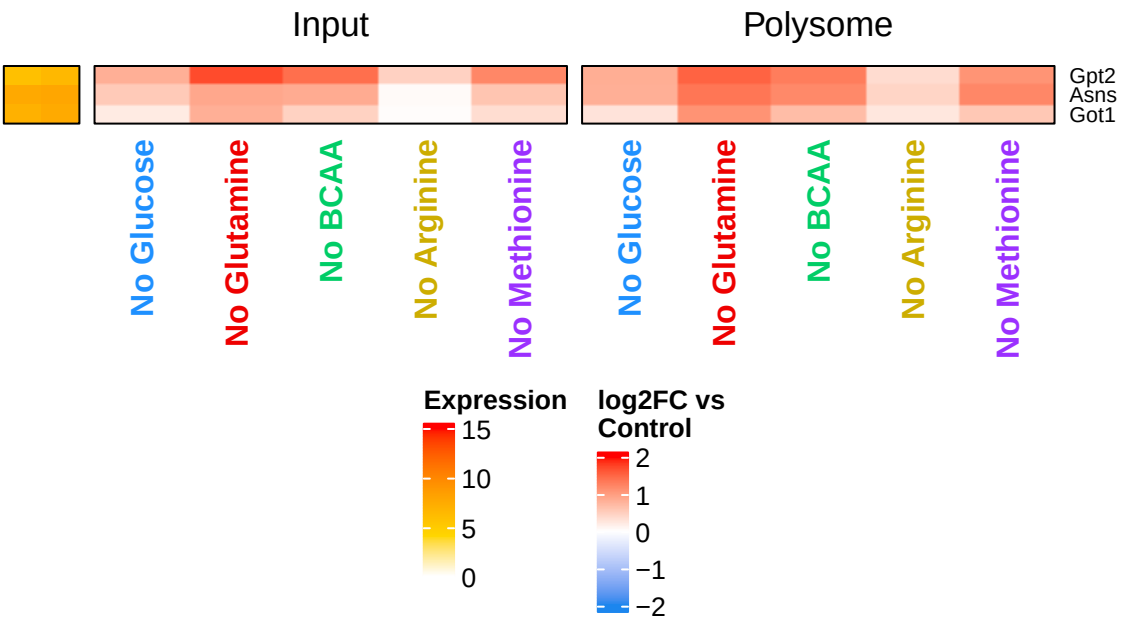
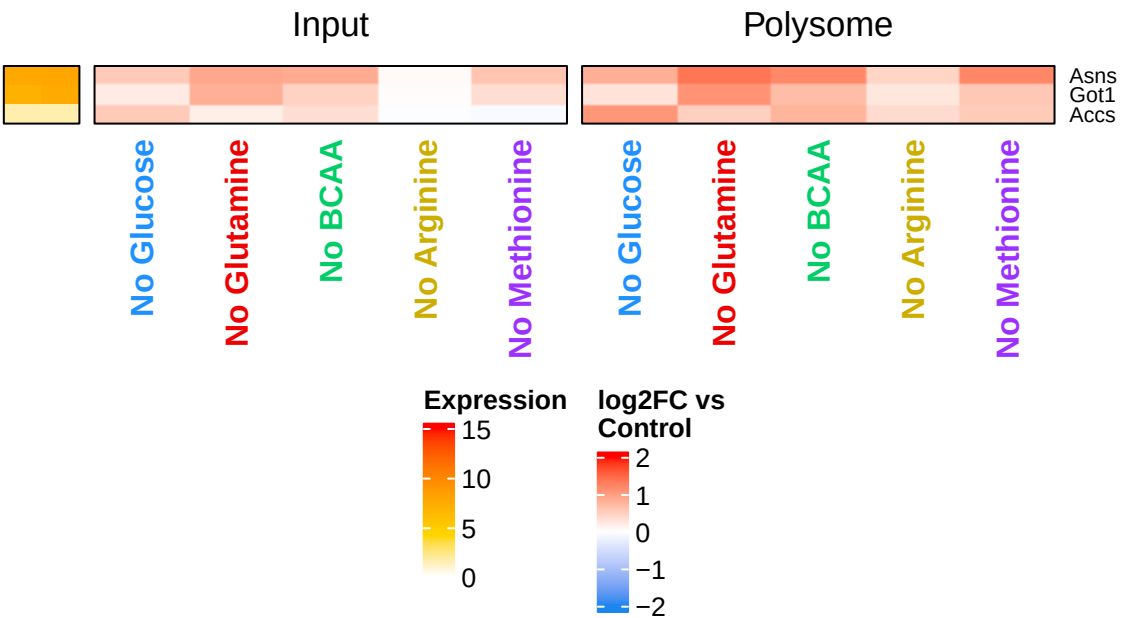
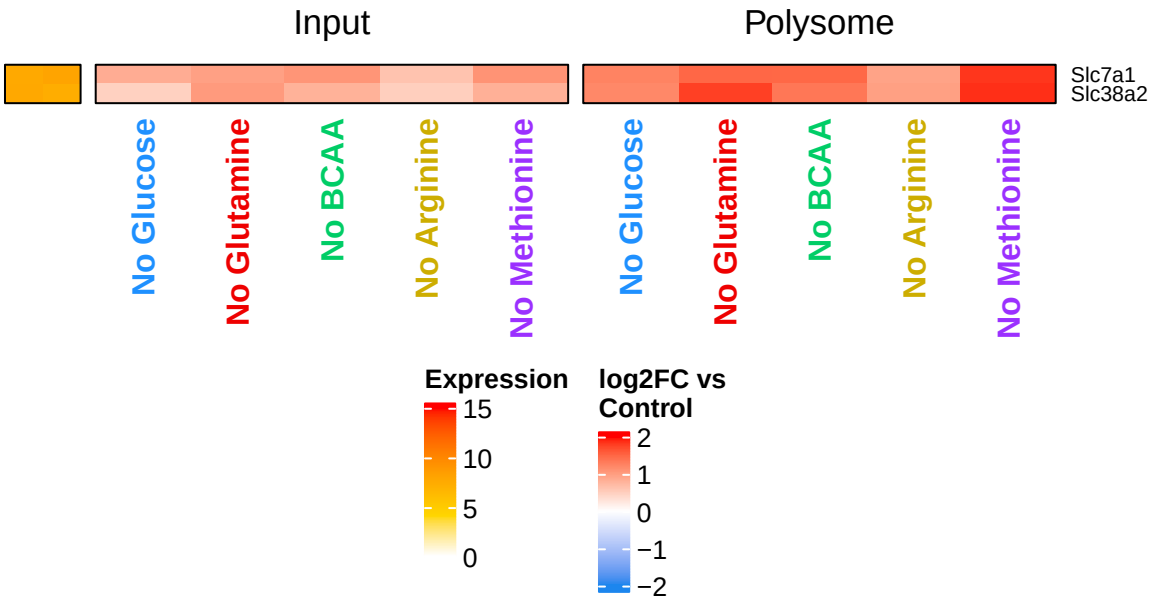
Alanine, aspartate and glutamate metabolism

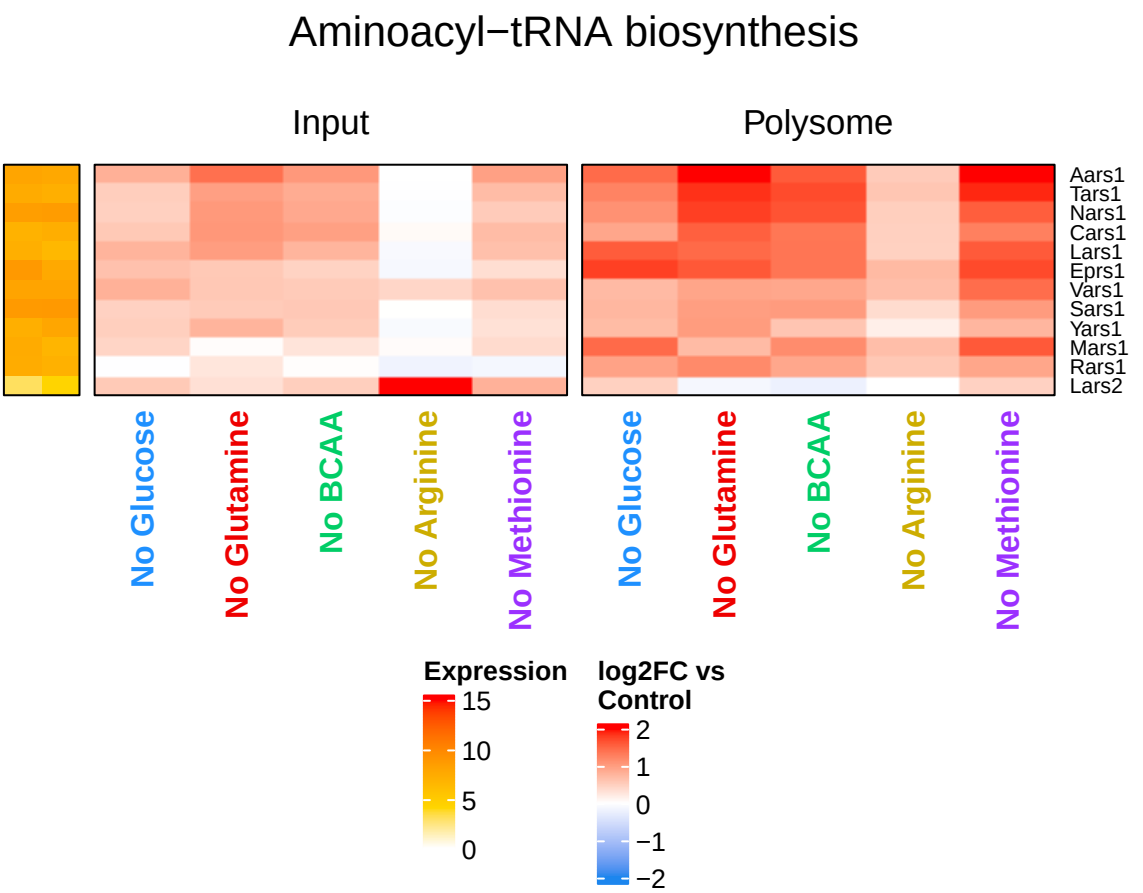


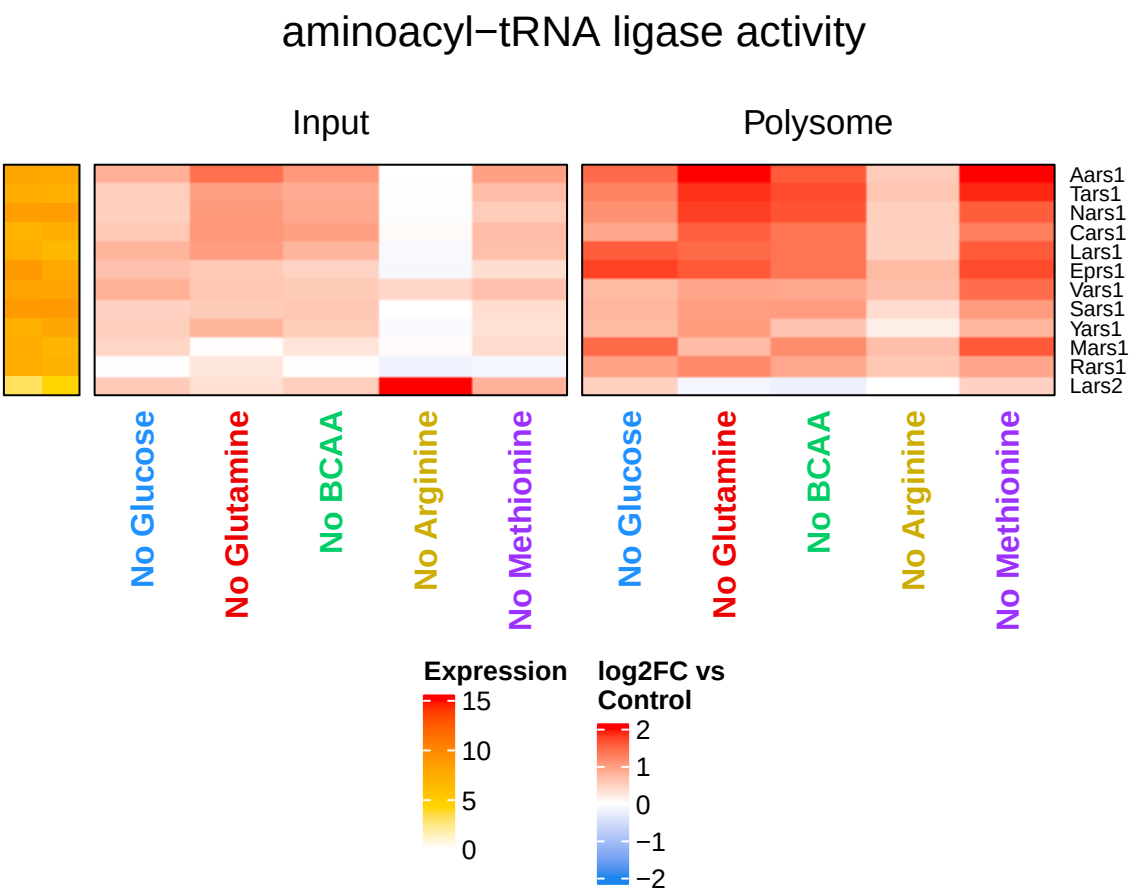
amino acid metabolic process



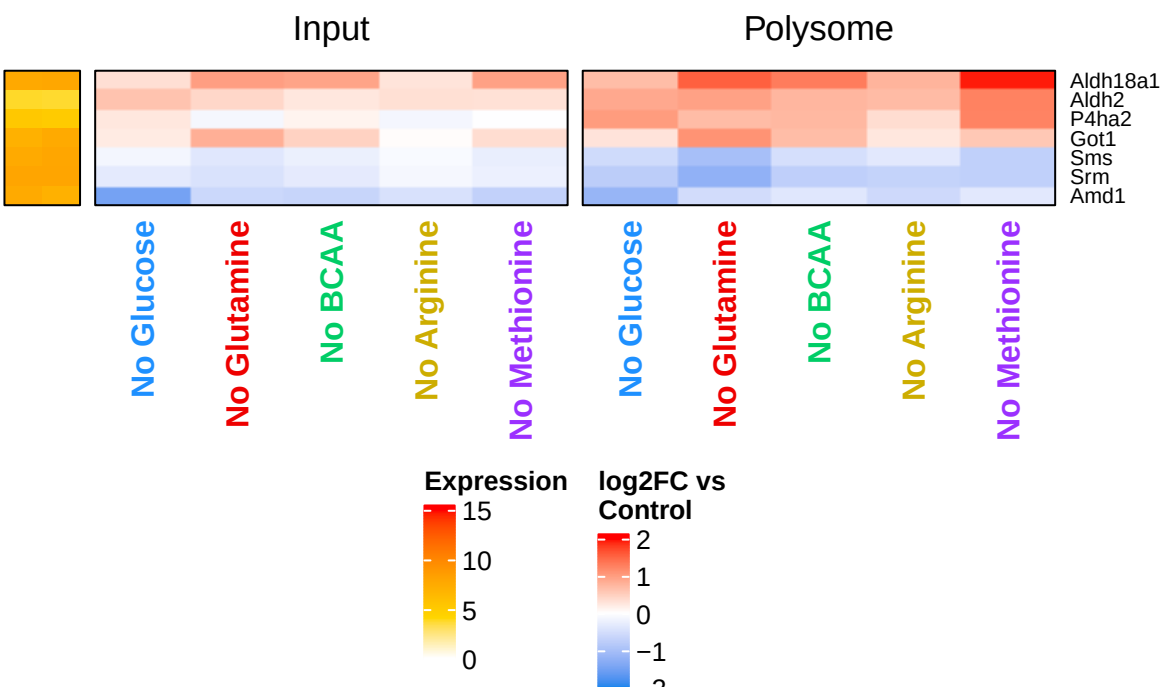
amino acid transmembrane transporter activity



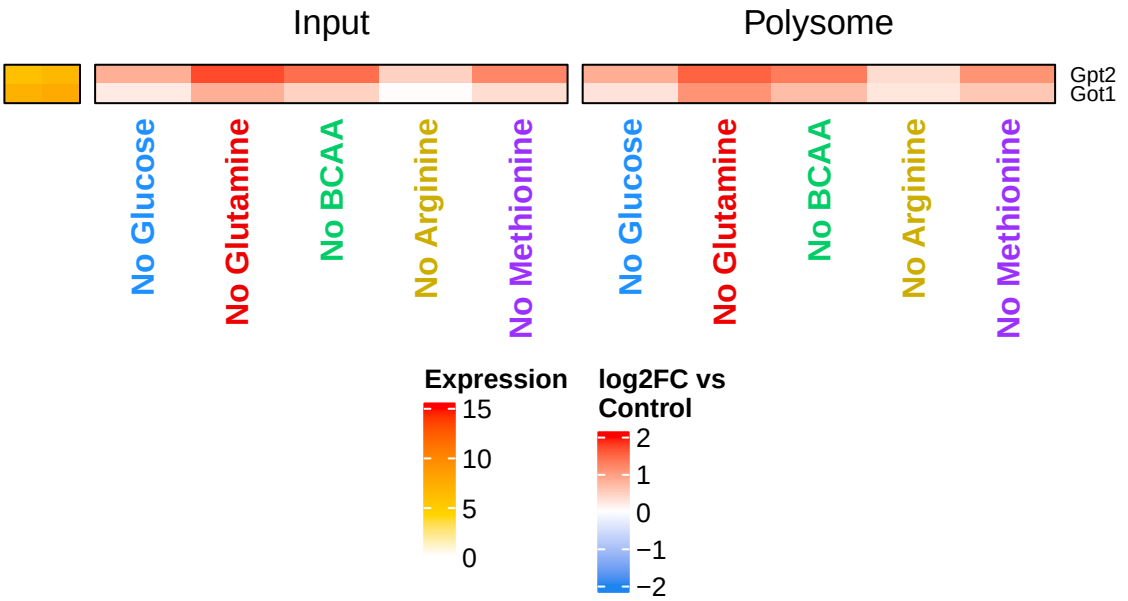

Aminoacyl−tRNA biosynthesis
Input
Polysome
Aars1
Tars1
Nars1
Cars1
Lars1
Eprs1
Vars1
Sars1
Yars1
Mars1
Rars1
Lars2
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2


aminoacyl−tRNA ligase activity
Input
Polysome
Aars1
Tars1
Nars1
Cars1
Lars1
Eprs1
Vars1
Sars1
Yars1
Mars1
Rars1
Lars2
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2

