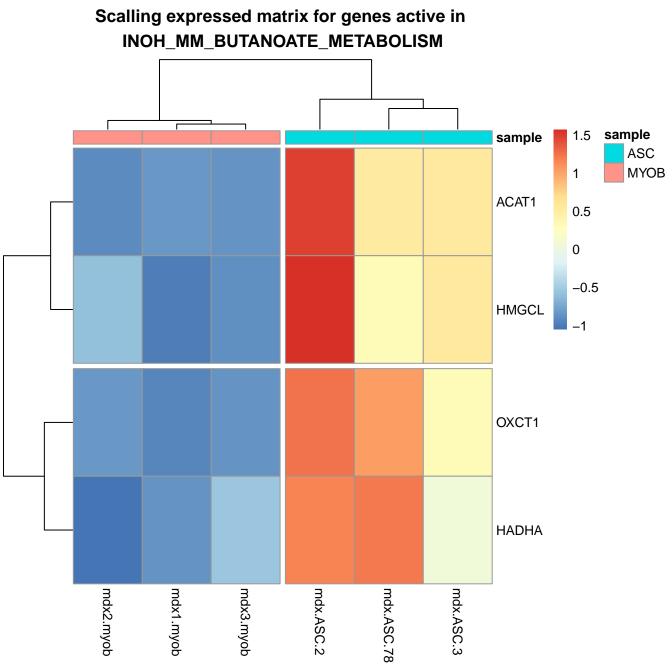
Expressed Matrix from Normalized for genes in INOH_MM_BUTANOATE_METABOLISM sample sample ASC 10000 MYOB 8000 OXCT1 6000 4000 2000 ACAT1 HADHA **HMGCL** mdx2.myob mdx.ASC.3 mdx1.myob mdx3.myob mdx.ASC.2 mdx.ASC.78

Expressed Matrix for genes active in INOH_MM_BUTANOATE_METABOLISM sample sample ASC 13 MYOB 12 **HADHA** 11 10 ACAT1 OXCT1 **HMGCL** mdx2.myob mdx1.myob mdx3.myob mdx.ASC.2 mdx.ASC.78 mdx.ASC.3

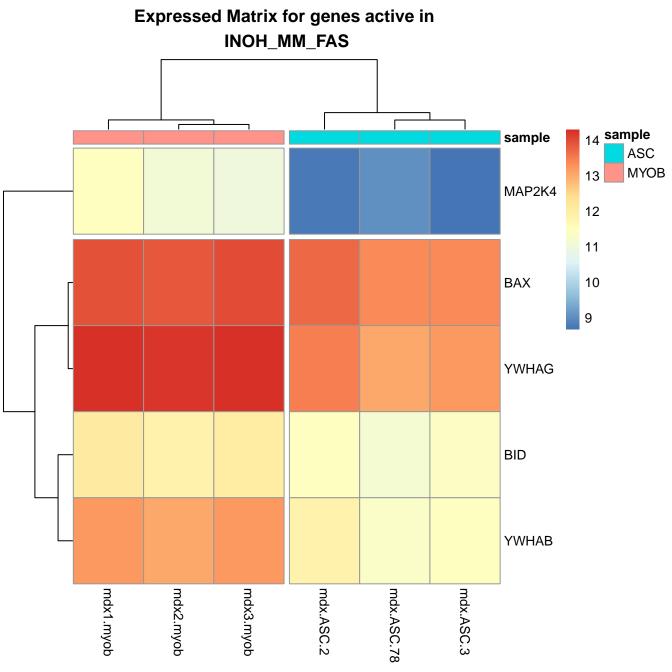


Expressed Matrix from Normalized for genes in INOH_MM_CITRATE_CYCLE 20000 **sample** sample ASC SUCLG2 MYOB 15000 ACO1 ACAT1 10000 DLST 5000 **SDHD** DLD **SDHA** ACO2 **OGDH** CS IDH3B IDH3G mdx.ASC.78 mdx1.myob mdx2.myob mdx3.myob mdx.ASC.2 mdx.ASC.3

Expressed Matrix for genes active in INOH_MM_CITRATE_CYCLE sample sample 14 ASC ACO₂ MYOB 13.5 **SDHD** 13 12.5 **SDHA** 12 DLD 11.5 SUCLG2 11 ACO₁ ACAT1 DLST OGDH CS IDH3B IDH3G mdx1.myob mdx2.myob mdx3.myob mdx.ASC.2 mdx.ASC.78 mdx.ASC.3

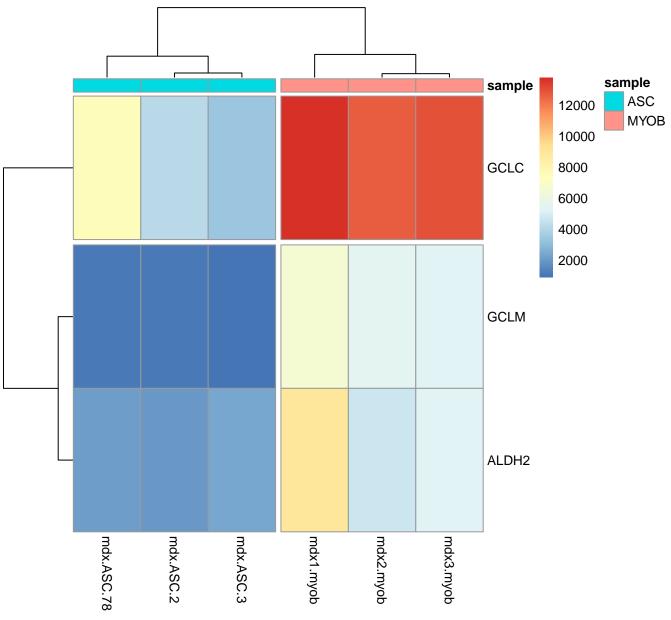
Scalling expressed matrix for genes active in INOH_MM_CITRATE_CYCLE sample sample ASC 1.5 SUCLG2 MYOB 1 ACAT1 0.5 DLST 0 IDH3G -0.5 CS IDH3B ACO1 SDHA ACO2 **OGDH** SDHD DLD mdx.ASC.2 mdx1.myob mdx2.myob mdx3.myob mdx.ASC.78 mdx.ASC.3

Expressed Matrix from Normalized for genes in INOH_MM_FAS 20000 **sample** sample ASC MYOB 15000 BAX 10000 **YWHAG** 5000 **YWHAB** BID MAP2K4 mdx2.myob mdx.ASC.2 mdx.ASC.3 mdx1.myob mdx3.myob mdx.ASC.78



Scalling expressed matrix for genes active in INOH_MM_FAS sample sample ASC 1 MYOB BAX 0.5 0 -0.5 MAP2K4 -1 BID **YWHAG YWHAB** mdx1.myob mdx2.myob mdx3.myob mdx.ASC.2 mdx.ASC.78 mdx.ASC.3

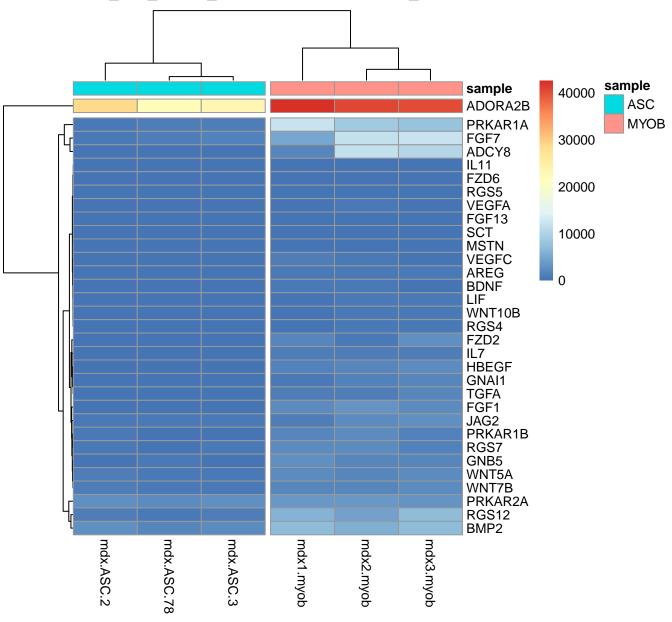
Expressed Matrix from Normalized for genes in INOH_MM_GLUTAMATE_GLUTAMINE_METABOLISM



