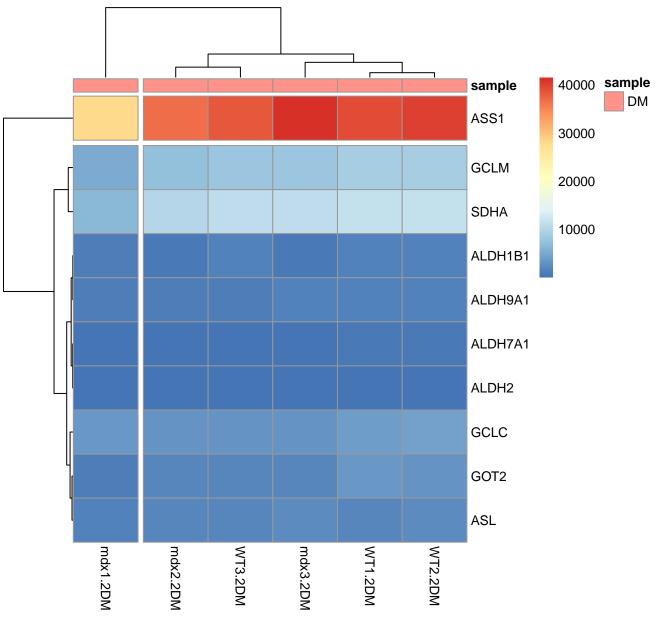
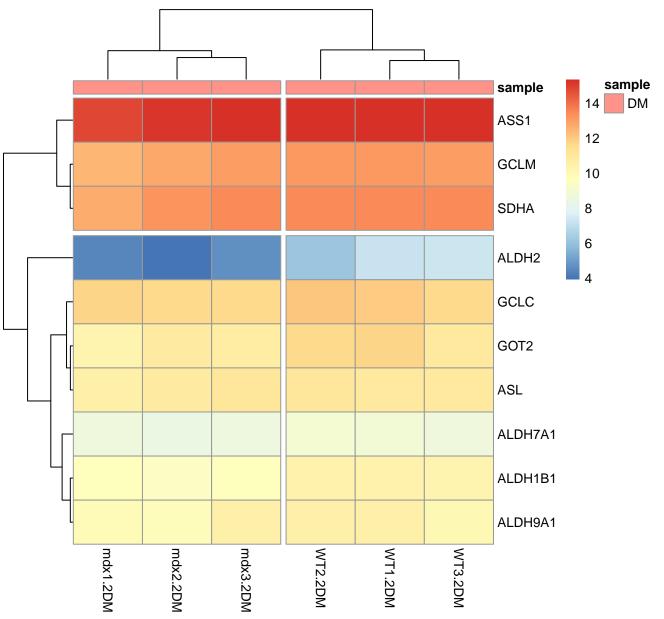
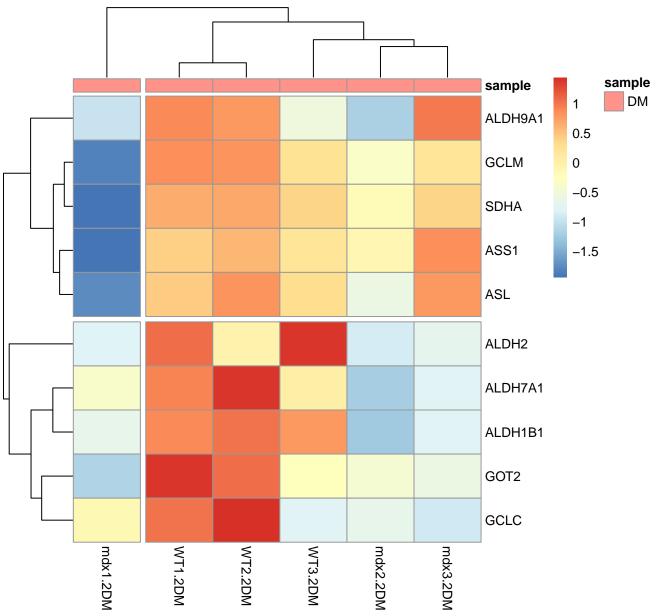
Expressed Matrix from Normalized for genes in INOH_MM_ARGININE_PROLINE_METABOLISM