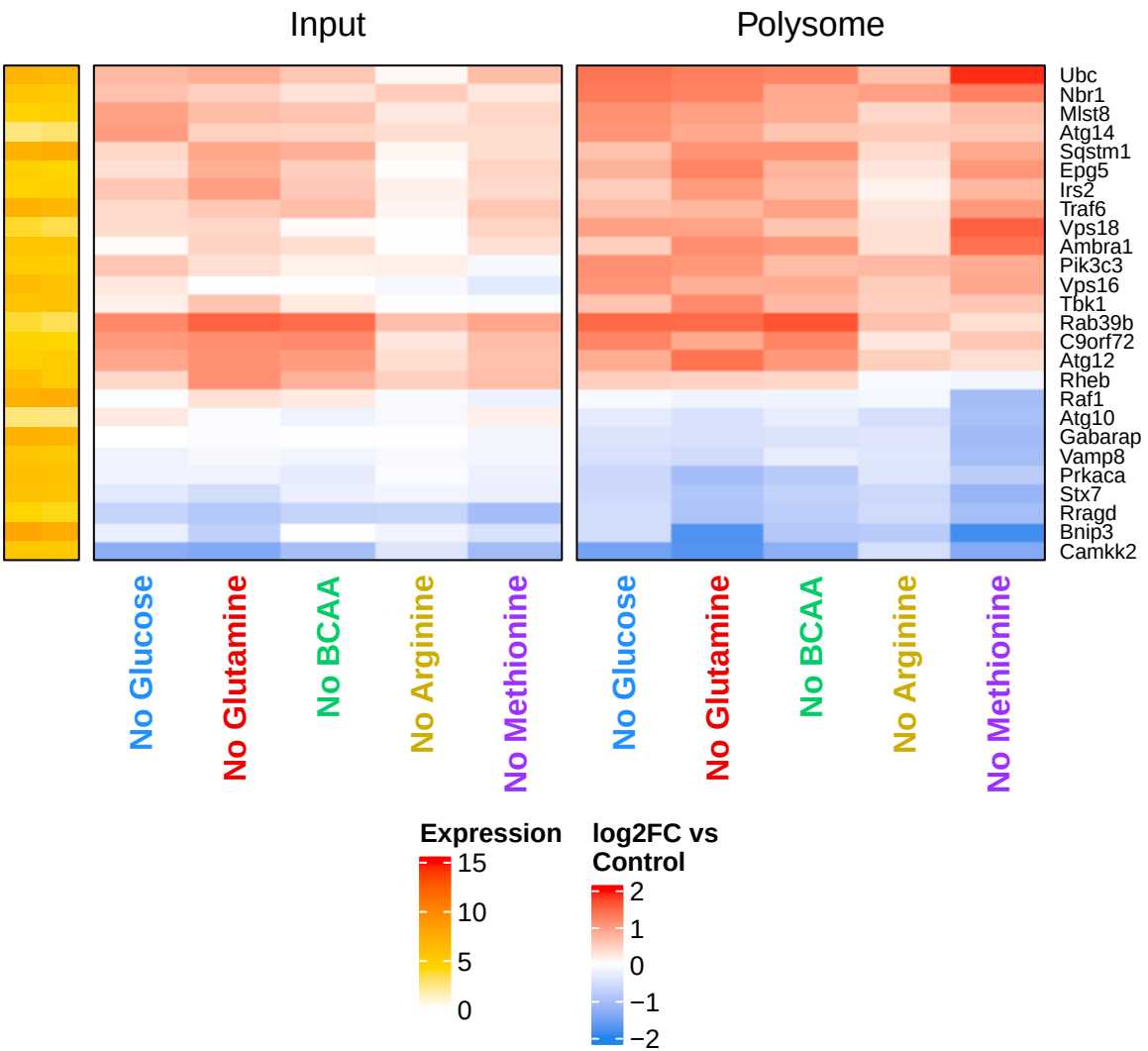
Arginine and proline metabolism



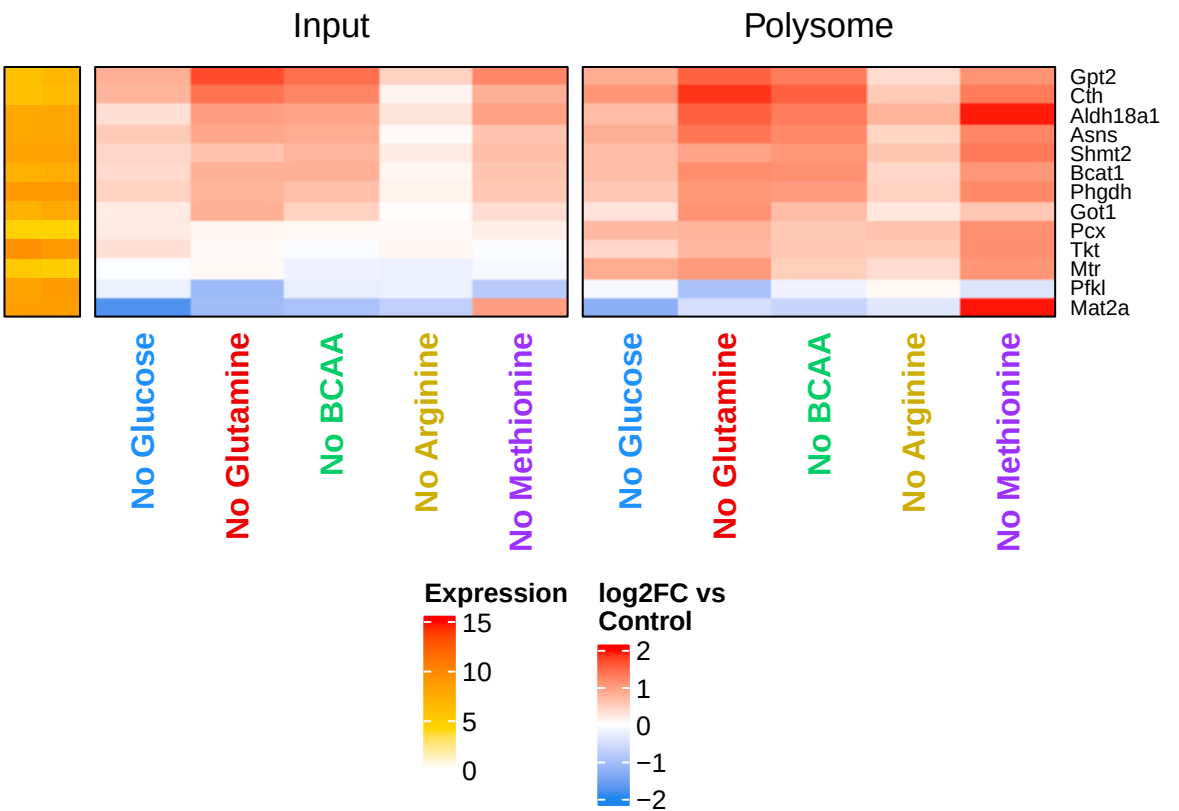
Arginine biosynthesis

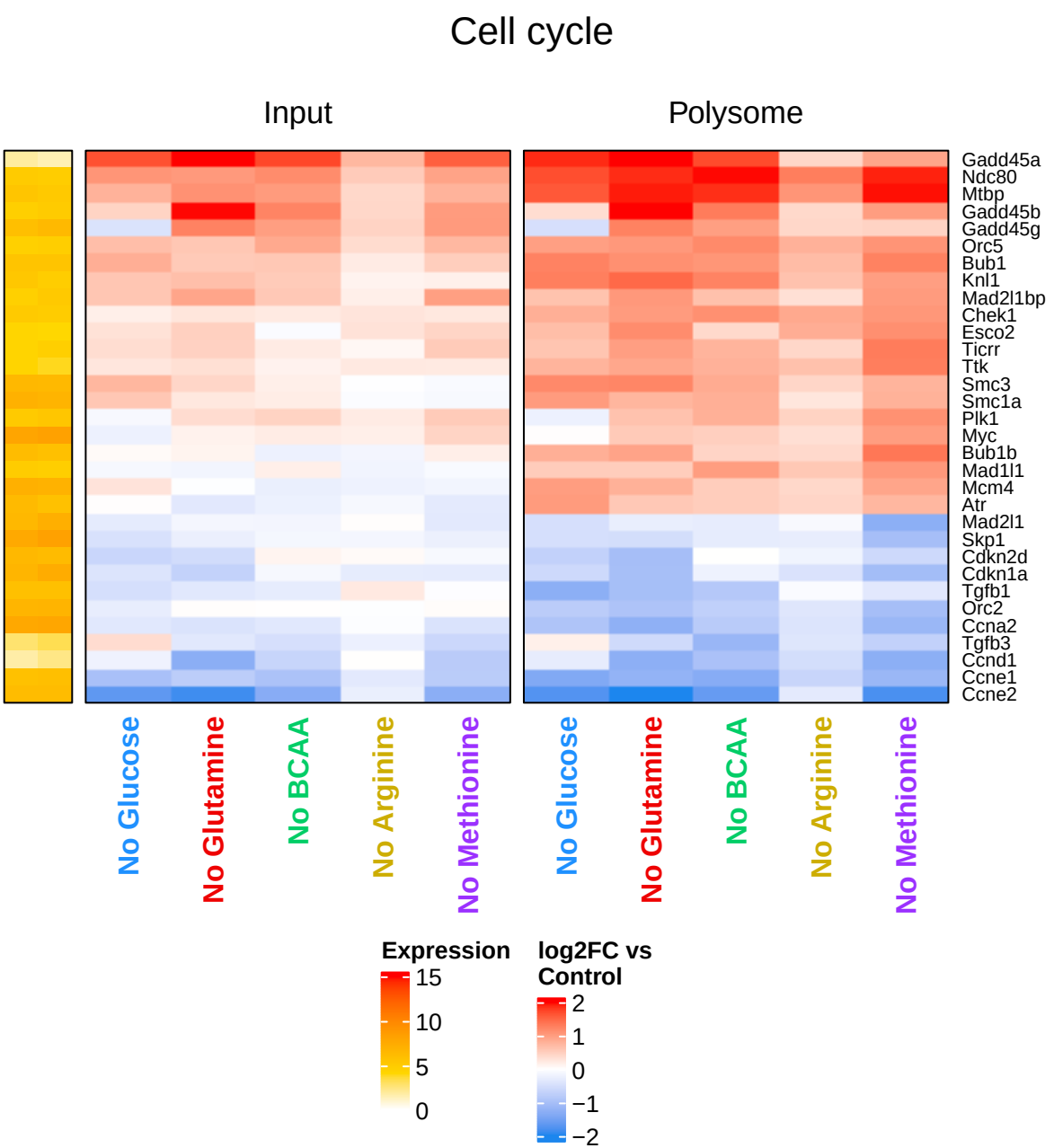


Autophagy − animal

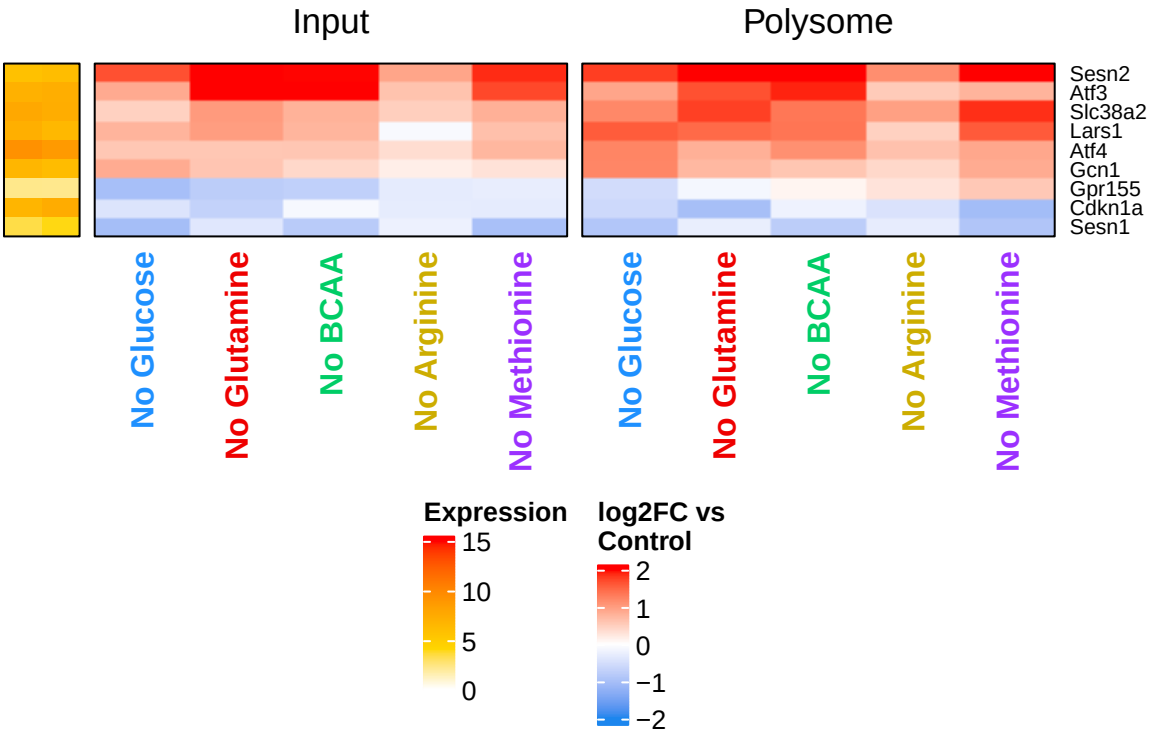


Biosynthesis of amino acids

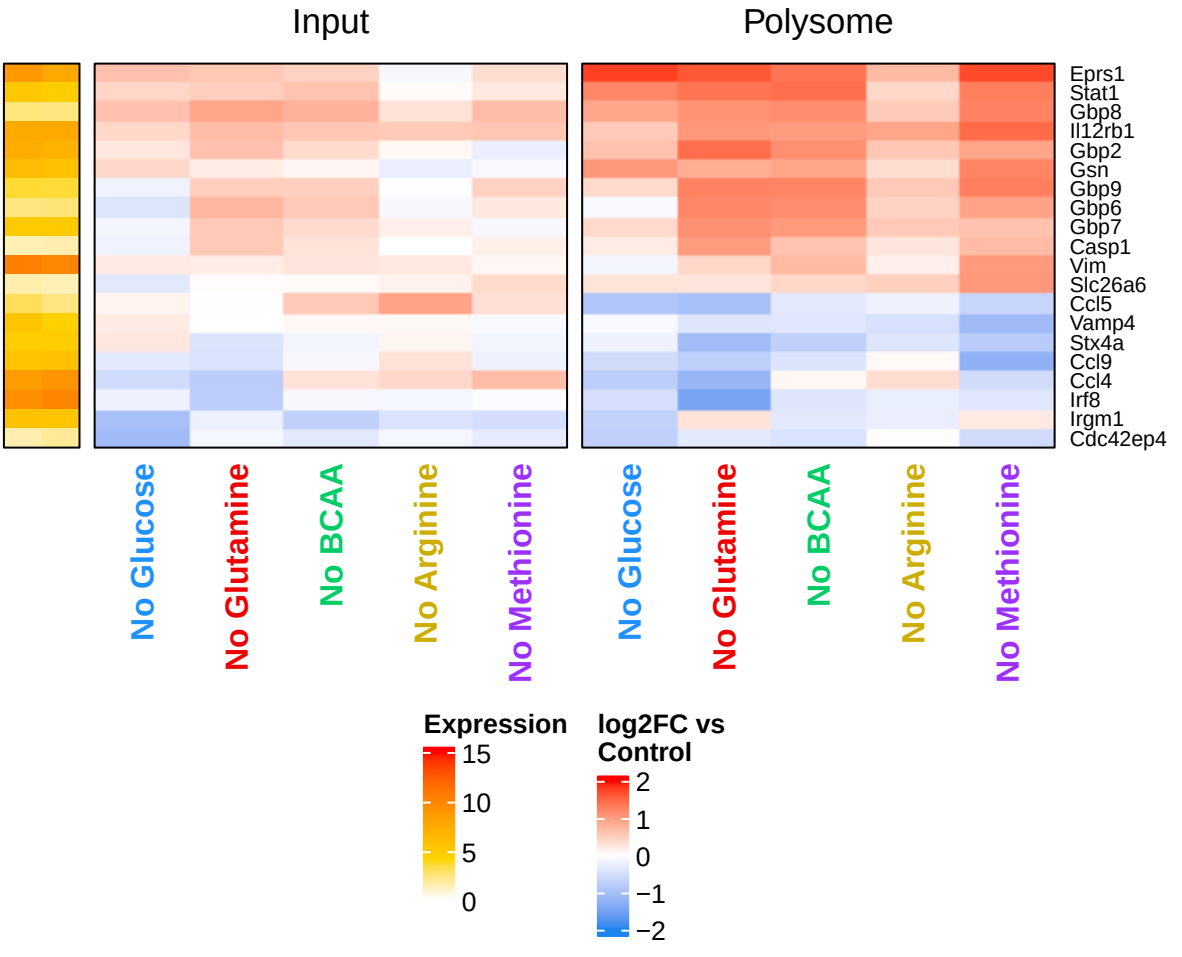



Cell cycle
Input
Polysome
Gadd45a
Ndc80
Mtbp
Gadd45b
Gadd45g
Orc5
Bub1
Knl1
Mad2l1bp
Chek1
Esco2
Ticrr
Ttk
Smc3
Smc1a
Plk1
Myc
Bub1b
Mad1l1
Mcm4
Atr
Mad2l1
Skp1
Cdkn2d
Cdkn1a
Tgfb1
Orc2
Ccna2
Tgfb3
Ccnd1
Ccne1
Ccne2
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2

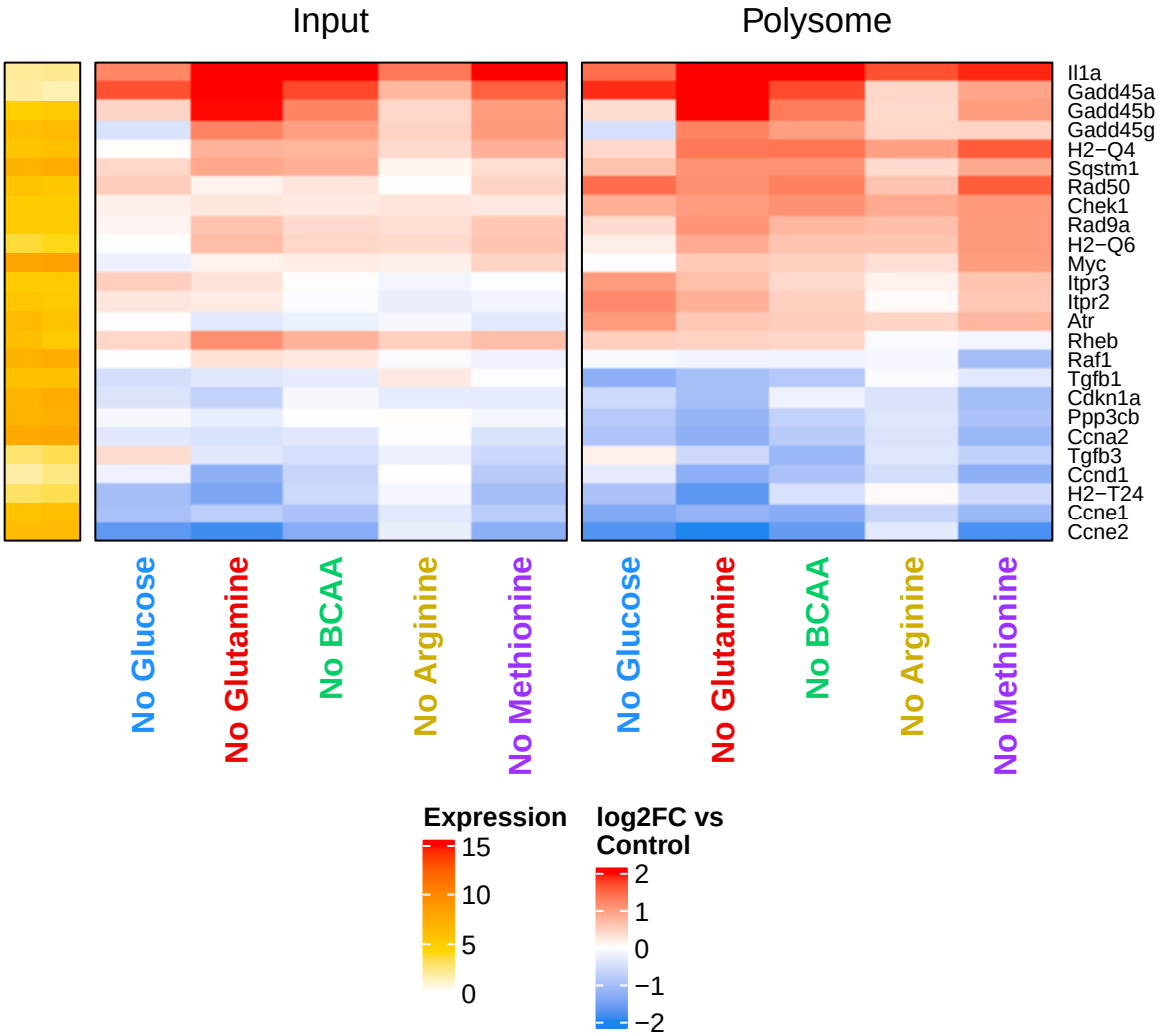
cellular response to amino acid starvation



