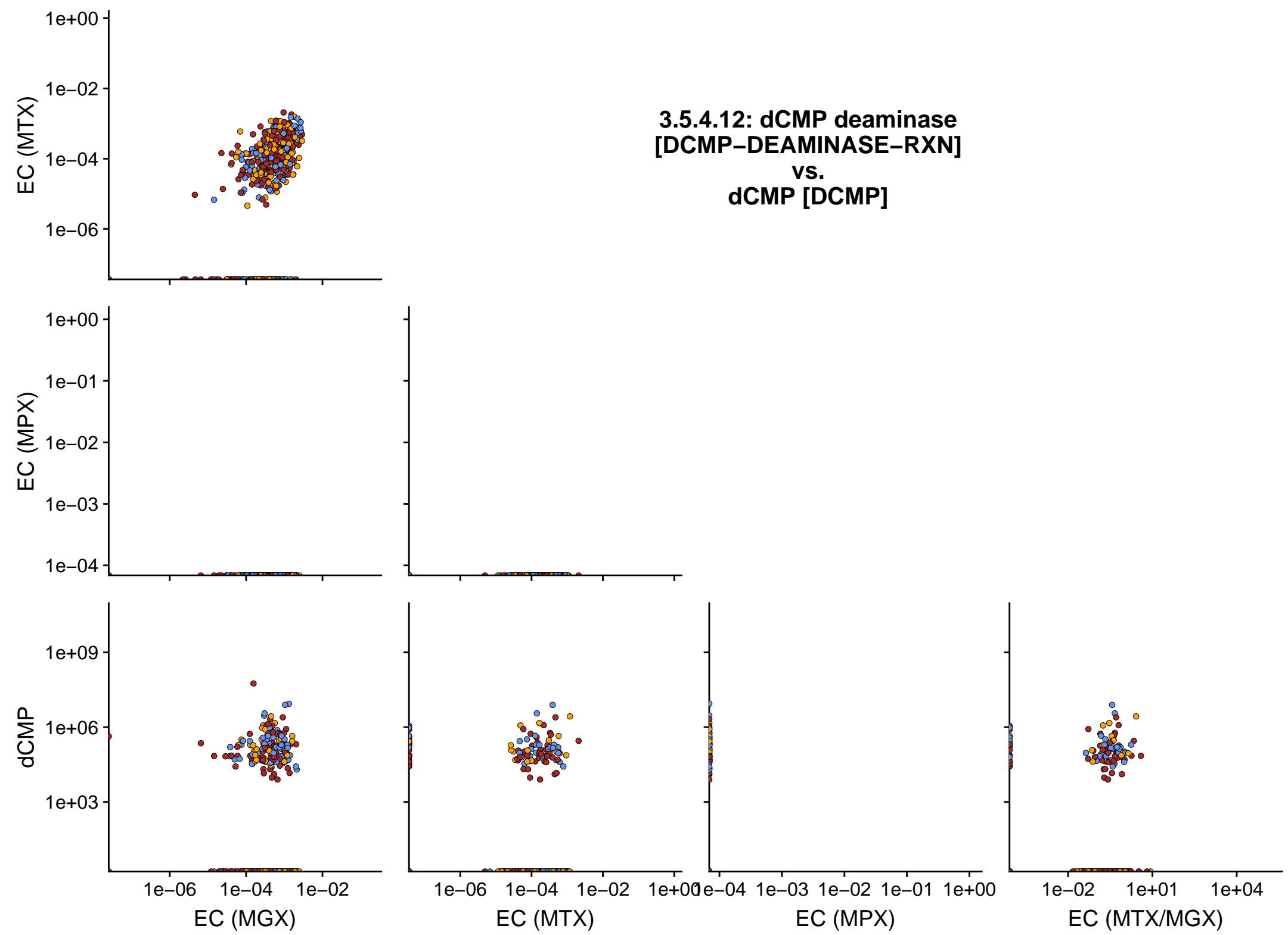
**3.5.3.12: Agmatine deiminase  
[AGMATINE-DEIMINASE-RXN]  
vs.  
