

Isotopomer Analysis

Project: EBV Lytic Reactivation

James Ch'ng

Glucose utilization by LCL cells after MCT inhibition

Date: Mar 13, 2020

Epstein-Barr Virus-immortalized LCLs were treated in biological triplicate with DMSO, or 1mM AZD3965+20mM VB124, for 48h or 72h. AZD3965+VB124-treated cells displayed reduced cell growth, suggesting MCT1/4-mediated lactate transport is important for LCL growth. We harvested and performed metabolite extraction on each treatment population.

READ ME: All significance tests were performed on normalized data with a one-way ANOVA. * p-value < 0.05, ** p-value < 0.01, *** p-value < 0.001.

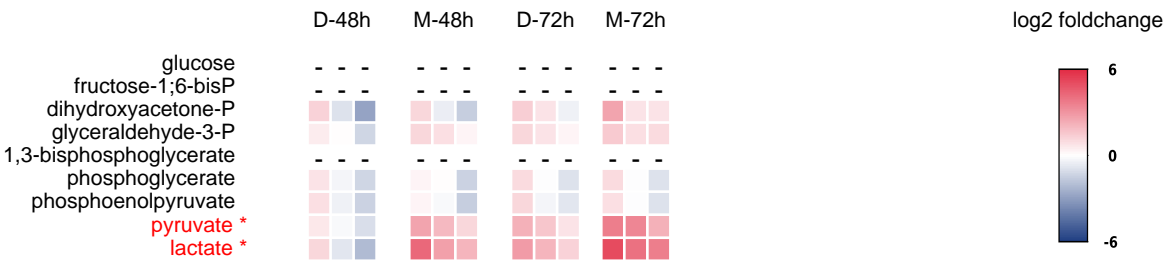
Pool sizes were normalized to field(s):

cell number*

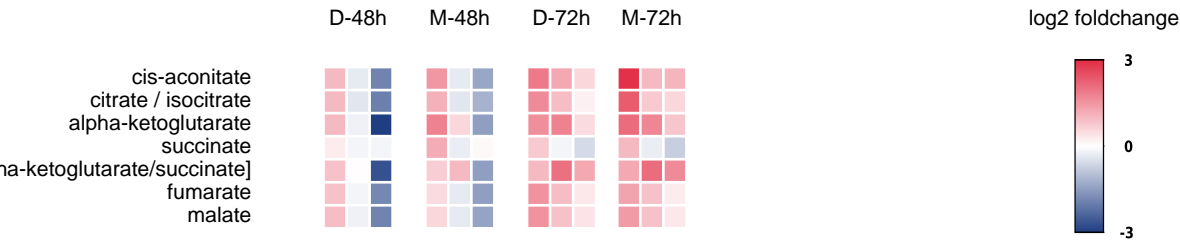
trifluoromethanesulfonate*

Pool Sizes

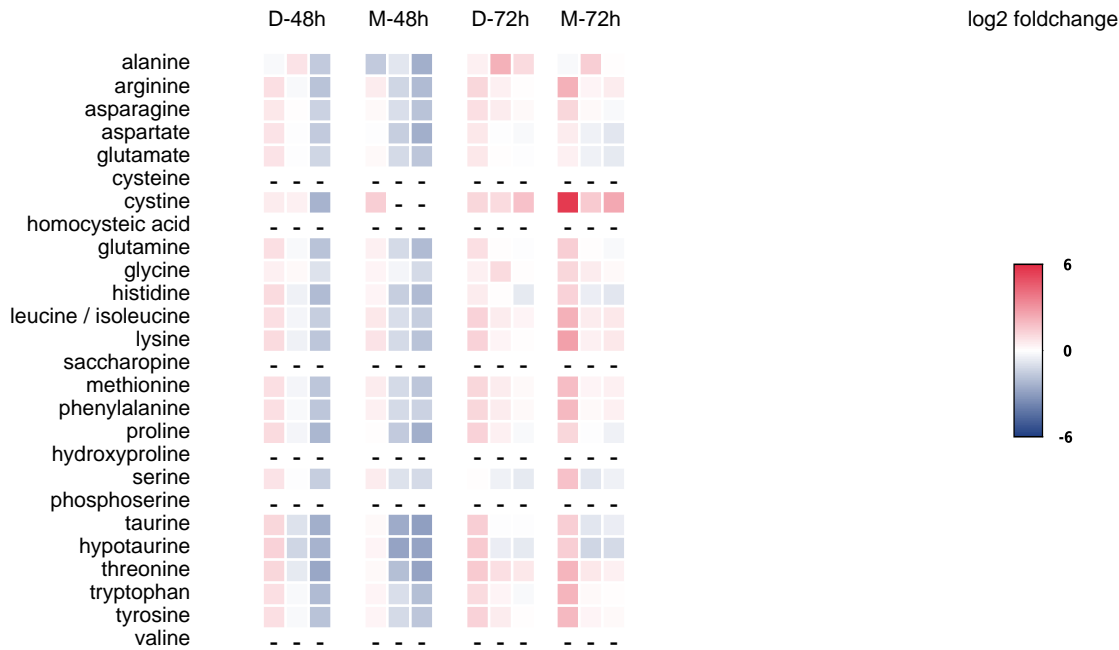
glycolysis



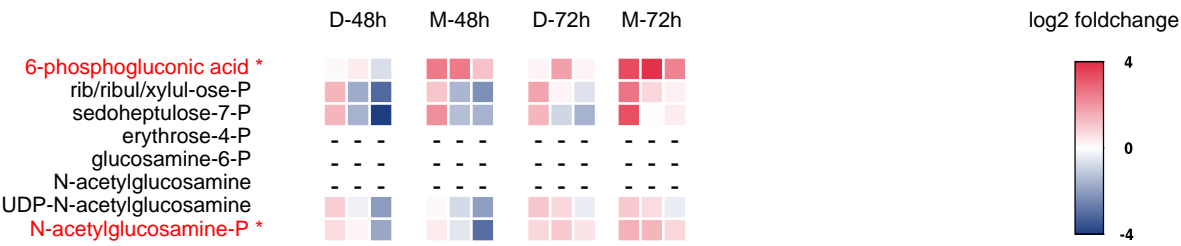
TCA



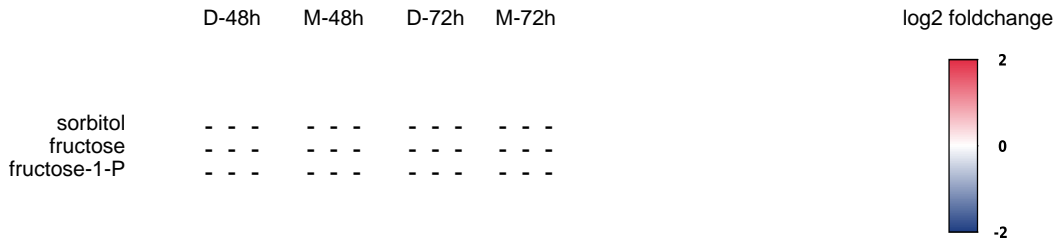
amino acid



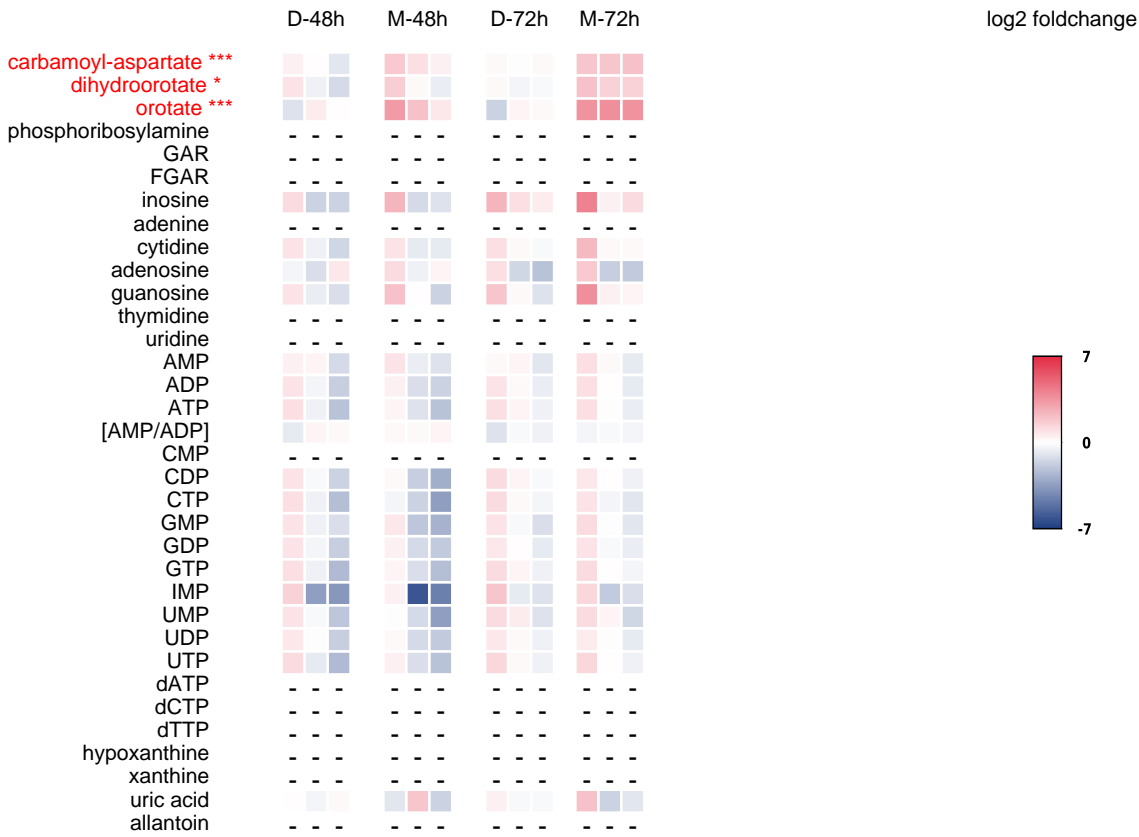
PPP



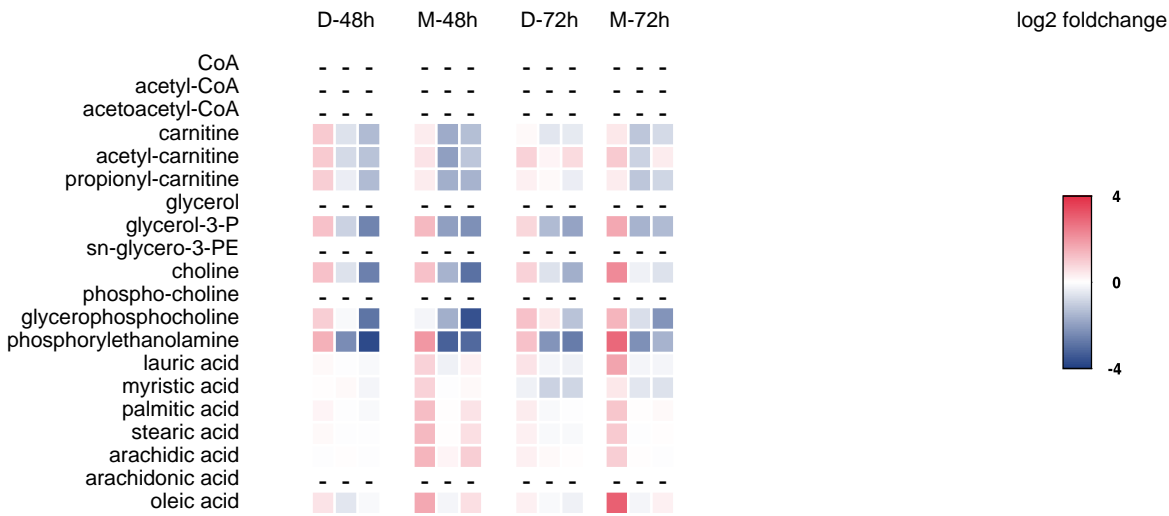
polyol-pathway



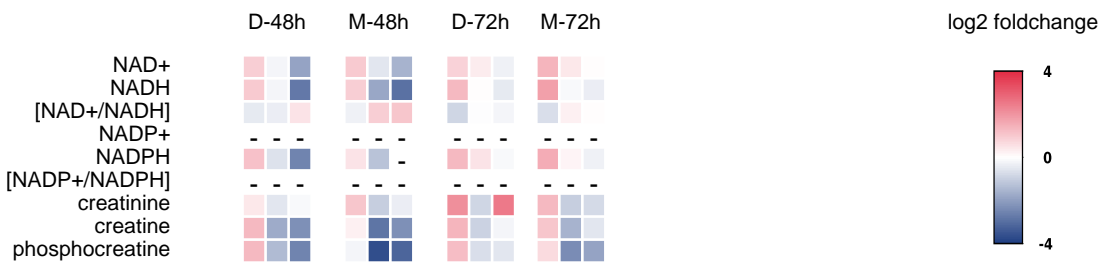
nucleotide



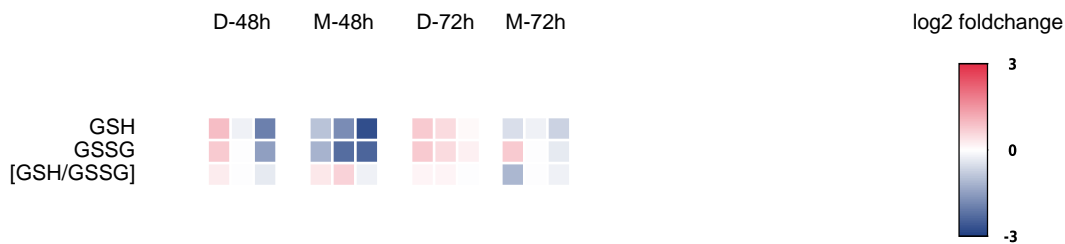
lipid-metabolism



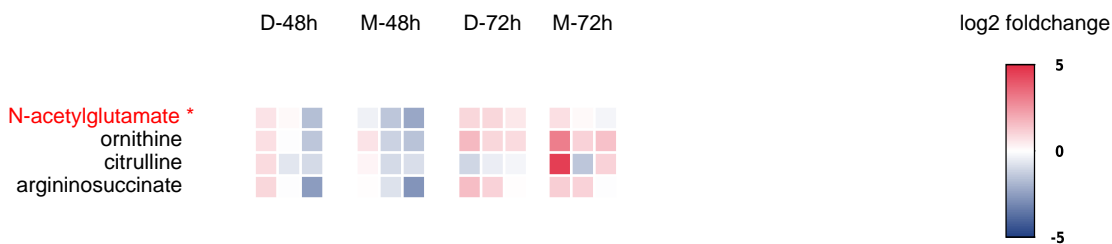
energy-carrier



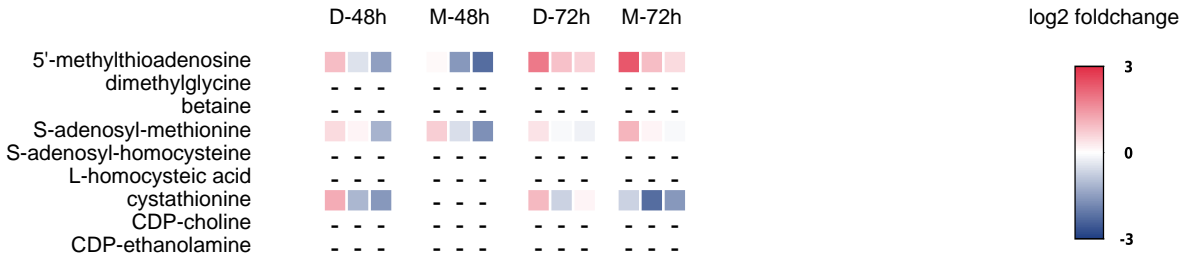
redox



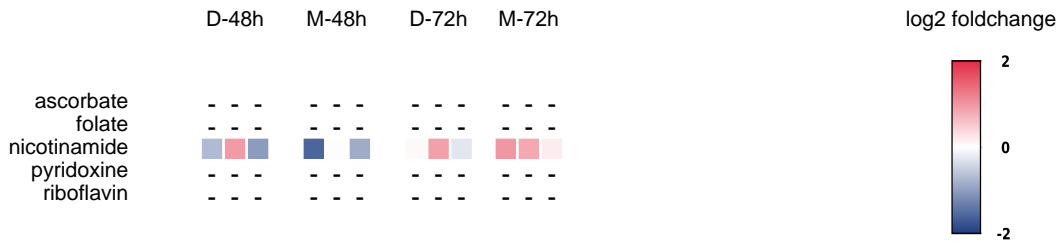
urea cycle



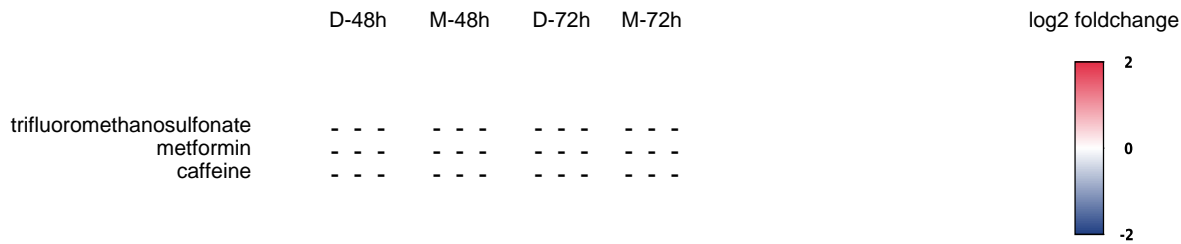
SAM-cycle



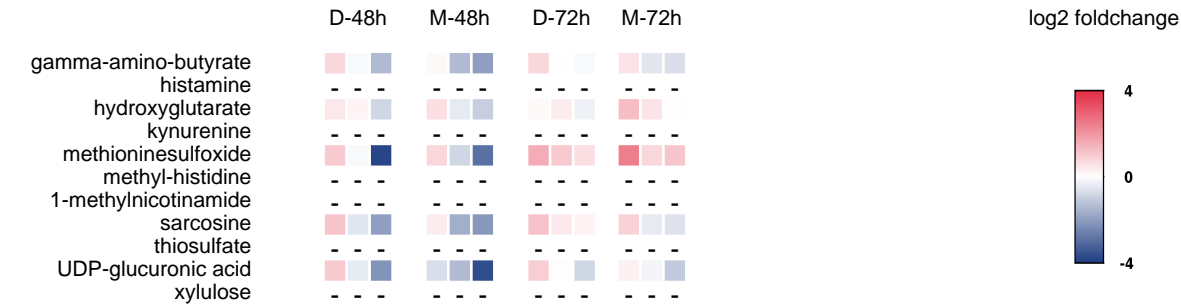
vitamin



small-molecule

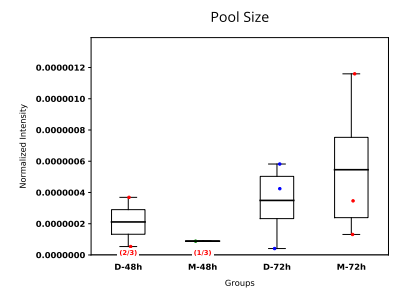
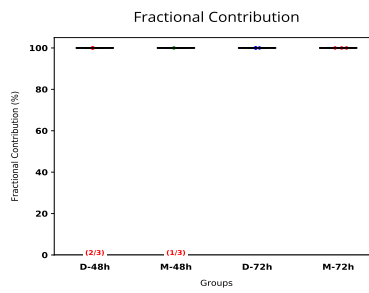
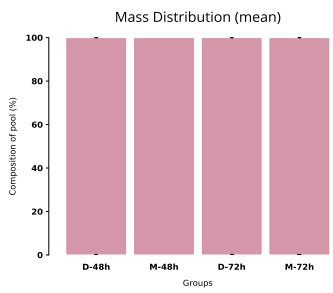