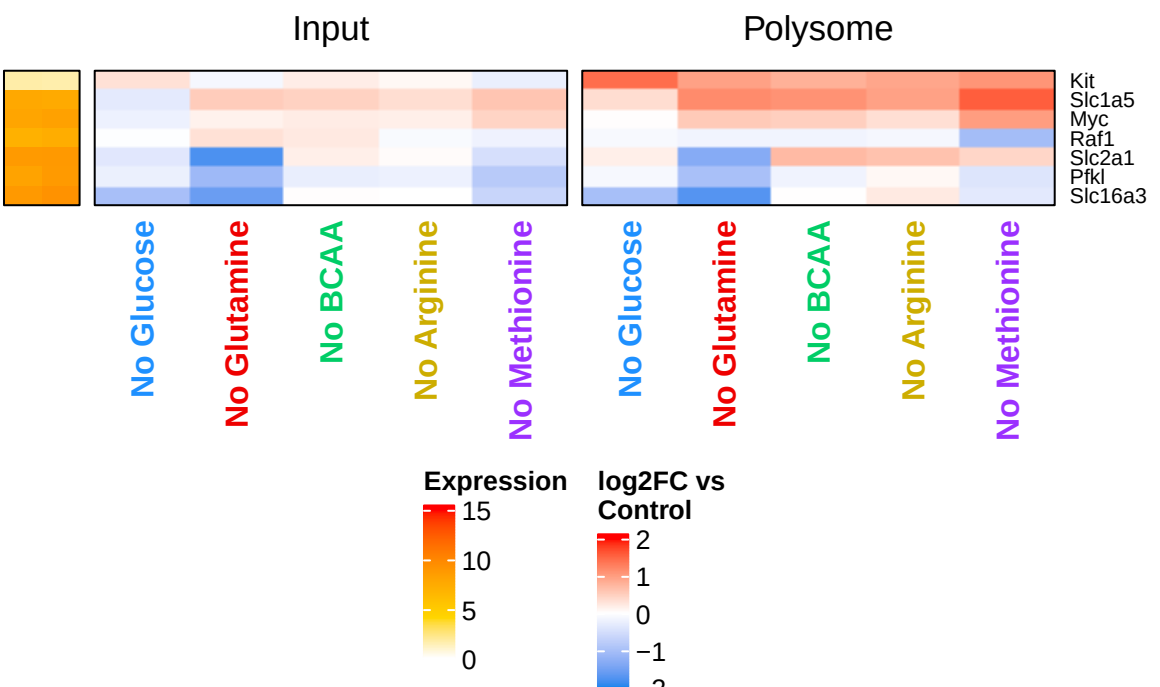
cellular response to type II interferon



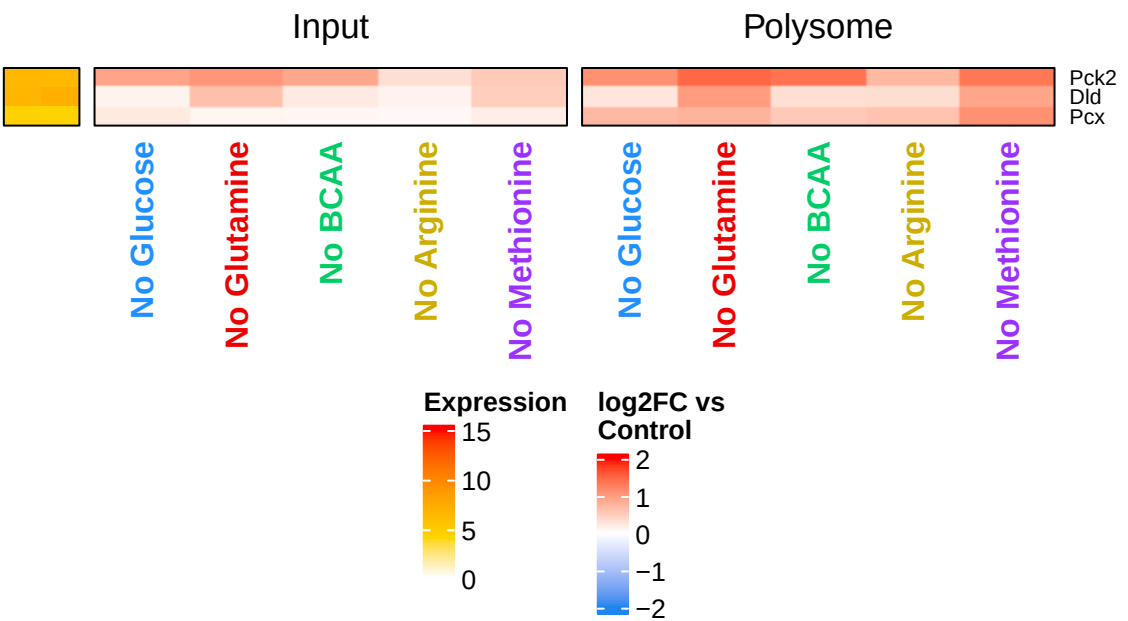
Cellular senescence



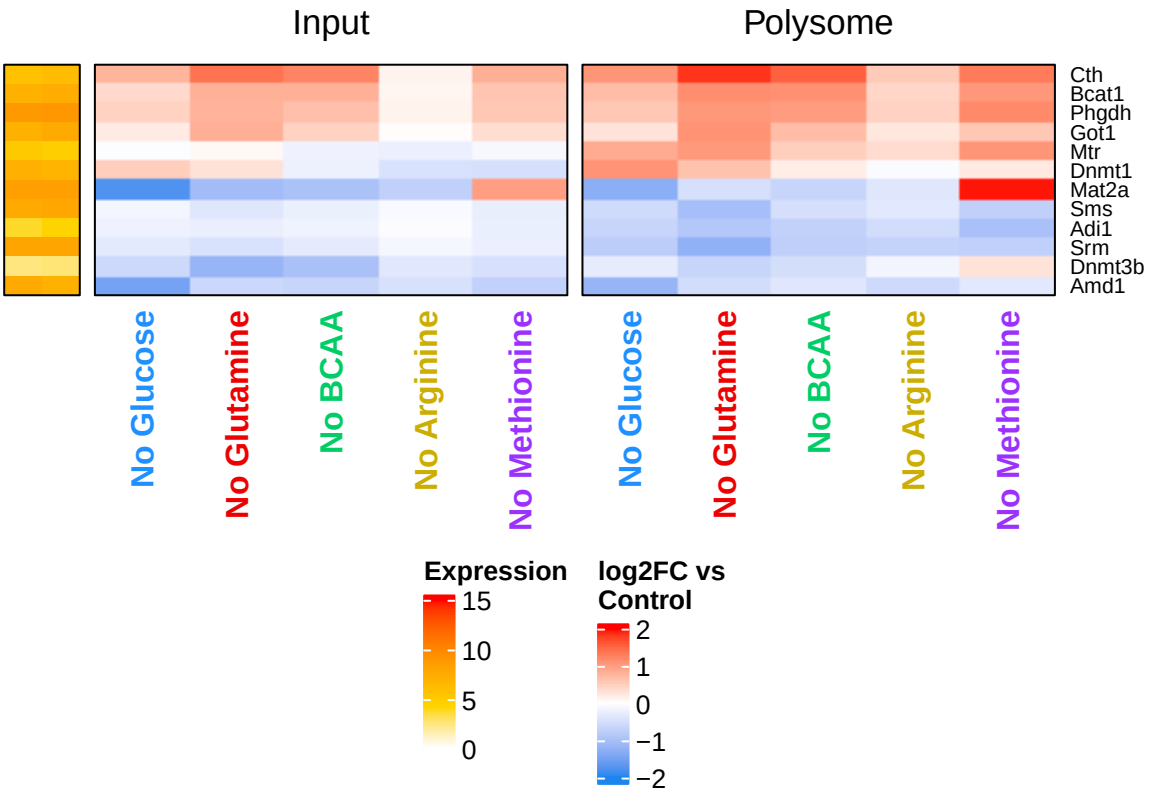
Central carbon metabolism in cancer

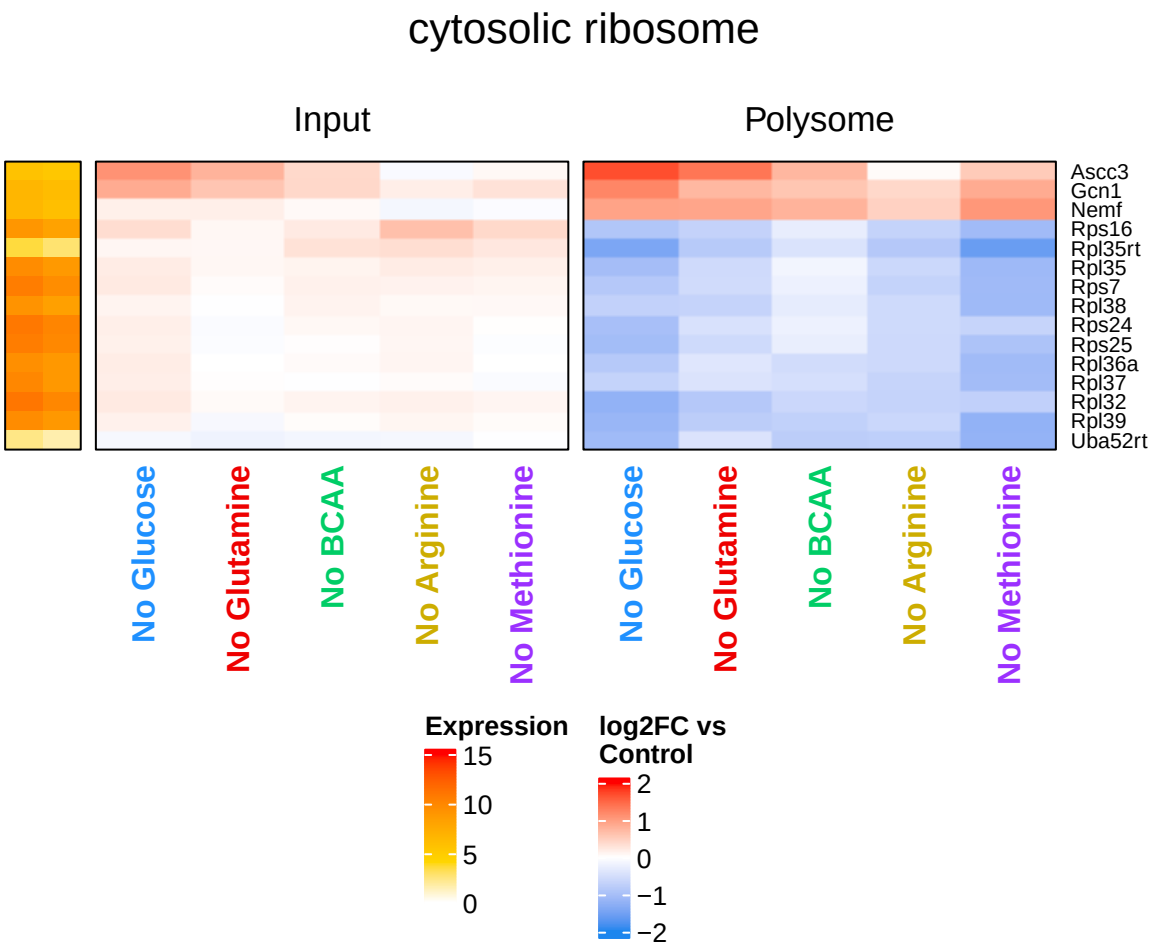


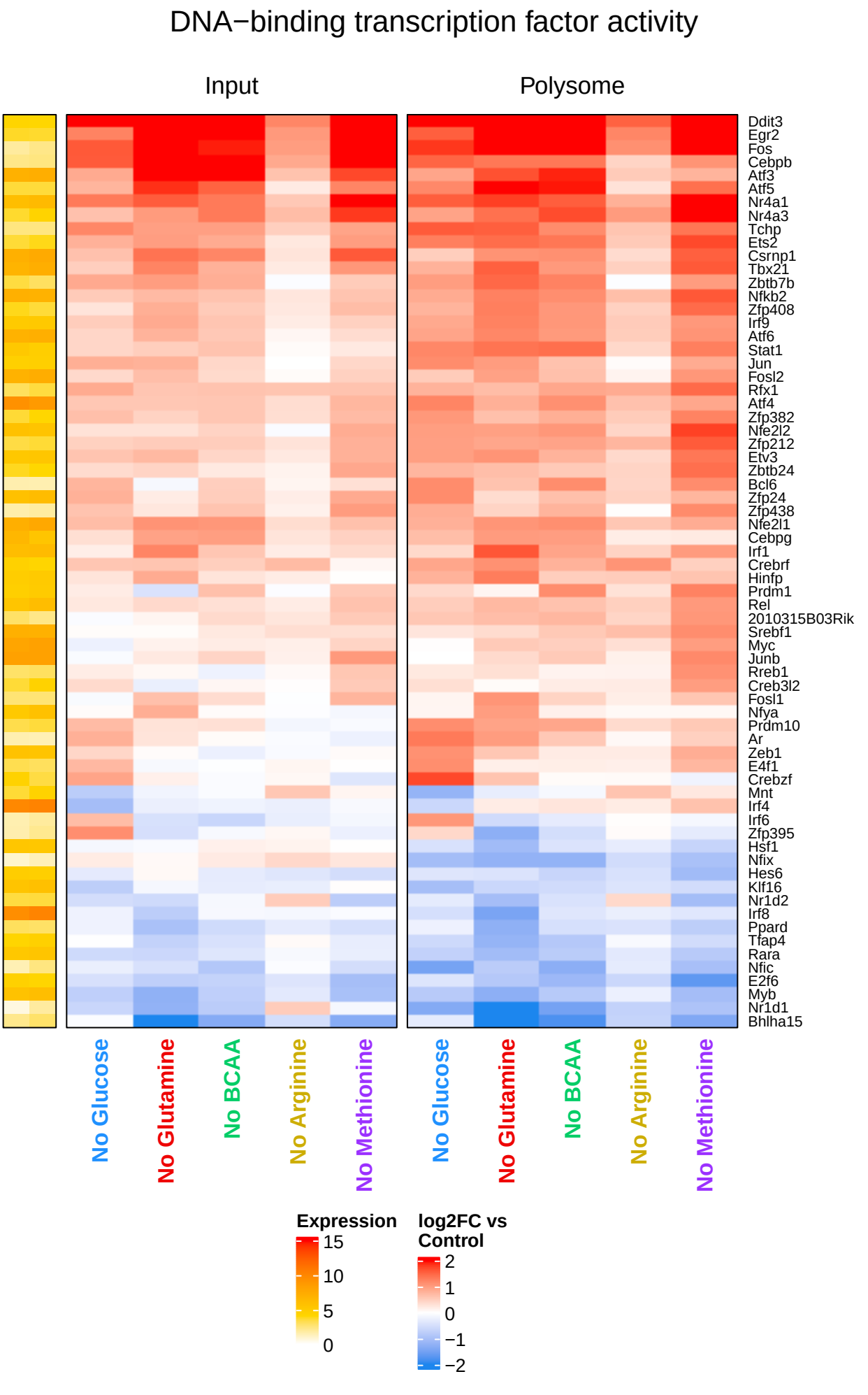
Citrate cycle (TCA cycle)



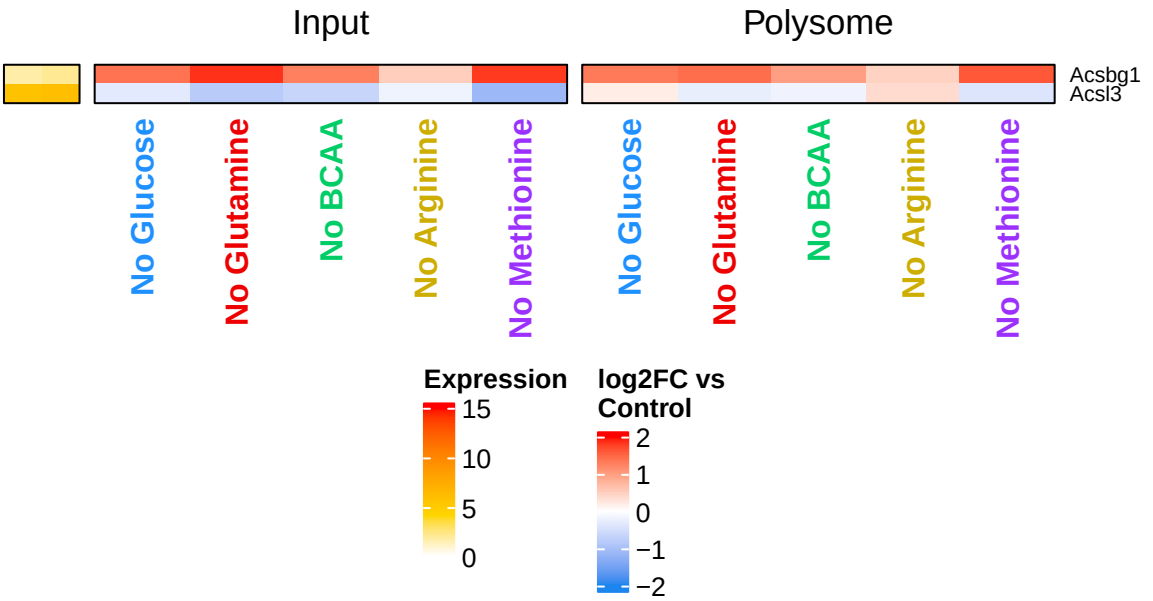
Cysteine and methionine metabolism



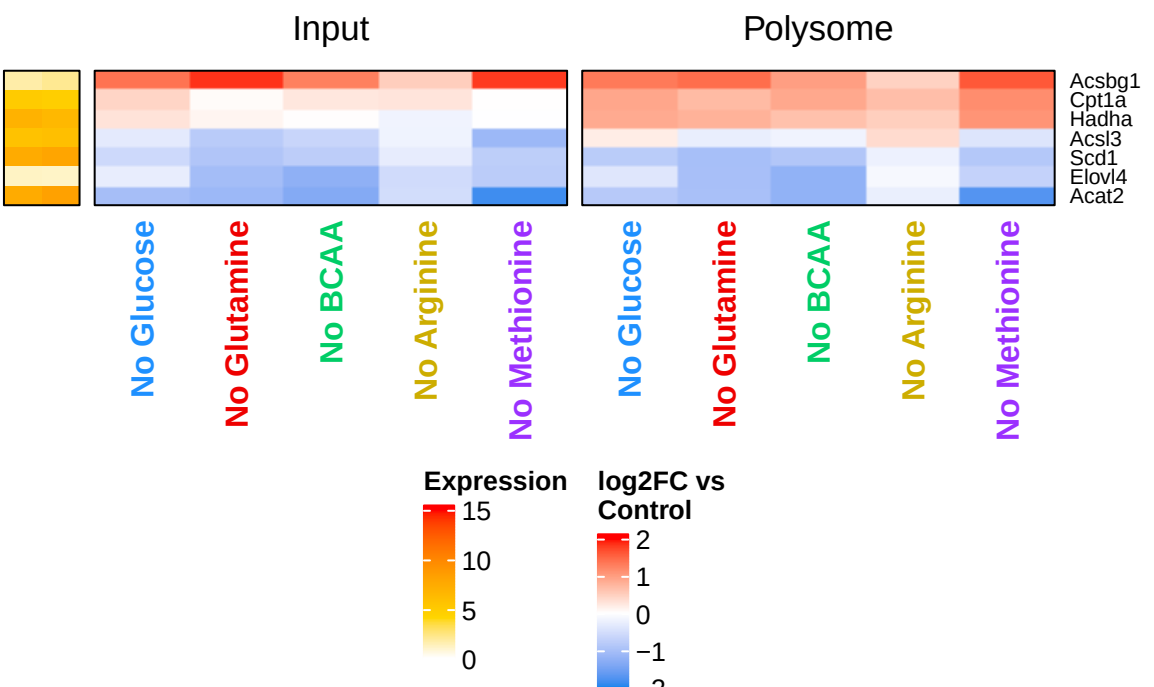

cytosolic ribosome
Input
Polysome
Ascc3
Gcn1
Nemf
Rps16
Rpl35rt
Rpl35
Rps7
Rpl38
Rps24
Rps25
Rpl36a
Rpl37
Rpl32
Rpl39
Uba52rt
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2