Expressed Matrix for genes active in INOH_MM_ARGININE_PROLINE_METABOLISM

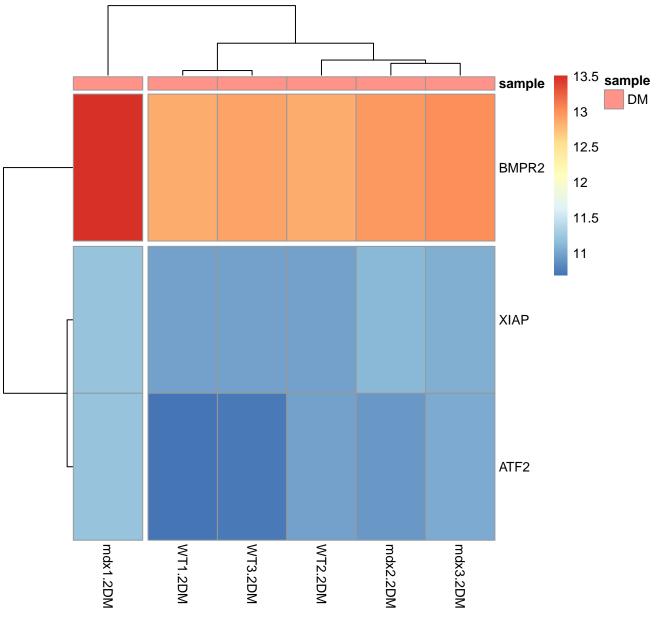


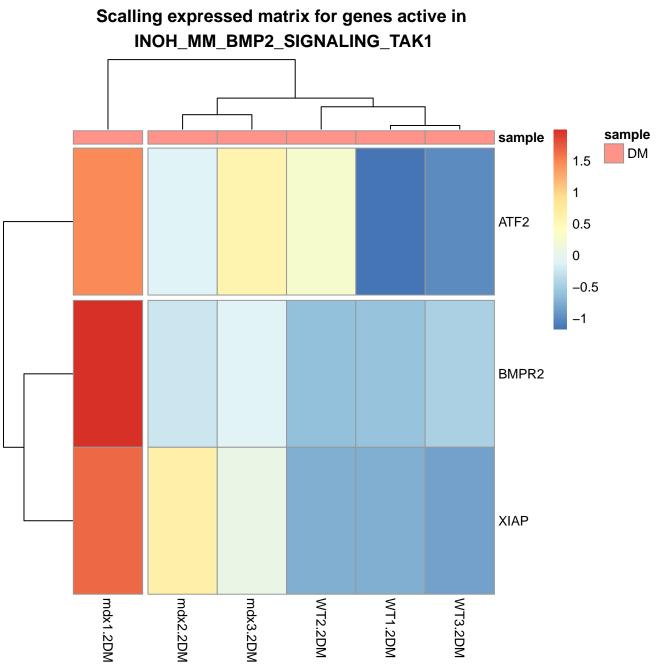
Scalling expressed matrix for genes active in INOH_MM_ARGININE_PROLINE_METABOLISM



Expressed Matrix from Normalized for genes in INOH_MM_BMP2_SIGNALING_TAK1 sample sample DM 10000 8000 BMPR2 6000 4000 2000 XIAP ATF2 WT3.2DM WT2.2DM WT1.2DM mdx1.2DM mdx2.2DM mdx3.2DM