agmatine [AGMATHINE]**



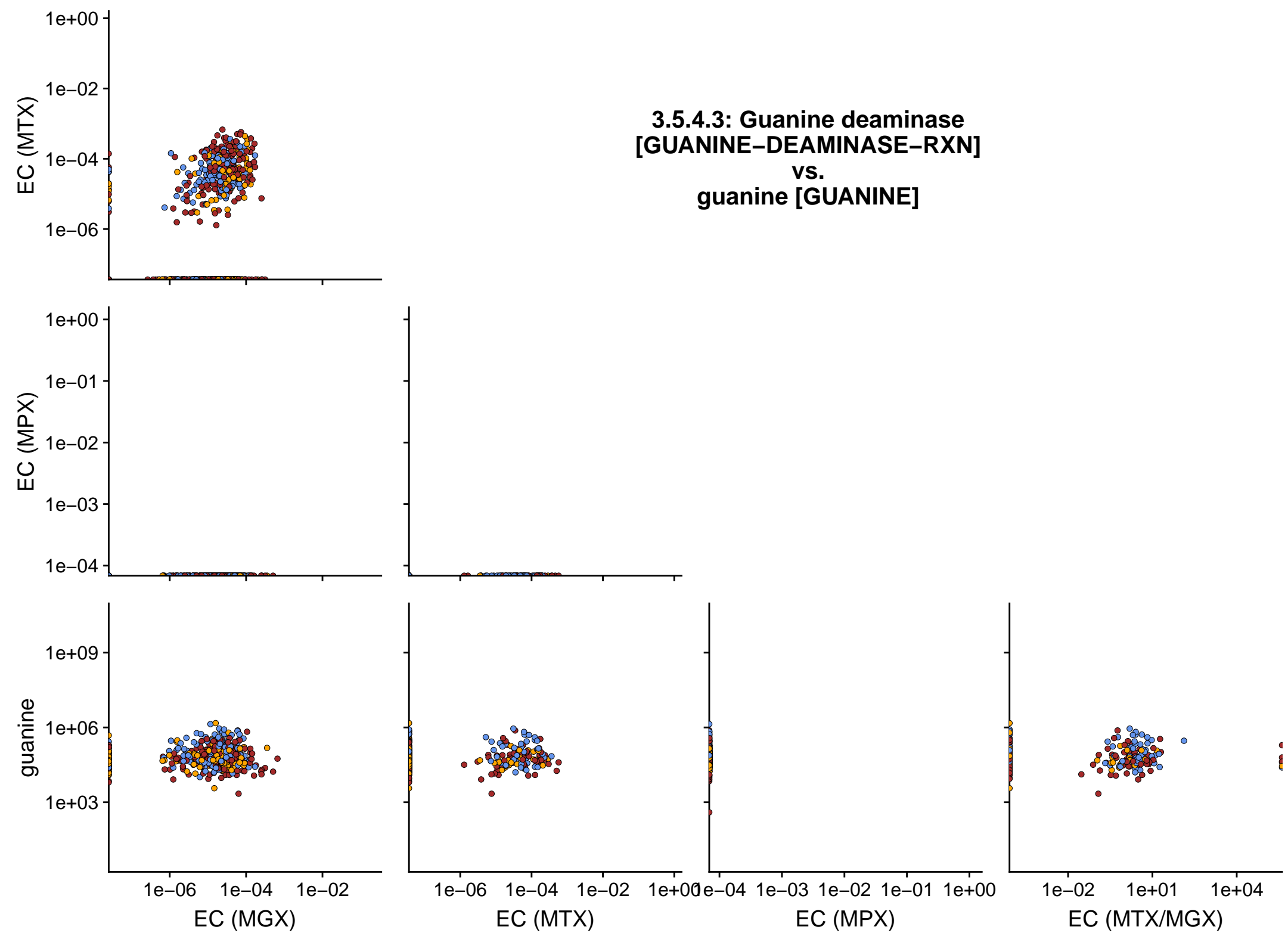
**3.5.3.3: Creatinase  
[CREATINASE-RXN]  
vs.  
creatinine [CREATINE]**



**3.5.4.12: dCMP deaminase  
[DCMP-DEAMINASE-RXN]  
vs.  