DNA−binding transcription factor activity
Input
Polysome
Ddit3
Egr2
Fos
Cebpb
Atf3
Atf5
Nr4a1
Nr4a3
Tchp
Ets2
Csrnp1
Tbx21
Zbtb7b
Nfkb2
Zfp408
Irf9
Atf6
Stat1
Jun
Fosl2
Rfx1
Atf4
Zfp382
Nfe2l2
Zfp212
Etv3
Zbtb24
Bcl6
Zfp24
Zfp438
Nfe2l1
Cebpg
Irf1
Crebrf
Hinfp
Prdm1
Rel
2010315B03Rik
Srebf1
Myc
Junb
Rreb1
Creb3l2
Fosl1
Nfya
Prdm10
Ar
Zeb1
E4f1
Crebzf
Mnt
Irf4
Irf6
Zfp395
Hsf1
Nfix
Hes6
Klf16
Nr1d2
Irf8
Ppard
Tfap4
Rara
Nfic
E2f6
Myb
Nr1d1
Bhlha15
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2

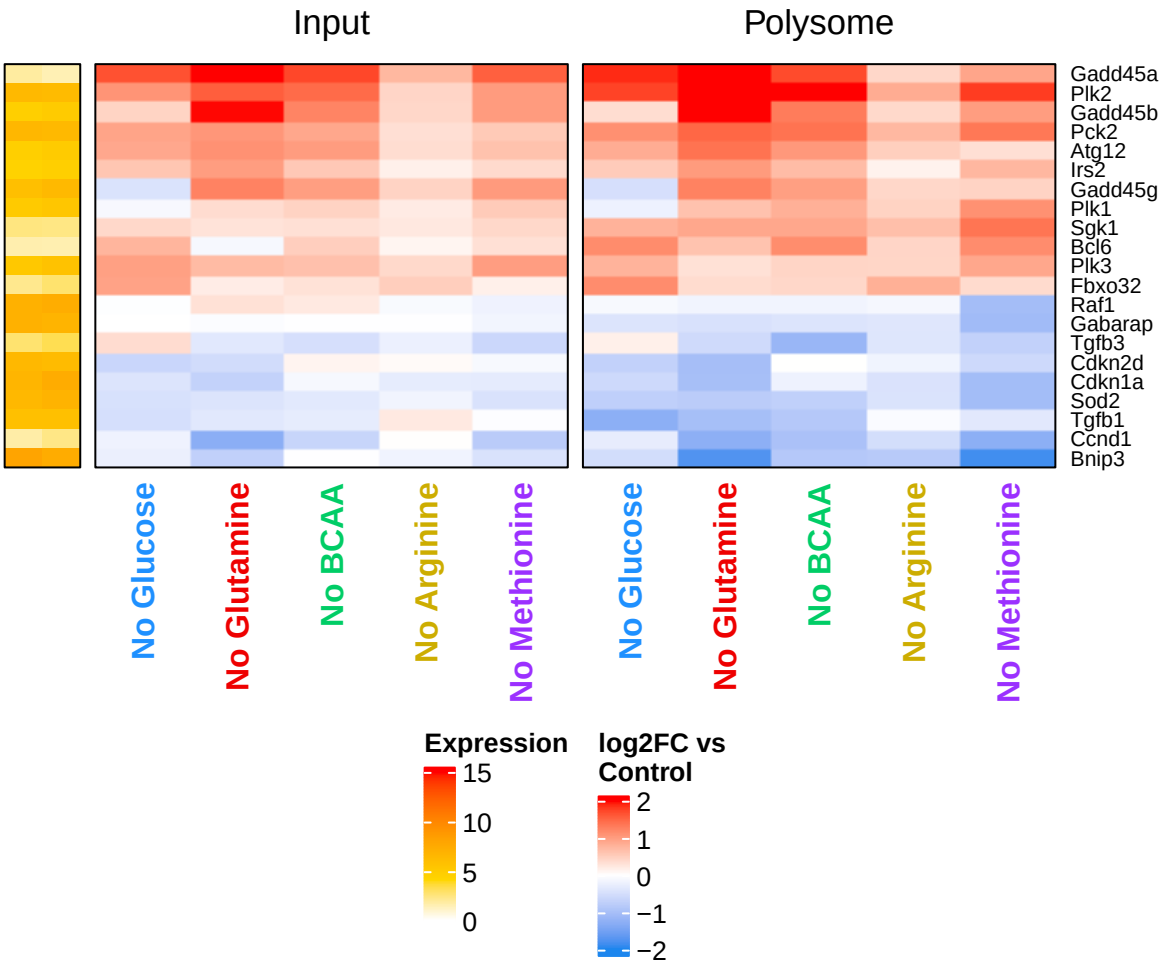
Fatty acid biosynthesis



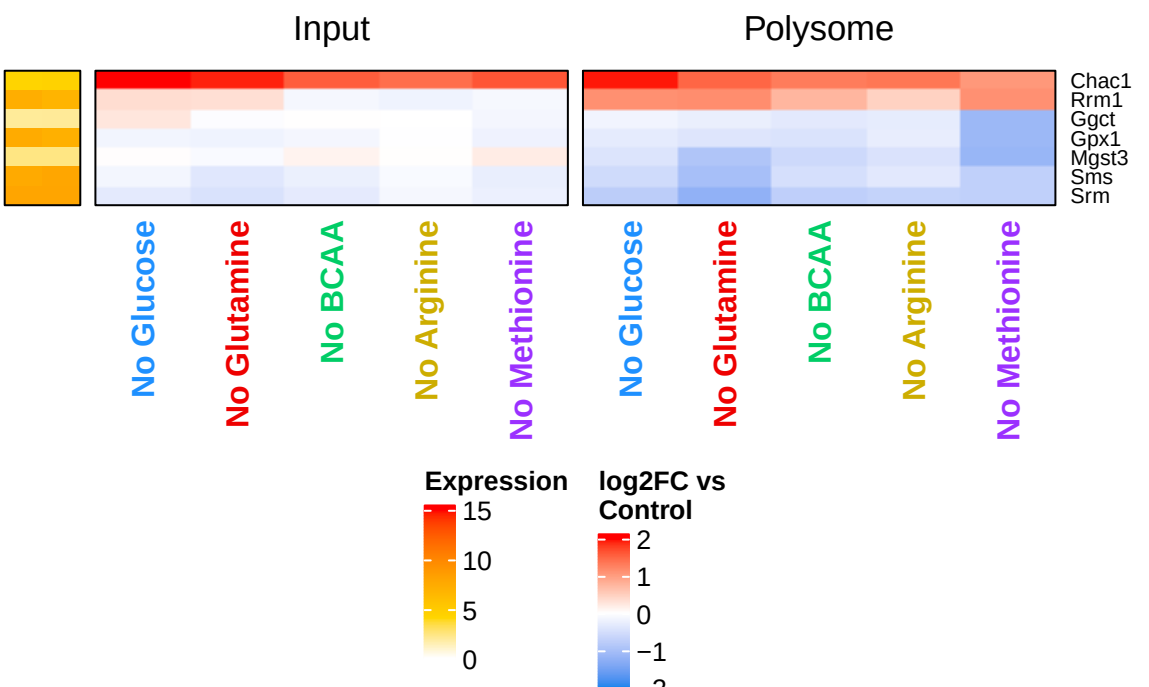
Fatty acid metabolism



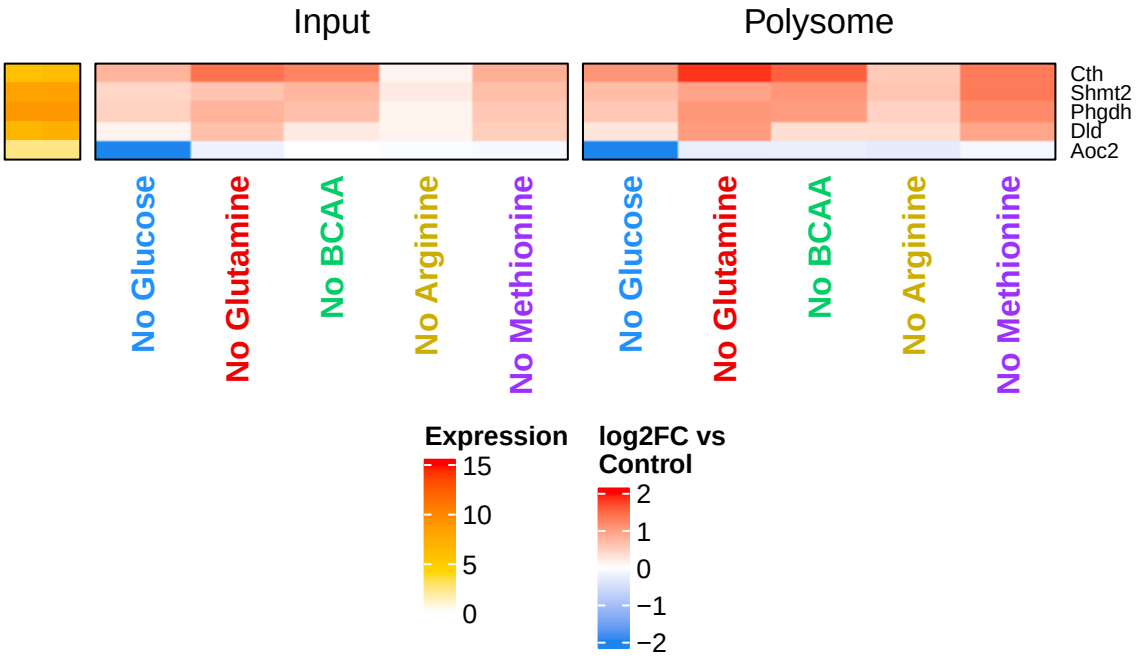
FoxO signaling pathway



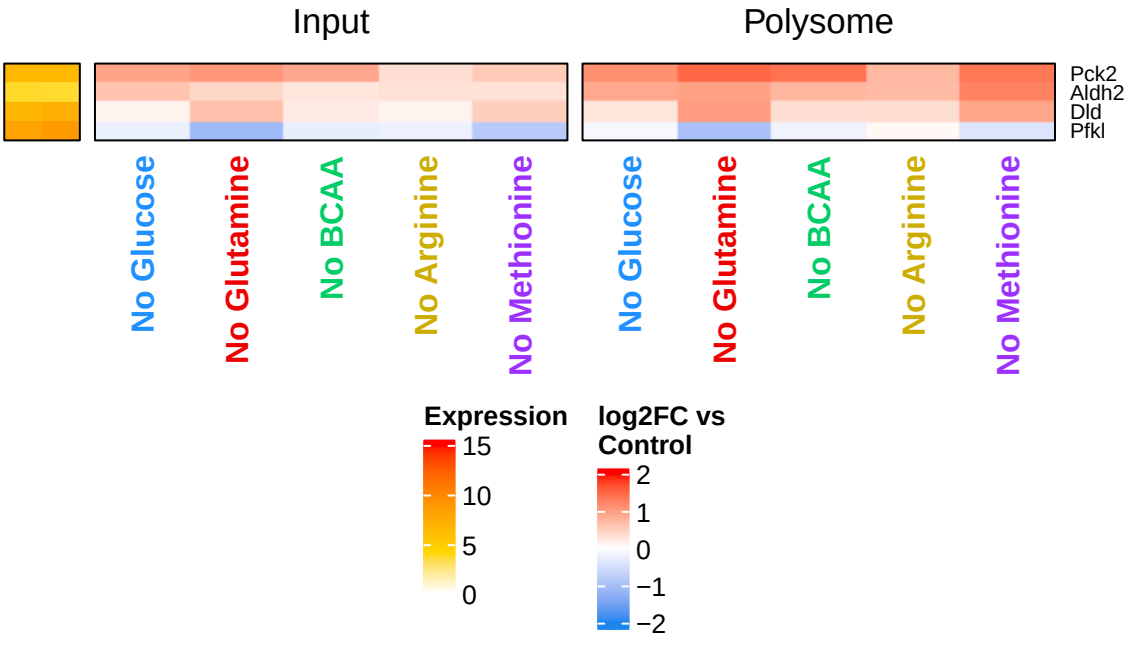
Glutathione metabolism



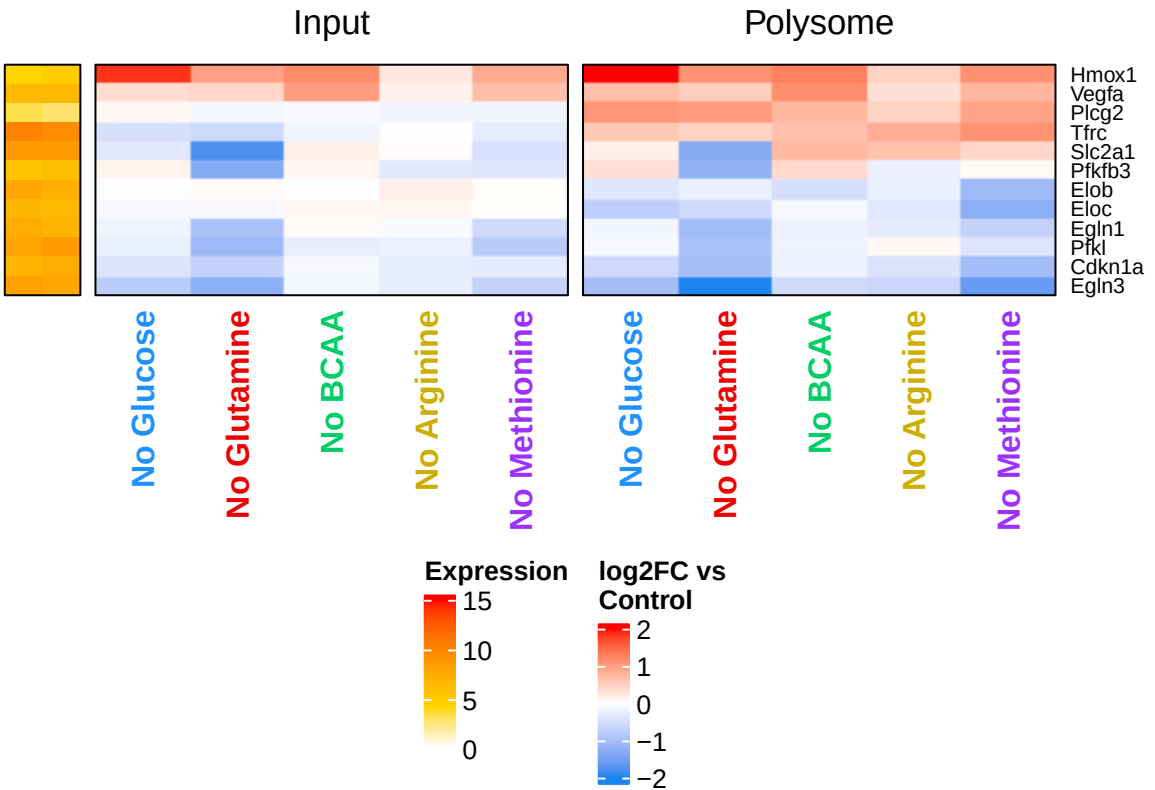
Glycine, serine, and threonine metabolism