Expressed Matrix for genes active in INOH_MM_BMP2_SIGNALING_TAK1



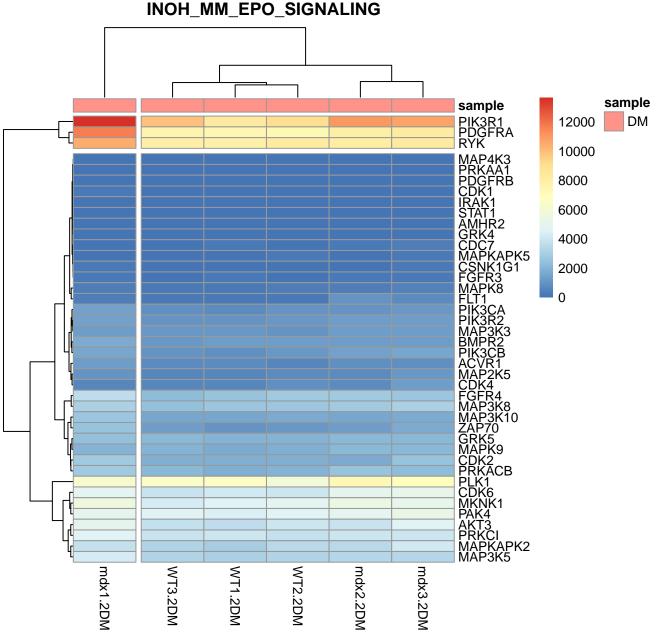


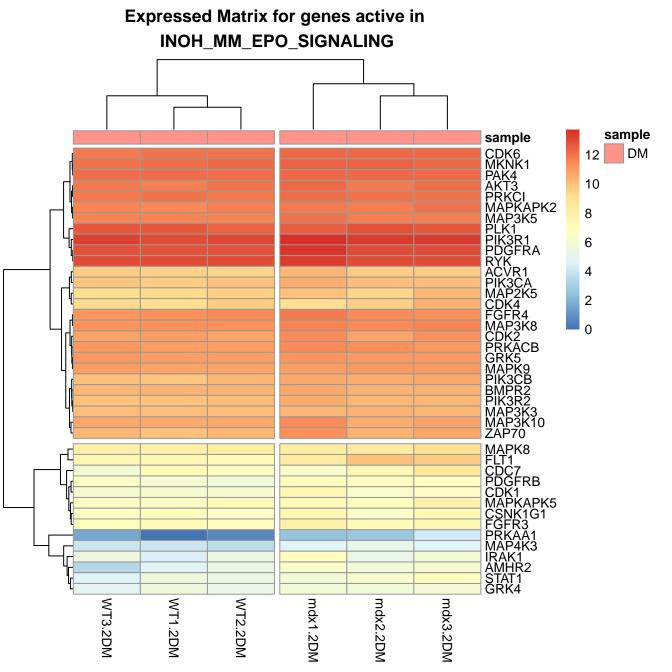
Expressed Matrix from Normalized for genes in INOH_MM_BUTANOATE_METABOLISM sample sample 16000 DM 14000 **ACADS** 12000 10000 8000 6000 **HADHA** 4000 2000 ACAT1 **HMGCL PDHX** WT3.2DM mdx1.2DM mdx2.2DM mdx3.2DM WT2.2DM WT1.2DM

Expressed Matrix for genes active in INOH_MM_BUTANOATE_METABOLISM 14 sample sample DM 13.5 13 ACAT1 12.5 12 11.5 ACADS 11 10.5 HADHA **HMGCL PDHX** mdx1.2DM WT2.2DM WT1.2DM WT3.2DM mdx2.2DM mdx3.2DM

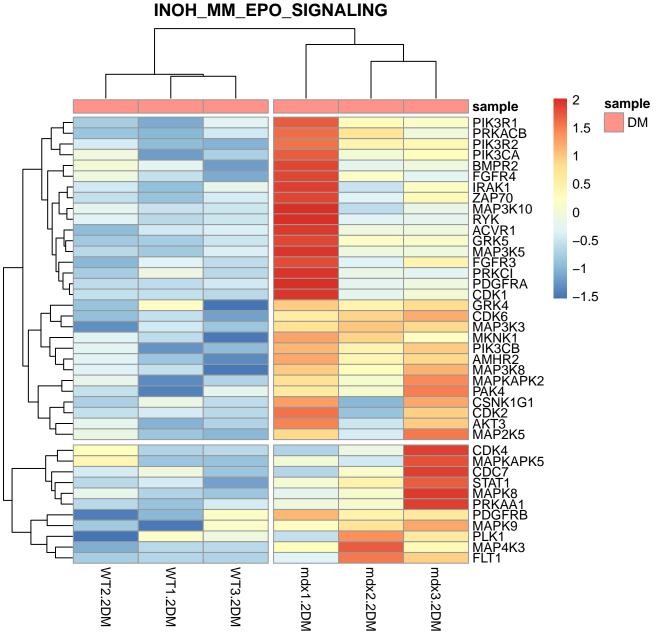
Scalling expressed matrix for genes active in INOH_MM_BUTANOATE_METABOLISM 1.5 sample sample DM 1 ACADS 0.5 0 -0.5 -1 PDHX -1.5**HMGCL** ACAT1 HADHA WT2.2DM mdx1.2DM WT1.2DM WT3.2DM mdx3.2DM mdx2.2DM