dCMP [DCMP]**

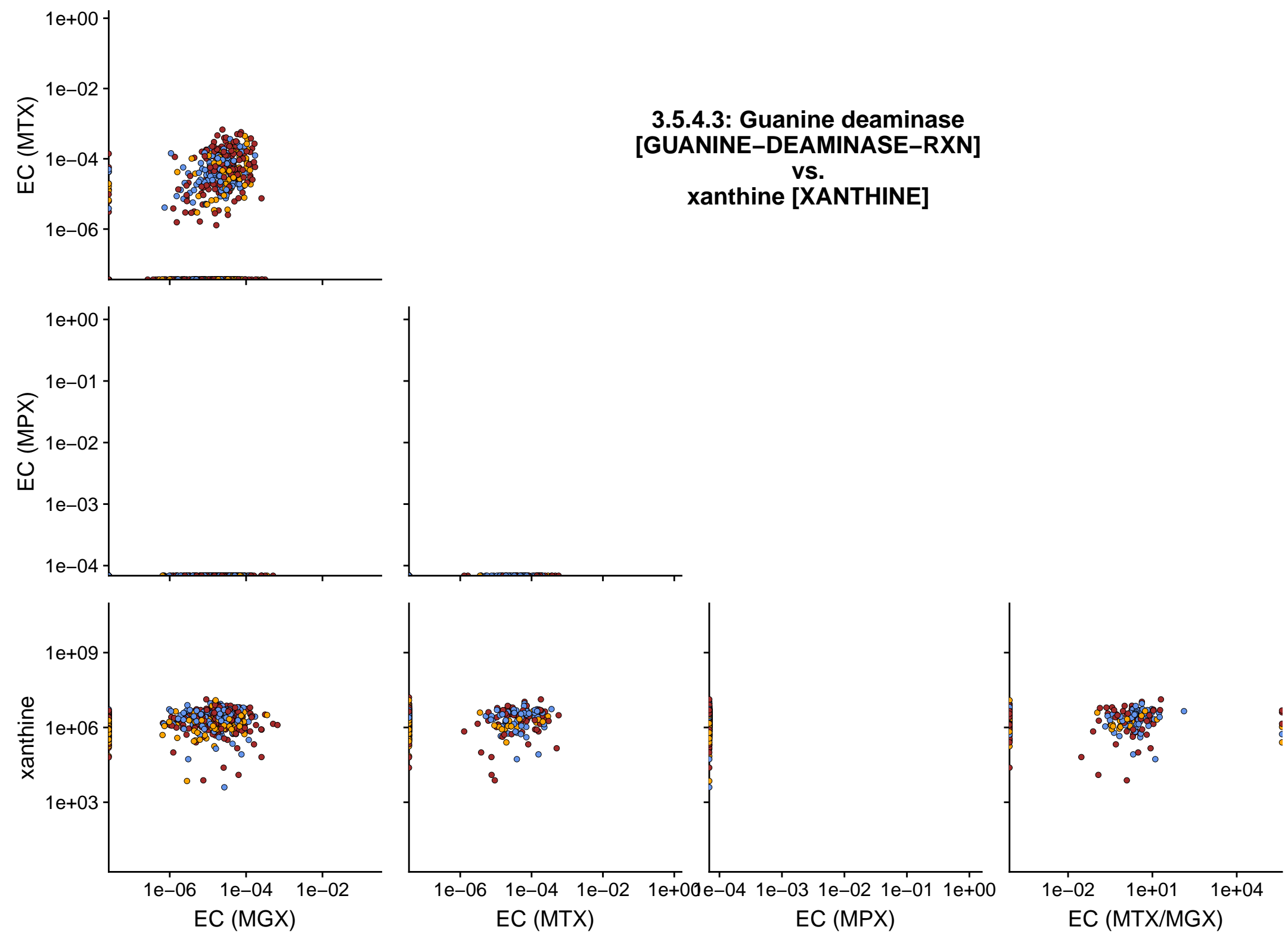


**3.5.4.3: Guanine deaminase  
[GUANINE-DEAMINASE-RXN]  
vs.  