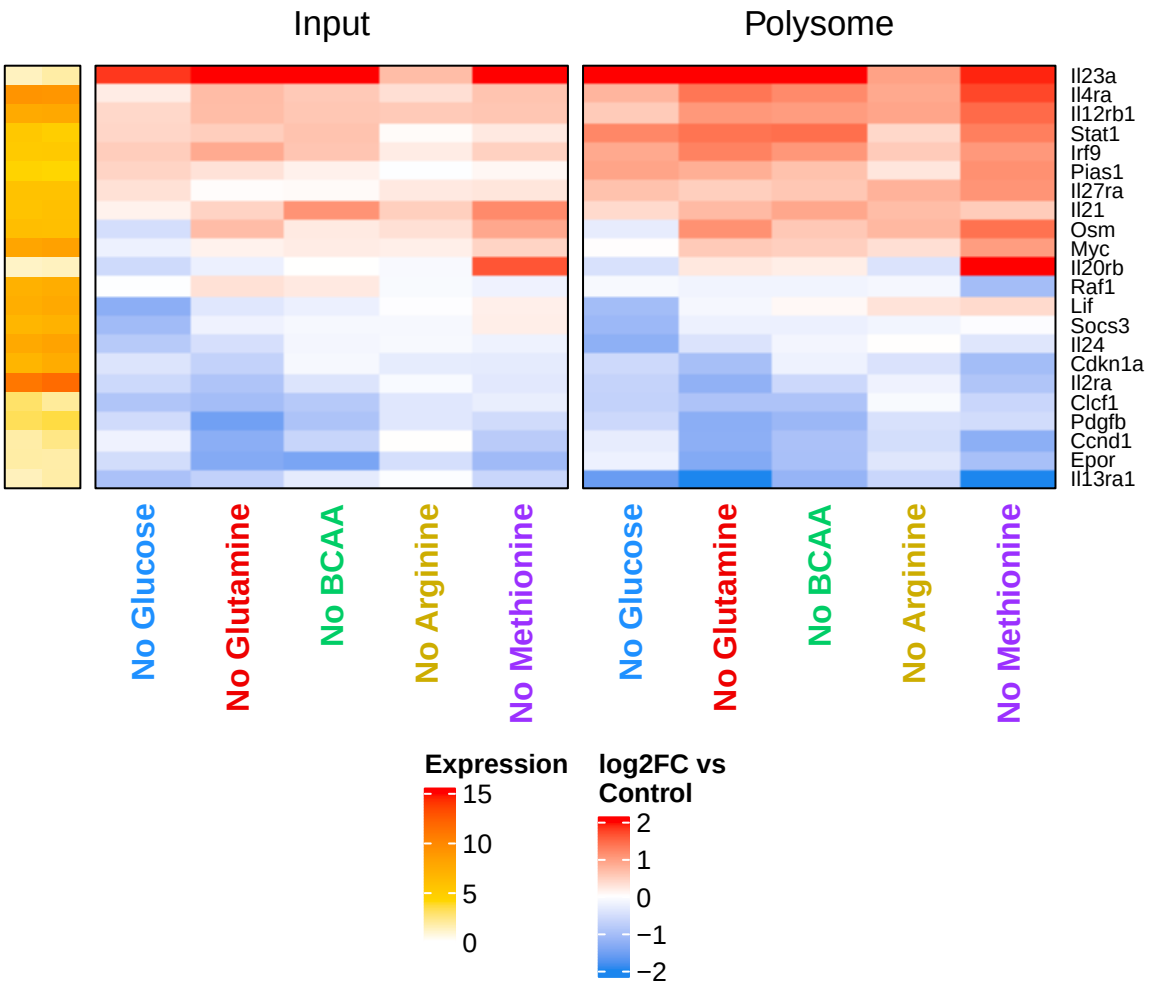
Glycolysis and Gluconeogenesis



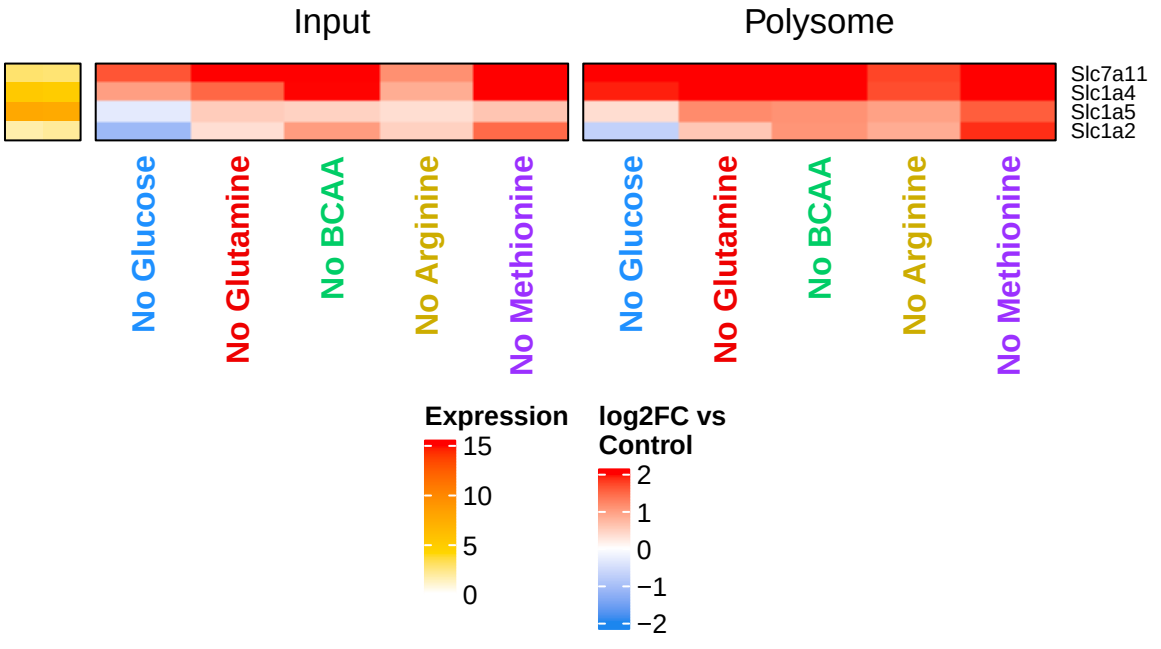
HIF−1 signaling pathway



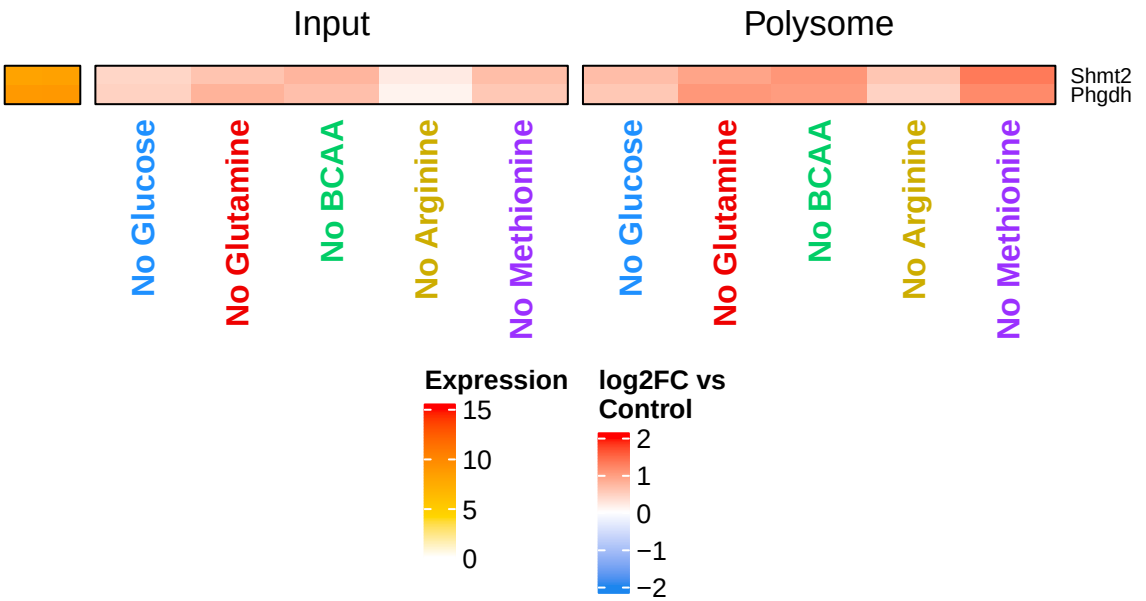
JAK−STAT signaling pathway



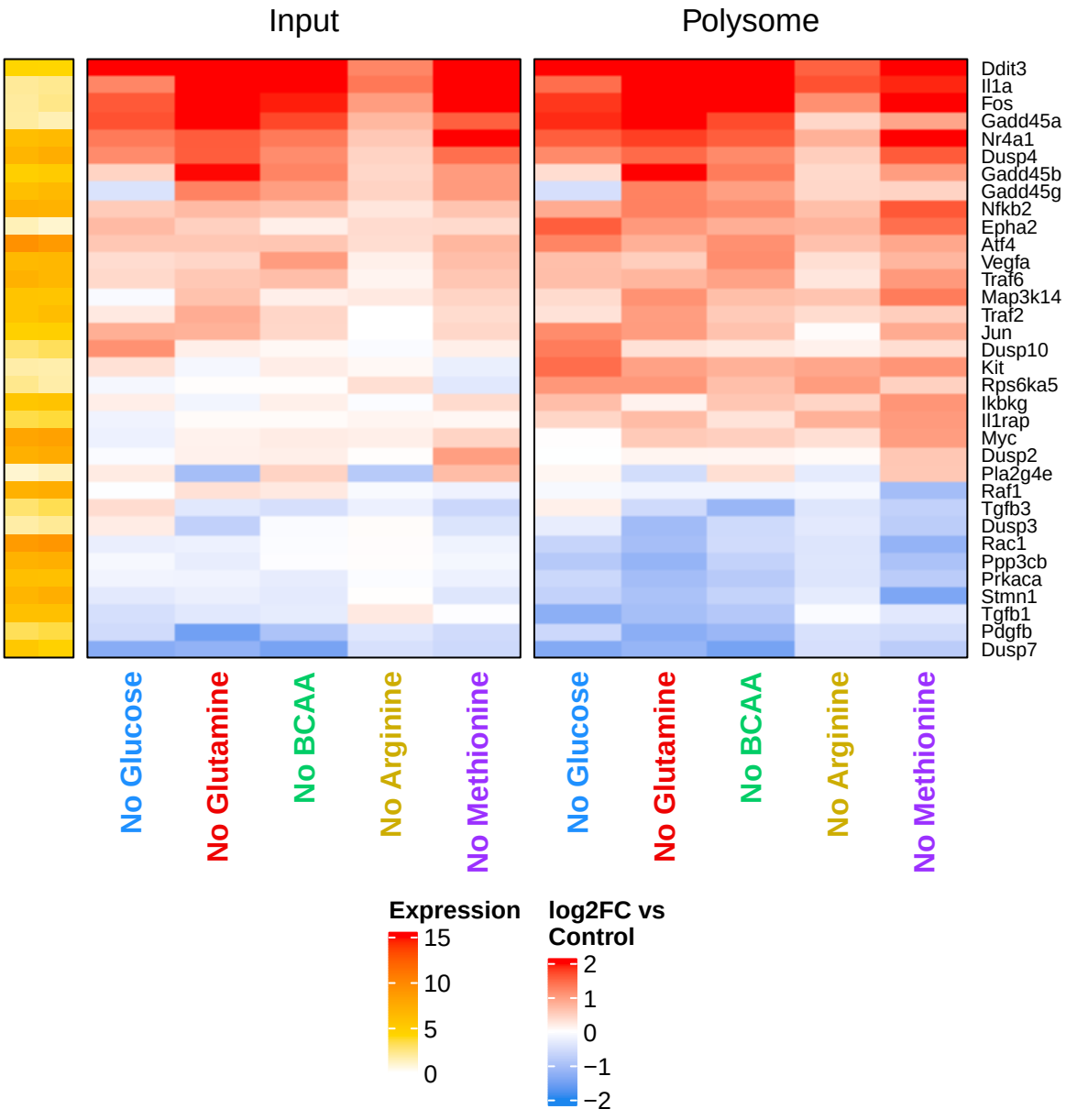
L−amino acid transmembrane transporter activity