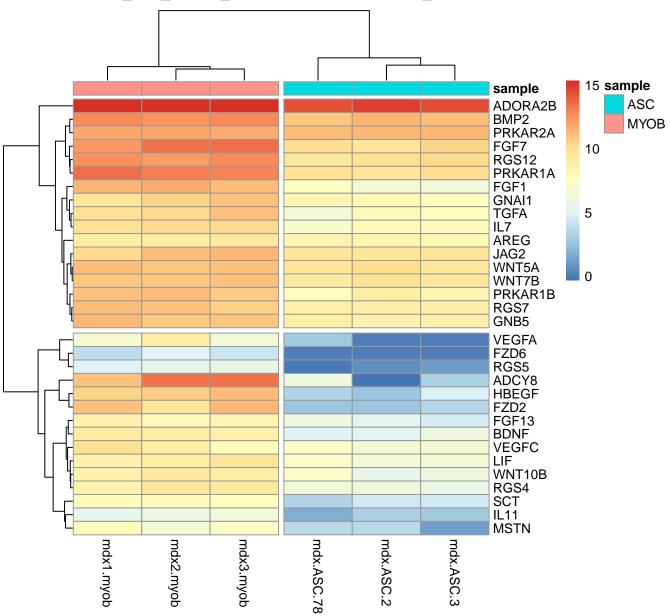
Expressed Matrix for genes active in INOH_MM_GLUTAMATE_GLUTAMINE_METABOLISM sample sample ASC 13 MYOB **GCLC** 12 11 10 **GCLM** ALDH2 mdx1.myob mdx.ASC.78 mdx.ASC.3 mdx2.myob mdx3.myob mdx.ASC.2

Scalling expressed matrix for genes active in INOH_MM_GLUTAMATE_GLUTAMINE_METABOLISM sample sample 1.5 ASC MYOB 1 0.5 ALDH2 0 -0.5 -1 **GCLM GCLC** mdx.ASC.78 mdx.ASC.2 mdx.ASC.3 mdx1.myob mdx2.myob mdx3.myob

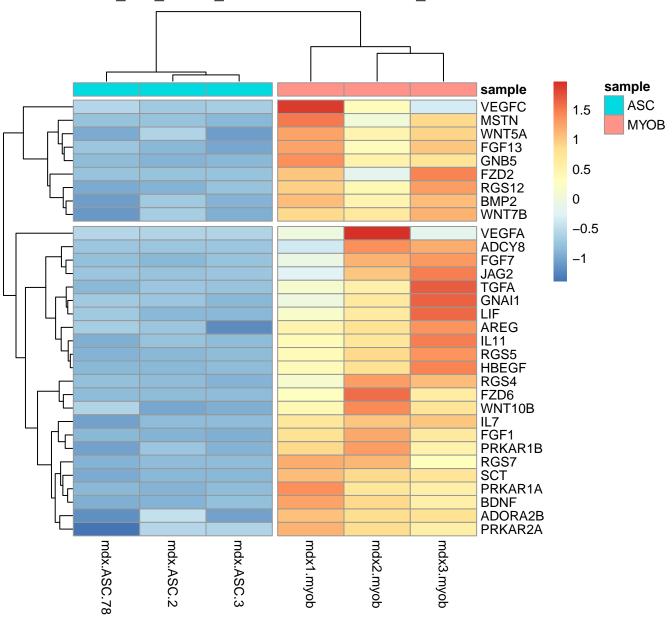
Expressed Matrix from Normalized for genes in INOH_MM_GPCR_SIGNALING-CHOLERA_TOXIN



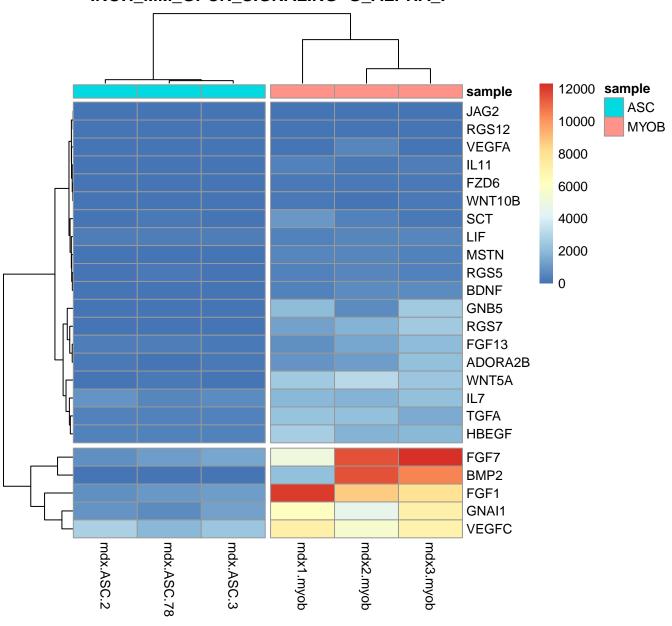
Expressed Matrix for genes active in INOH_MM_GPCR_SIGNALING-CHOLERA_TOXIN



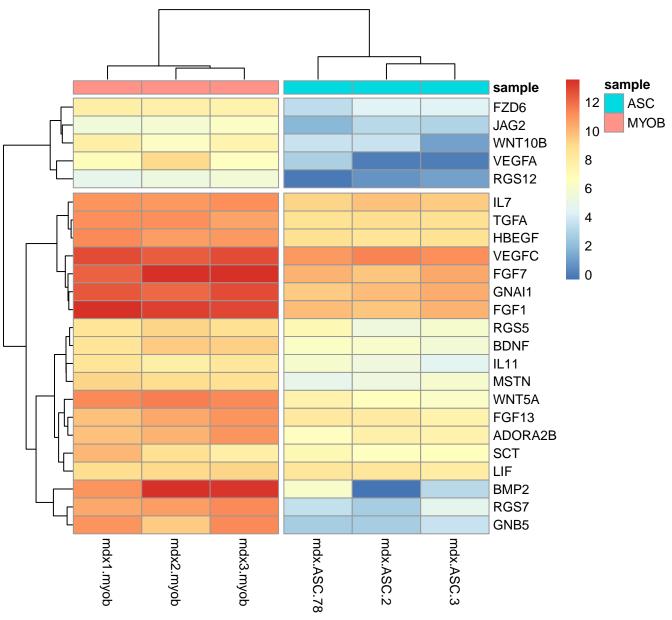
Scalling expressed matrix for genes active in INOH_MM_GPCR_SIGNALING-CHOLERA_TOXIN



Expressed Matrix from Normalized for genes in INOH_MM_GPCR_SIGNALING-G_ALPHA_I

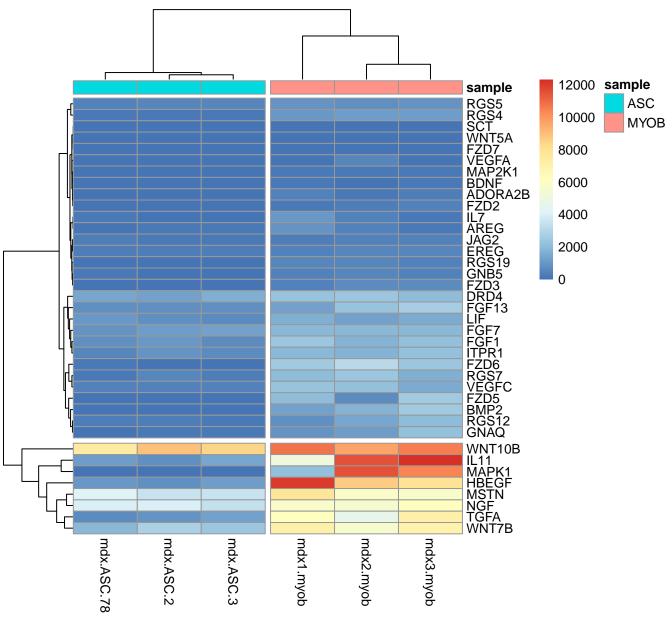


Expressed Matrix for genes active in INOH_MM_GPCR_SIGNALING-G_ALPHA_I

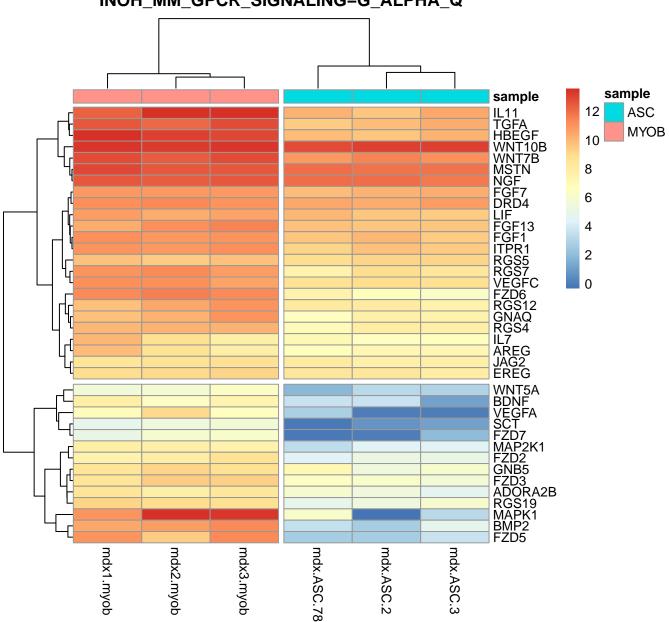


Scalling expressed matrix for genes active in INOH_MM_GPCR_SIGNALING-G_ALPHA_I sample sample ASC SCT 1.5 MYOB WNT10B 1 IL11 **HBEGF** 0.5 GNB5 GNAI1 0 **VEGFC** IL7 -0.5 WNT5A -1 RGS5 **TGFA** FZD6 FGF1 **MSTN VEGFA** BMP2 FGF7 **BDNF** FGF13 ADORA2B LIF JAG2 RGS12 RGS7 mdx.ASC.78 mdx.ASC.2 mdx.ASC.3 mdx1.myob mdx2.myob mdx3.myob