guanine [GUANINE]**

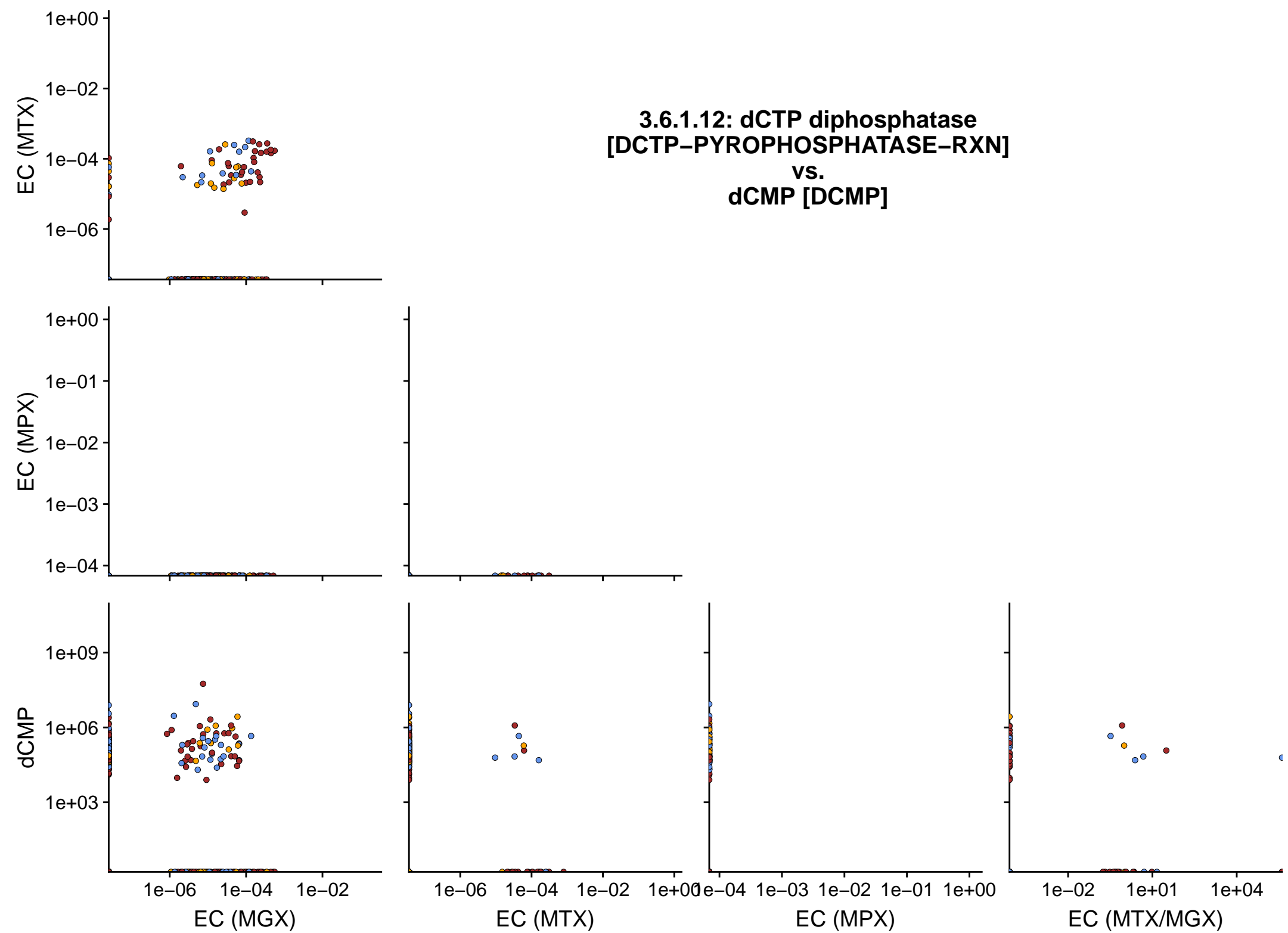