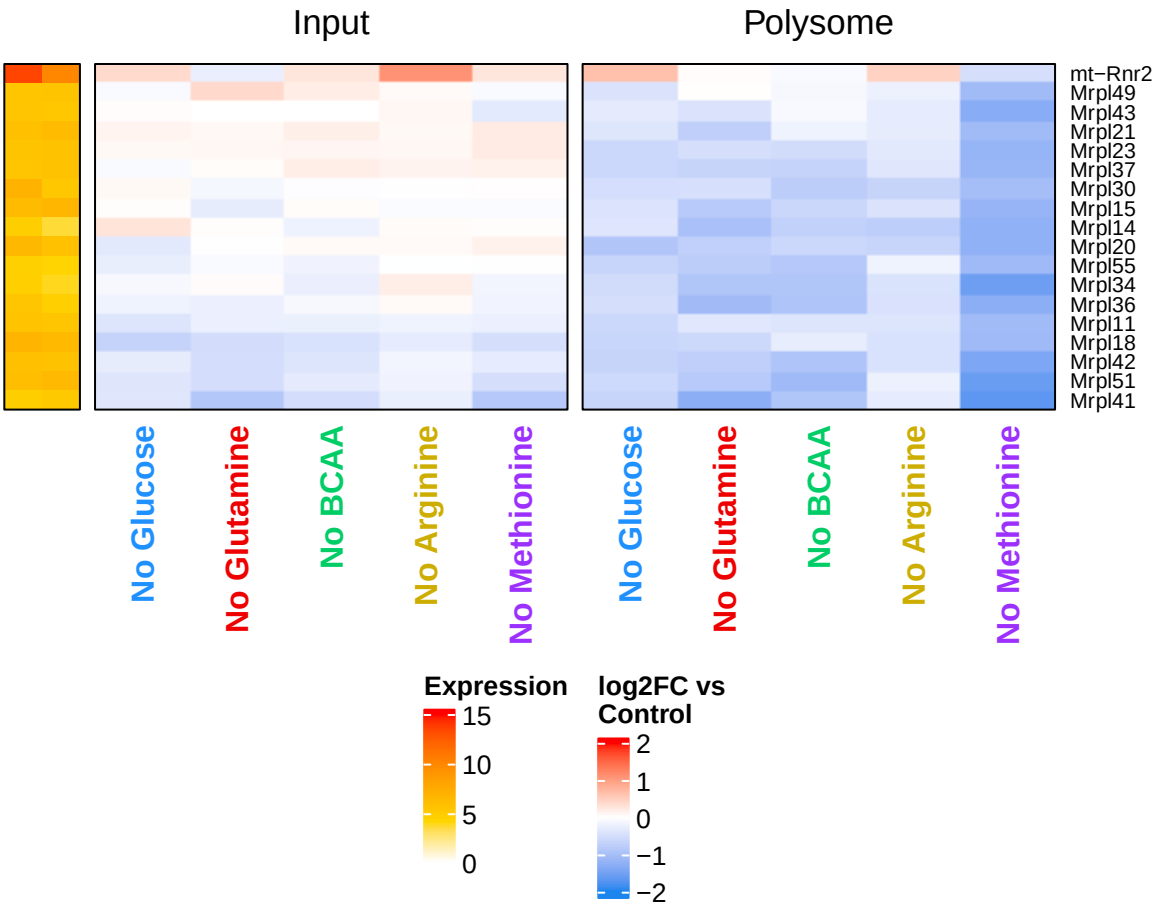
L−serine metabolic process



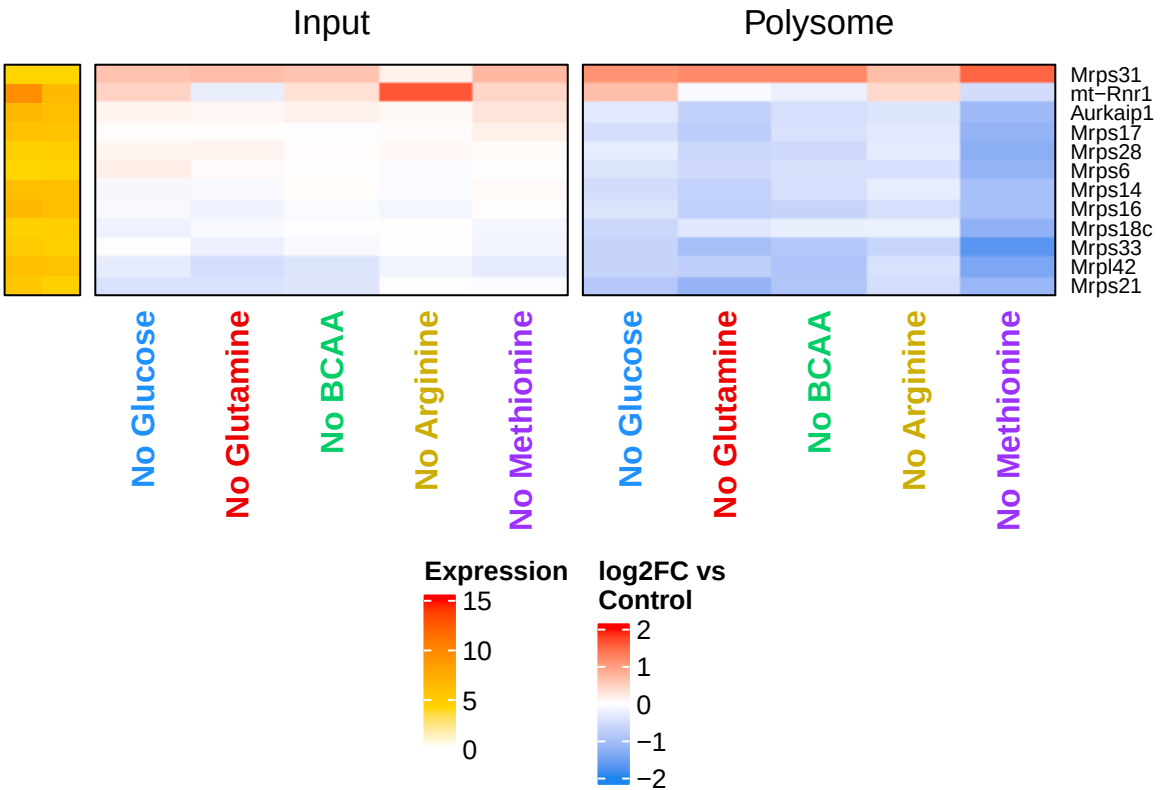
MAPK signaling pathway



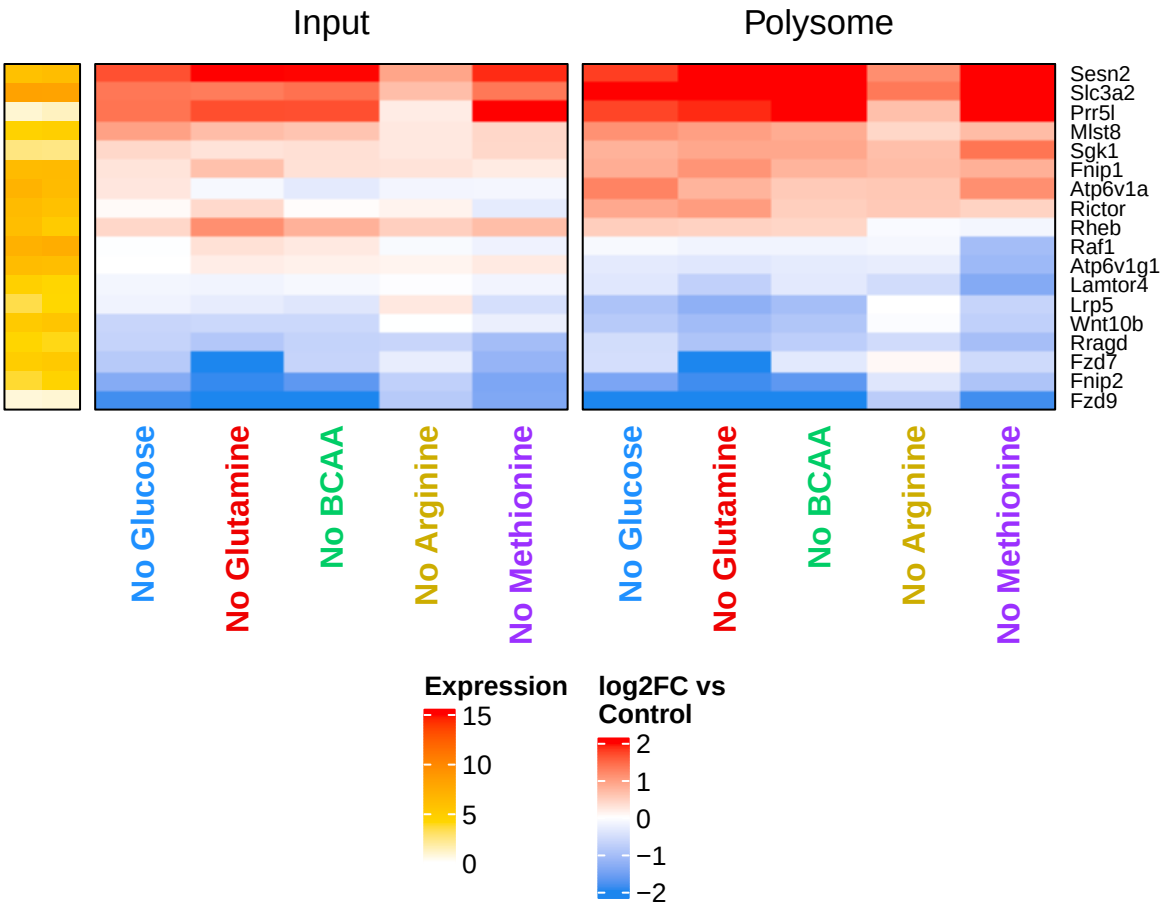
mitochondrial large ribosomal subunit



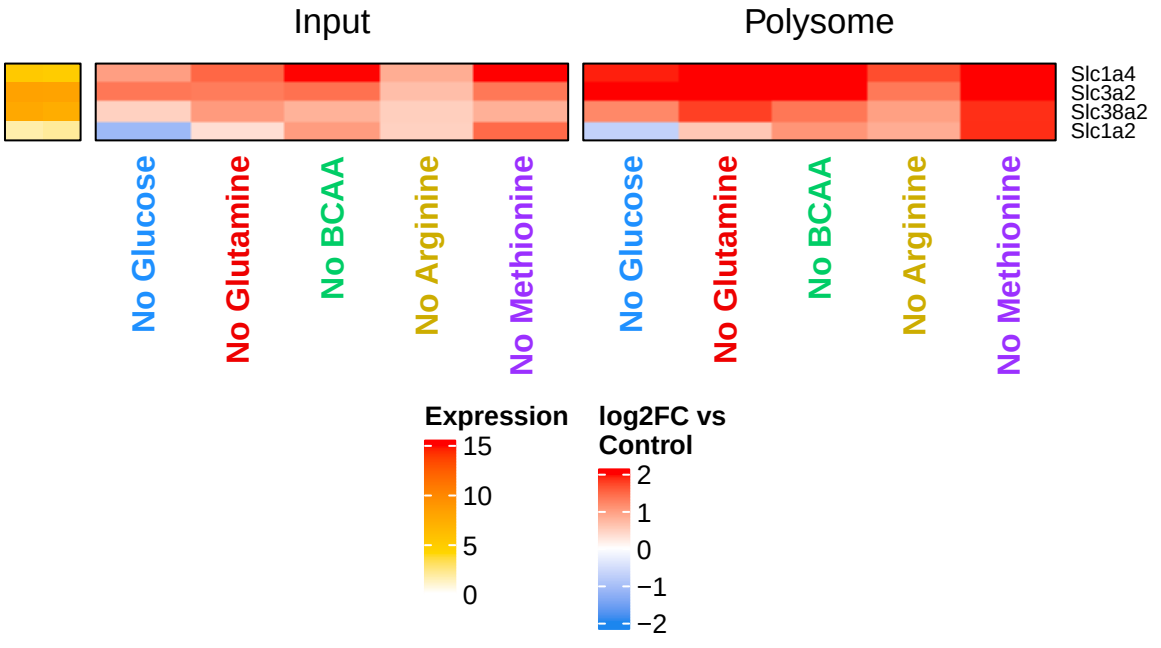
mitochondrial small ribosomal subunit



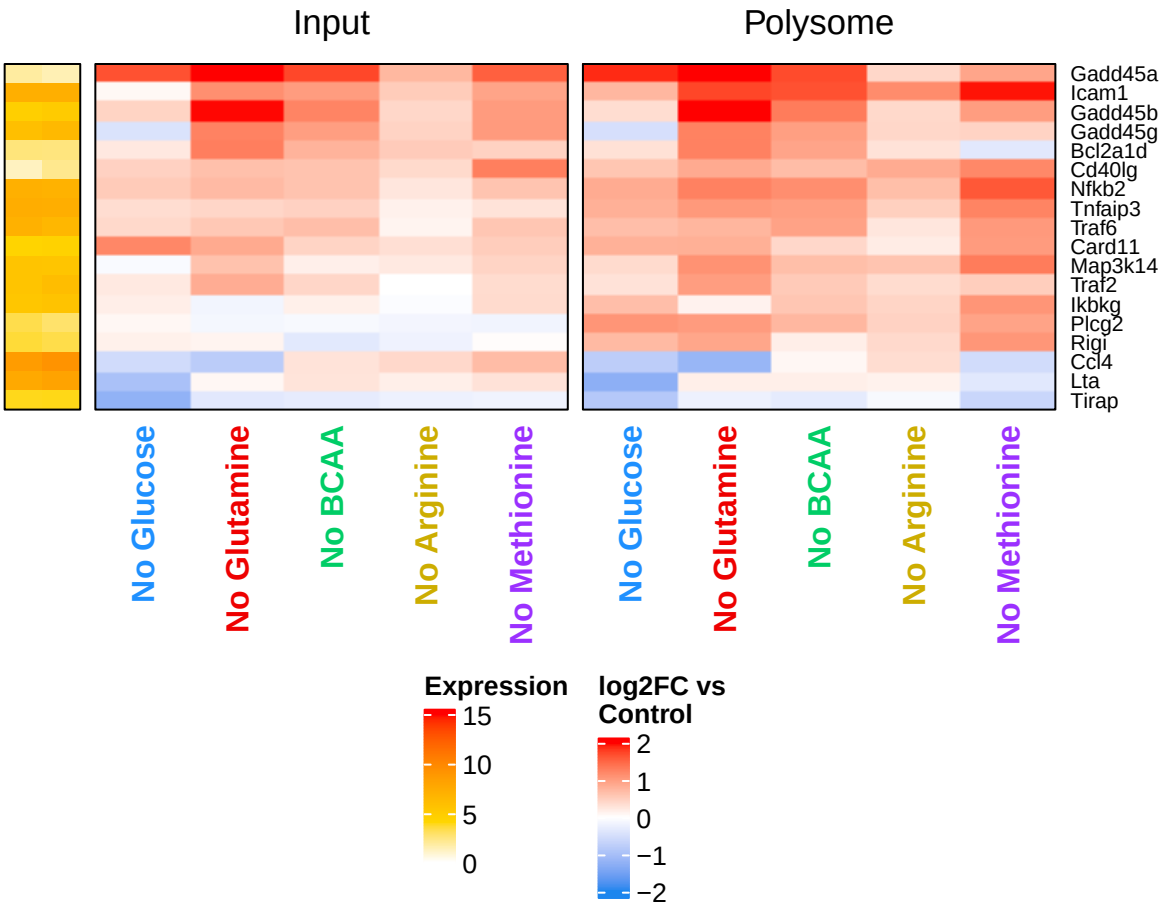
mTOR signaling pathway



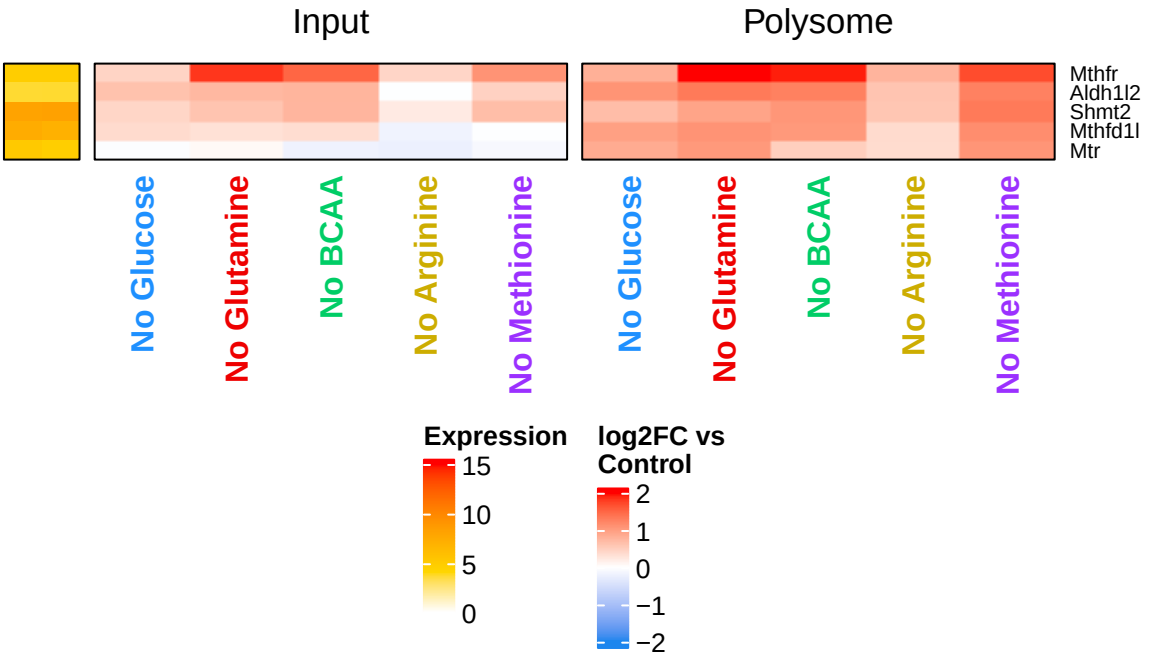
neutral amino acid transmembrane transporter activity