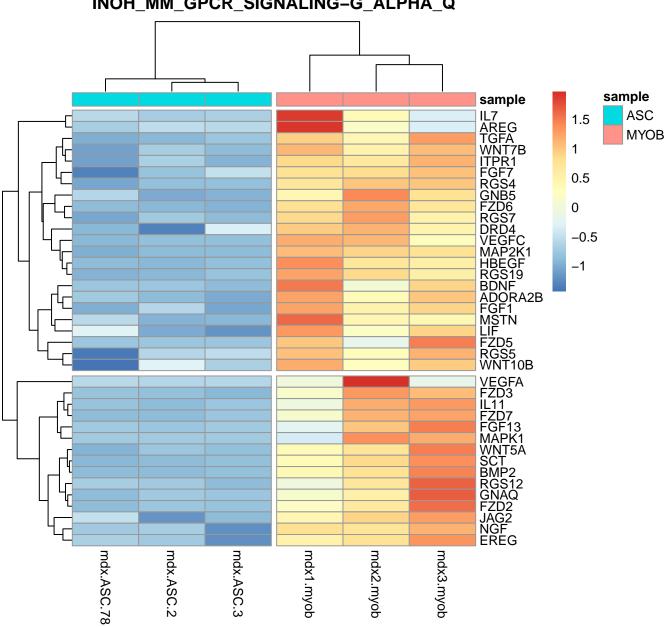
Expressed Matrix from Normalized for genes in INOH_MM_GPCR_SIGNALING-G_ALPHA_Q



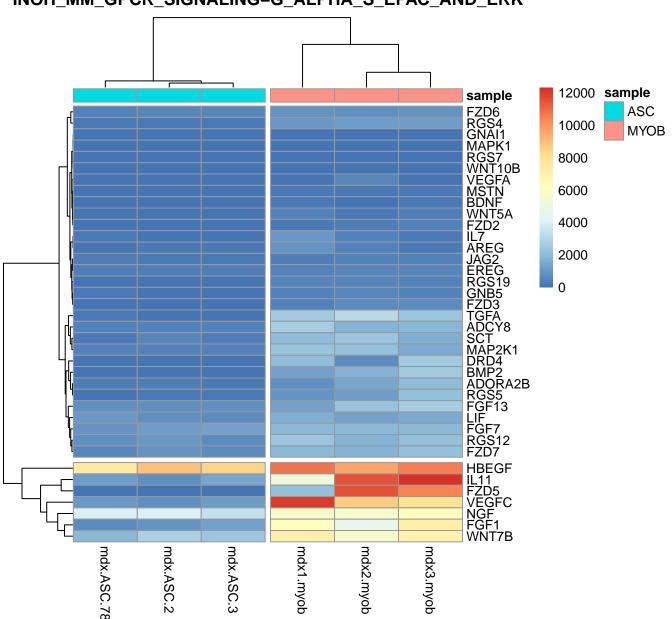
Expressed Matrix for genes active in INOH_MM_GPCR_SIGNALING-G_ALPHA_Q



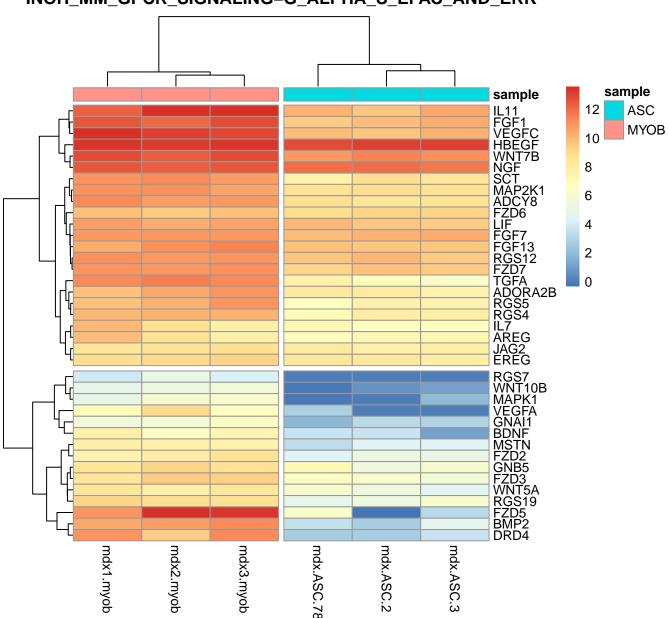
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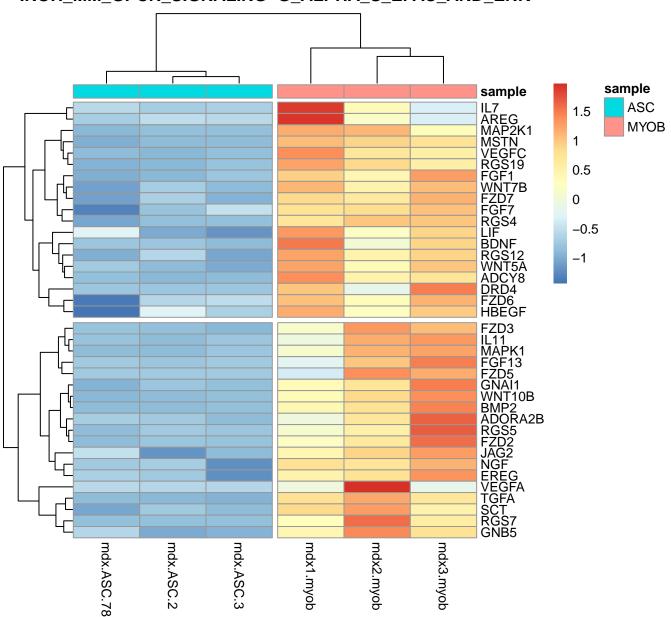
Expressed Matrix from Normalized for genes in INOH_MM_GPCR_SIGNALING-G_ALPHA_S_EPAC_AND_ERK