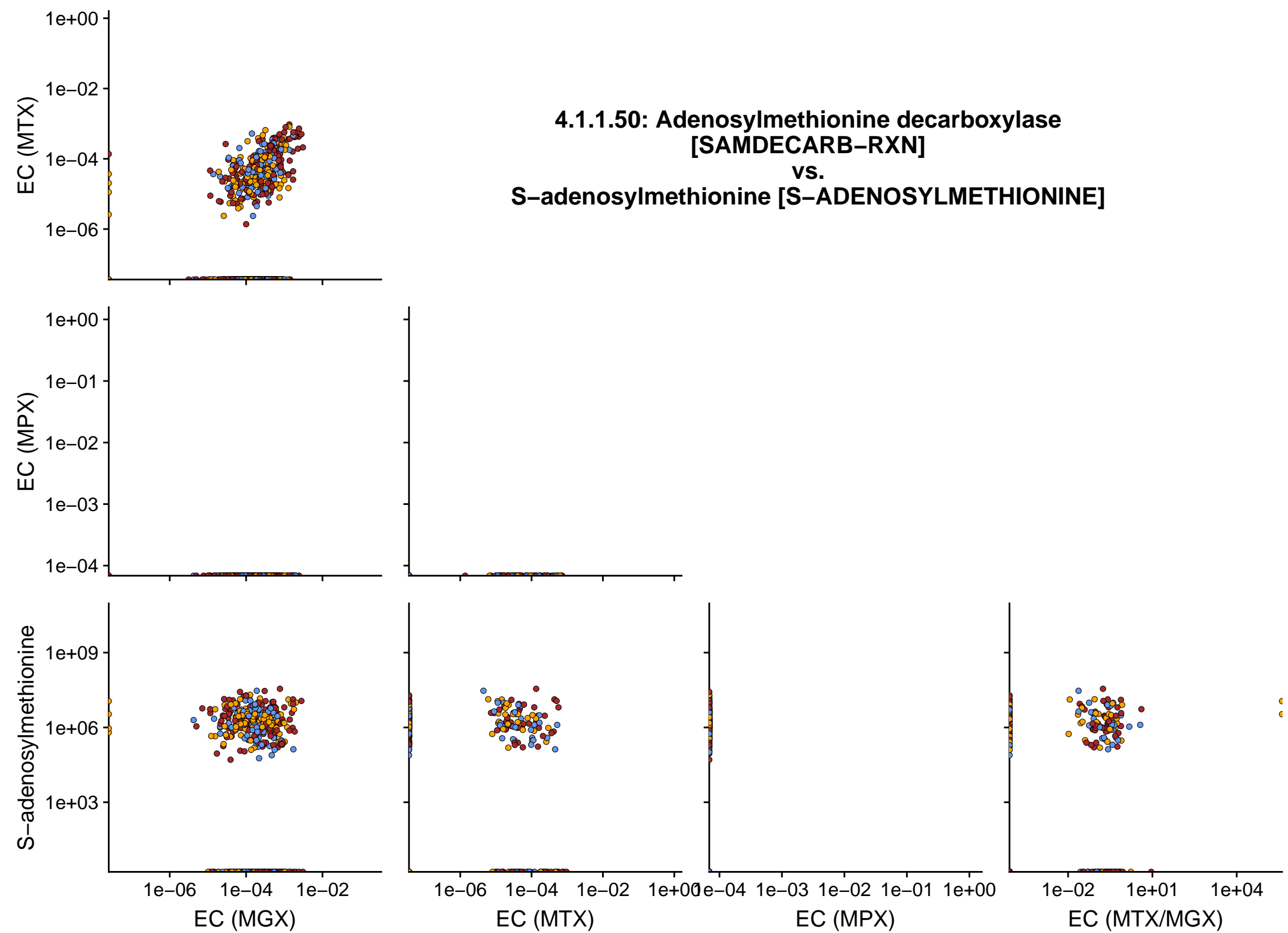
**3.5.4.3: Guanine deaminase  
[GUANINE-DEAMINASE-RXN]  
vs.  