other

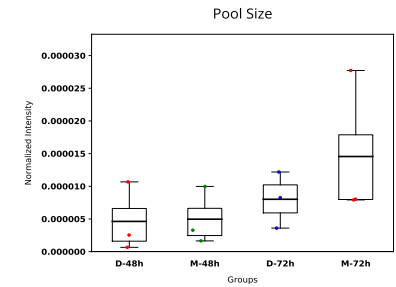
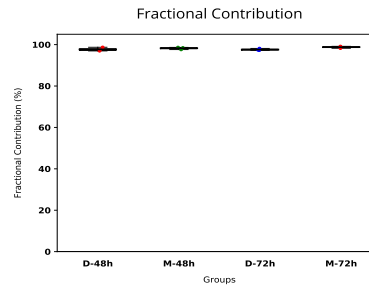
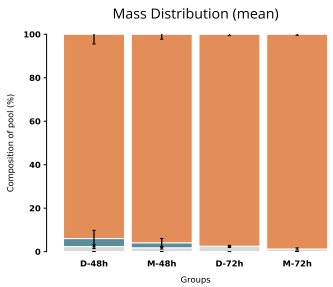


glycolysis

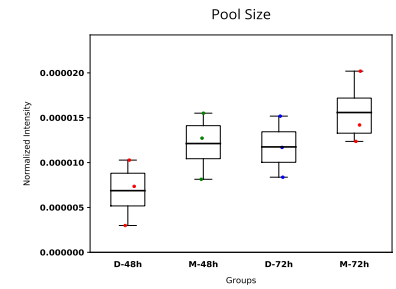
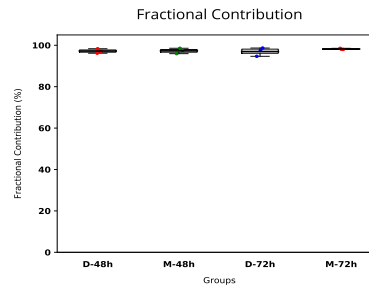
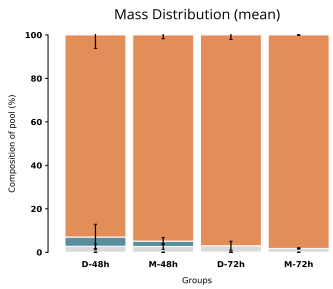
fructose-1;6-bisphosphate



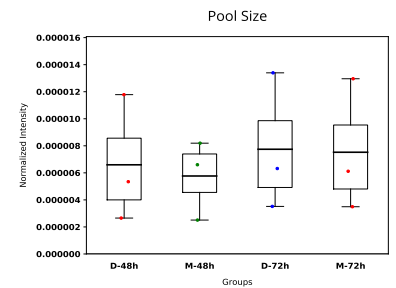
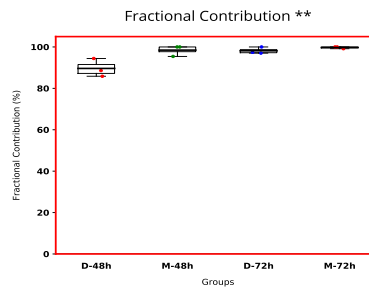
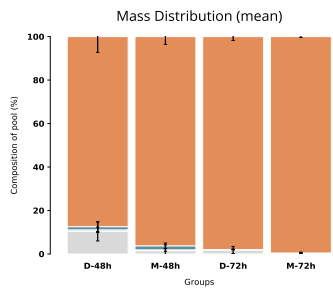
dihydroxyacetone-phosphate



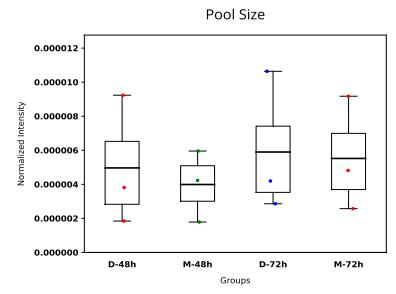
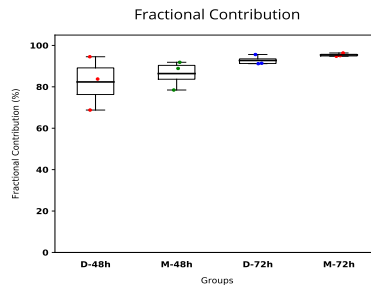
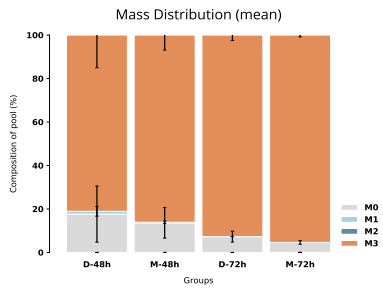
glyceraldehyde-3-phosphate



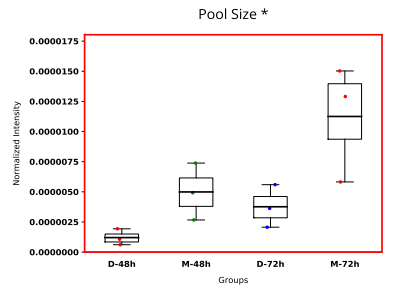
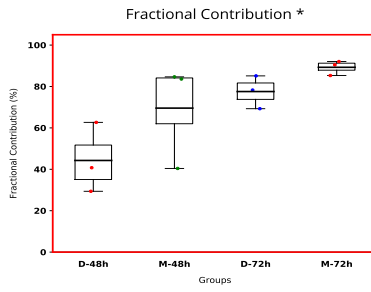
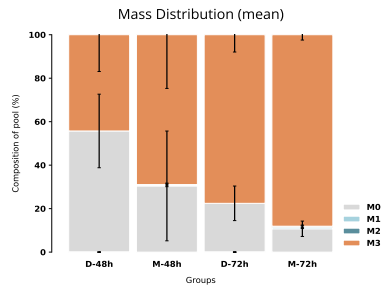
phosphoglycerate



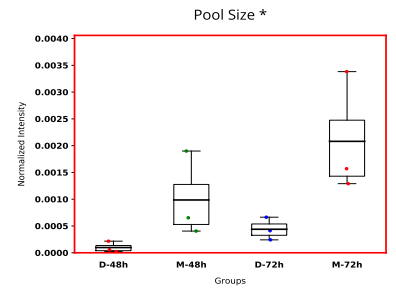
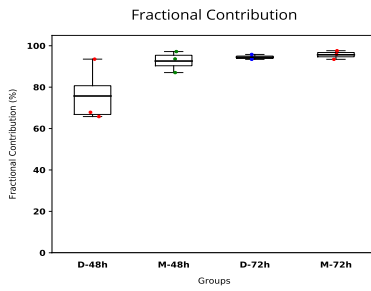
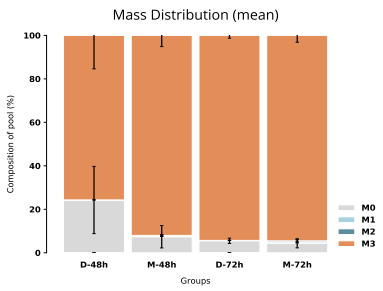
phosphoenolpyruvate



pyruvate

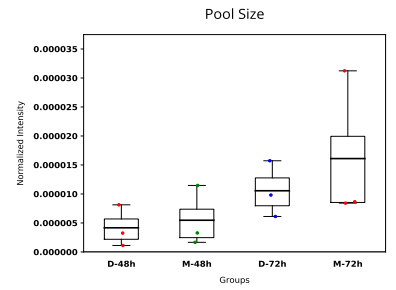
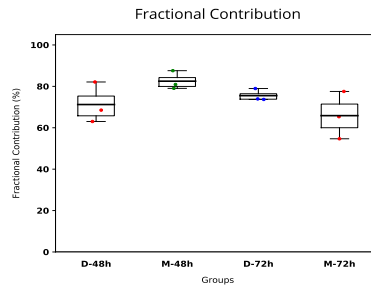
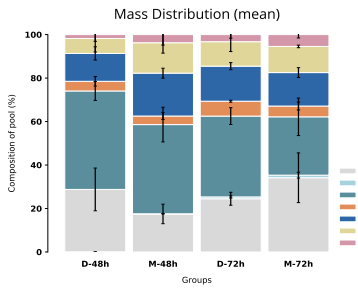


lactate

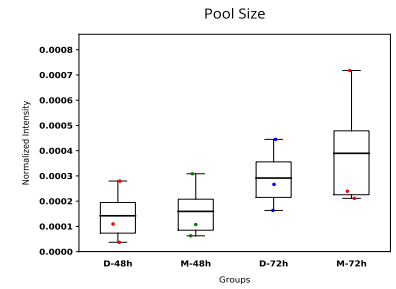
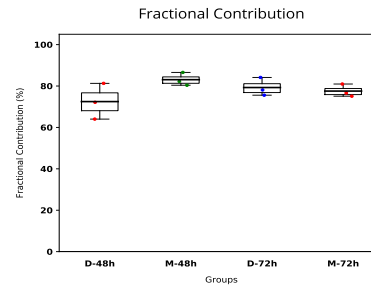
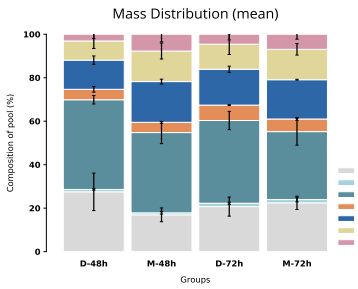


TCA

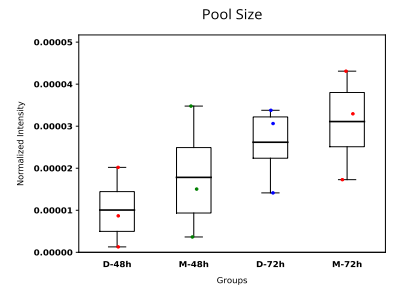
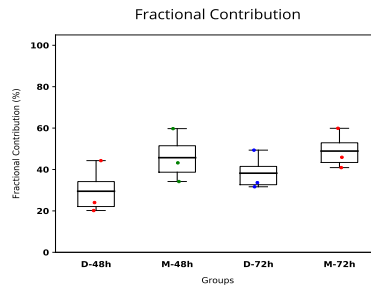
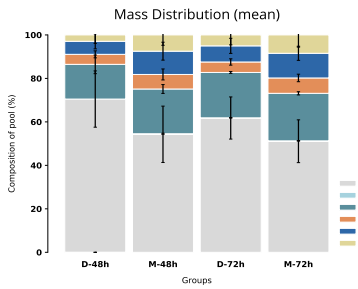
cis-aconitate



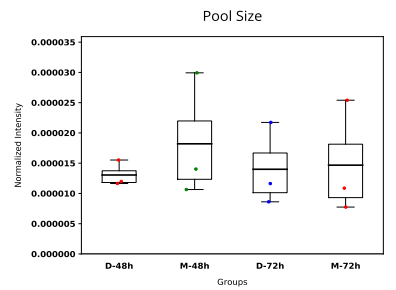
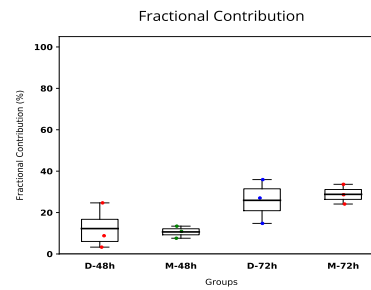
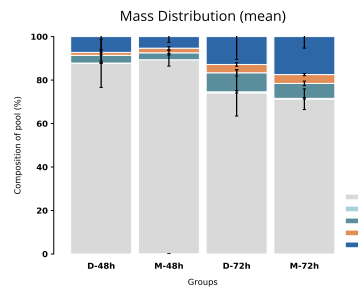
citrate / isocitrate



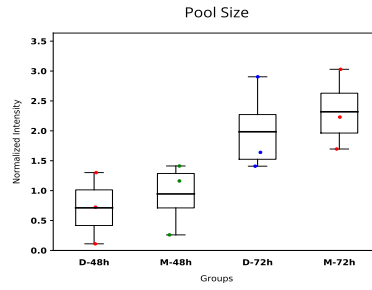
alpha-ketoglutarate



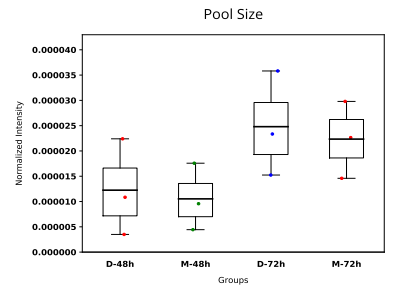
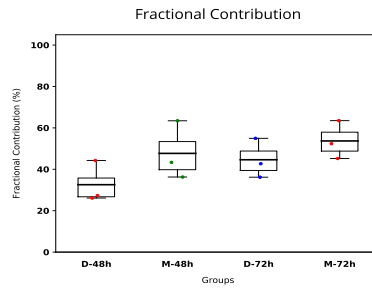
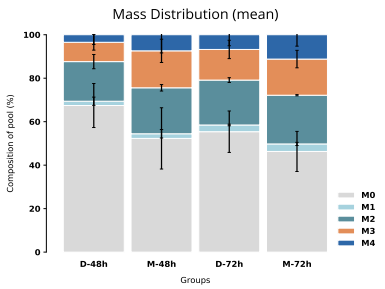
succinate



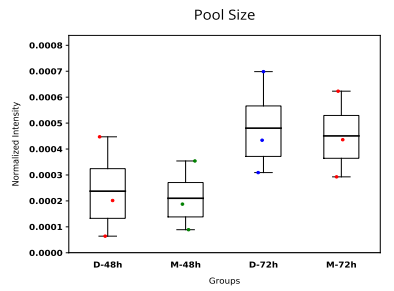
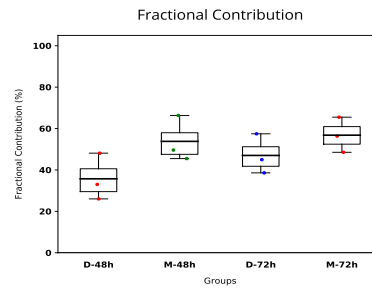
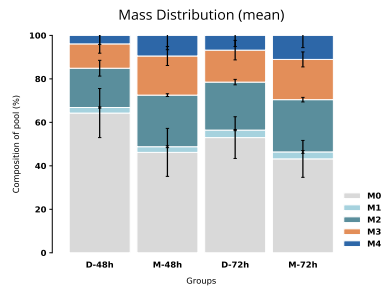
[alpha-ketoglutarate/succinate]



fumarate

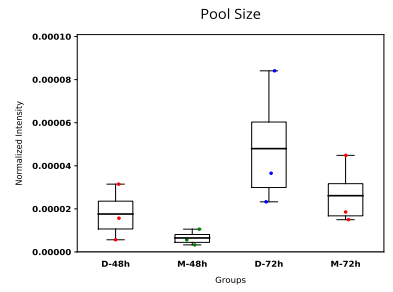
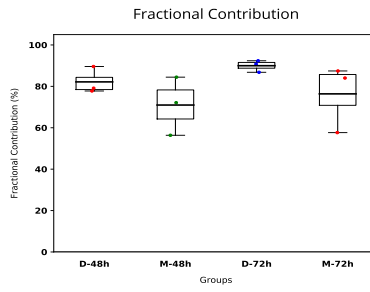
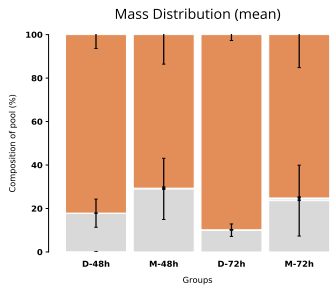


malate

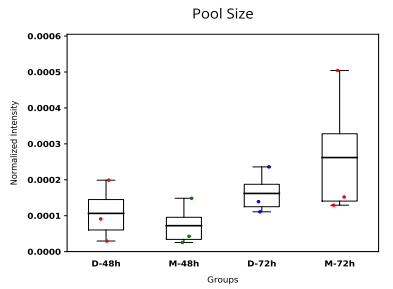
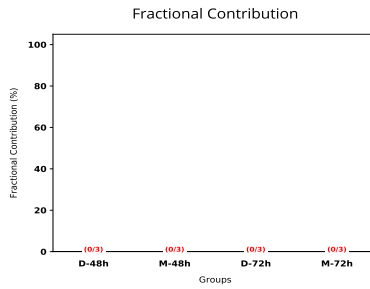
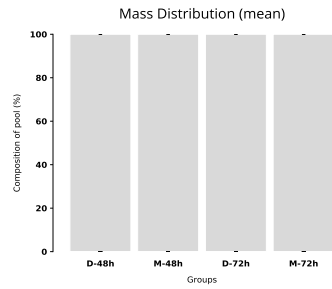


amino acid

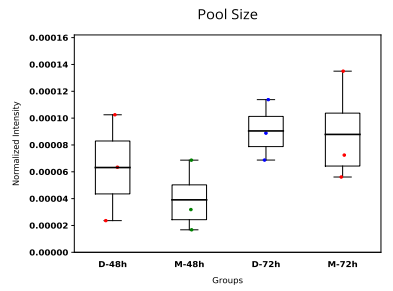
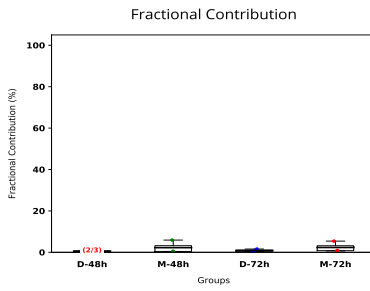
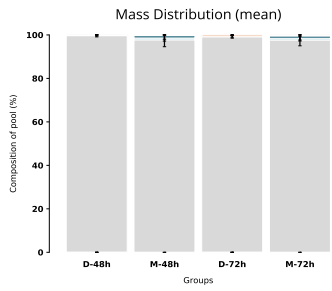
alanine