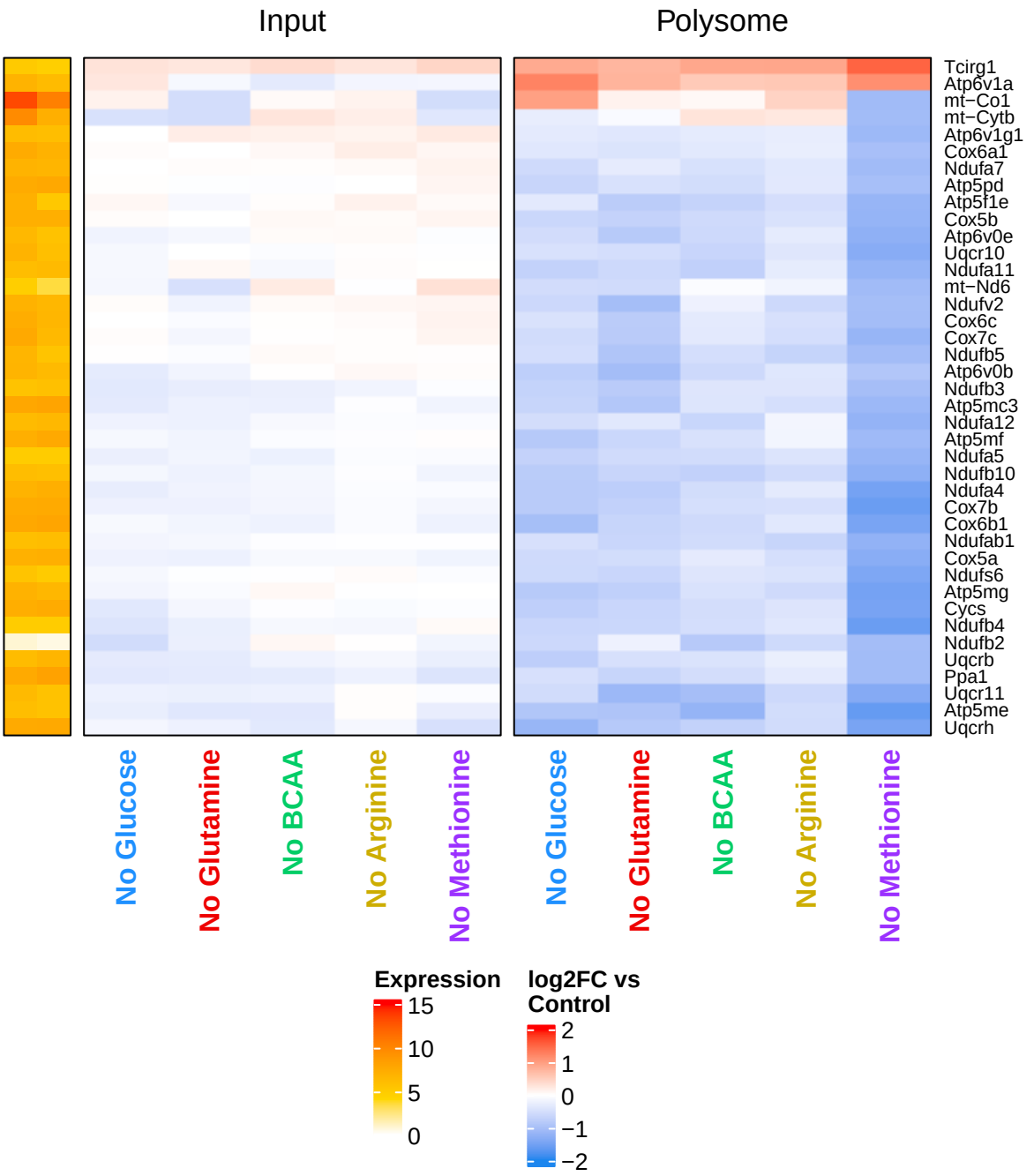
NF−kappa B signaling pathway



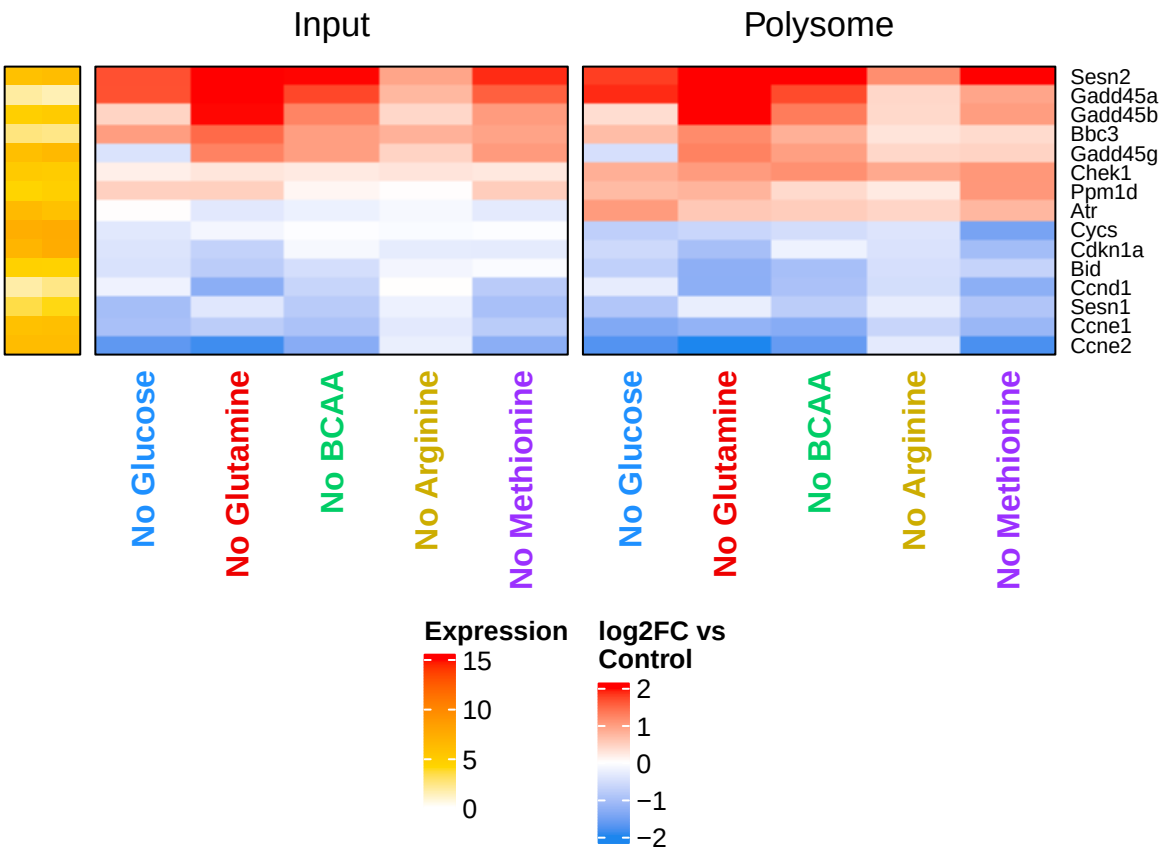
One carbon pool by folate



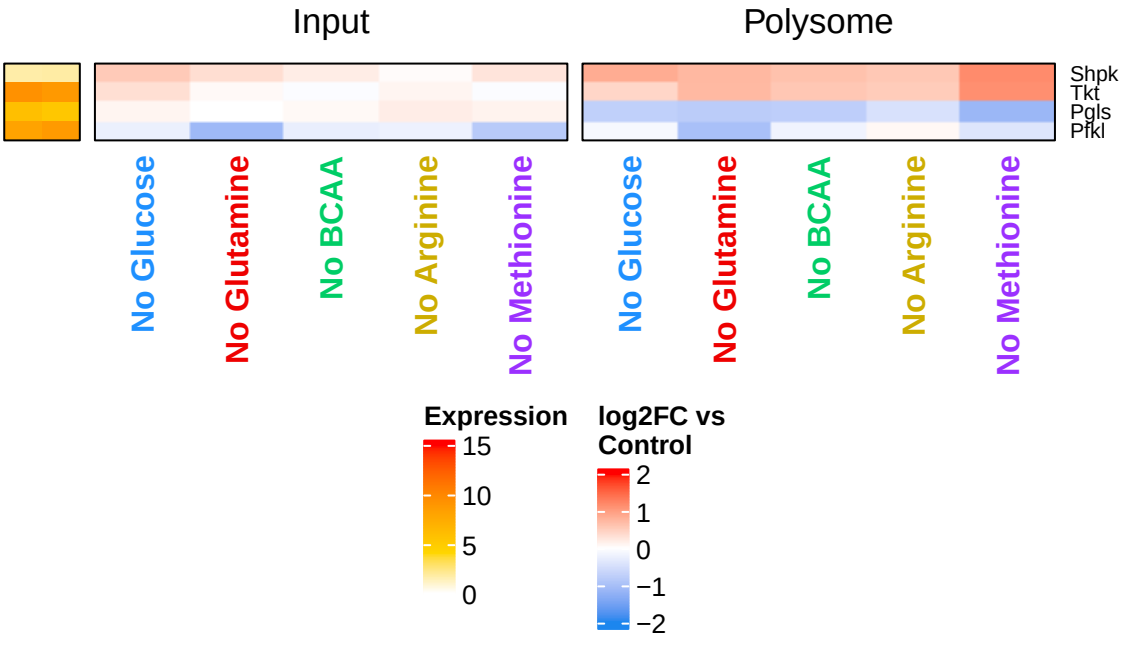
Oxidative phosphorylation

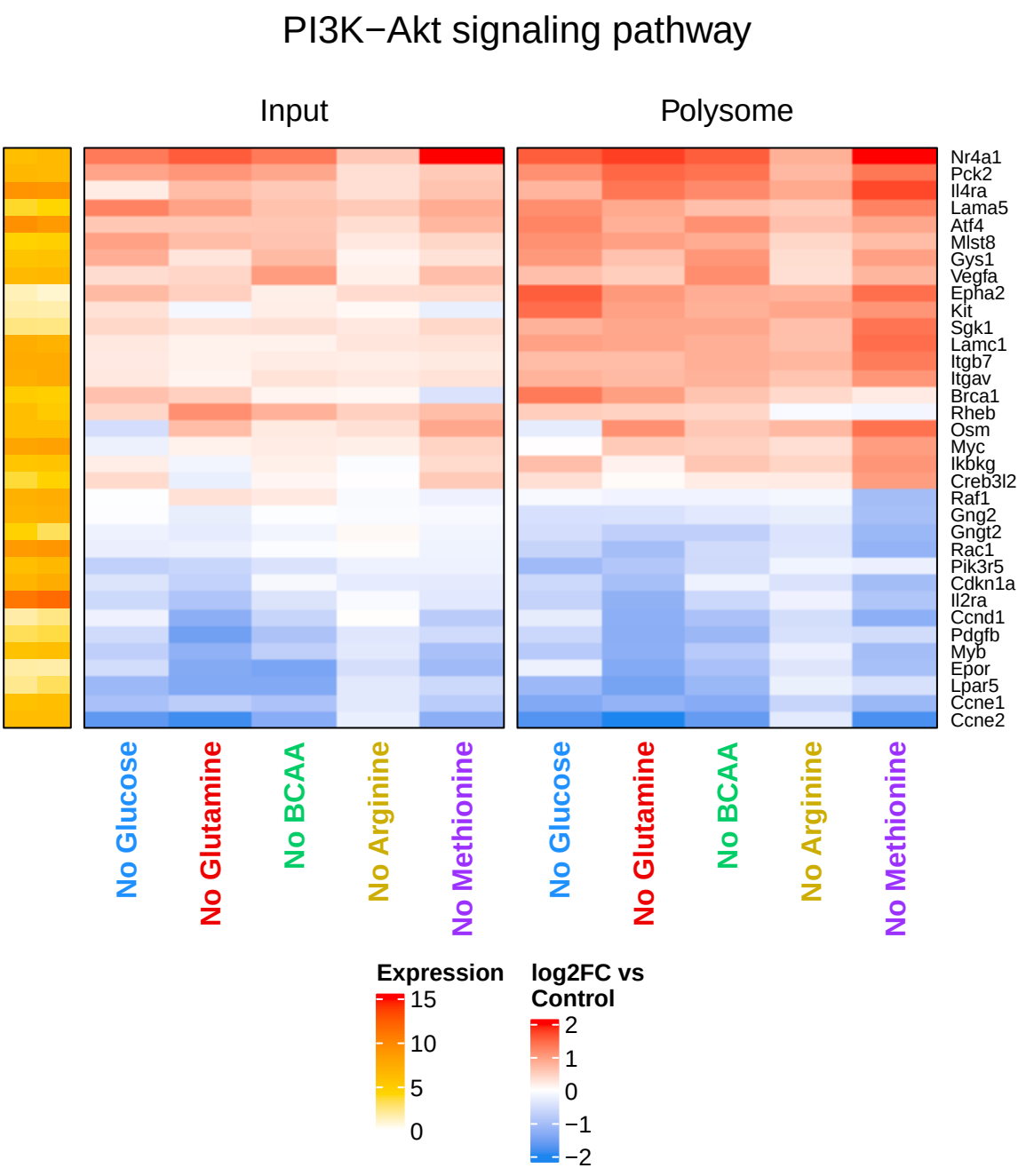


p53 signaling pathway

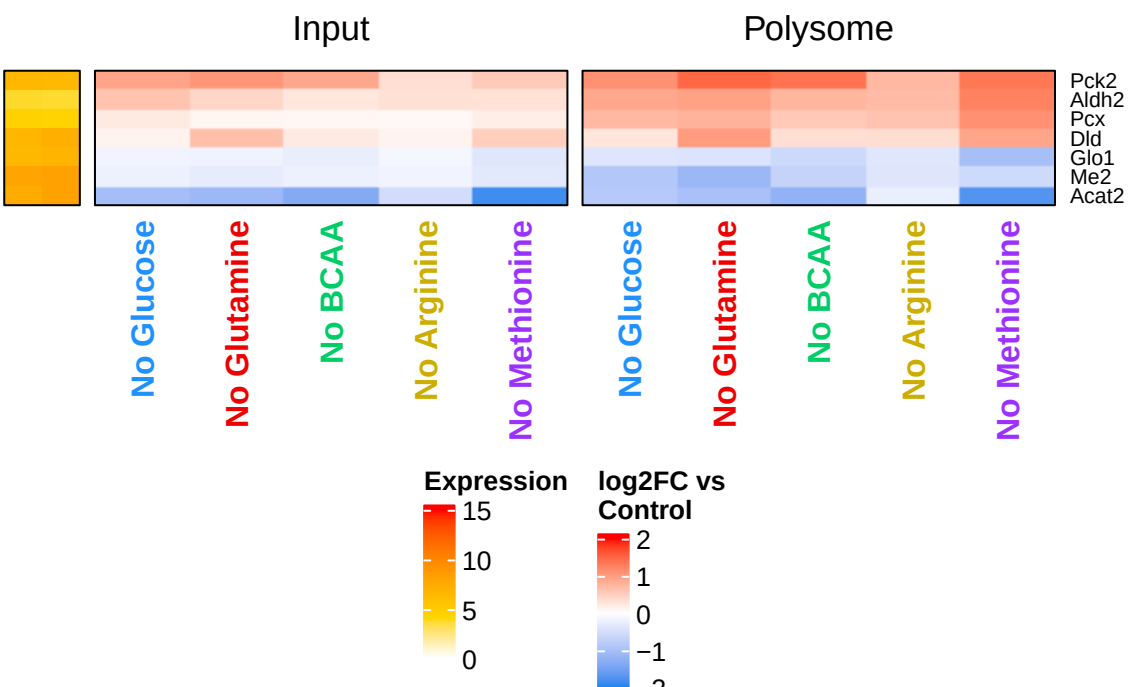


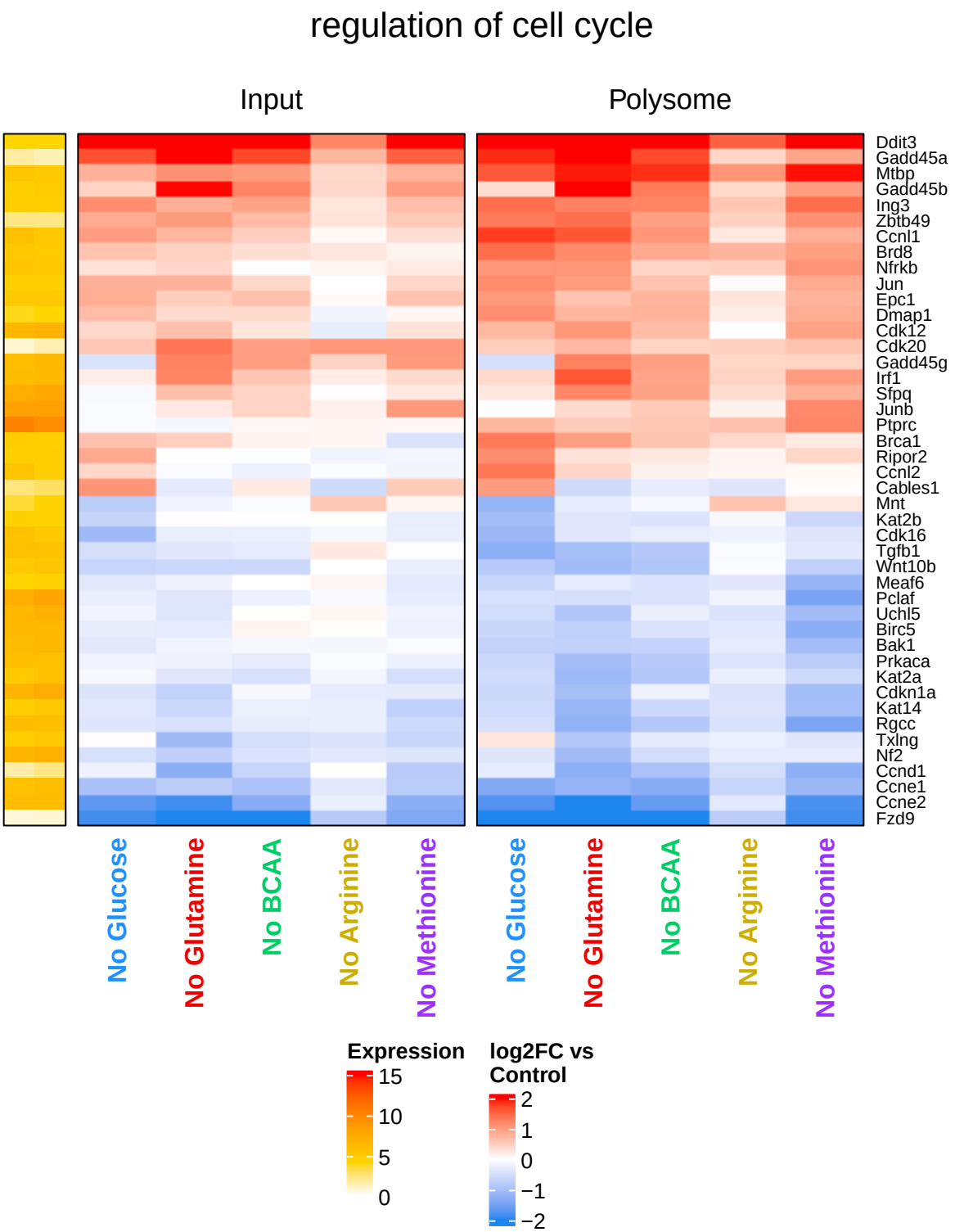
Pentose phosphate pathway

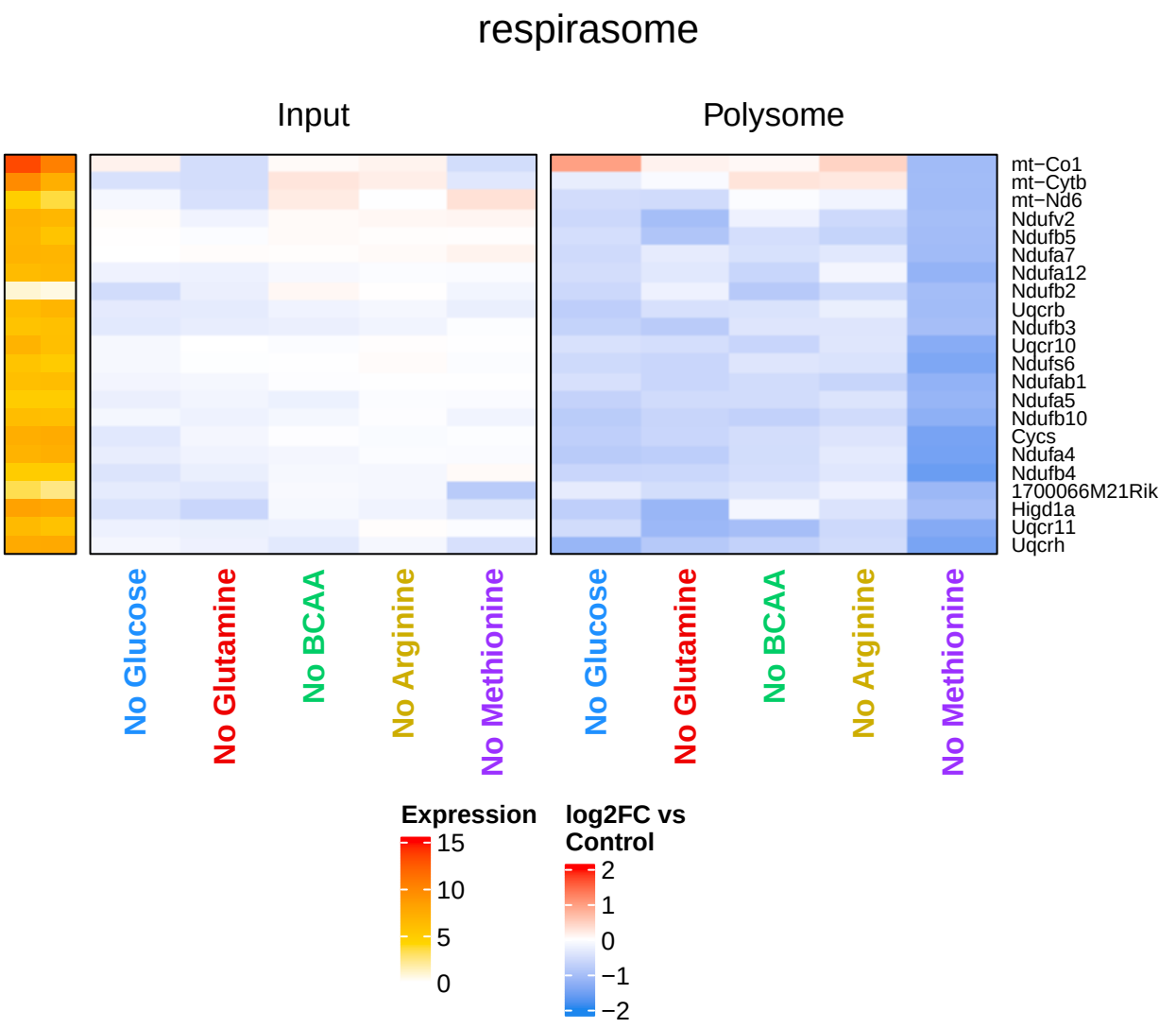


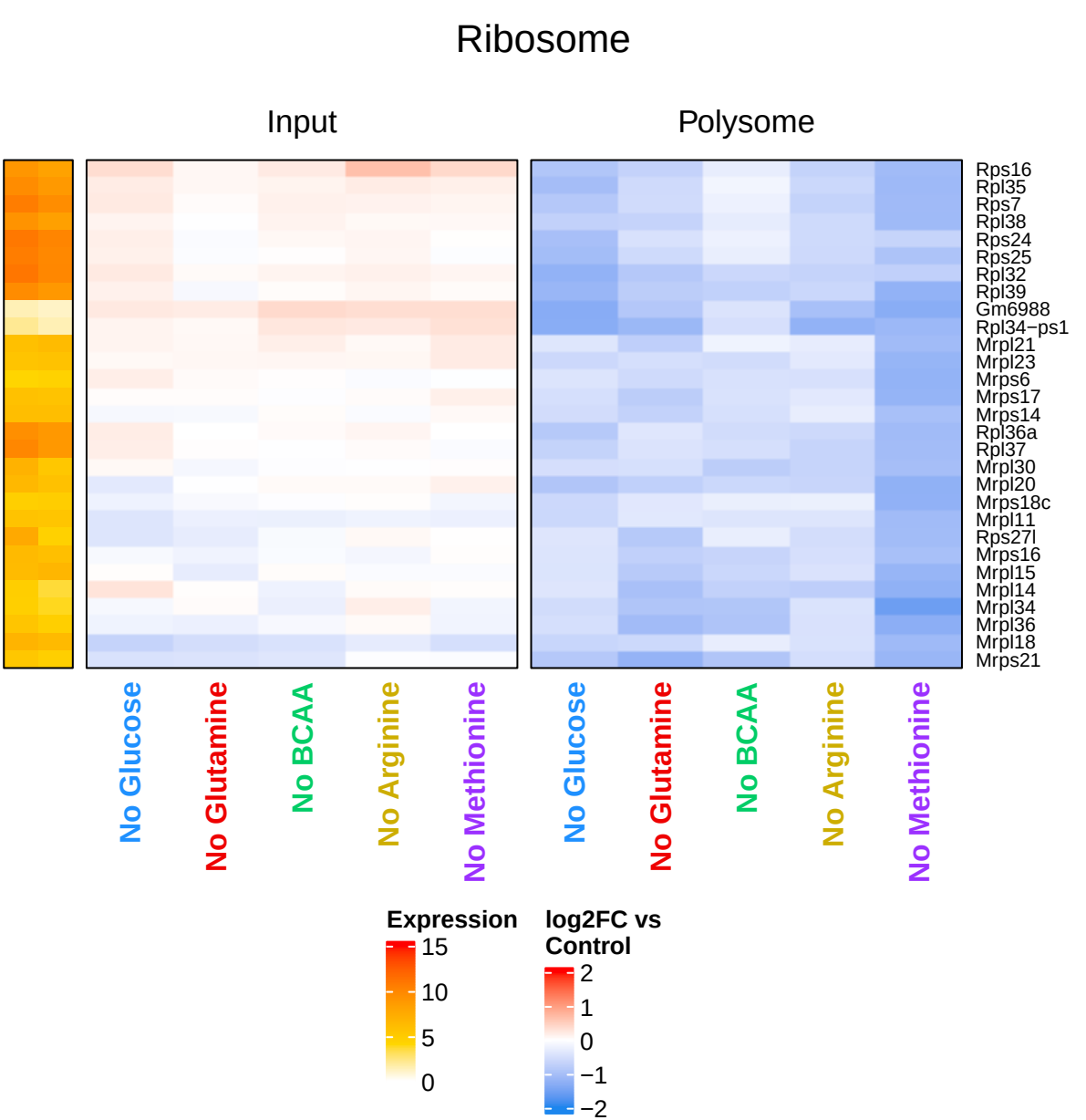

PI3K−Akt signaling pathway
Input
Polysome
Nr4a1
Pck2
Il4ra
Lama5
Atf4
Mlst8
Gys1
Vegfa
Epha2
Kit
Sgk1
Lamc1
Itgb7
Itgav
Brca1
Rheb
Osm
Myc
Ikbkg
Creb3l2
Raf1
Gng2
Gngt2
Rac1
Pik3r5
Cdkn1a
Il2ra
Ccnd1
Pdgfb
Myb
Epor
Lpar5
Ccne1
Ccne2
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2

Pyruvate metabolism

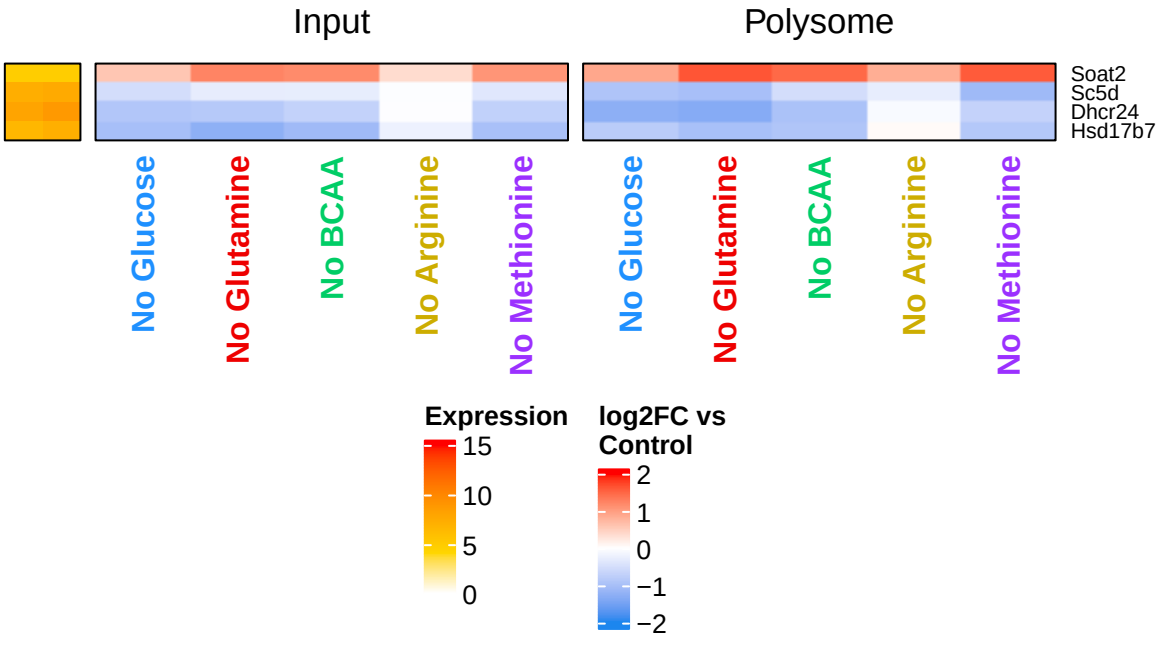



regulation of cell cycle
Input
Polysome
Ddit3
Gadd45a
Mtbp
Gadd45b
Ing3
Zbtb49
Ccnl1
Brd8
Nfrkb
Jun
Epc1
Dmap1
Cdk12
Cdk20
Gadd45g
Irf1
Sfpq
Junb
Ptprc
Brca1
Ripor2
Ccnl2
Cables1
Mnt
Kat2b
Cdk16
Tgfb1
Wnt10b
Meaf6
Pclaf
Uchl5
Birc5
Bak1
Prkaca
Kat2a
Cdkn1a
Kat14
Rgcc
Txlng
Nf2
Ccnd1
Ccne1
Ccne2
Fzd9
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2

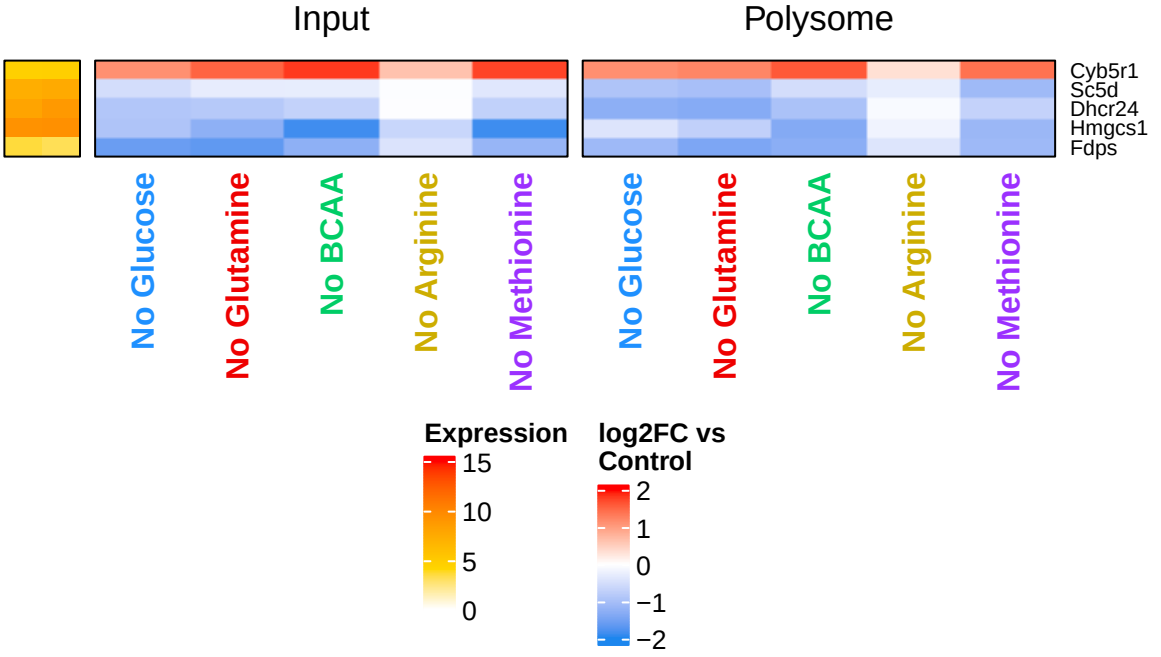

respirasome
Input
Polysome
mt−Co1
mt−Cytb
mt−Nd6
Ndufv2
Ndufb5
Ndufa7
Ndufa12
Ndufb2
Uqcrb
Ndufb3
Uqcr10
Ndufs6
Ndufab1
Ndufa5
Ndufb10
Cycs
Ndufa4
Ndufb4
1700066M21Rik
Higd1a
Uqcr11
Uqcrh
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2