xanthine [XANTHINE]**



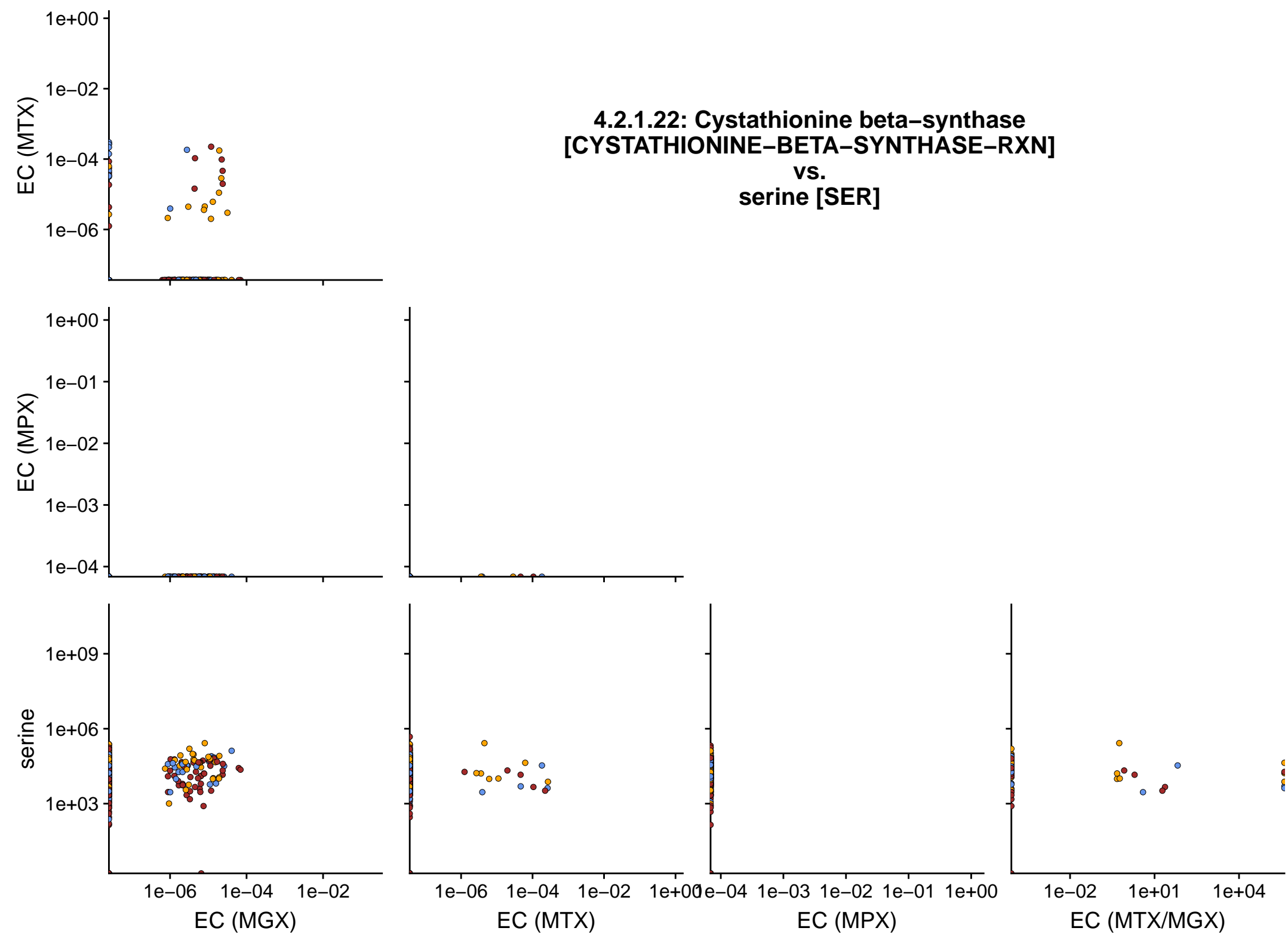
**3.6.1.12: dCTP diphosphatase  
[DCTP-PYROPHOSPHATASE-RXN]  
vs.  