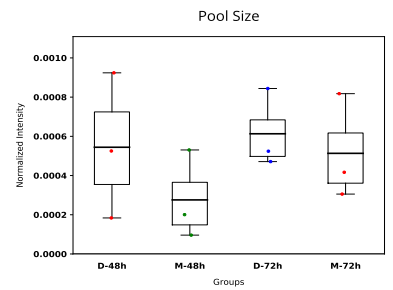
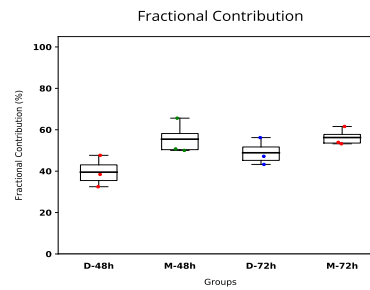
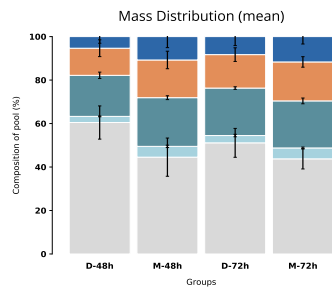
arginine



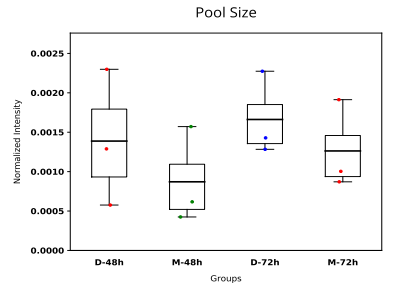
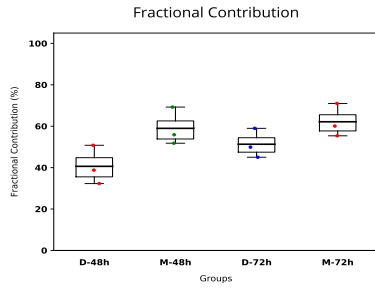
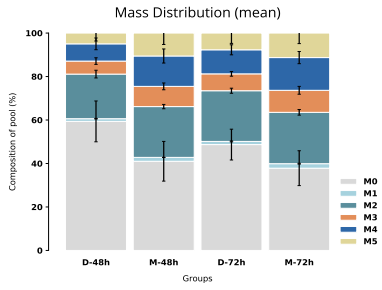
asparagine



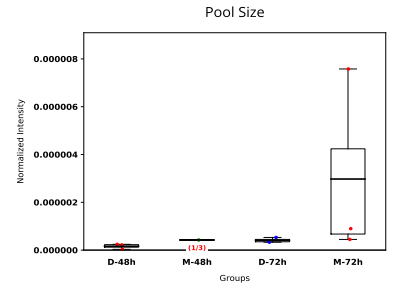
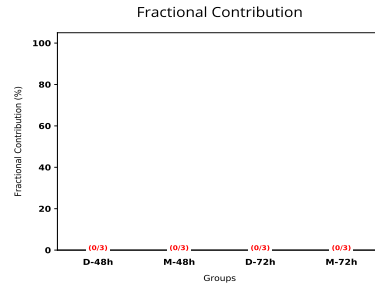
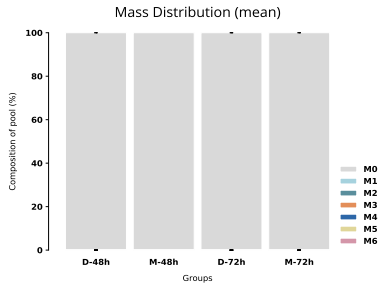
aspartate



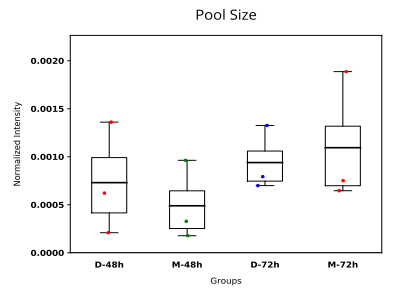
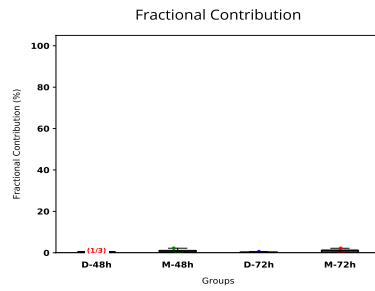
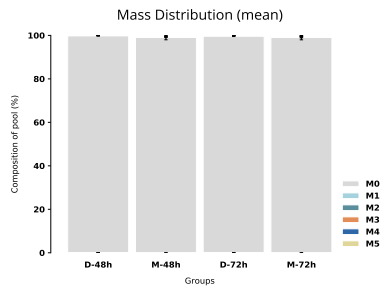
glutamate



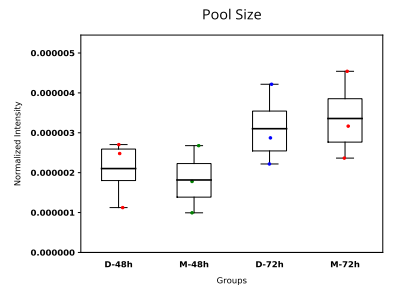
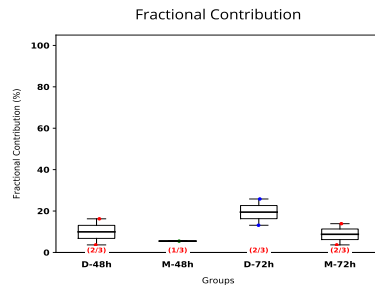
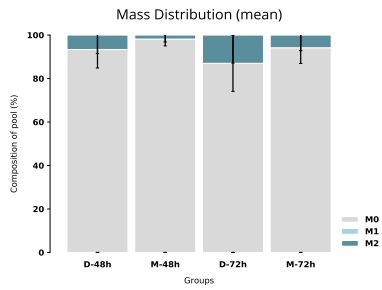
cystine



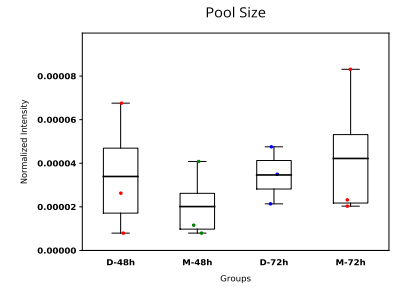
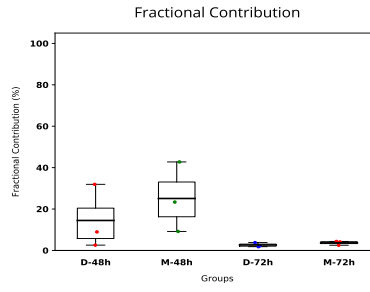
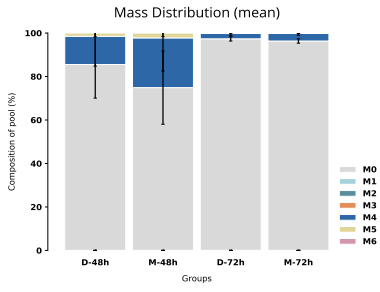
glutamine



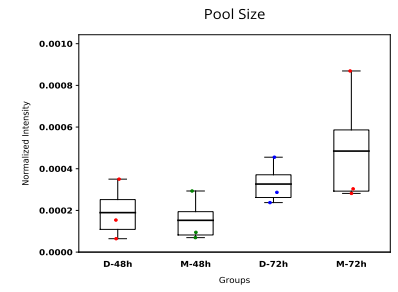
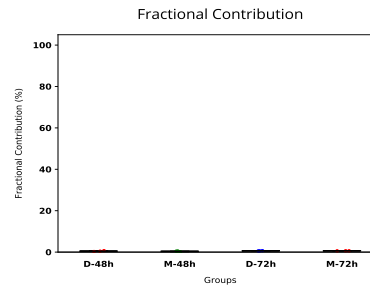
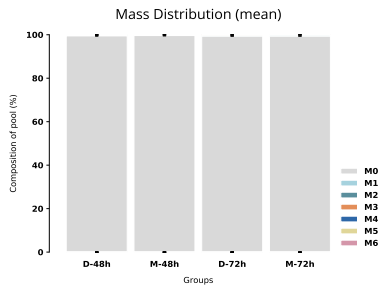
glycine



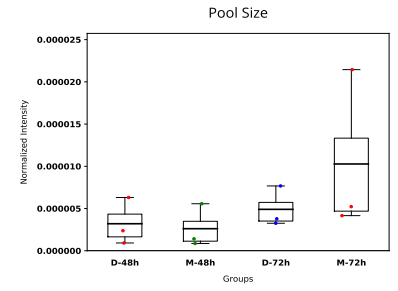
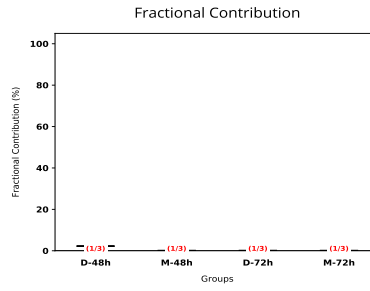
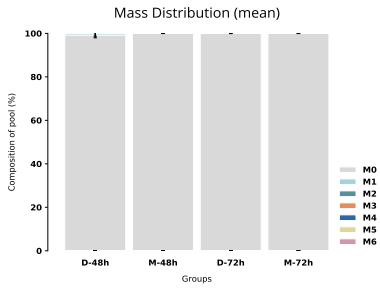
histidine



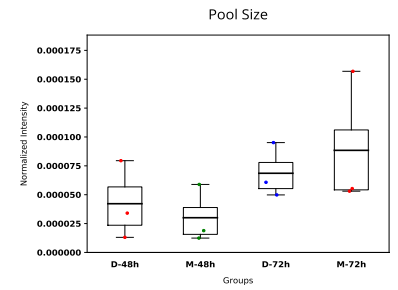
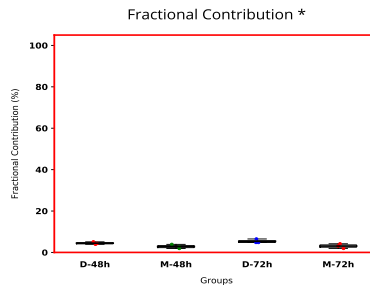
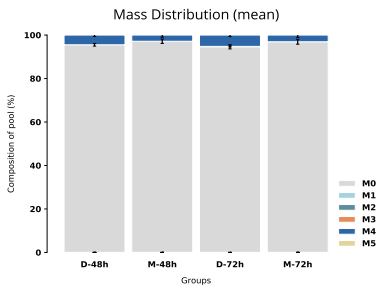
leucine / isoleucine



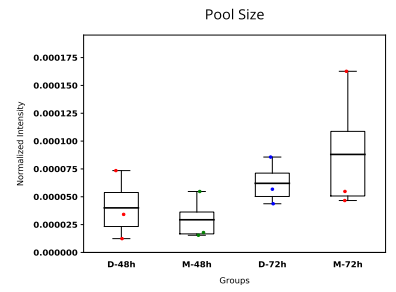
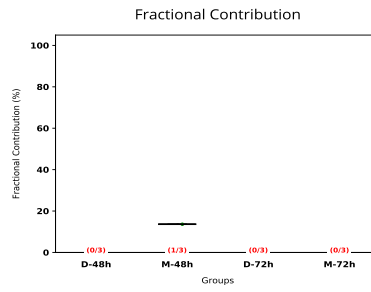
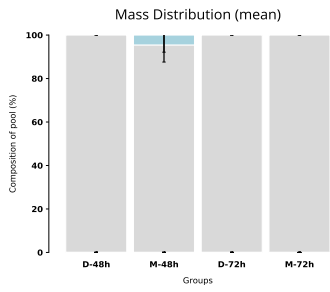
lysine



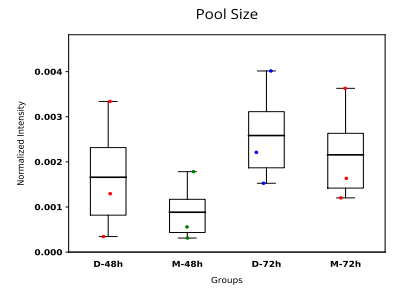
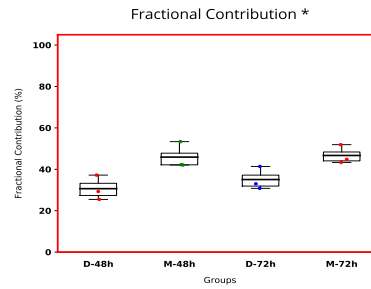
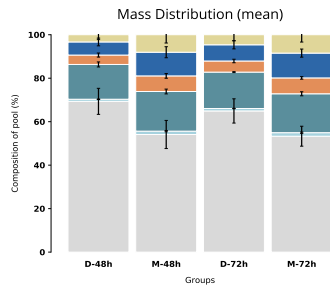
methionine



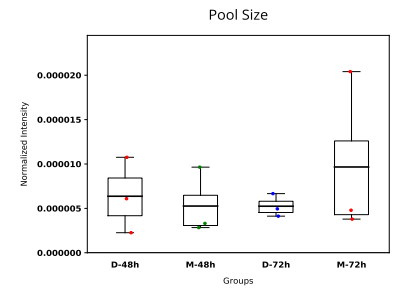
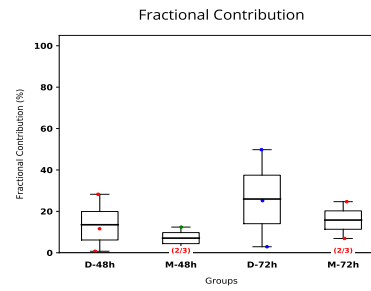
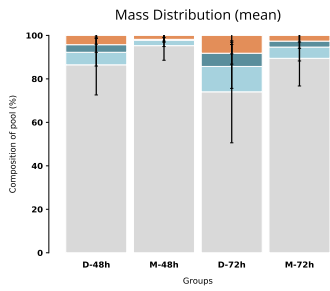
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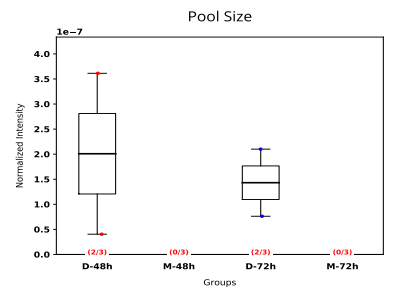
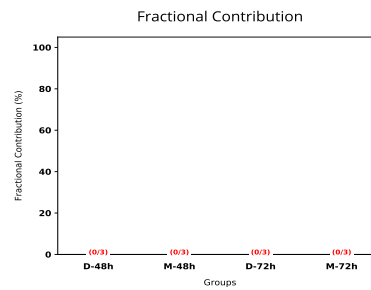
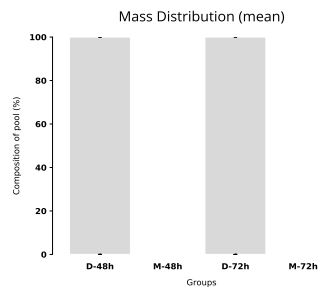
proline