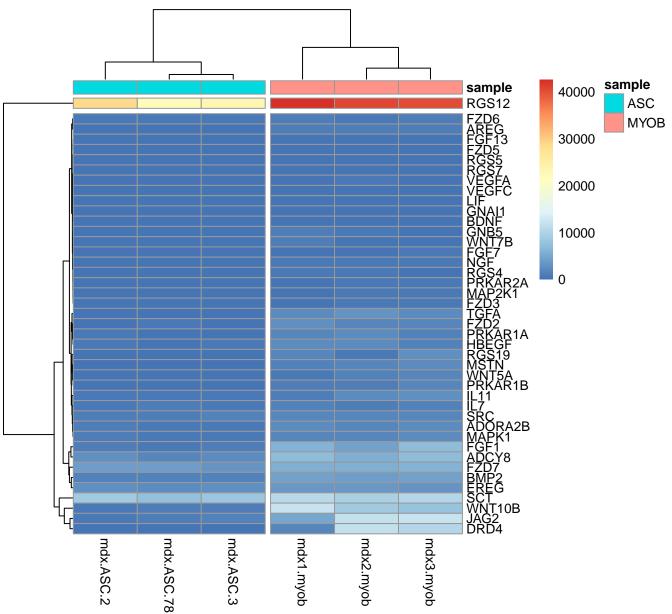
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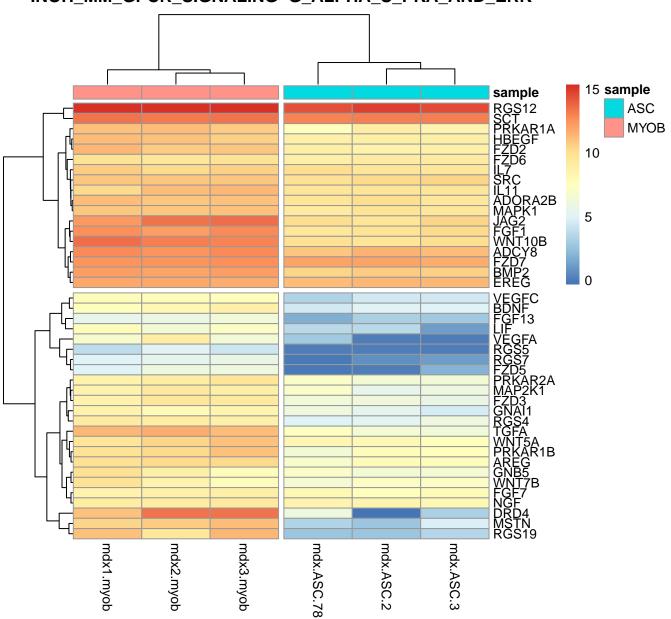
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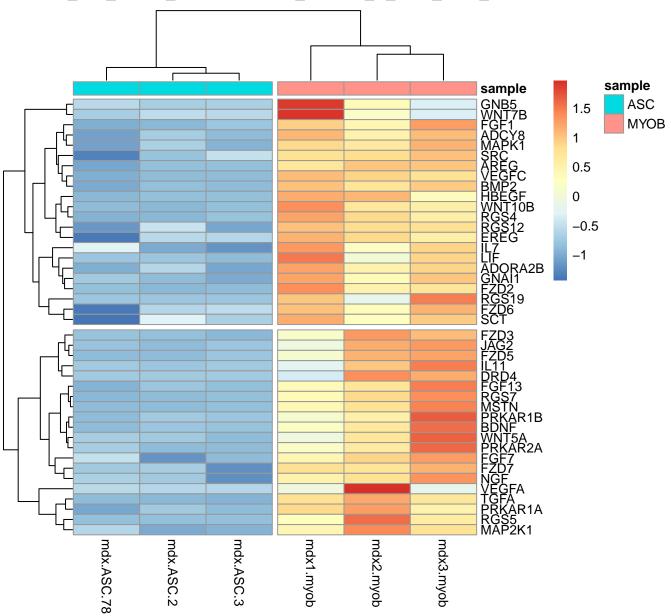
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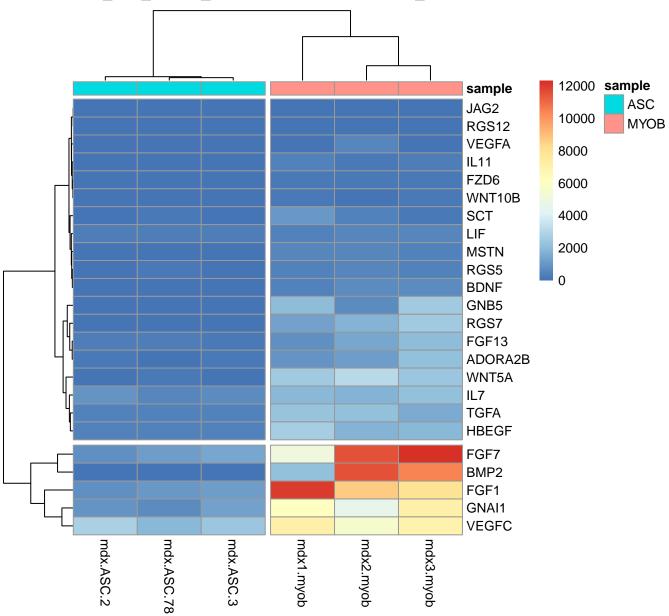
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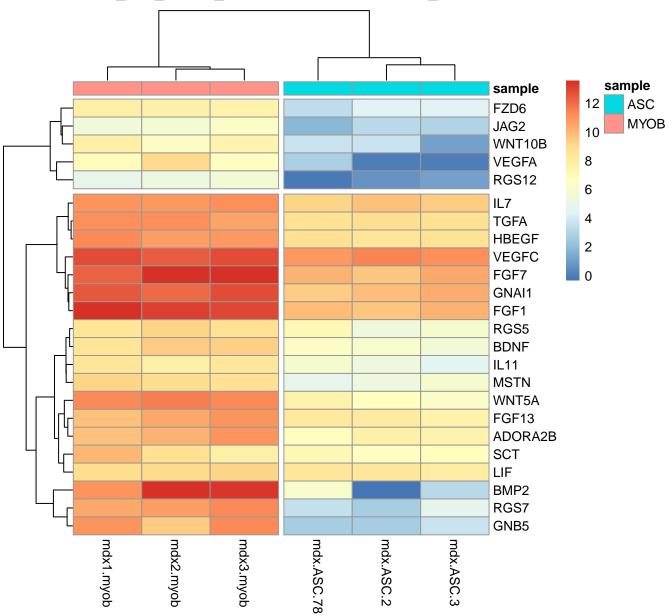
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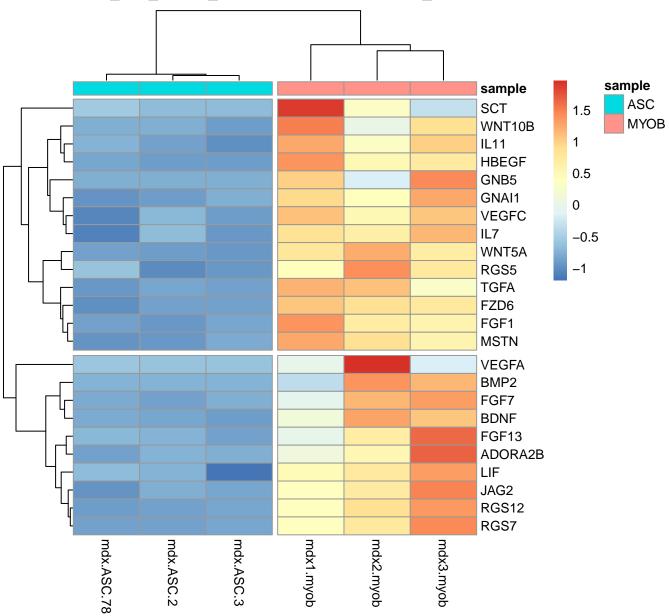
Expressed Matrix from Normalized for genes in INOH_MM_GPCR_SIGNALING-PERTUSSIS_TOXIN



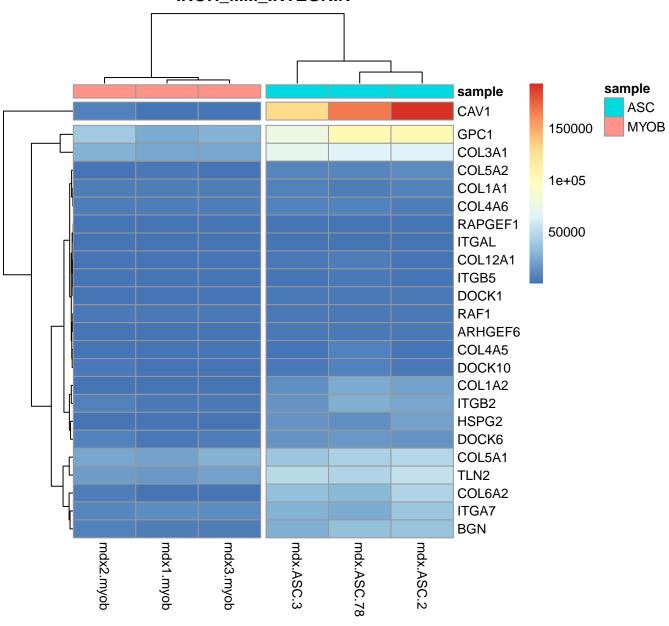
Expressed Matrix for genes active in INOH_MM_GPCR_SIGNALING-PERTUSSIS_TOXIN



Scalling expressed matrix for genes active in INOH_MM_GPCR_SIGNALING-PERTUSSIS_TOXIN



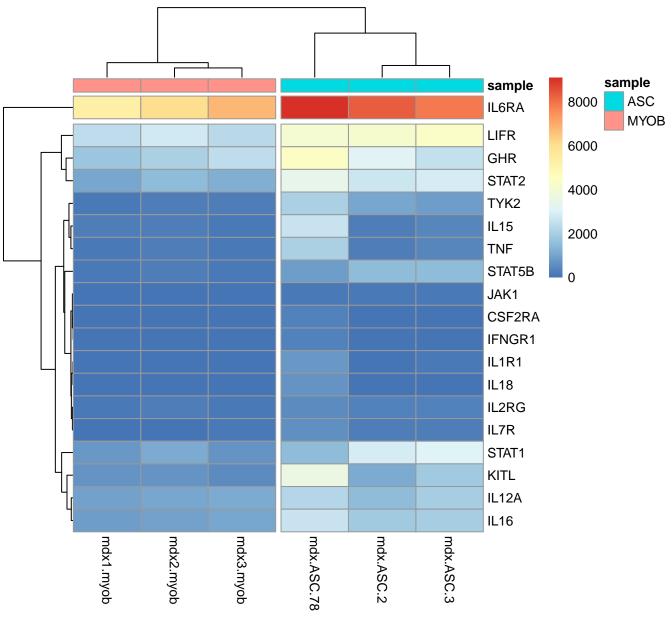
Expressed Matrix from Normalized for genes in INOH_MM_INTEGRIN