Ribosome
Input
Polysome
Rps16
Rpl35
Rps7
Rpl38
Rps24
Rps25
Rpl32
Rpl39
Gm6988
Rpl34−ps1
Mrpl21
Mrpl23
Mrps6
Mrps17
Mrps14
Rpl36a
Rpl37
Mrpl30
Mrpl20
Mrps18c
Mrpl11
Rps27l
Mrps16
Mrpl15
Mrpl14
Mrpl34
Mrpl36
Mrpl18
Mrps21
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2

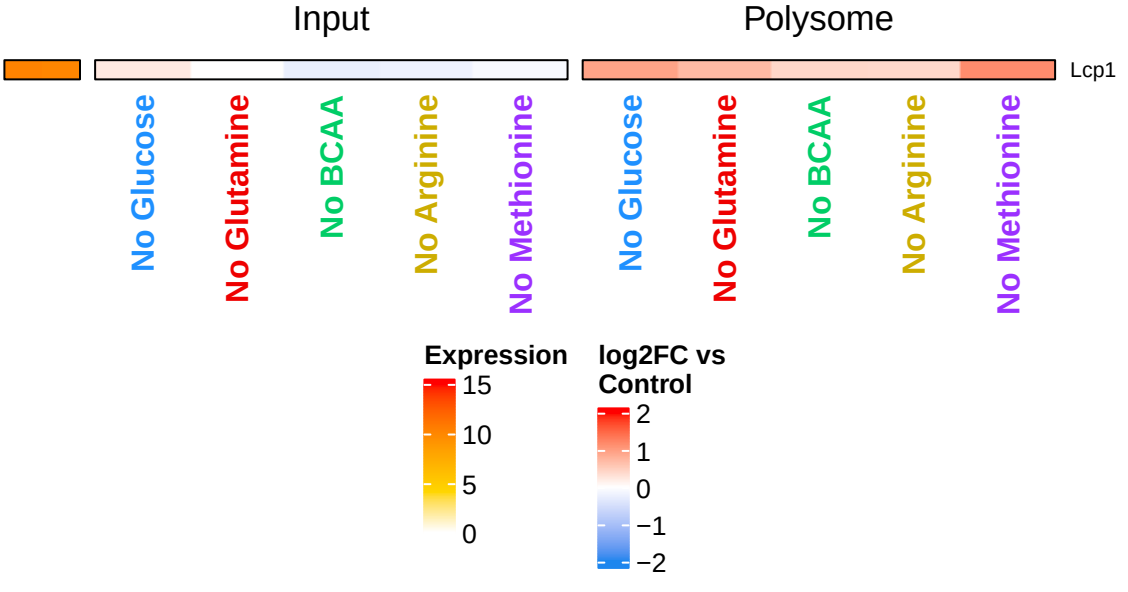
Steroid biosynthesis



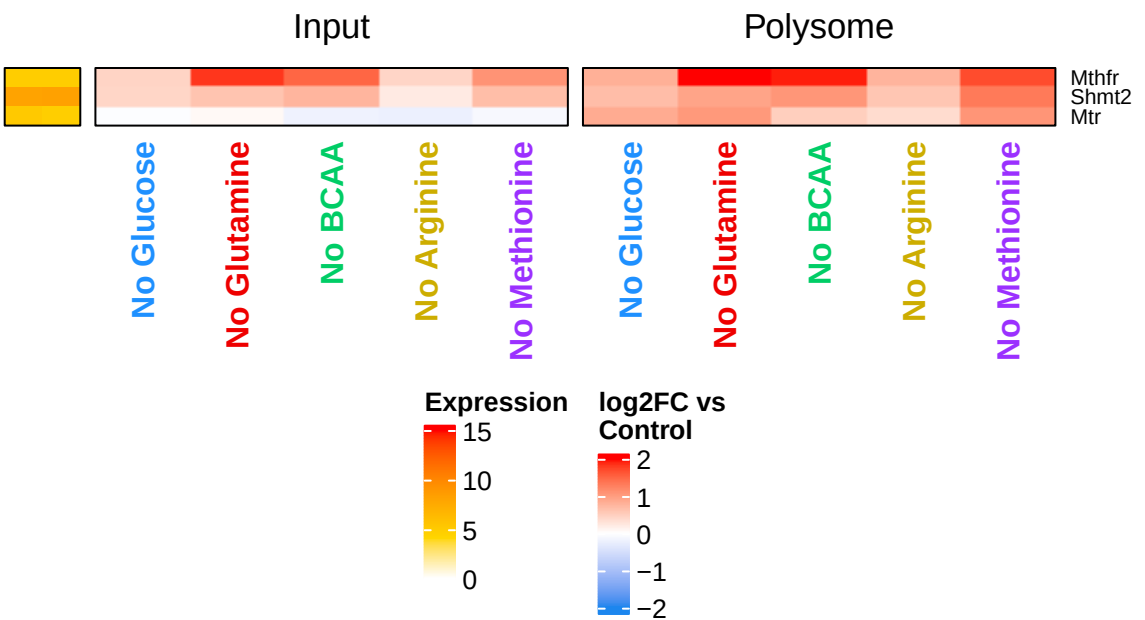
sterol biosynthetic process

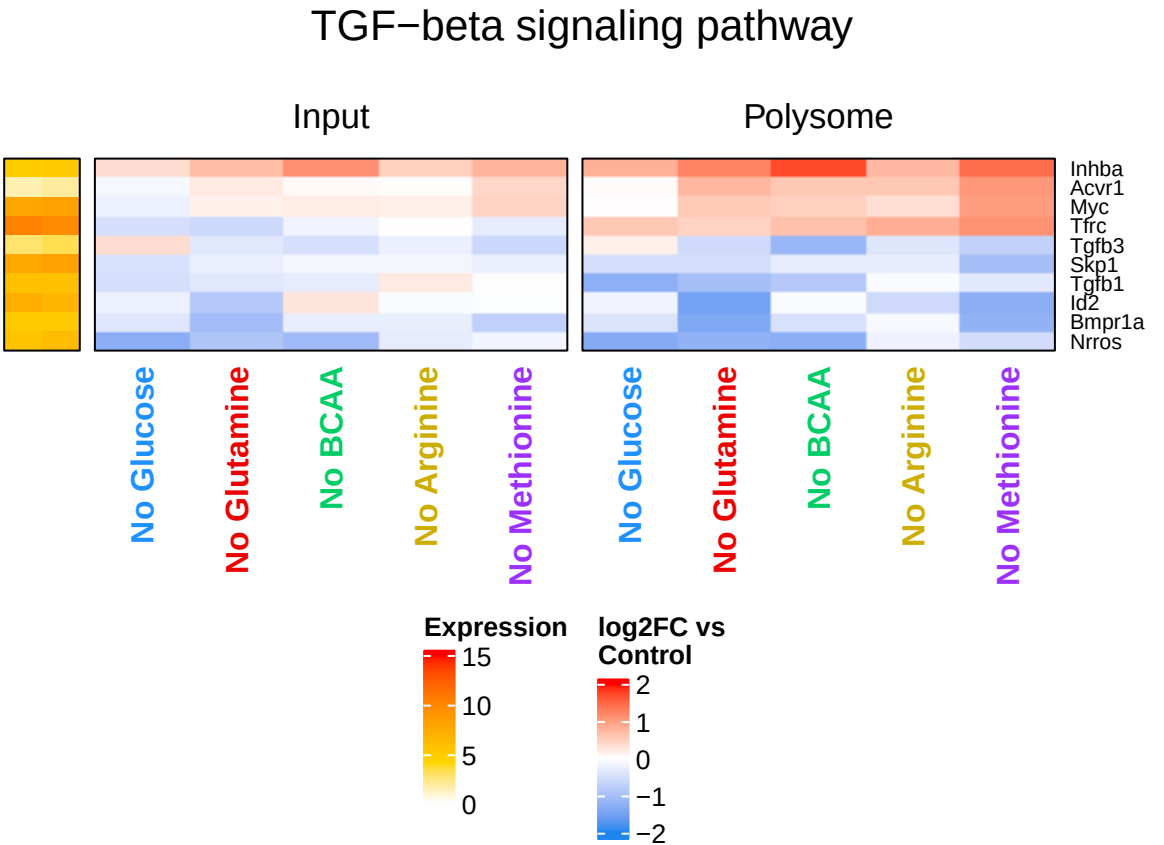


T cell activation involved in immune response

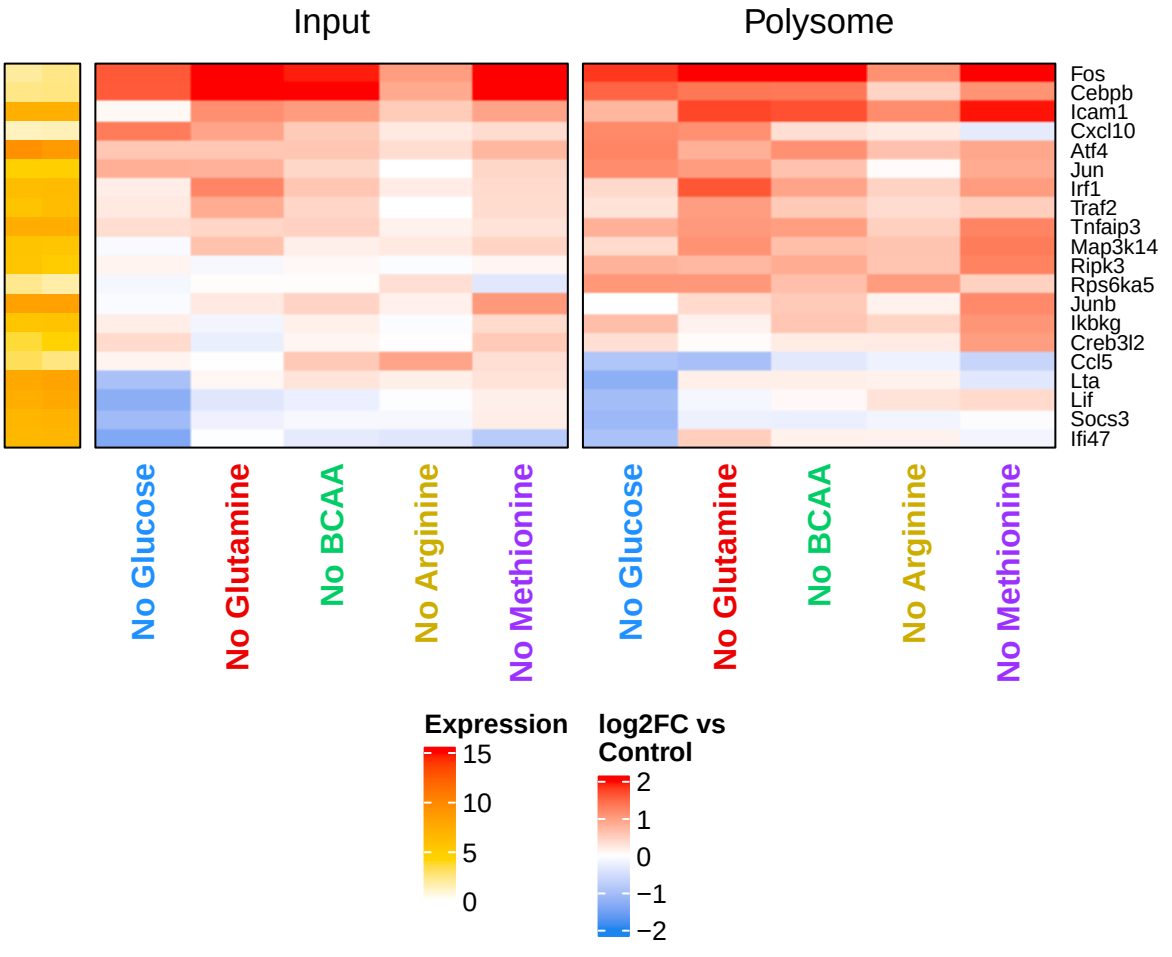


tetrahydrofolate metabolic process

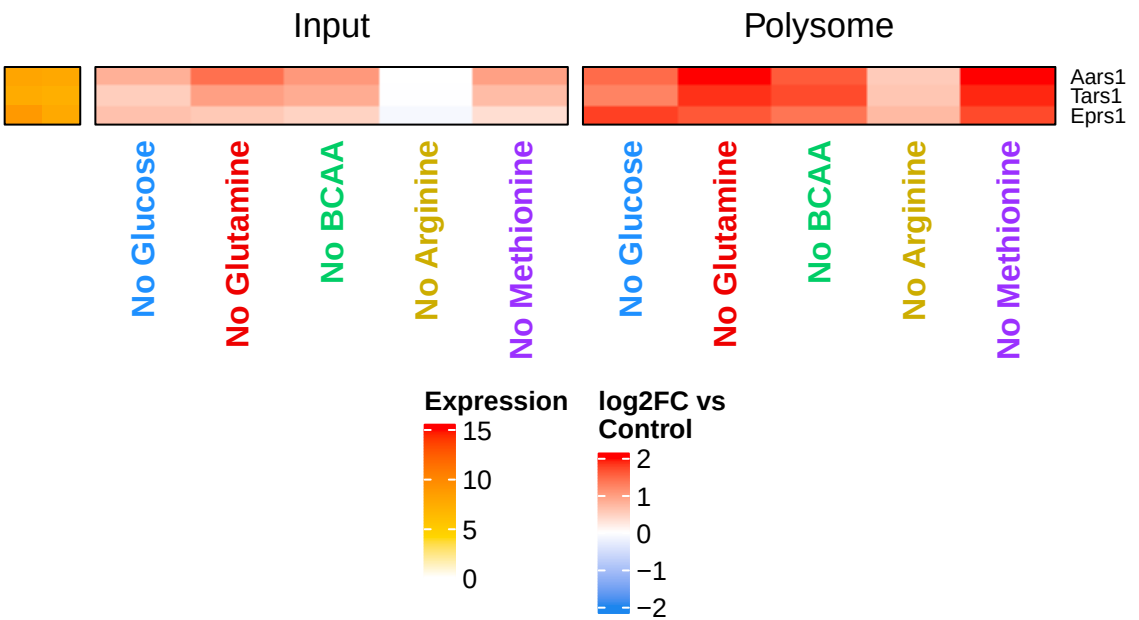



TGF−beta signaling pathway
Input
Polysome
Inhba
Acvr1
Myc
Tfrc
Tgfb3
Skp1
Tgfb1
Id2
Bmpr1a
Nrros
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
No Glucose
No Glutamine
No BCAA
No Arginine
No Methionine
Expression
15
10
5
0
log2FC vs Control
2
1
0
−1
−2

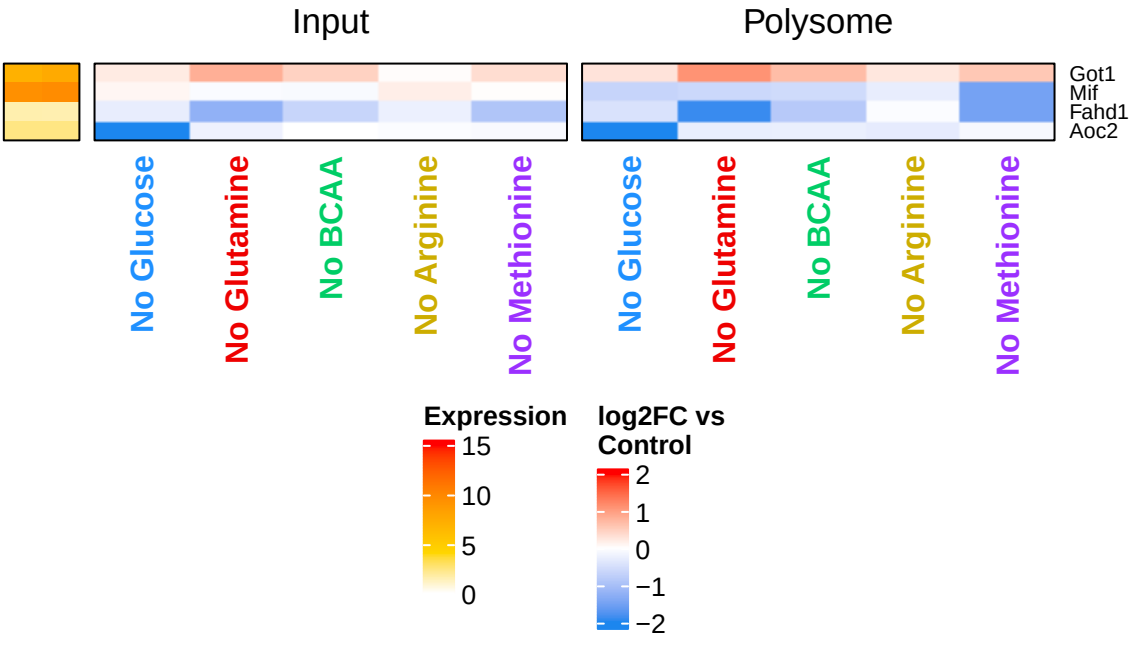
TNF signaling pathway



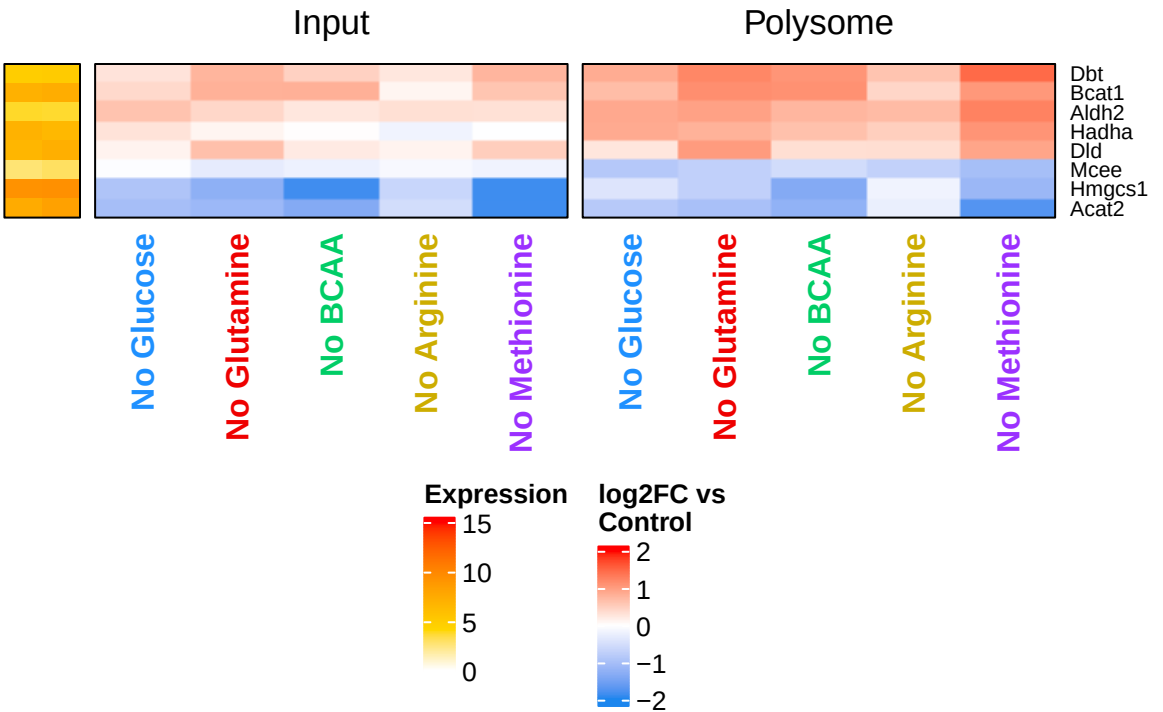
tRNA aminoacylation



Tyrosine metabolism



Valine, leucine and isoleucine degradation



Wnt signaling pathway