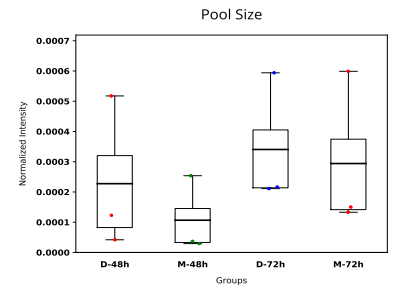
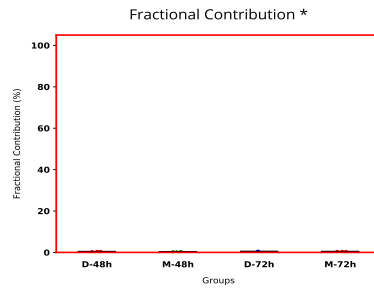
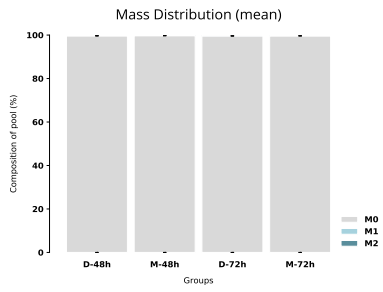
serine



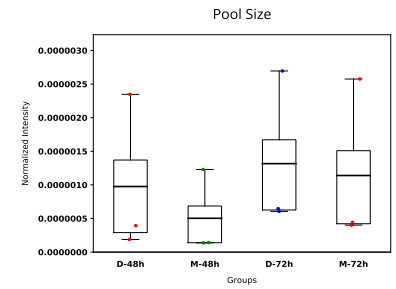
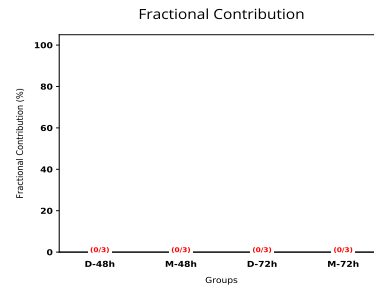
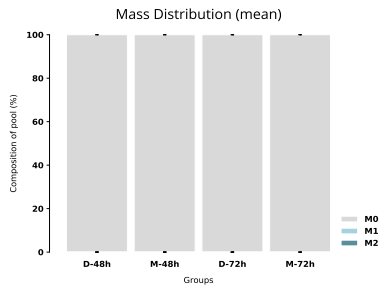
phosphoserine



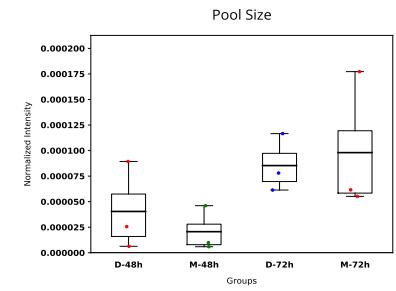
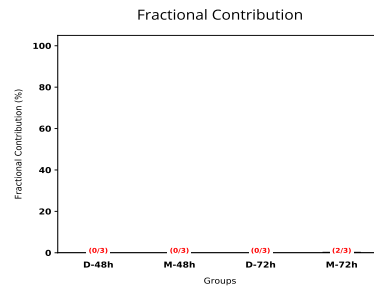
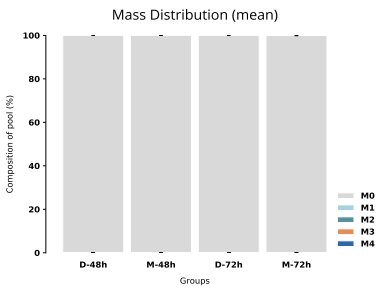
taurine



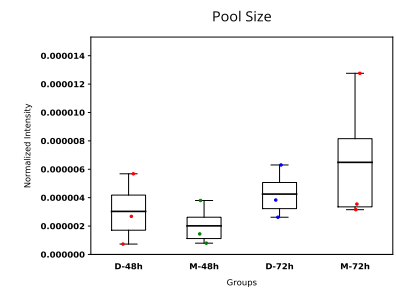
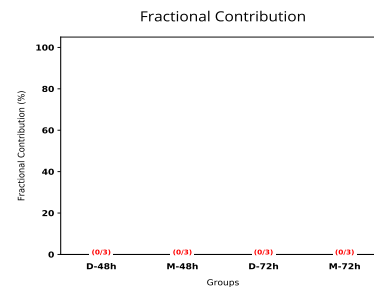
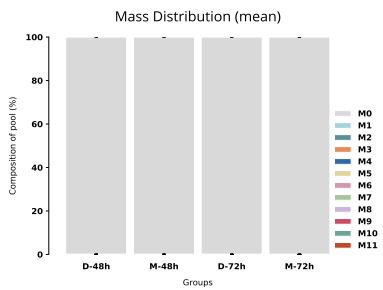
hypotaurine



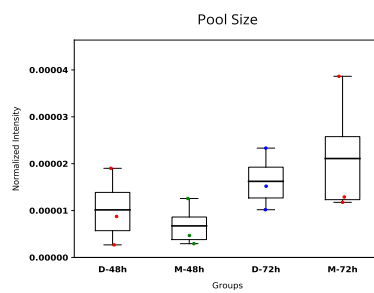
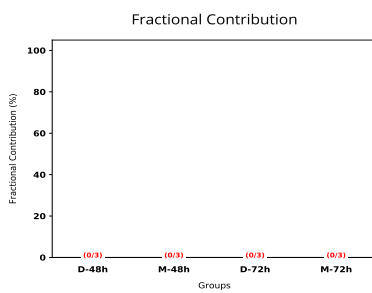
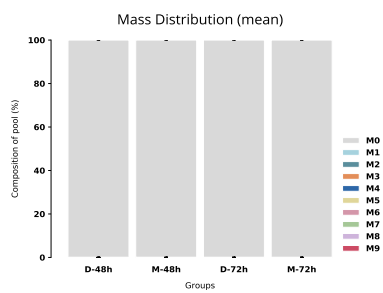
threonine



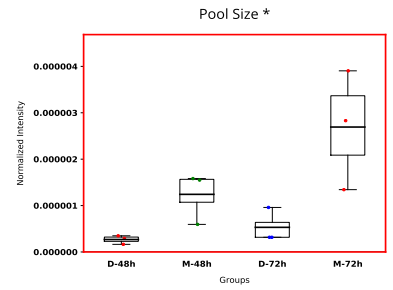
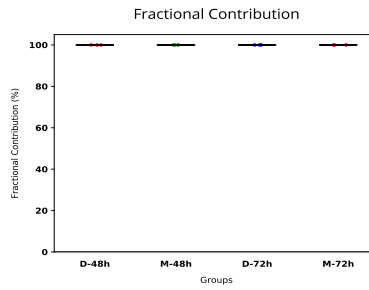
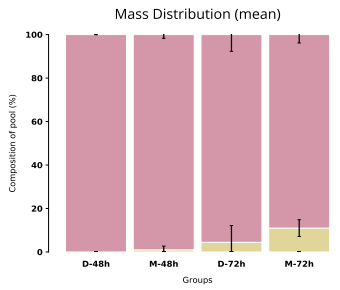
tryptophan



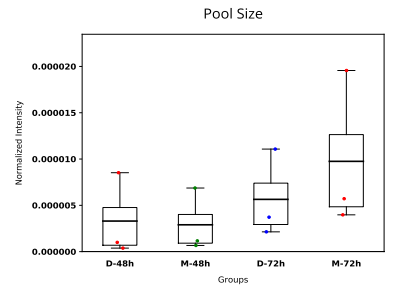
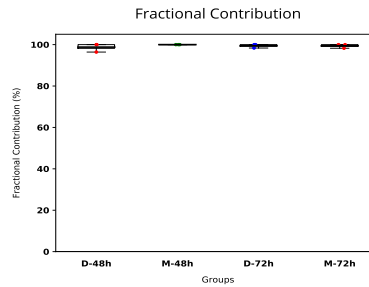
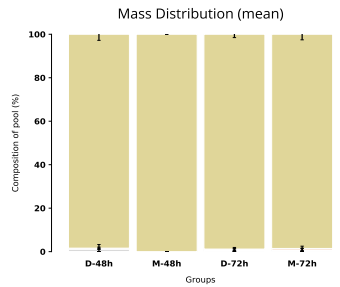
tyrosine



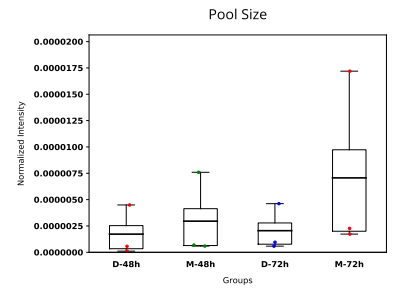
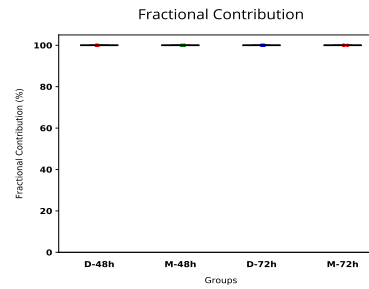
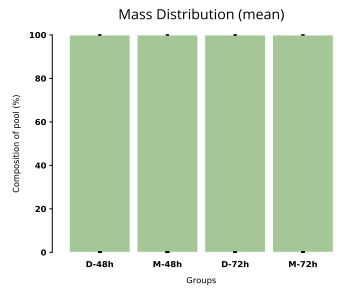
6-phosphogluconic acid



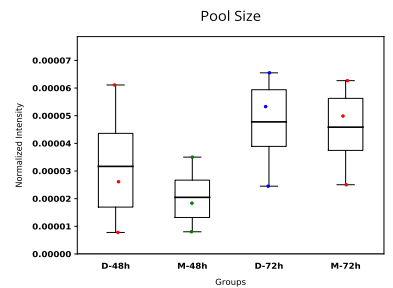
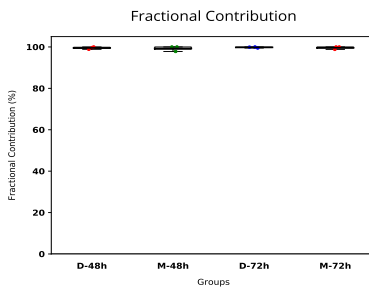
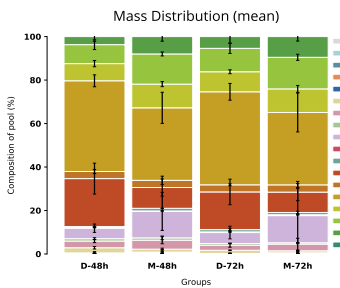
rib/ribul/xylul-ose-phosphate



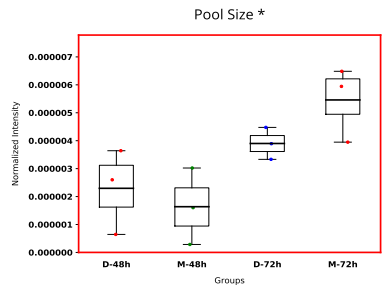
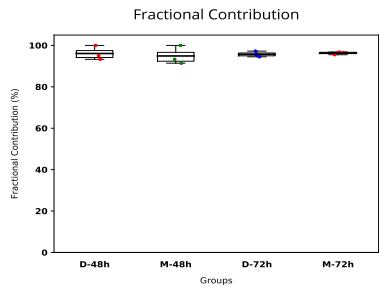
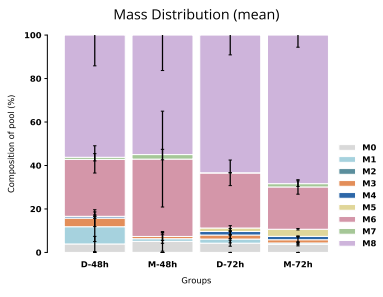
sedoheptulose-7-phosphate



UDP-N-acetylglucosamine

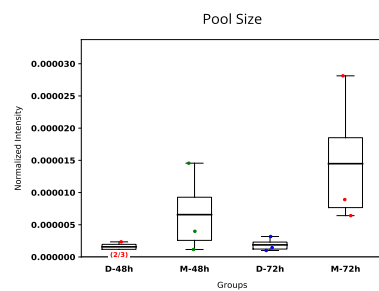
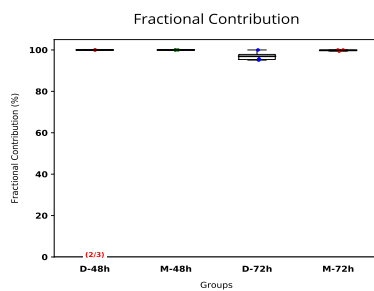
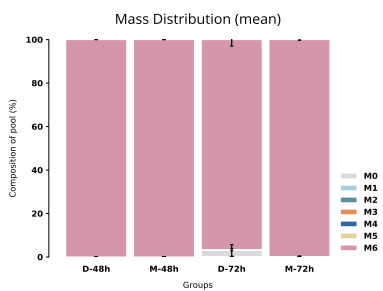


N-acetylglucosamine-phosphate



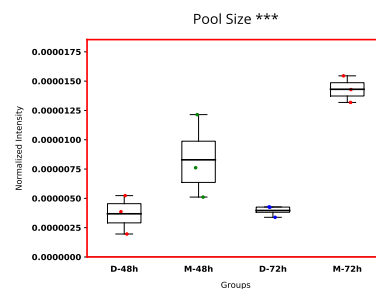
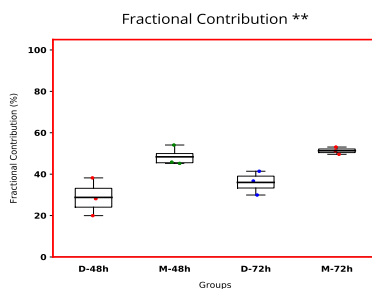
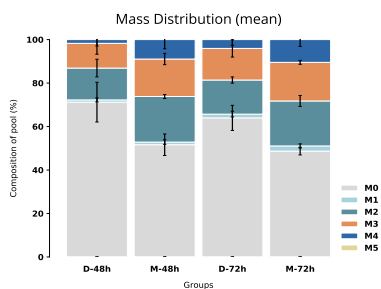
polyol-pathway

fructose-1-phosphate

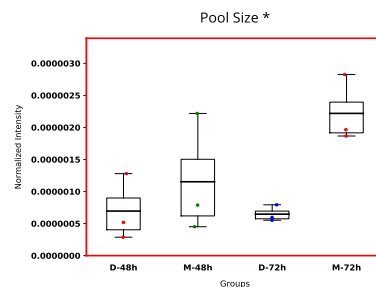
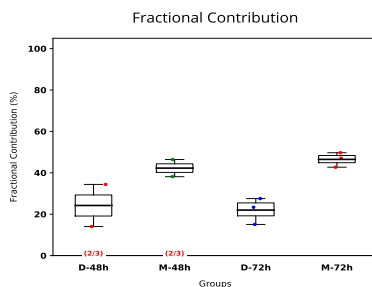
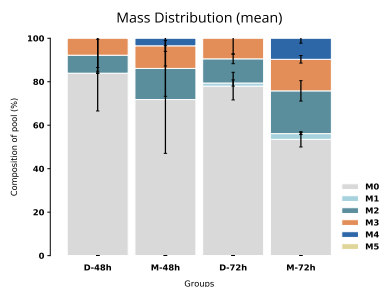


nucleotide

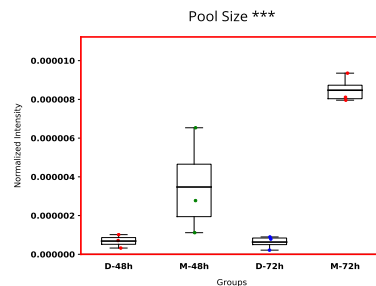
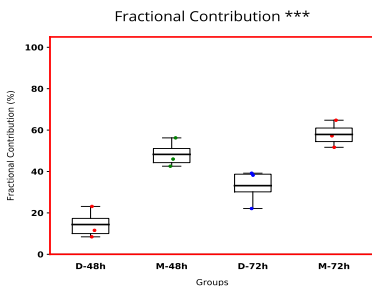
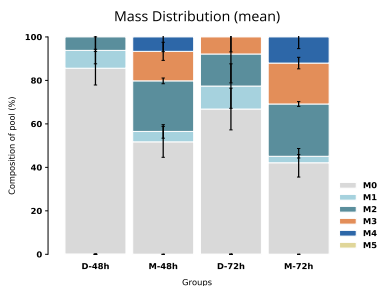
carbamoyl-aspartate



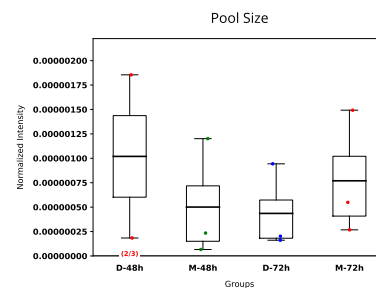
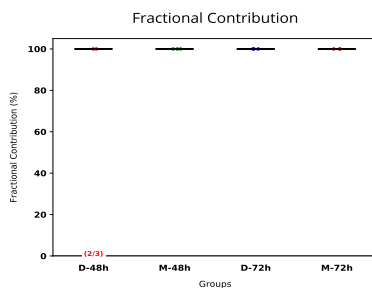
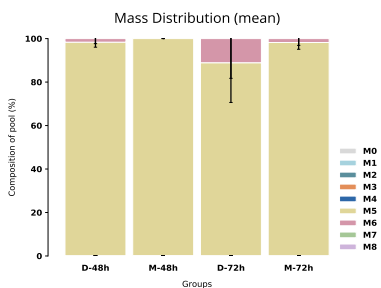
dihydroorotate



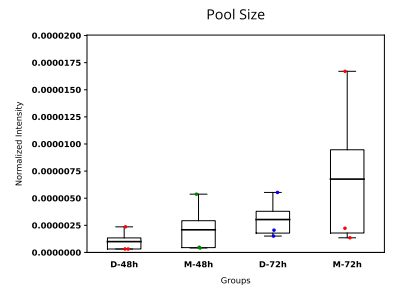
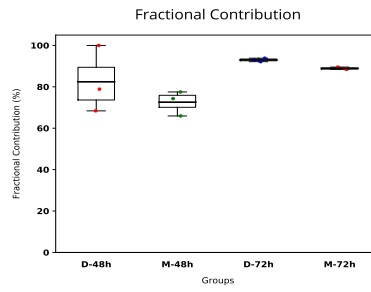
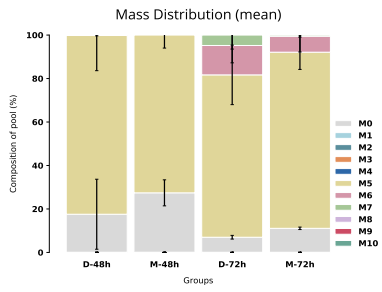
orotate