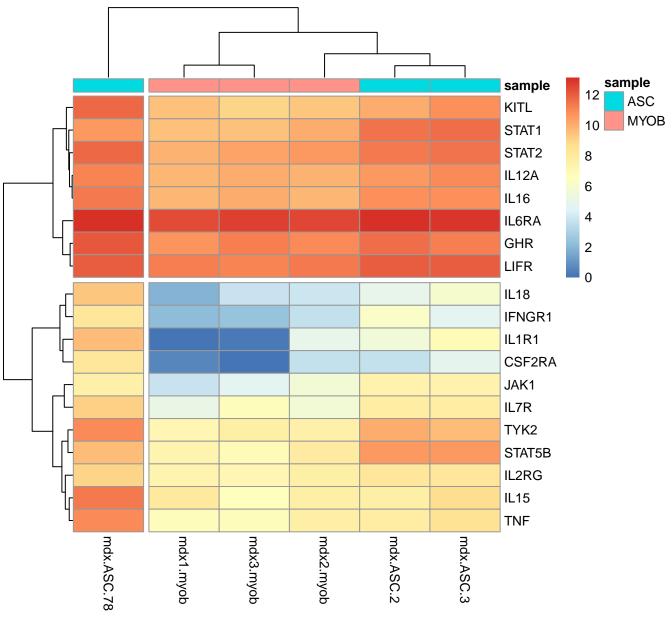
Expressed Matrix for genes active in INOH_MM_INTEGRIN sample sample ASC RAPGEF1 15 MYOB COL4A5 **ITGAL** COL5A1 10 TLN2 GPC1 COL3A1 5 DOCK6 ITGB2 ITGA7 BGN CAV1 HSPG2 COL1A2 COL6A2 ITGB5 COL12A1 DOCK1 ARHGEF6 DOCK10 RAF1 COL5A2 COL1A1 COL4A6 mdx.ASC.78 mdx.ASC.2 mdx.ASC.3 mdx2.myob mdx1.myob mdx3.myob

Scalling expressed matrix for genes active in INOH_MM_INTEGRIN 2 sample sample ASC COL1A1 1.5 MYOB COL5A1 ITGA7 1 HSPG2 0.5 COL6A2 TLN2 0 COL5A2 COL4A5 -0.5RAPGEF1 -1 DOCK10 ITGB5 COL3A1 COL4A6 DOCK6 **ITGAL** DOCK1 COL1A2 ITGB2 GPC1 **BGN** CAV1 ARHGEF6 COL12A1 RAF1 mdx2.myob mdx1.myob mdx3.myob mdx.ASC.78 mdx.ASC.2 mdx.ASC.3

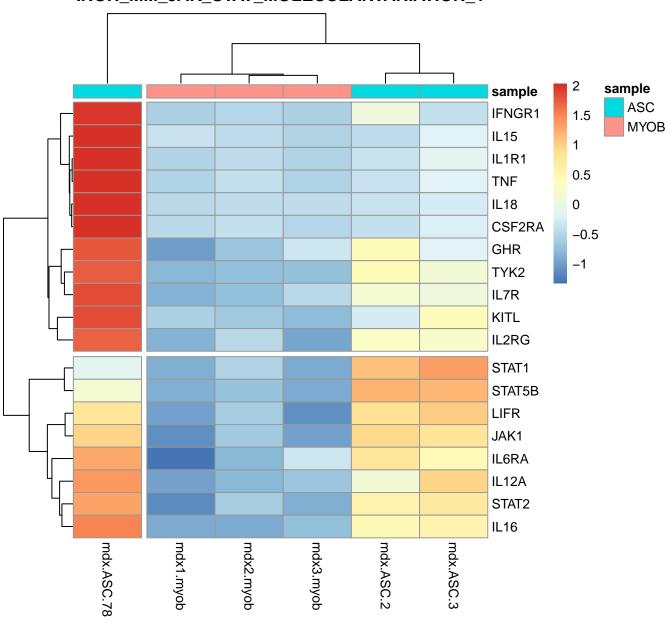
Expressed Matrix from Normalized for genes in INOH_MM_JAK_STAT_MOLECULARVARIATION_1



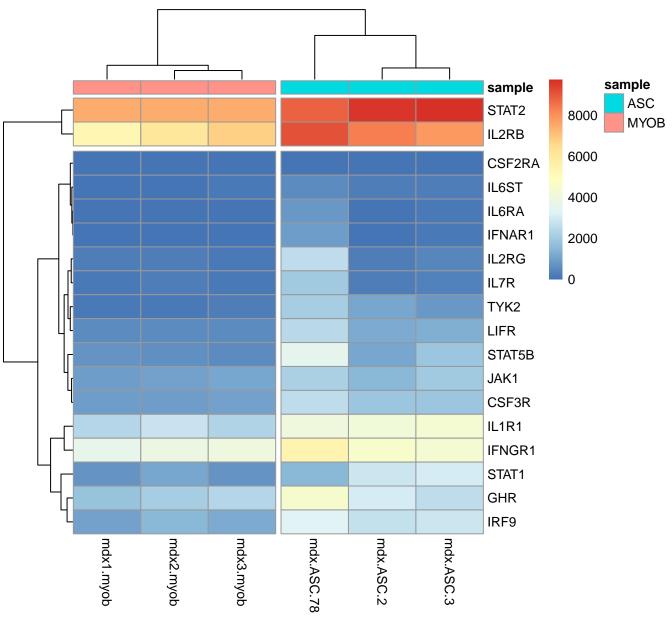
Expressed Matrix for genes active in INOH_MM_JAK_STAT_MOLECULARVARIATION_1



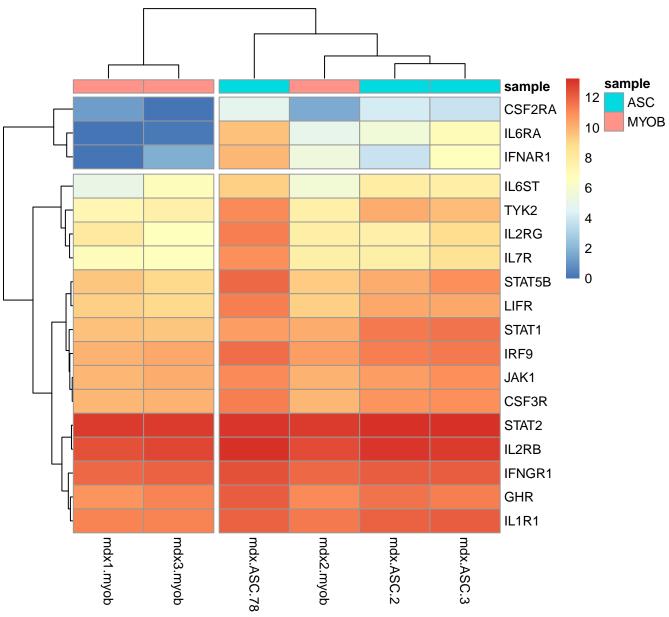
Scalling expressed matrix for genes active in INOH_MM_JAK_STAT_MOLECULARVARIATION_1



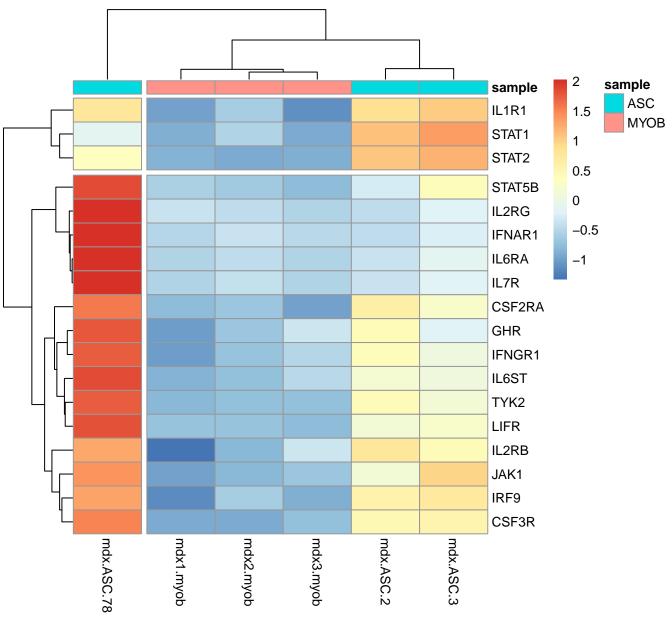
Expressed Matrix from Normalized for genes in INOH_MM_JAK_STAT_MOLECULARVARIATION_2