dCMP [DCMP]**



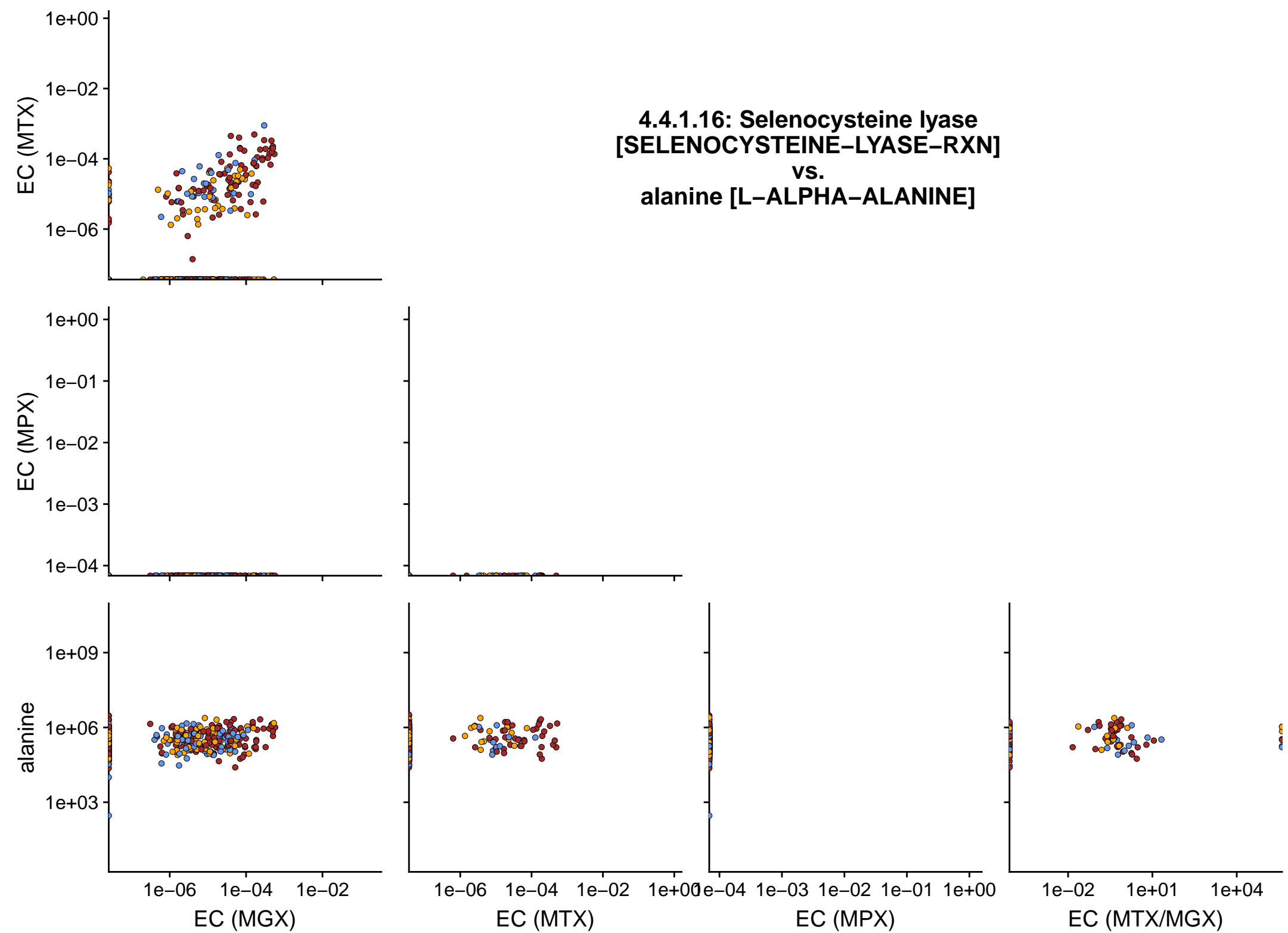
**4.1.1.50: Adenosylmethionine decarboxylase  
[SAMDECARB-RXN]  
vs.  