Expressed Matrix from Normalized for genes in INOH MM EPO SIGNALING

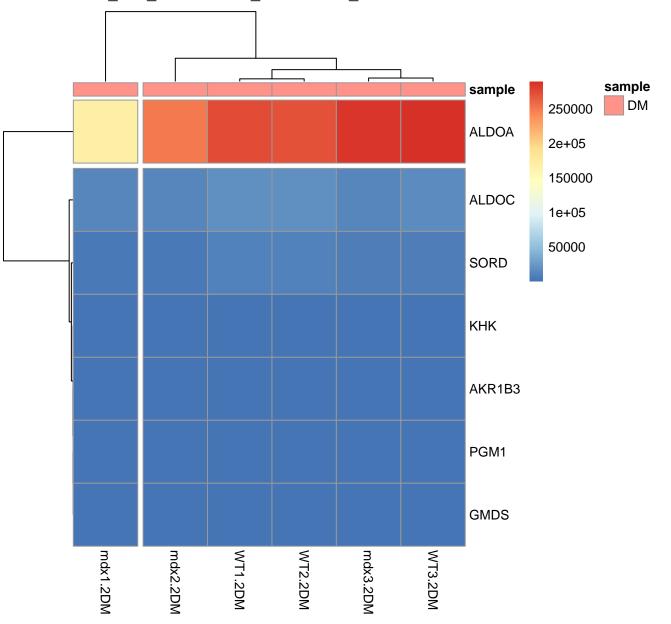




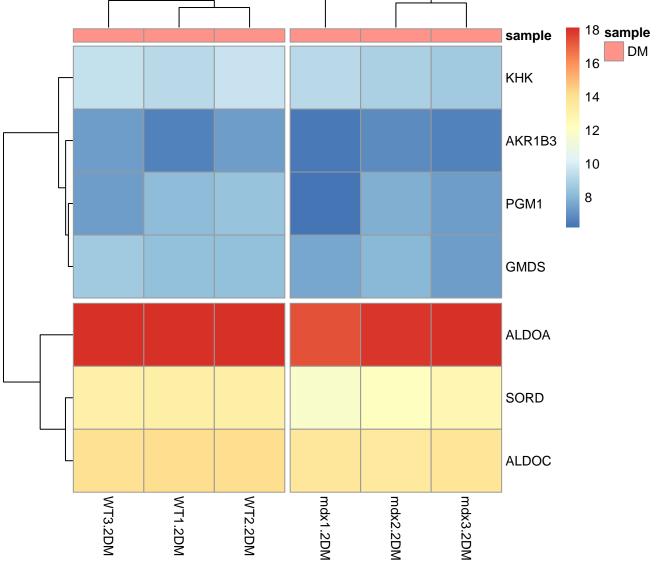
Scalling expressed matrix for genes active in



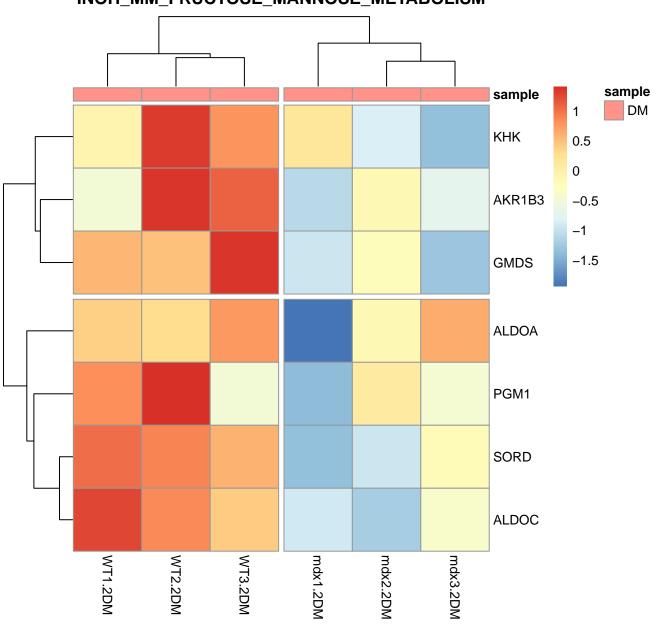
Expressed Matrix from Normalized for genes in INOH_MM_FRUCTOSE_MANNOSE_METABOLISM