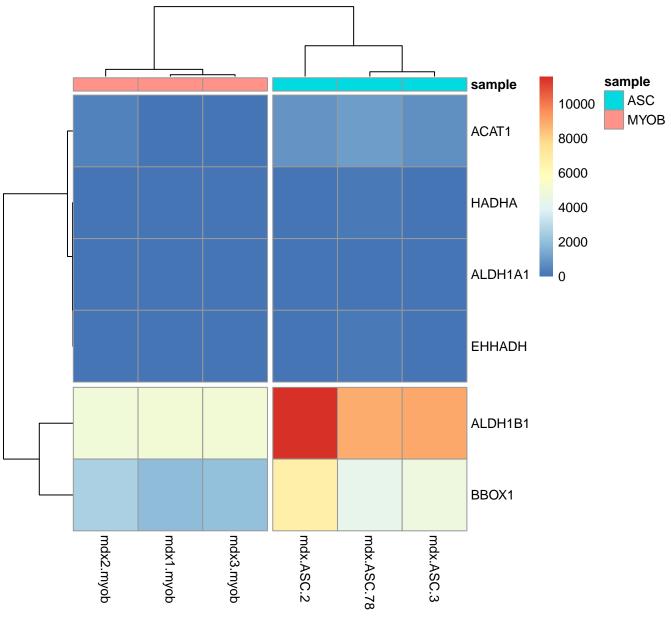
Expressed Matrix for genes active in INOH_MM_JAK_STAT_MOLECULARVARIATION_2



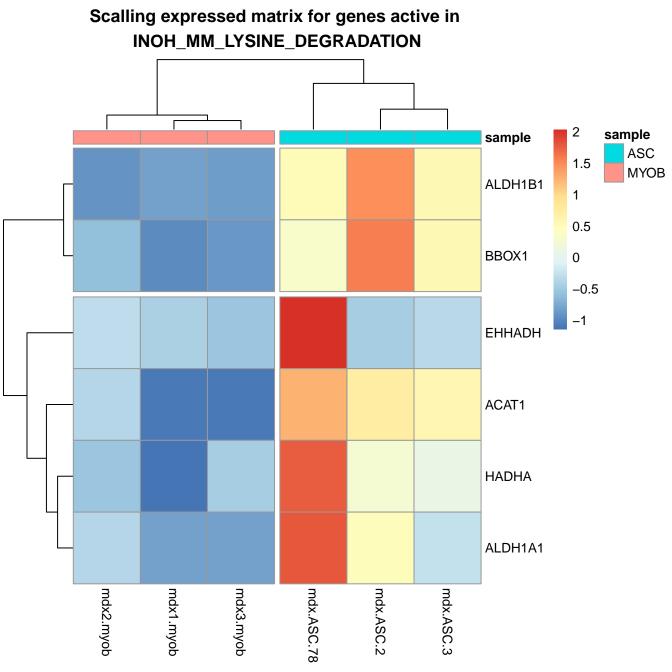
Scalling expressed matrix for genes active in INOH_MM_JAK_STAT_MOLECULARVARIATION_2



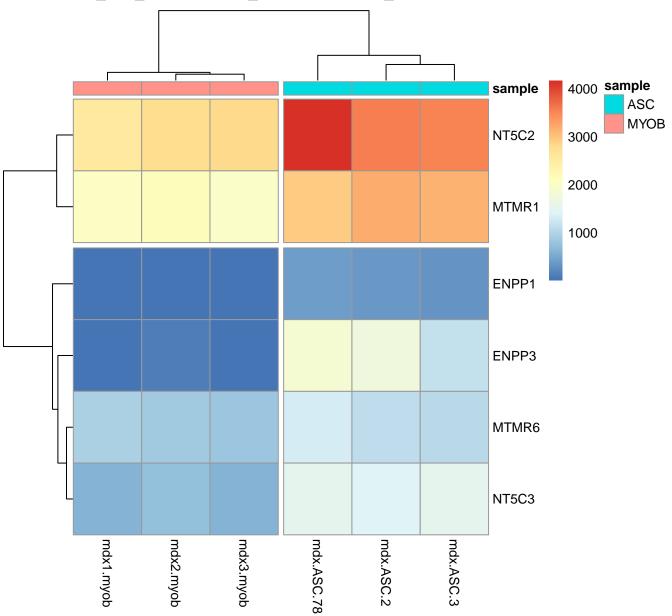
Expressed Matrix from Normalized for genes in INOH_MM_LYSINE_DEGRADATION



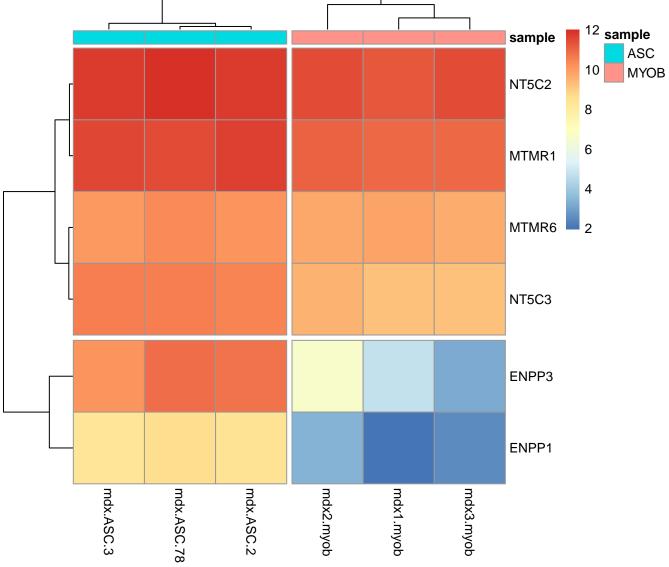
Expressed Matrix for genes active in INOH_MM_LYSINE_DEGRADATION sample sample 12 ASC MYOB 10 ALDH1B1 8 6 BBOX1 4 2 0 ALDH1A1 **EHHADH** HADHA ACAT1 mdx1.myob mdx3.myob mdx.ASC.78 mdx.ASC.2 mdx2.myob mdx.ASC.3



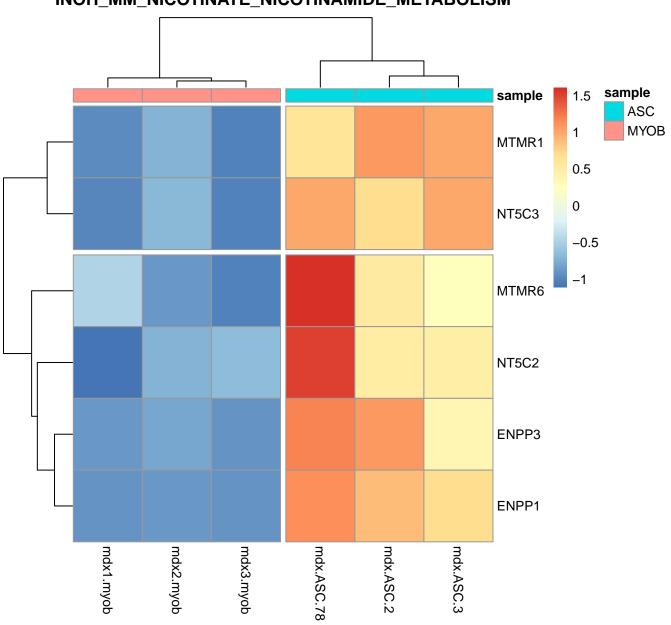
Expressed Matrix from Normalized for genes in INOH_MM_NICOTINATE_NICOTINAMIDE_METABOLISM



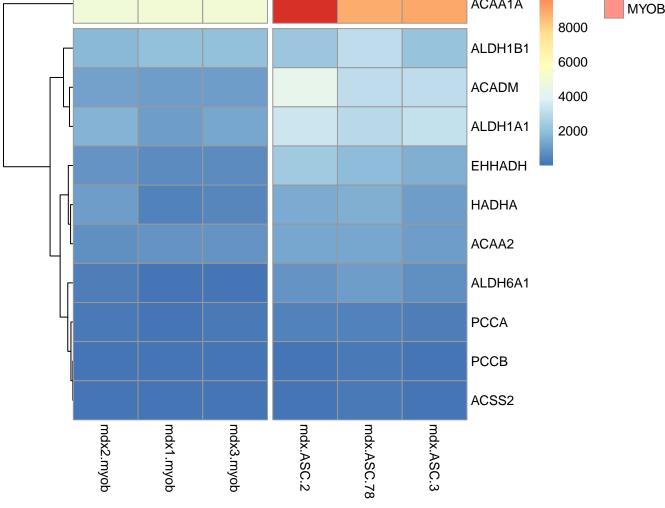
Expressed Matrix for genes active in INOH_MM_NICOTINATE_NICOTINAMIDE_METABOLISM 12 sample sample ASC 10 NT5C2 8 6 MTMR1