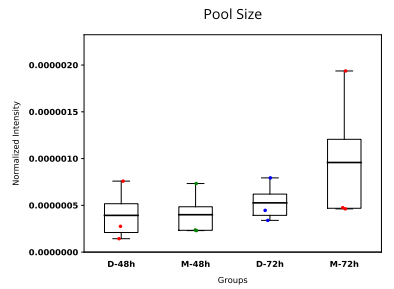
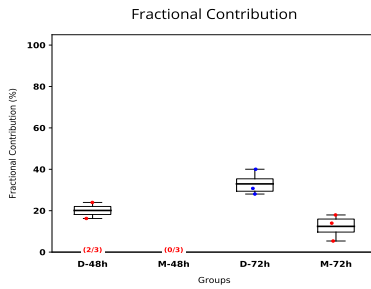
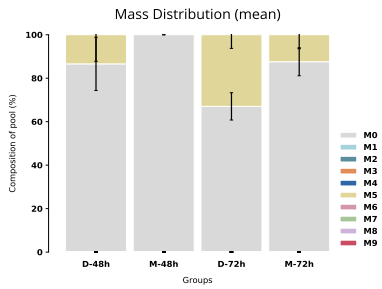
FGAR



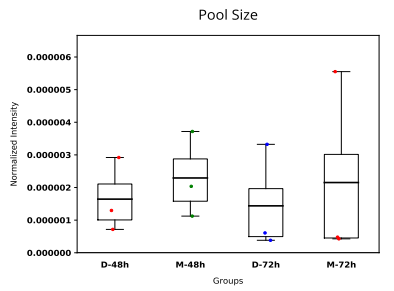
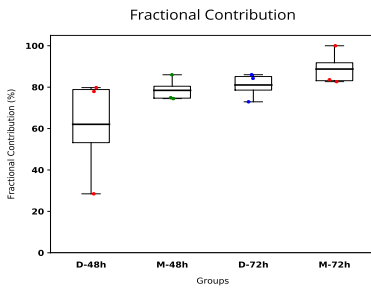
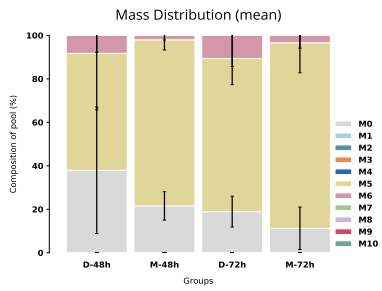
inosine



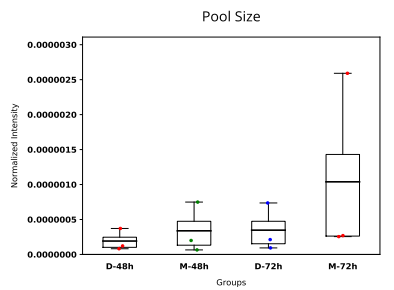
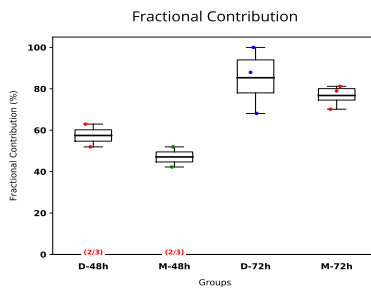
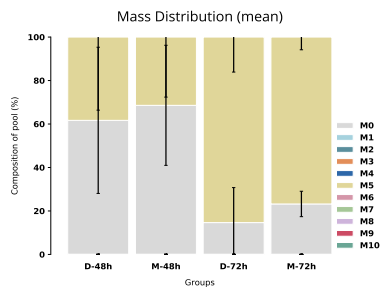
cytidine



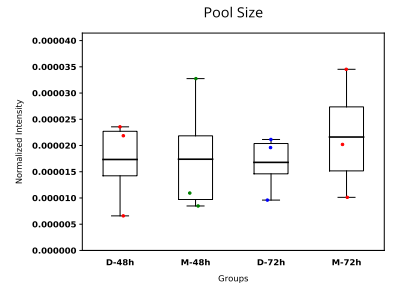
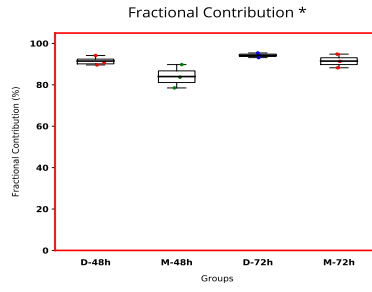
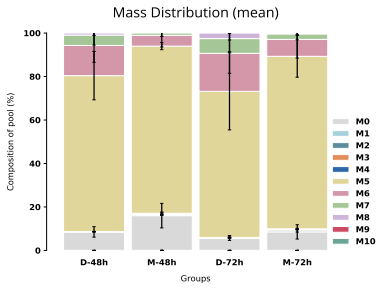
adenosine



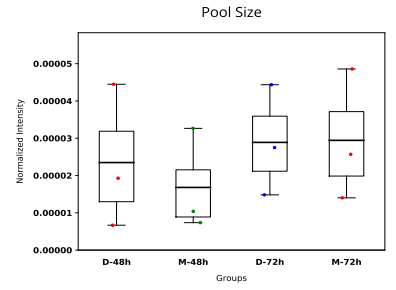
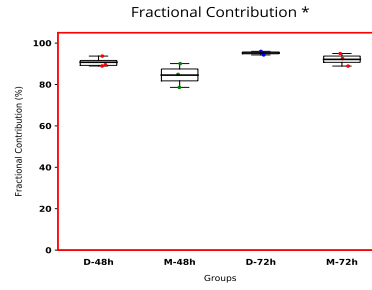
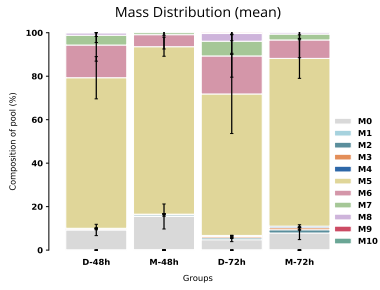
guanosine



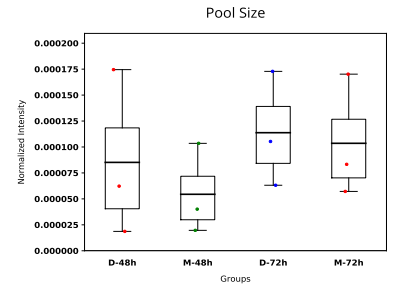
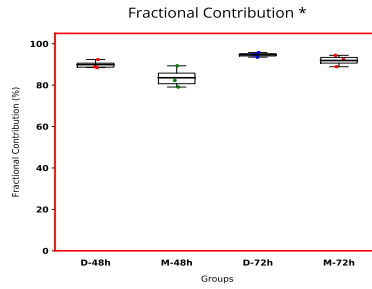
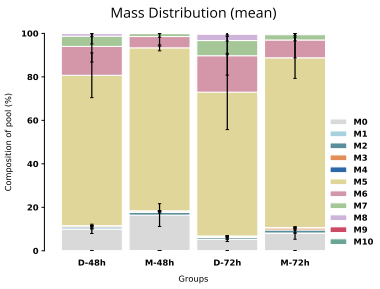
AMP



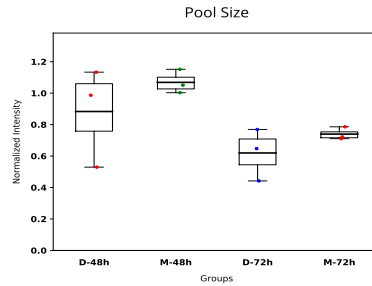
ADP



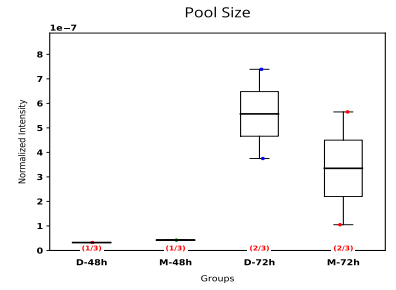
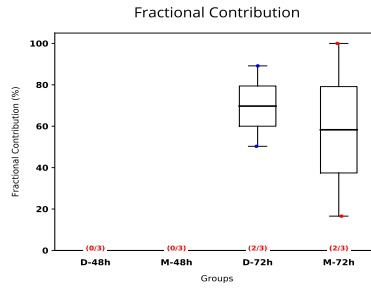
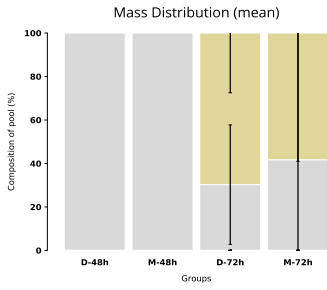
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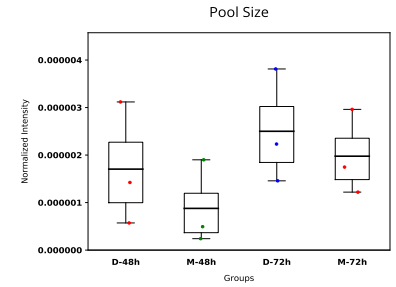
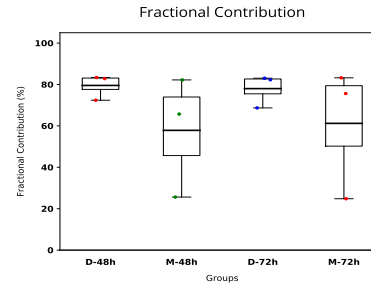
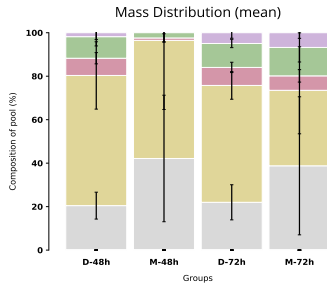
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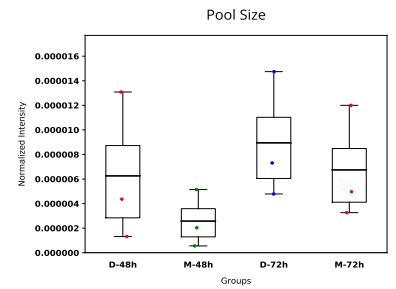
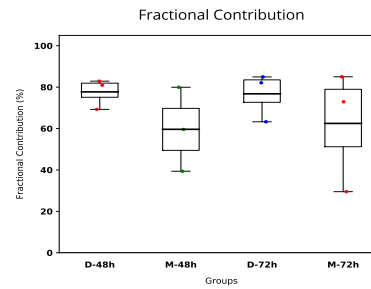
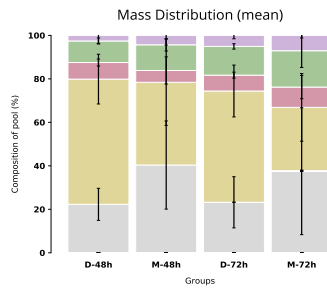
CMP



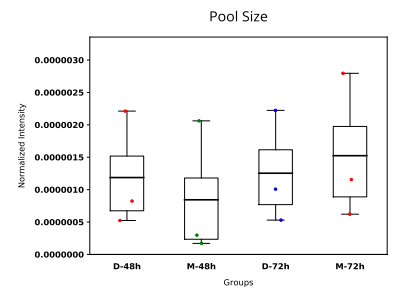
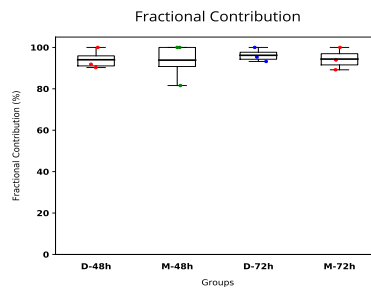
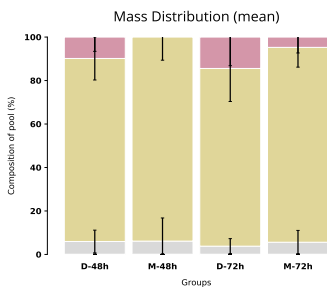
CDP



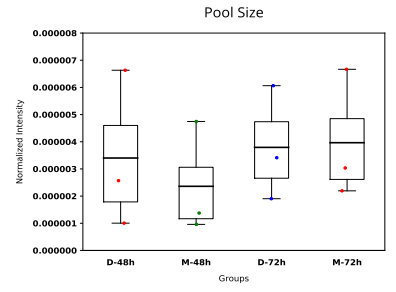
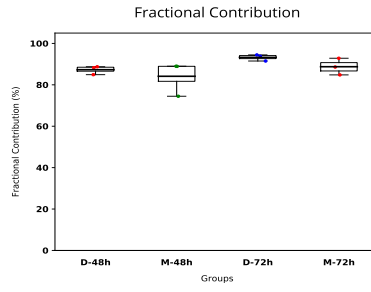
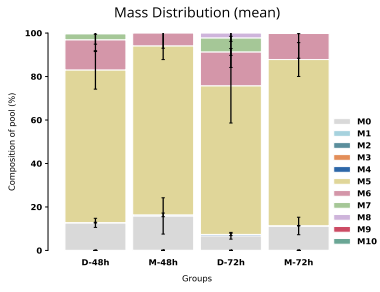
CTP



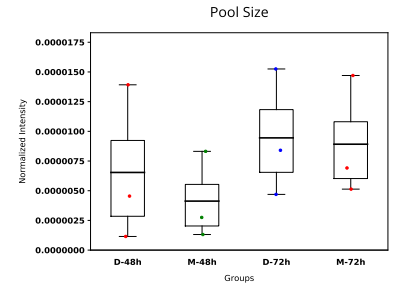
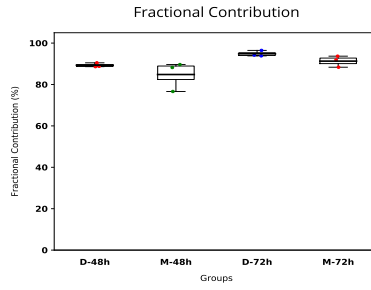
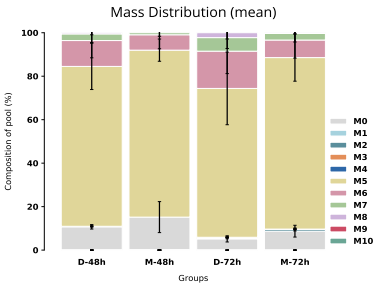
GMP



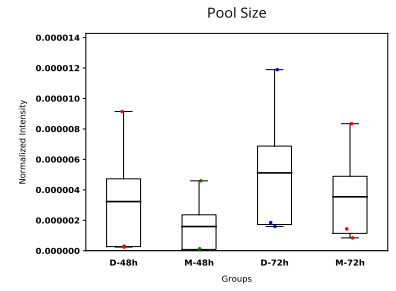
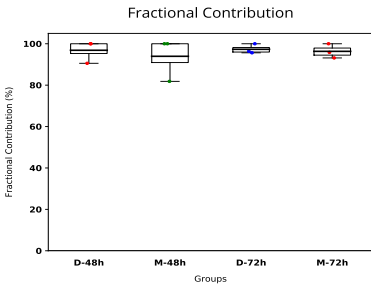
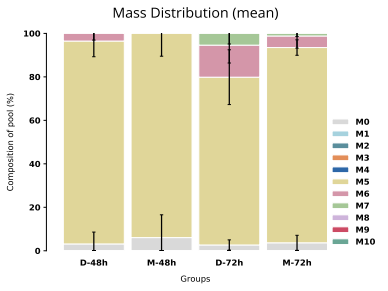
GDP



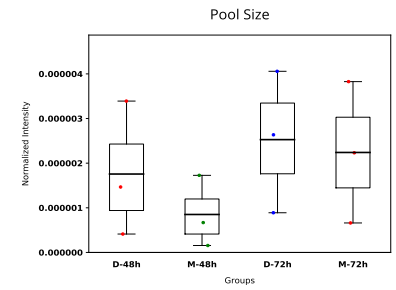
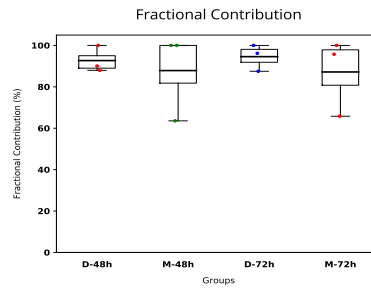
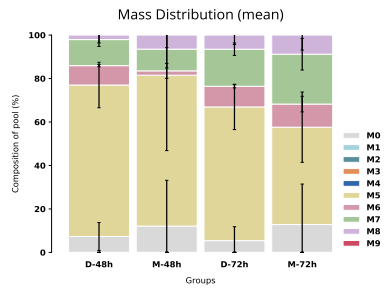
GTP