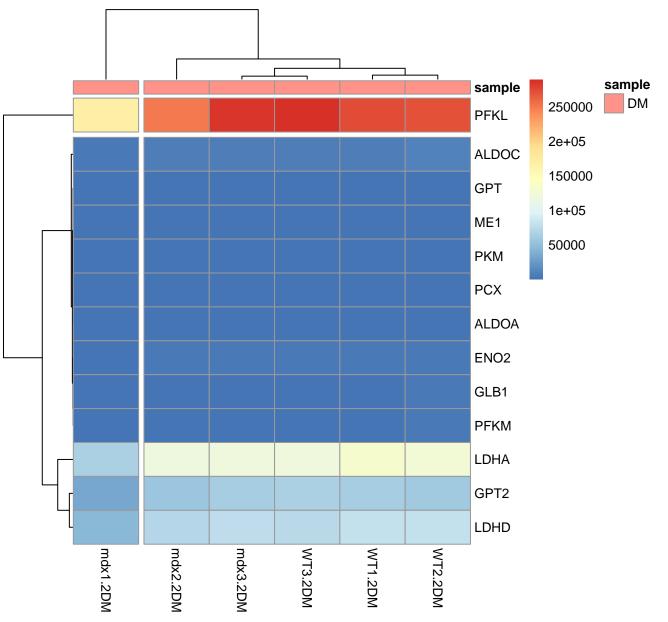
Expressed Matrix for genes active in INOH_MM_FRUCTOSE_MANNOSE_METABOLISM 18 sample sample DM 16 KHK 14 12 AKR1B3 10 8 PGM1



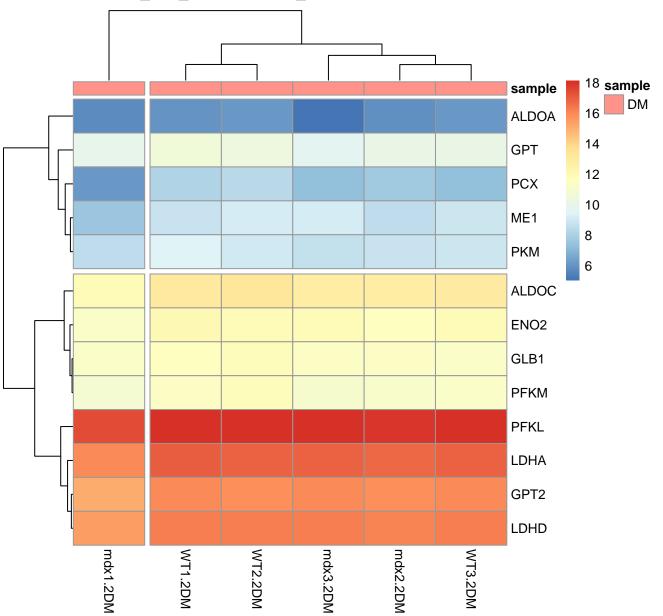
Scalling expressed matrix for genes active in INOH_MM_FRUCTOSE_MANNOSE_METABOLISM