S-adenosylmethionine [S-ADENOSYLMETHIONINE]**



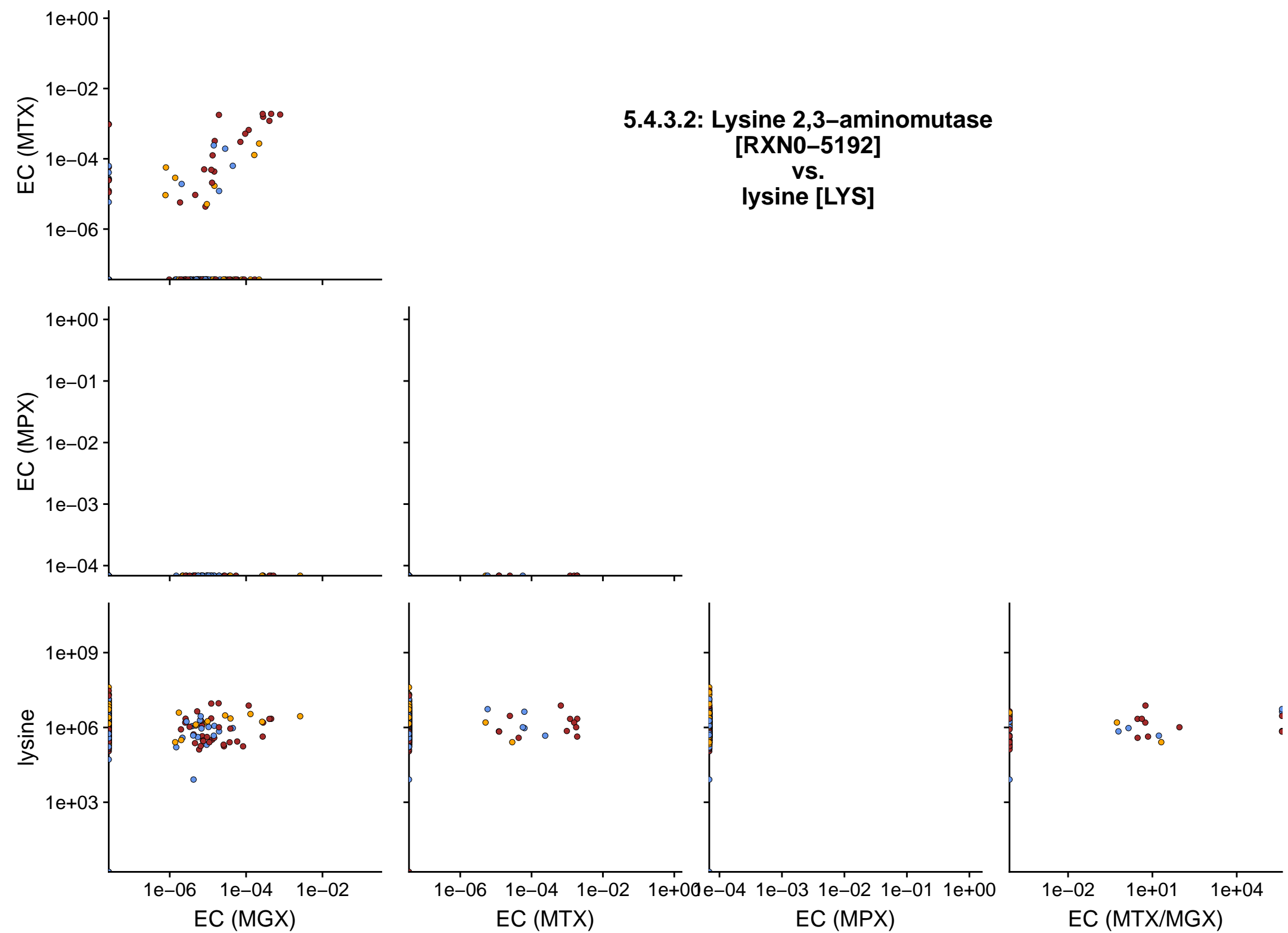
**4.2.1.22: Cystathionine beta-synthase  
[CYSTATHIONINE-BETA-SYNTHASE-RXN]  
vs.  
serine [SER]**



**4.4.1.16: Selenocysteine lyase  
[SELENOCYSTEINE-LYASE-RXN]  
vs.  
alanine [L-ALPHA-ALANINE]**



**5.4.3.2: Lysine 2,3-aminomutase  
[RXN0-5192]  
vs.  
lysine [LYS]**



**6.3.2.7: UDP-N-acetylmuramoyl-L-alanyl-D-glutamate--L-lysine ligase  
[6.3.2.7-RXN]  
vs.  
lysine [LYS]**