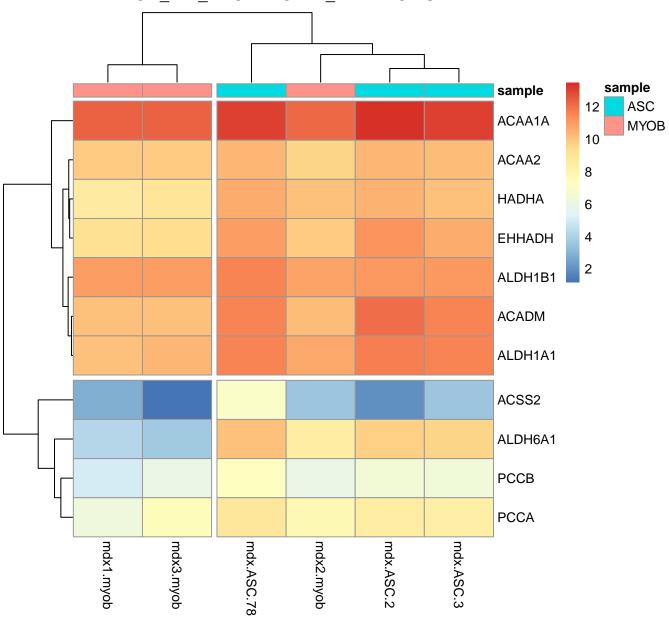
Scalling expressed matrix for genes active in INOH_MM_NICOTINATE_NICOTINAMIDE_METABOLISM



Expressed Matrix from Normalized for genes in INOH_MM_PROPANOATE_METABOLISM sample sample ASC 10000 ACAA1A MYOB 8000 ALDH1B1 6000 **ACADM** 4000 ALDH1A1 2000 **EHHADH HADHA** ACAA2



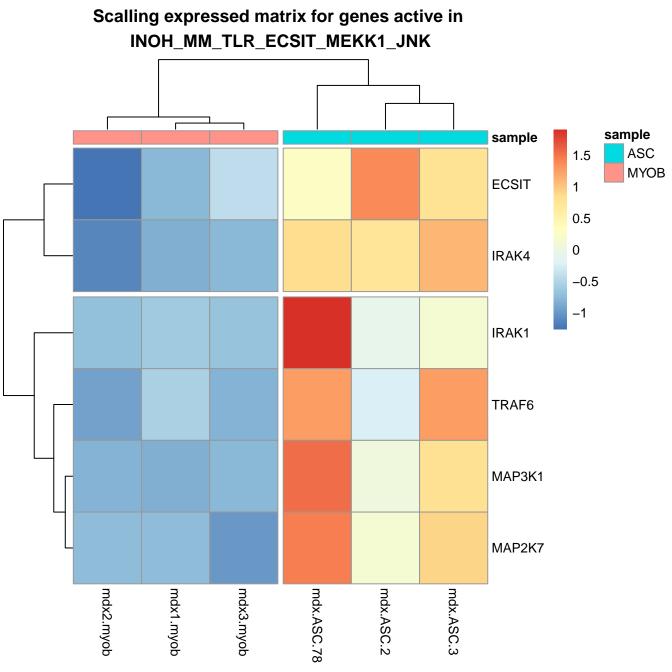
Expressed Matrix for genes active in INOH_MM_PROPANOATE_METABOLISM



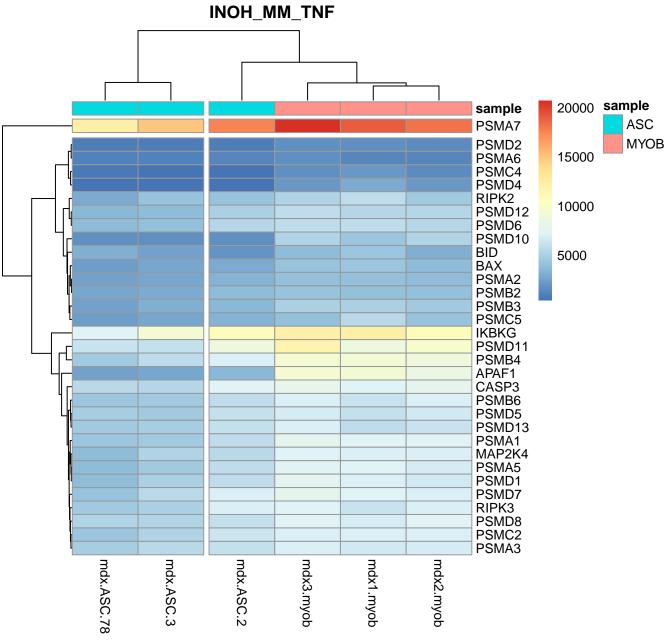
Scalling expressed matrix for genes active in INOH_MM_PROPANOATE_METABOLISM 2 sample sample ASC 1.5 **PCCB** MYOB 1 ACSS2 0.5 ALDH1B1 0 -0.5 HADHA -1 ALDH6A1 **PCCA** ACAA2 ALDH1A1 **EHHADH ACADM** ACAA1A mdx2.myob mdx1.myob mdx3.myob mdx.ASC.78 mdx.ASC.2 mdx.ASC.3

Expressed Matrix from Normalized for genes in INOH_MM_TLR_ECSIT_MEKK1_JNK sample sample ASC 4000 MYOB IRAK1 3000 **ECSIT** 2000 1000 MAP3K1 MAP2K7 TRAF6 IRAK4 mdx.ASC.78 mdx.ASC.3 mdx.ASC.2 mdx2.myob mdx1.myob mdx3.myob

Expressed Matrix for genes active in INOH_MM_TLR_ECSIT_MEKK1_JNK sample sample 12 ASC 11.5 MYOB TRAF6 11 10.5 10 IRAK4 9.5 9 8.5 IRAK1 **ECSIT** MAP3K1 MAP2K7 mdx2.myob mdx1.myob mdx3.myob mdx.ASC.78 mdx.ASC.2 mdx.ASC.3

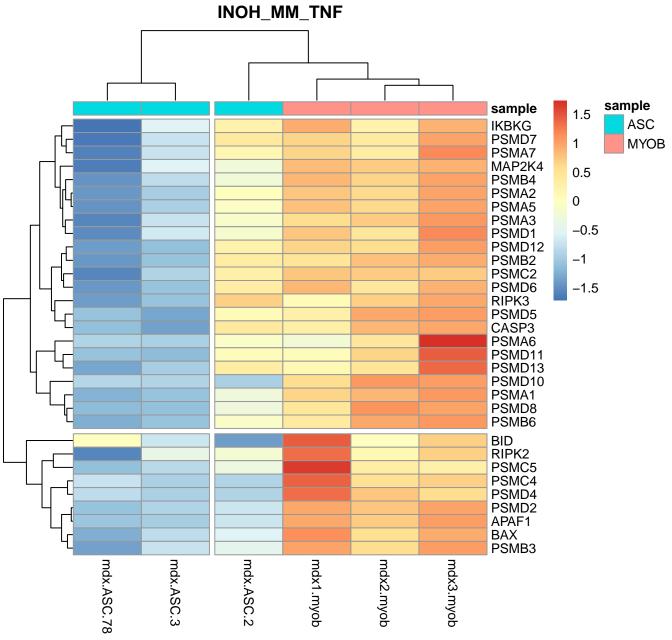


Expressed Matrix from Normalized for genes in

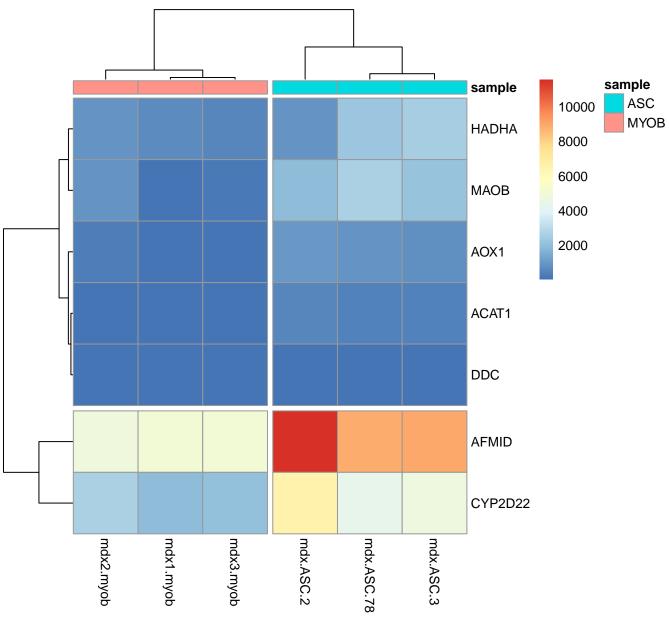


Expressed Matrix for genes active in INOH_MM_TNF 14 sample sample **ASC** PSMD2 PSMA6 **MYOB** 13 PSMC4 PSMD4 12 PSMA7 **IKBKG** PSMD11 11 PSMB4 PSMD10 BID 10 PSMA2 PSMB2 9 BAX PSMC5 CASP3 PSMD8 PSMA3 PSMD7 RIPK3 PSMC2 PSMB6 PSMD5 PSMD13 PSMA1 PSMA5 MAP2K4 PSMD1 APAF1 PSMD12 PSMD6 RIPK2 PSMB3 mdx1.myob mdx.ASC.2 mdx.ASC.3 mdx2.myob mdx3.myob mdx.ASC.78