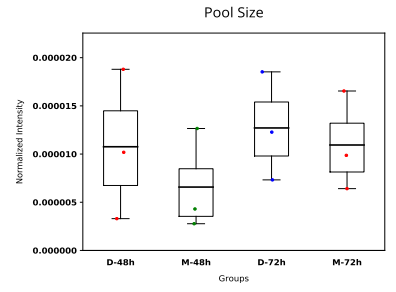
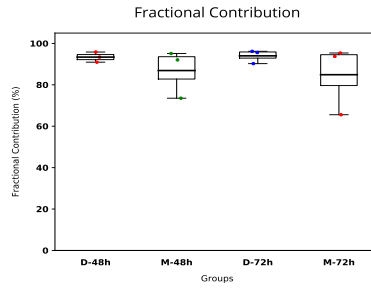
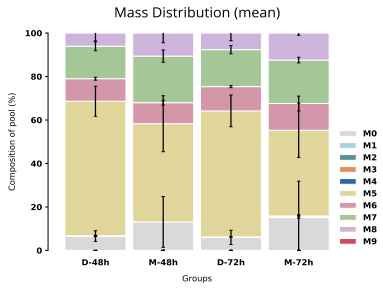
IMP



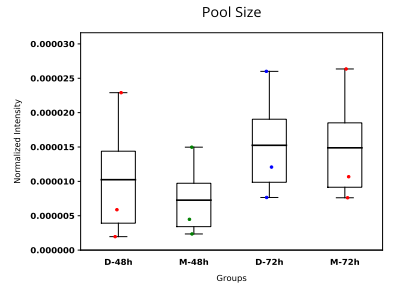
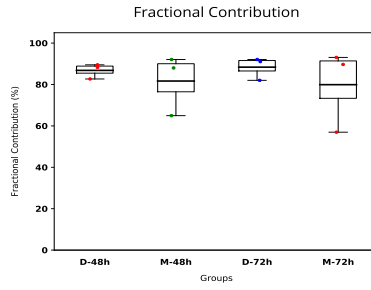
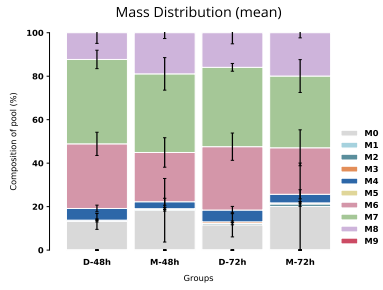
UMP



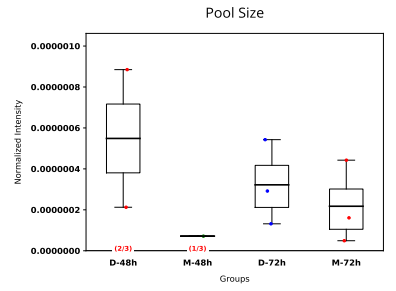
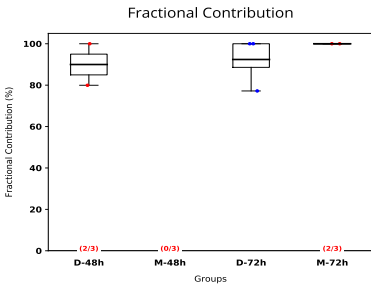
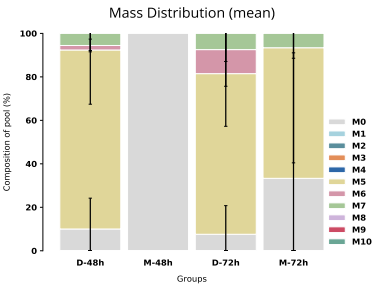
UDP



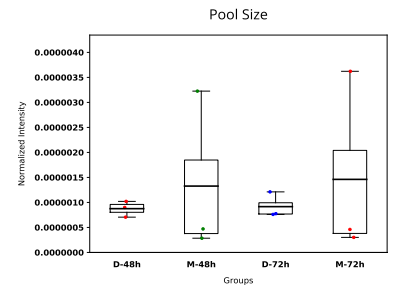
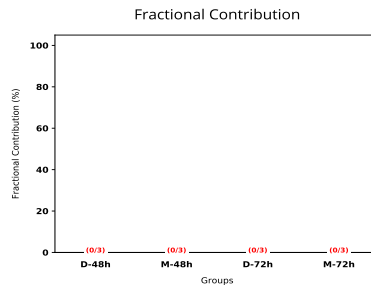
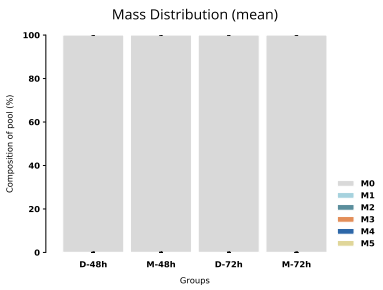
UTP



dTTP

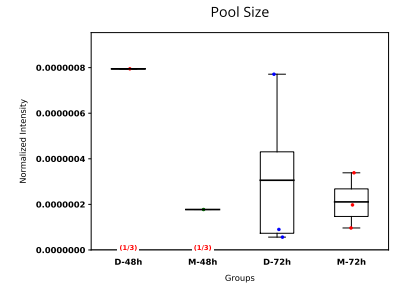
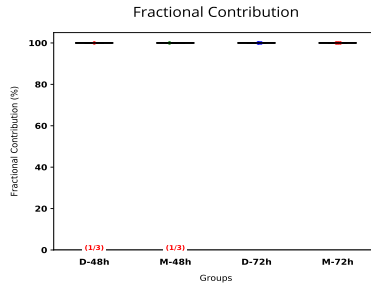
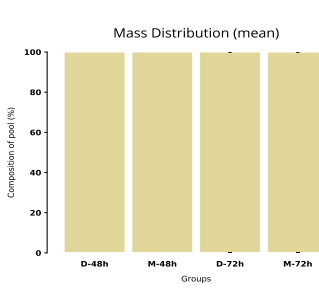


uric acid

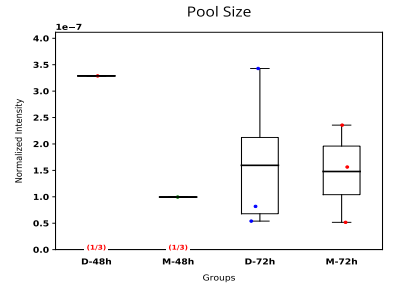
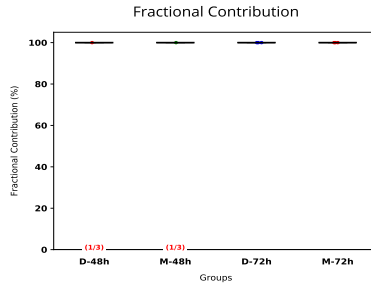
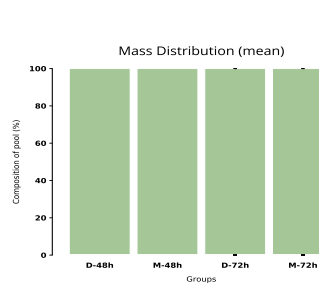


lipid-metabolism

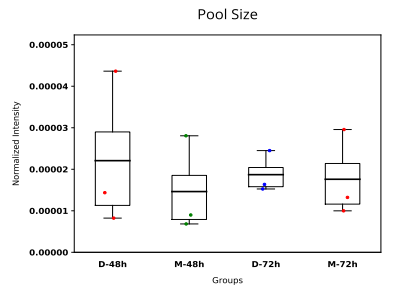
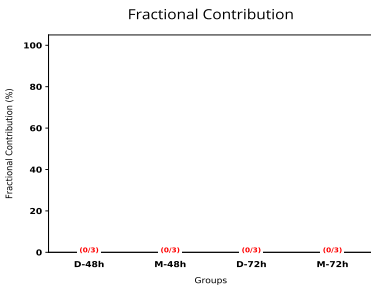
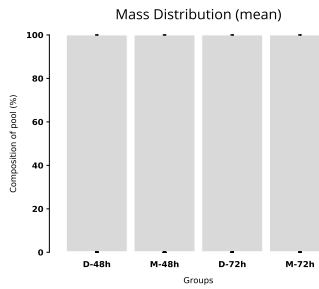
CoA



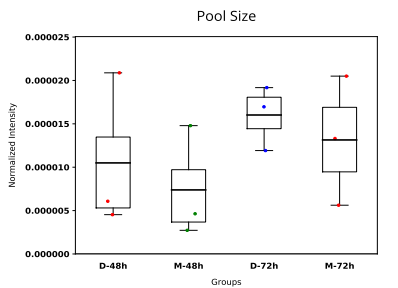
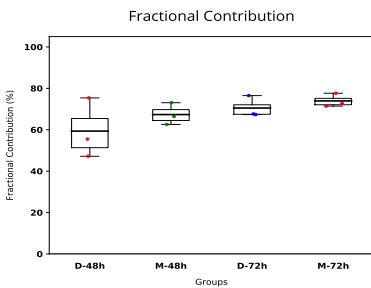
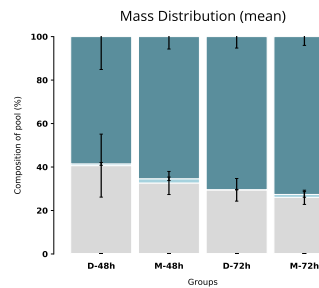
acetyl-CoA



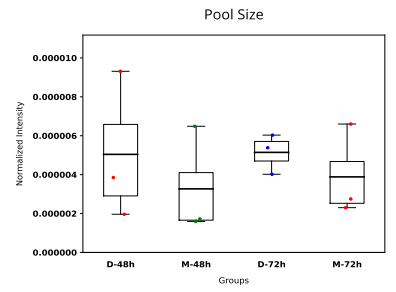
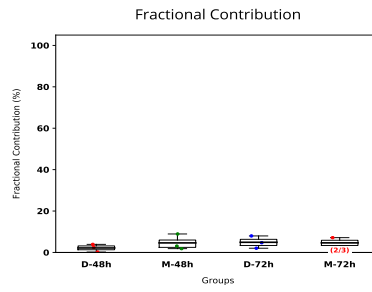
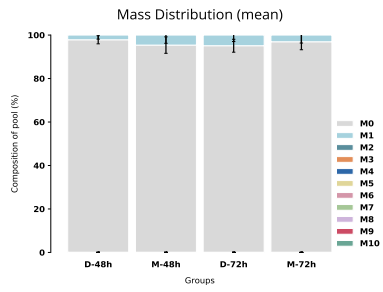
carnitine



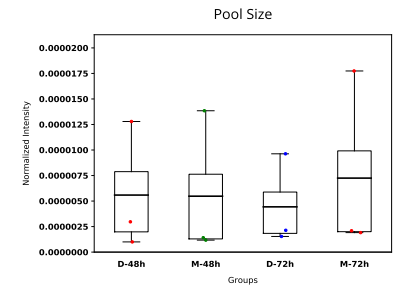
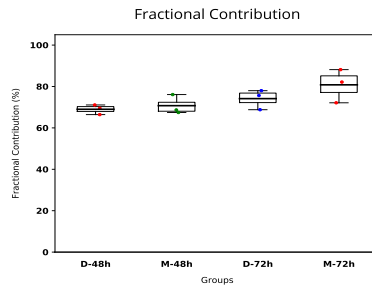
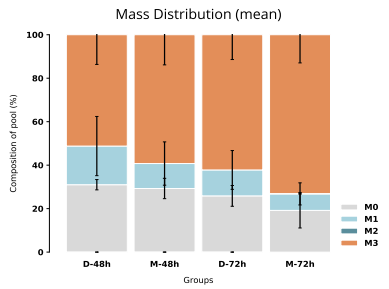
acetyl-carnitine



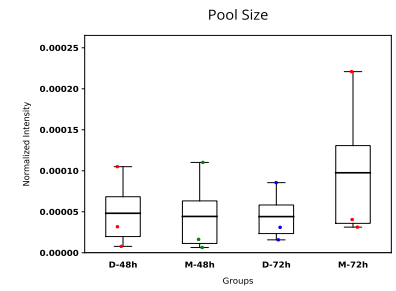
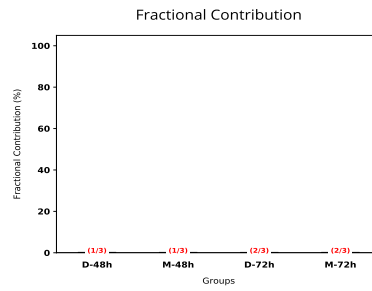
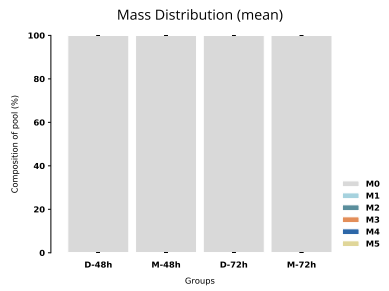
propionyl-carnitine



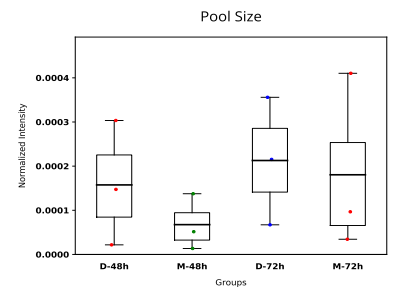
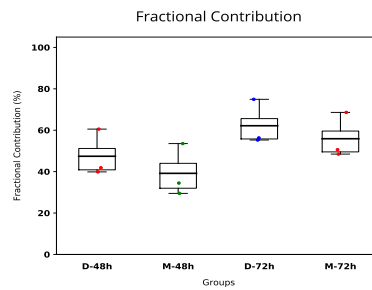
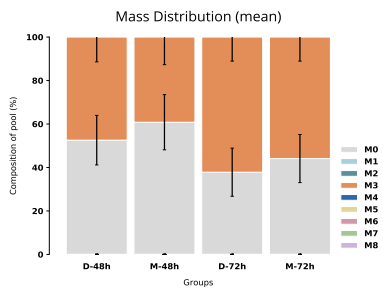
glycerol-3-phosphate



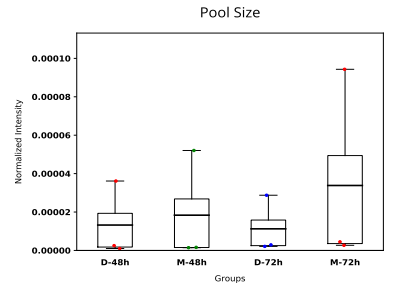
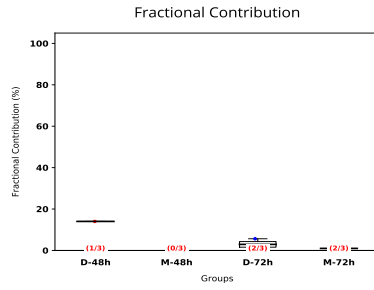
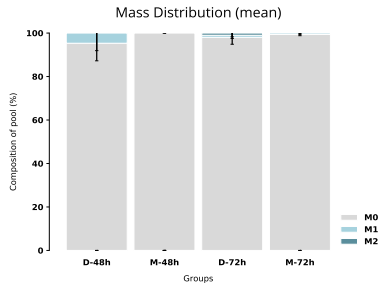
choline



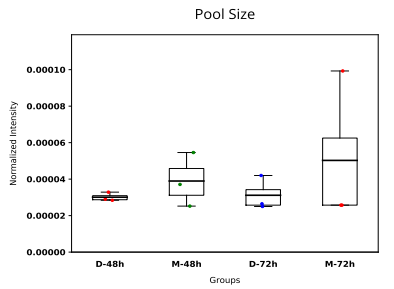
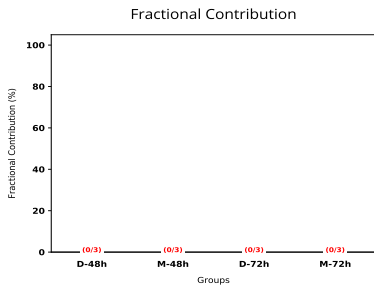
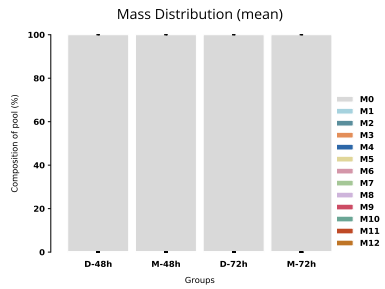
glycerophosphocholine



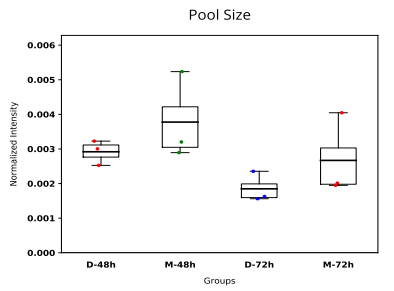
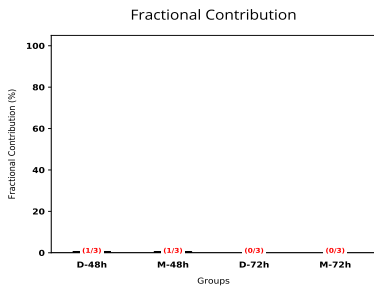
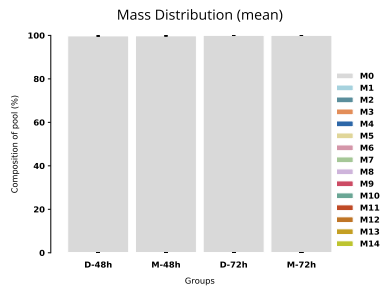
phosphorylethanolamine



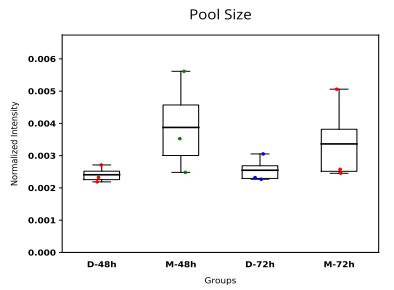
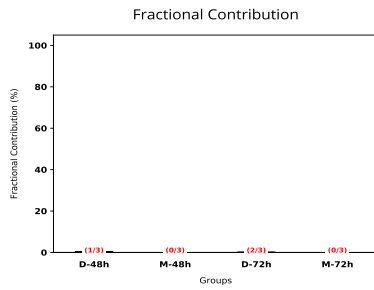
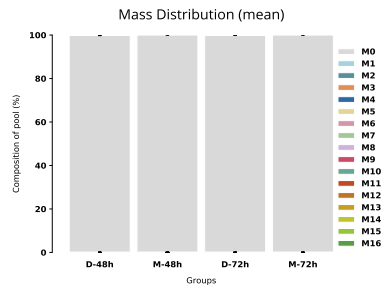
lauric acid