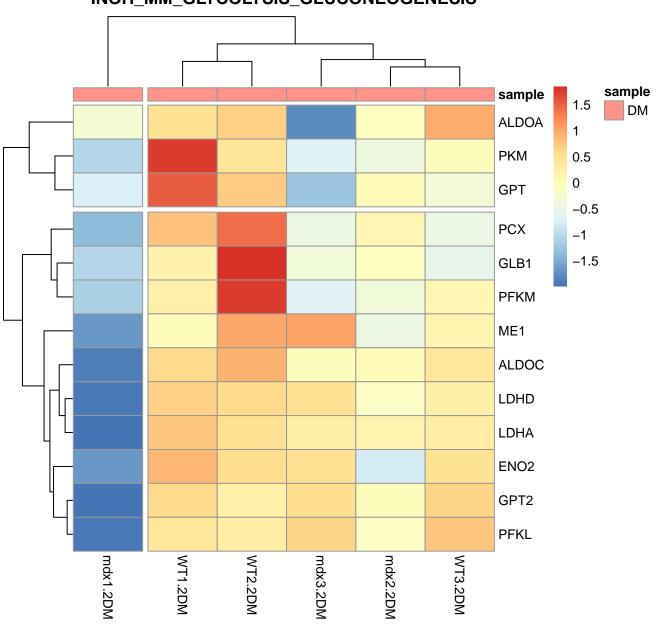
Expressed Matrix from Normalized for genes in INOH_MM_GLYCOLYSIS_GLUCONEOGENESIS



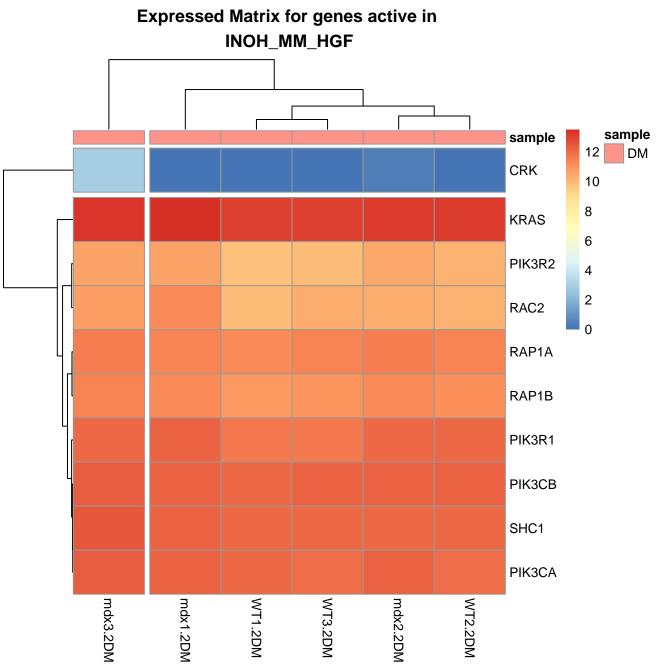
Expressed Matrix for genes active in INOH_MM_GLYCOLYSIS_GLUCONEOGENESIS



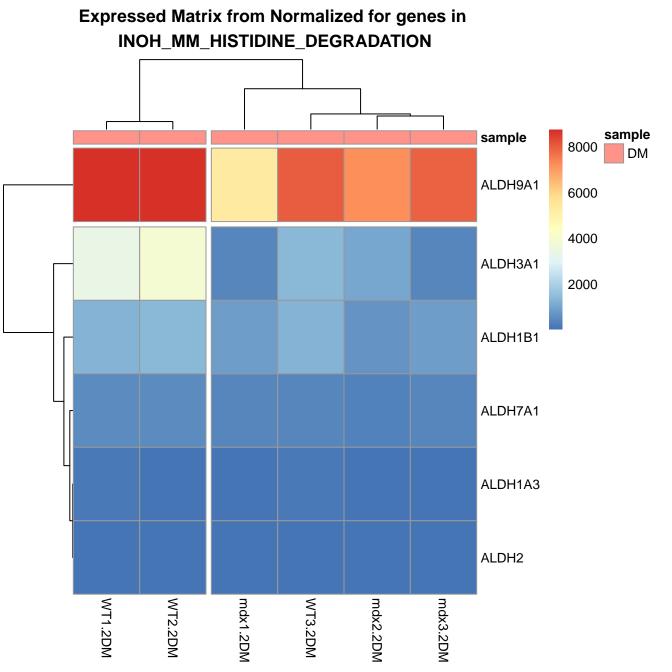
Scalling expressed matrix for genes active in INOH_MM_GLYCOLYSIS_GLUCONEOGENESIS