Scalling expressed matrix for genes active in



Expressed Matrix from Normalized for genes in INOH_MM_TRYPTOPHAN_DEGRADATION



Expressed Matrix for genes active in INOH_MM_TRYPTOPHAN_DEGRADATION sample sample ASC 12 MYOB DDC 10 ACAT1 8 AOX1 6 **AFMID** CYP2D22 **HADHA MAOB** mdx.ASC.2 mdx.ASC.78 mdx.ASC.3 mdx2.myob mdx1.myob mdx3.myob

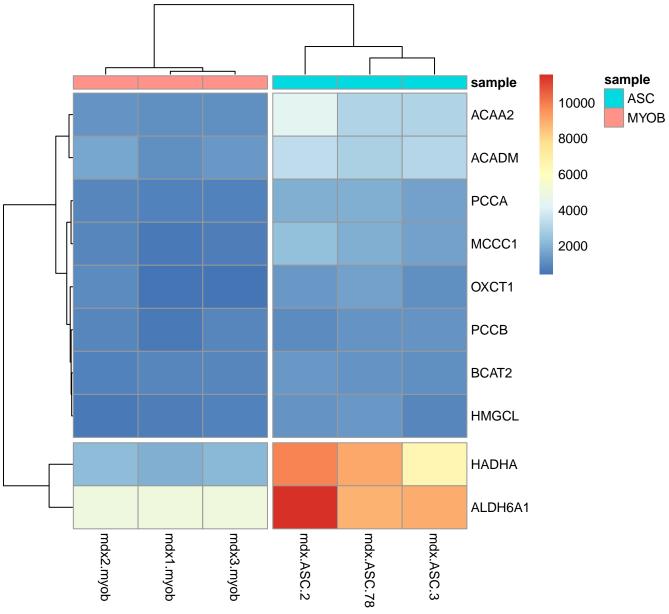
Scalling expressed matrix for genes active in INOH_MM_TRYPTOPHAN_DEGRADATION sample sample 1.5 ASC 1 MYOB AOX1 0.5 ACAT1 0 -0.5**AFMID** CYP2D22 HADHA DDC **MAOB** mdx.ASC.3 mdx2.myob mdx1.myob mdx3.myob mdx.ASC.2

Expressed Matrix from Normalized for genes in INOH_MM_TYROSINE_METABOLISM 20000 **sample** sample ASC MYOB AOC3 15000 10000 MAOA 5000 GSTZ1 MAOB ADH7 DDC **SDHA** mdx.ASC.2 mdx.ASC.78 mdx1.myob mdx2.myob mdx.ASC.3 mdx3.myob

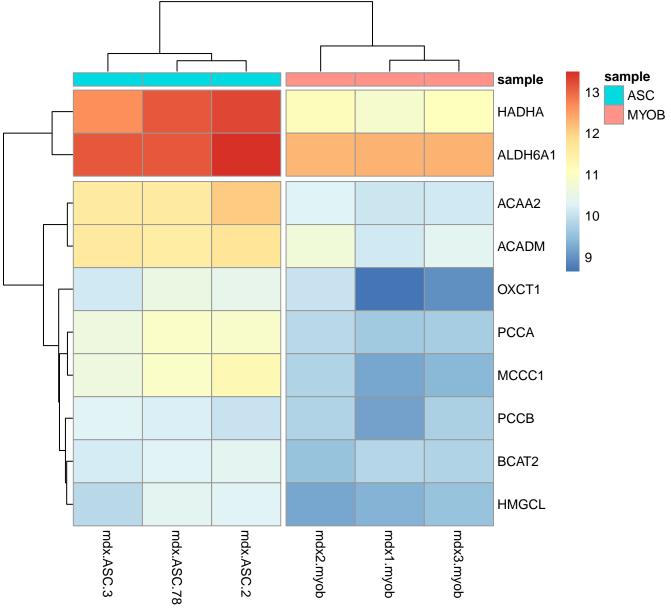
Expressed Matrix for genes active in INOH_MM_TYROSINE_METABOLISM 14 sample sample ASC 12 MYOB MAOB 10 8 ADH7 6 4 2 AOC3 DDC **SDHA** GSTZ1 MAOA mdx2.myob mdx.ASC.78 mdx.ASC.2 mdx.ASC.3 mdx1.myob mdx3.myob

Scalling expressed matrix for genes active in INOH_MM_TYROSINE_METABOLISM sample sample 1.5 ASC MYOB AOC3 1 0.5 MAOA 0 -0.5GSTZ1 -1 DDC **SDHA** MAOB ADH7 mdx2.myob mdx.ASC.2 mdx.ASC.78 mdx.ASC.3 mdx1.myob mdx3.myob

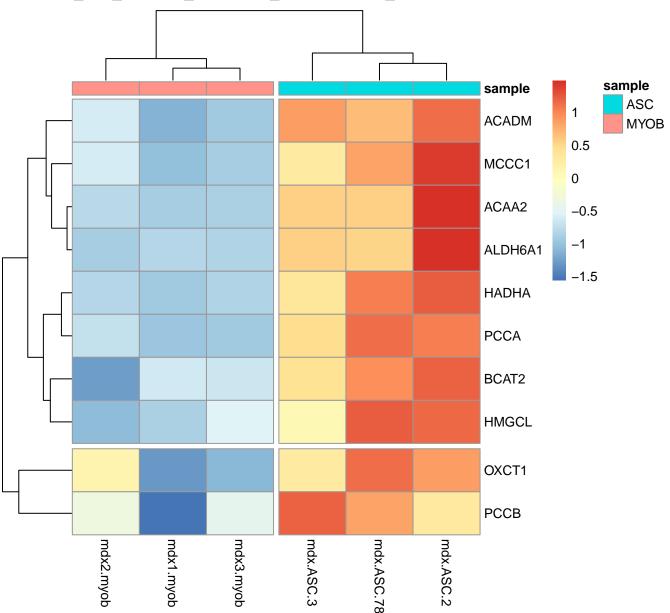
Expressed Matrix from Normalized for genes in INOH_MM_VALINE_LEUCINE_ISOLEUCINE_DEGRADATION



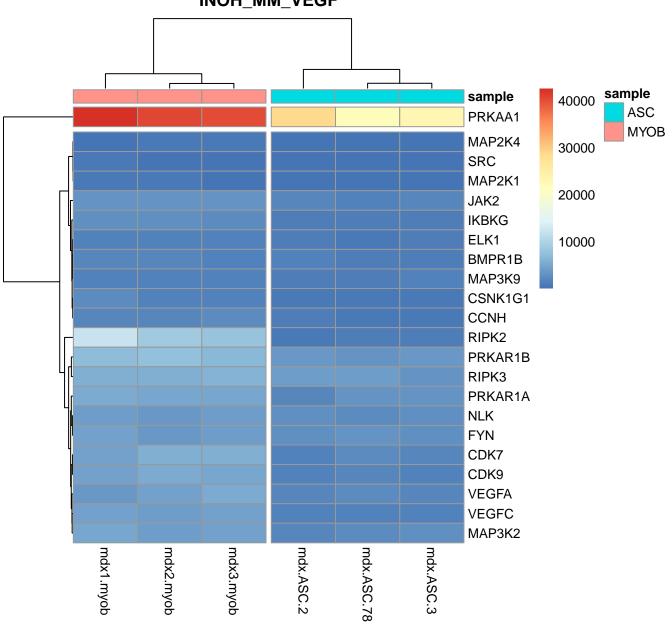
Expressed Matrix for genes active in INOH_MM_VALINE_LEUCINE_ISOLEUCINE_DEGRADATION



Scalling expressed matrix for genes active in INOH_MM_VALINE_LEUCINE_ISOLEUCINE_DEGRADATION



Expressed Matrix from Normalized for genes in INOH_MM_VEGF



Expressed Matrix for genes active in INOH_MM_VEGF sample sample ASC 14 PRKAA1 MYOB SRC 12 MAP2K1 MAP2K4 10 CSNK1G1 BMPR1B 8 MAP3K9 **IKBKG** 6 ELK1 **CCNH** RIPK2 JAK2 **VEGFC VEGFA** CDK7 CDK9 PRKAR1B RIPK3 NLK FYN PRKAR1A MAP3K2 mdx3.myob mdx1.myob mdx2.myob mdx.ASC.78 mdx.ASC.2 mdx.ASC.3

Scalling expressed matrix for genes active in INOH_MM_VEGF sample 1.5 sample ASC **VEGFA** 1 MYOB MAP2K4 BMPR1B 0.5 MAP2K1 0 PRKAR1A MAP3K2 -0.5FYN SRC -1 CSNK1G1 RIPK2 PRKAA1 NLK JAK2 RIPK3 CCNH **VEGFC** ELK1 **IKBKG** PRKAR1B MAP3K9 CDK7 CDK9 mdx.ASC.2 mdx.ASC.78 mdx.ASC.3 mdx1.myob mdx2.myob mdx3.myob