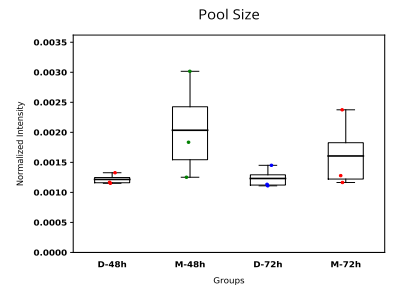
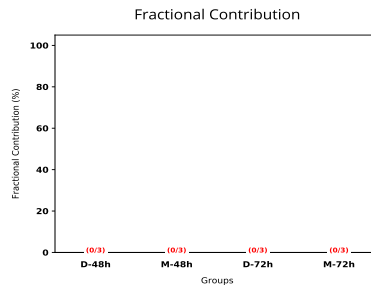
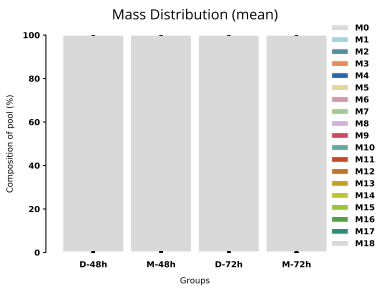
myristic acid



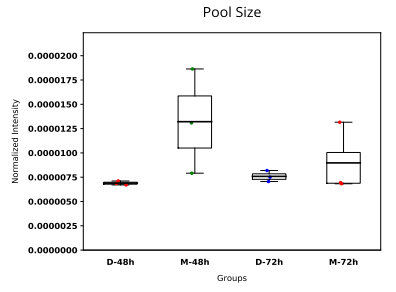
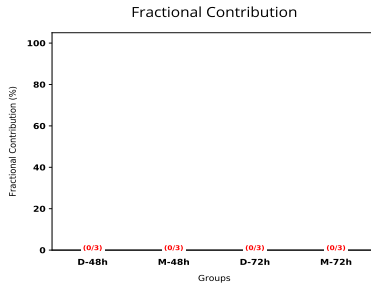
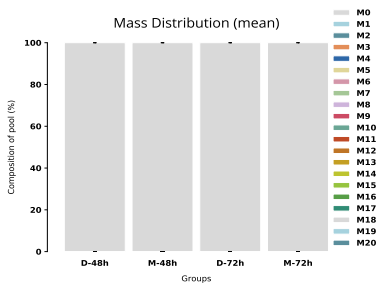
palmitic acid



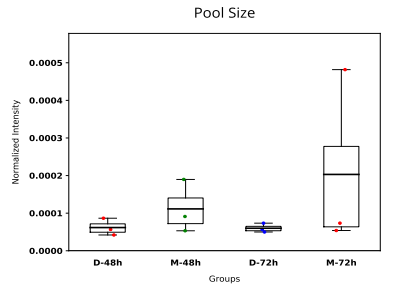
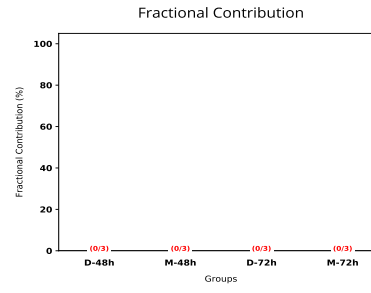
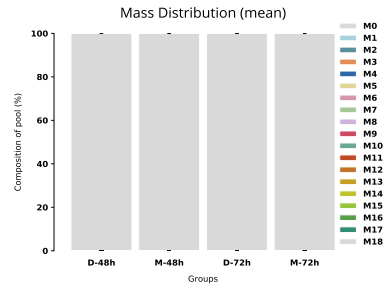
stearic acid



arachidic acid

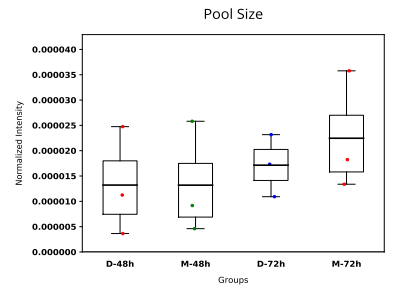
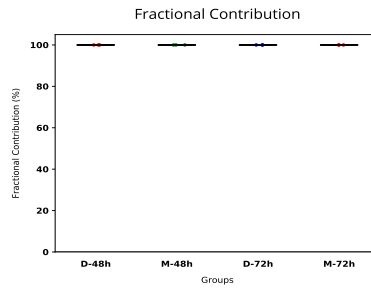
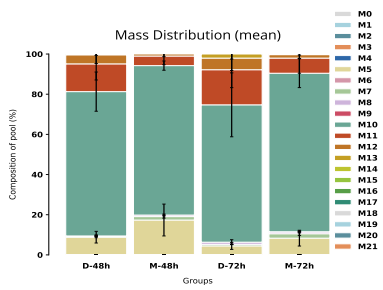


oleic acid

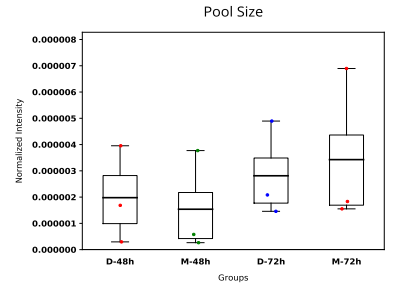
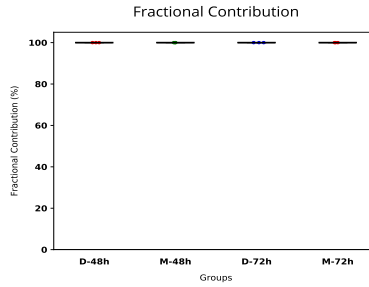
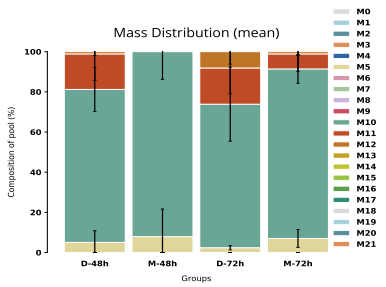


energy-carrier

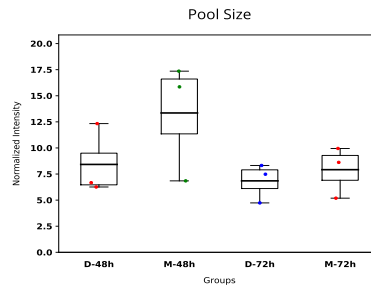
NAD+



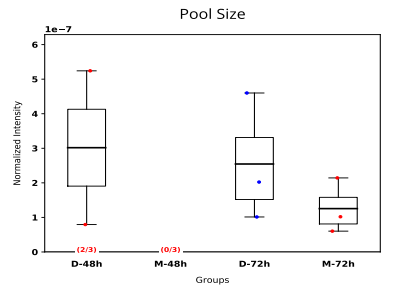
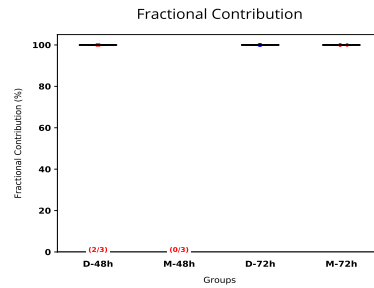
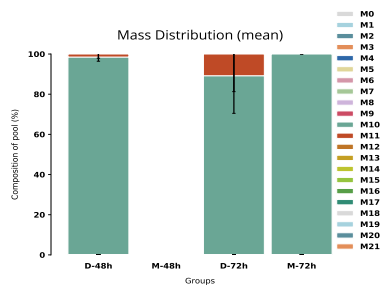
NADH



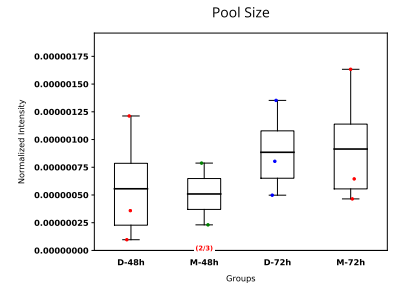
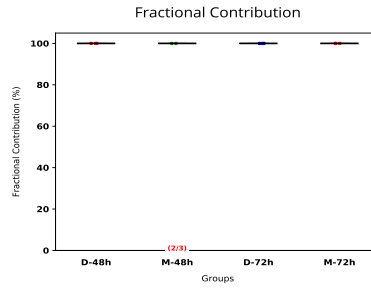
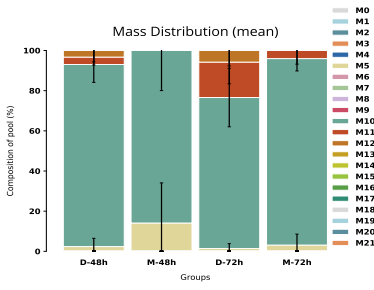
[NAD+/NADH]



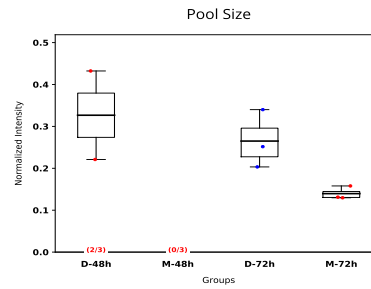
NADP+



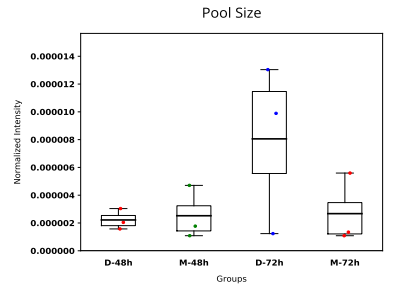
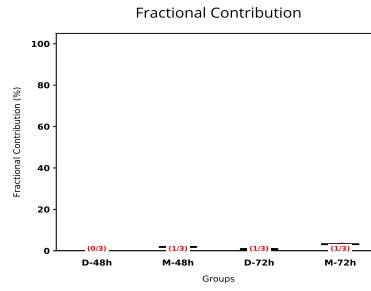
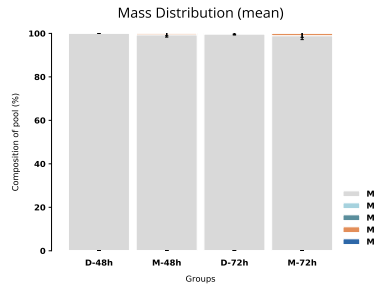
NADPH



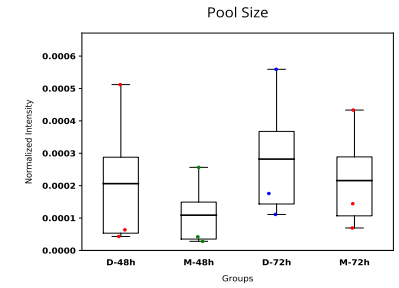
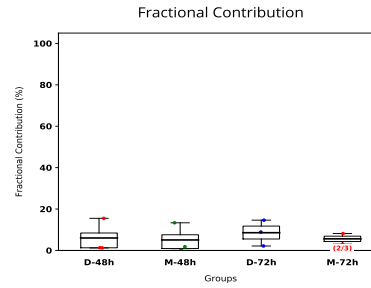
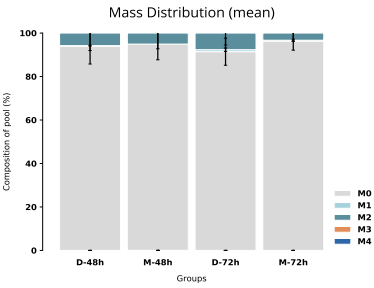
[NADP+/NADPH]



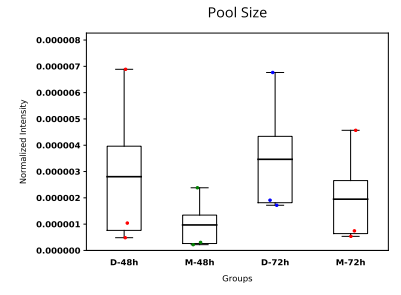
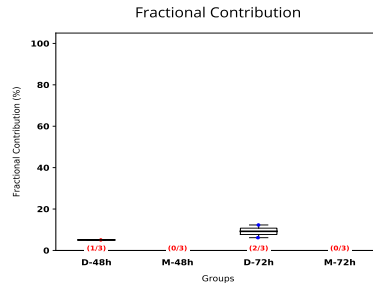
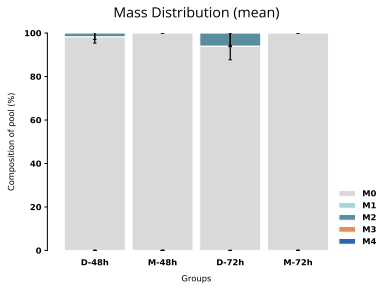
creatinine



creatine

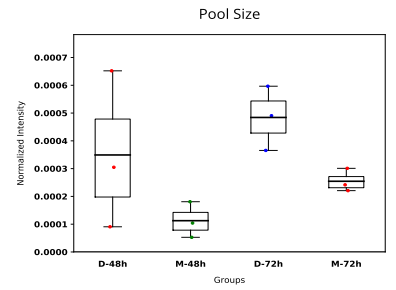
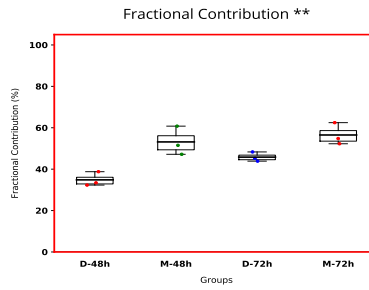
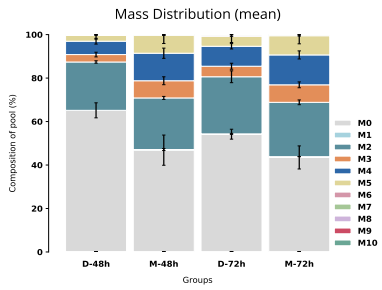


phosphocreatine

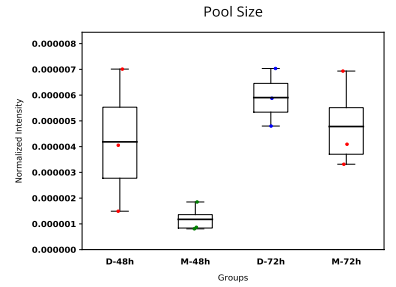
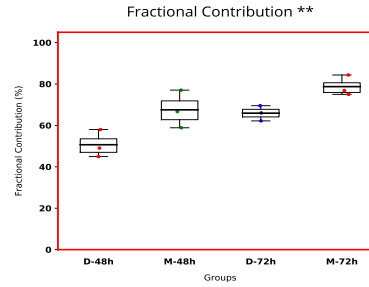
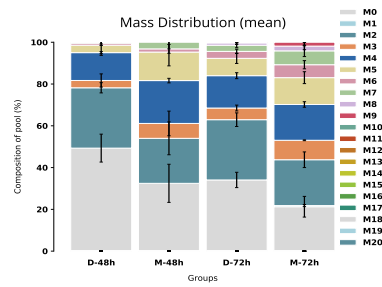


redox

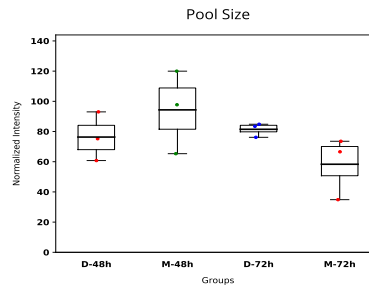
GSH



GSSG

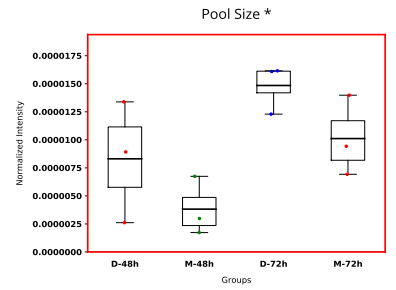
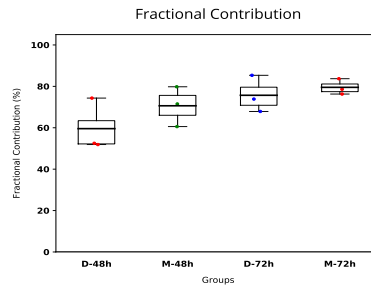
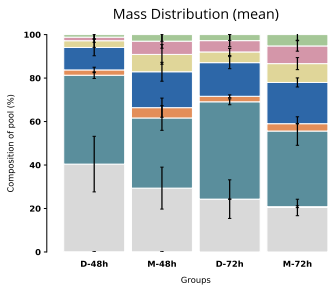


[GSH/GSSG]

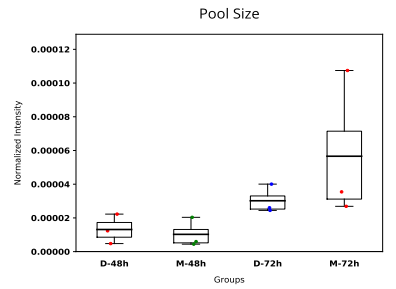
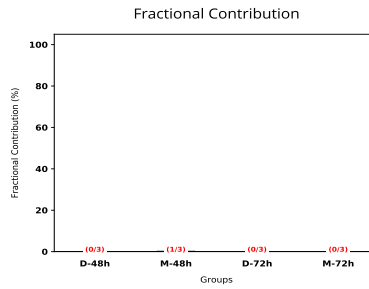
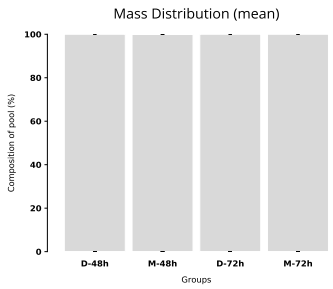


urea cycle

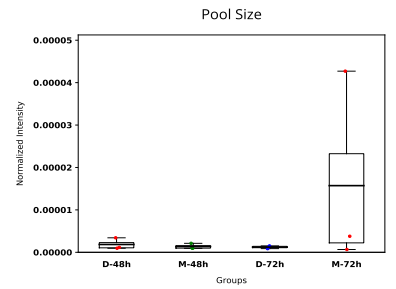
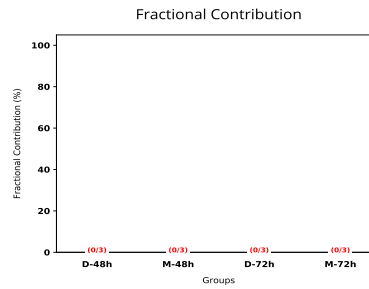
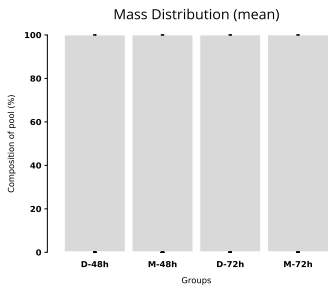
N-acetylglutamate



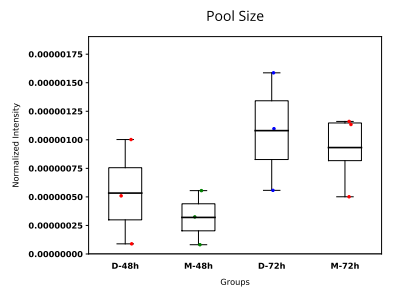
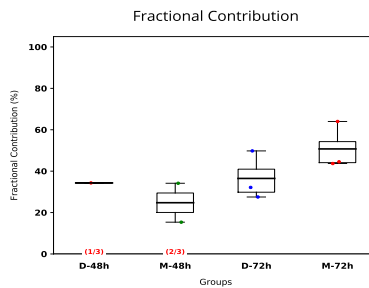
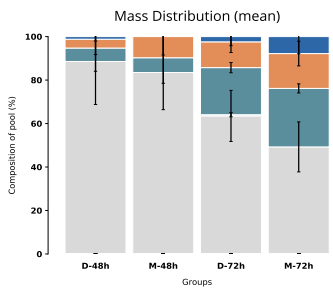
ornithine



citrulline

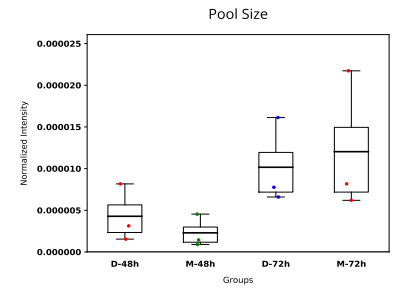
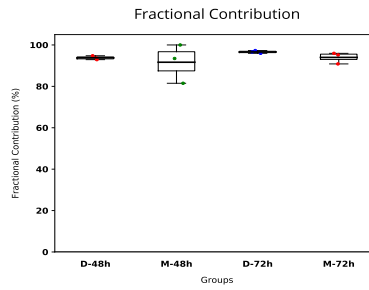
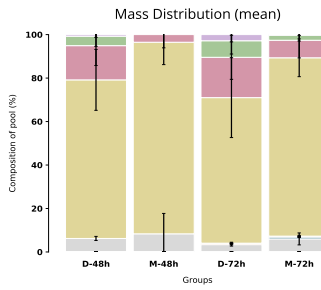


argininosuccinate

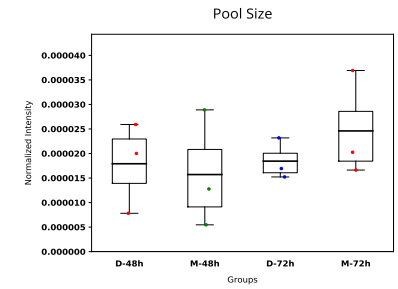
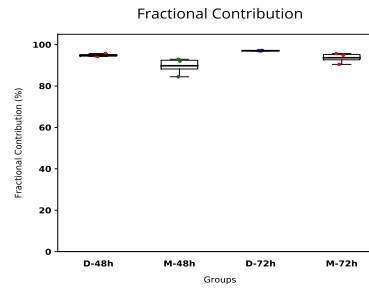
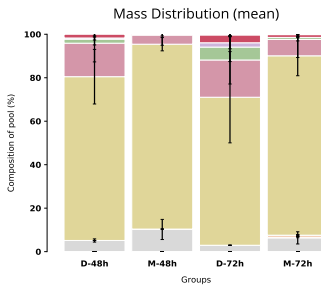


SAM-cycle

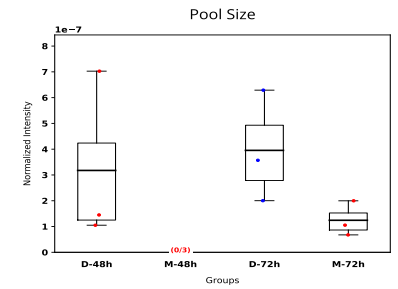
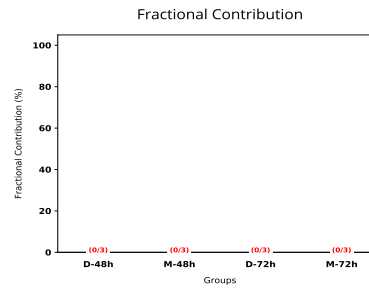
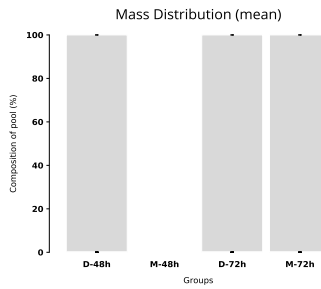
5'-methylthioadenosine



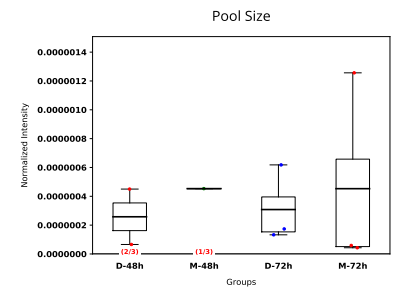
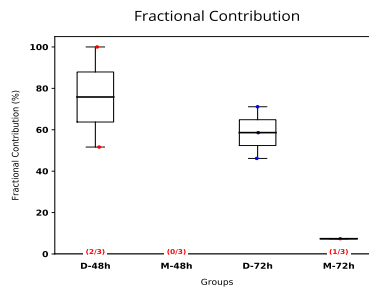
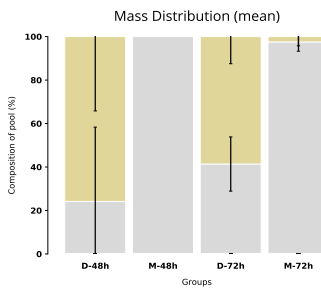
S-adenosyl-methionine



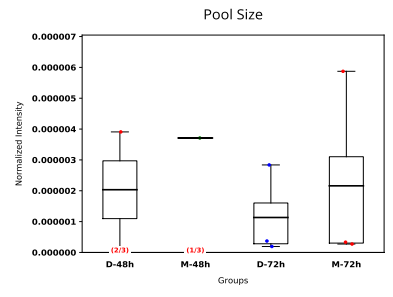
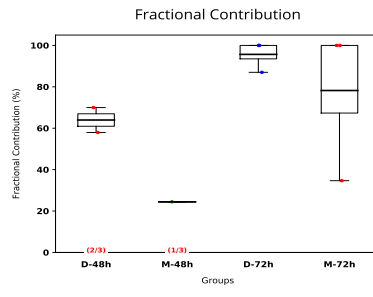
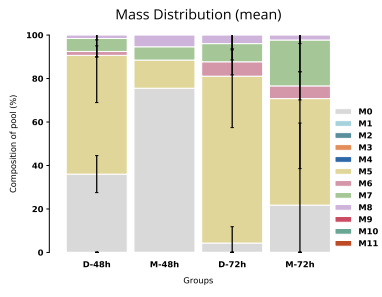
cystathionine



CDP-choline

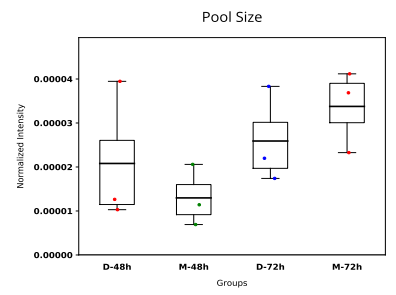
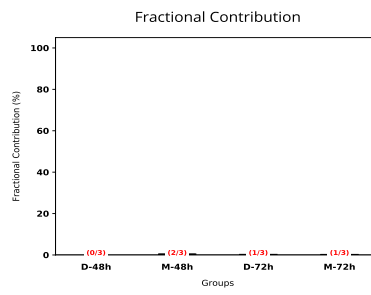
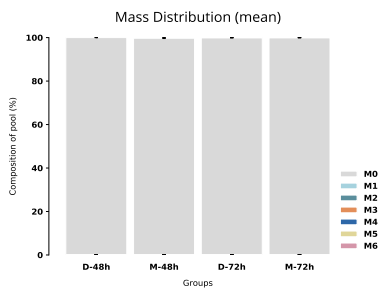


CDP-ethanolamine



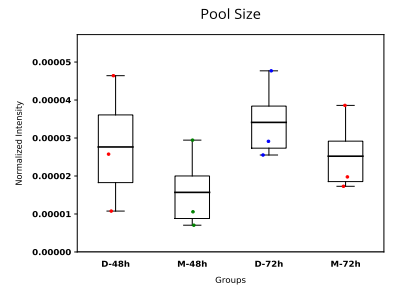
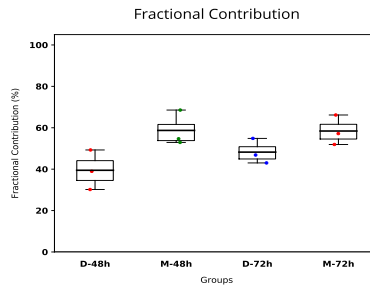
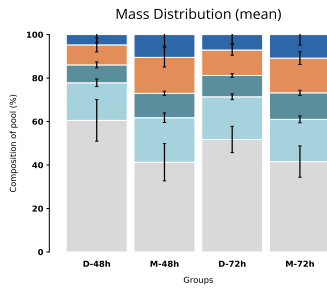
vitamin

nicotinamide

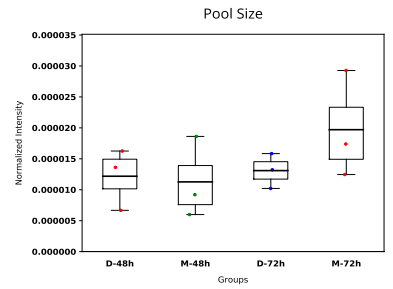
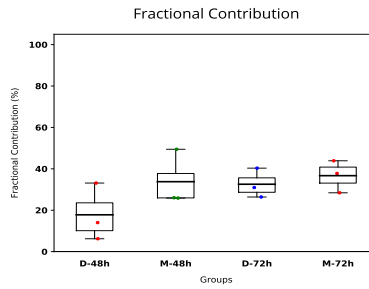
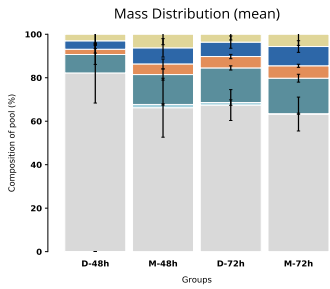


other

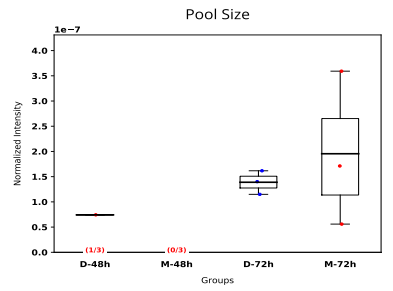
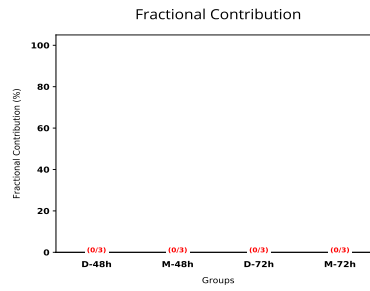
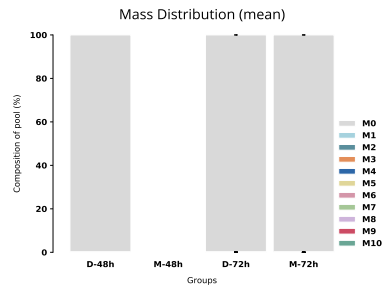
gamma-amino-butyrate



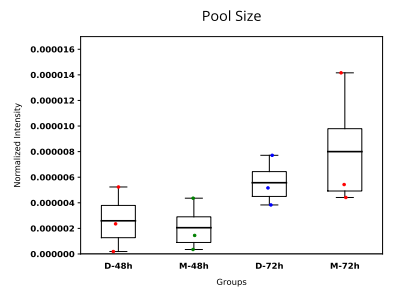
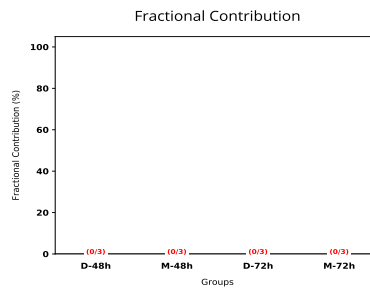
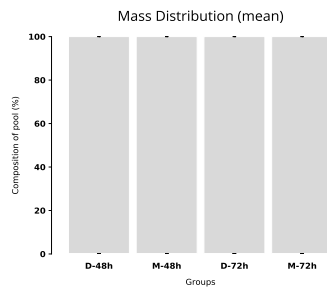
hydroxyglutarate



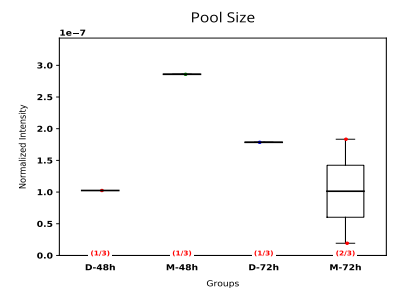
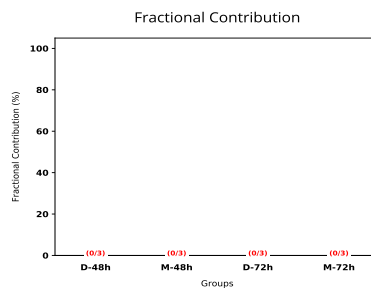
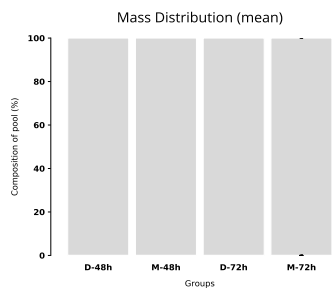
kynurenine



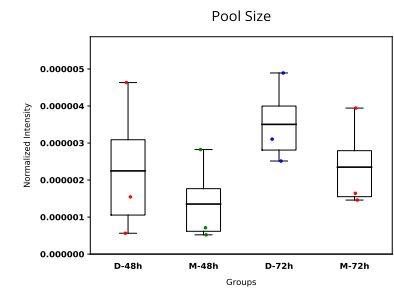
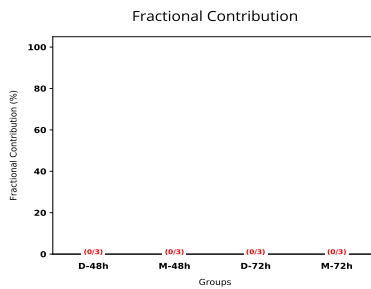
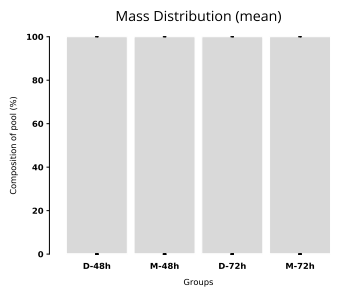
methioninesulfoxide



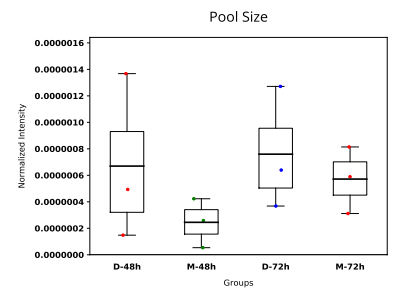
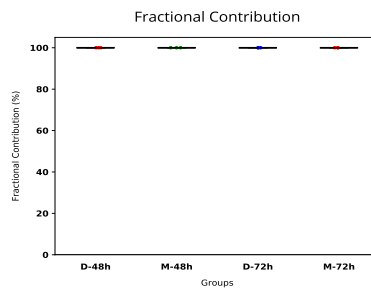
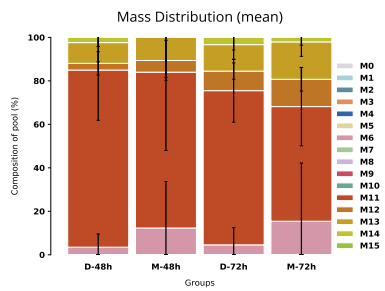
1-methylnicotinamide



sarcosine



UDP-glucuronic acid



xylulose