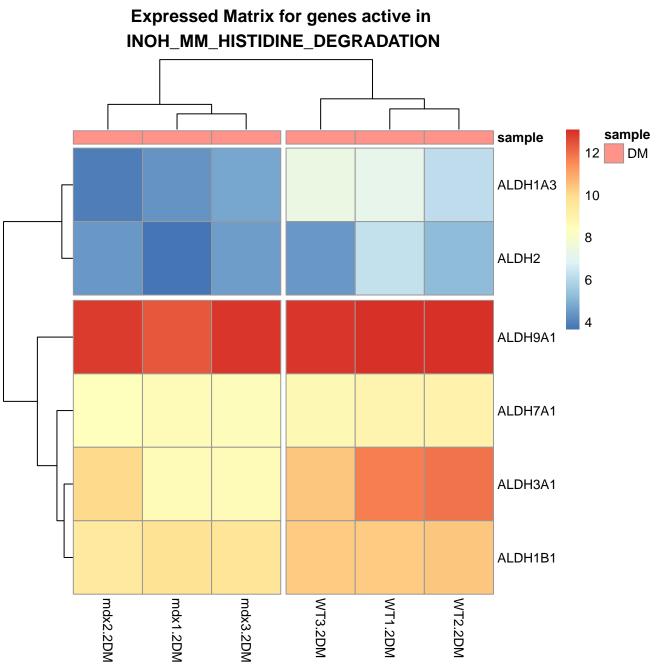


Expressed Matrix from Normalized for genes in INOH_MM_HGF sample sample DM 10000 KRAS 8000 PIK3R1 6000 4000 PIK3CB 2000 SHC1 0 PIK3CA CRK PIK3R2 RAC2 RAP1A RAP1B mdx1.2DM WT2.2DM WT3.2DM WT1.2DM mdx2.2DM mdx3.2DM



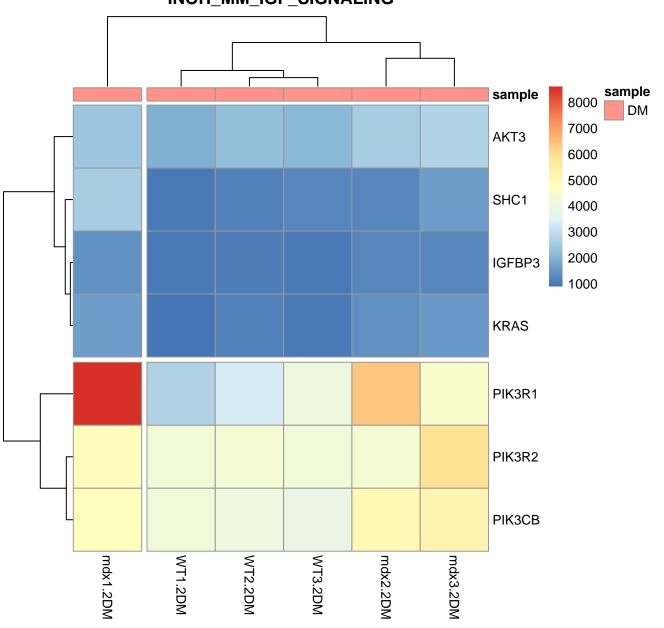
Scalling expressed matrix for genes active in INOH_MM_HGF 2 sample sample DM 1.5 **KRAS** 1 RAC2 0.5 0 PIK3R1 -0.5 PIK3R2 -1 CRK SHC1 PIK3CA PIK3CB RAP1A RAP1B WT2.2DM WT1.2DM WT3.2DM mdx1.2DM mdx2.2DM mdx3.2DM





Scalling expressed matrix for genes active in INOH_MM_HISTIDINE_DEGRADATION sample sample 1.5 DM 1 ALDH1A3 0.5 0 -0.5ALDH3A1 -1 -1.5 ALDH7A1 ALDH1B1 ALDH9A1 ALDH2 WT1.2DM WT2.2DM mdx1.2DM mdx2.2DM mdx3.2DM

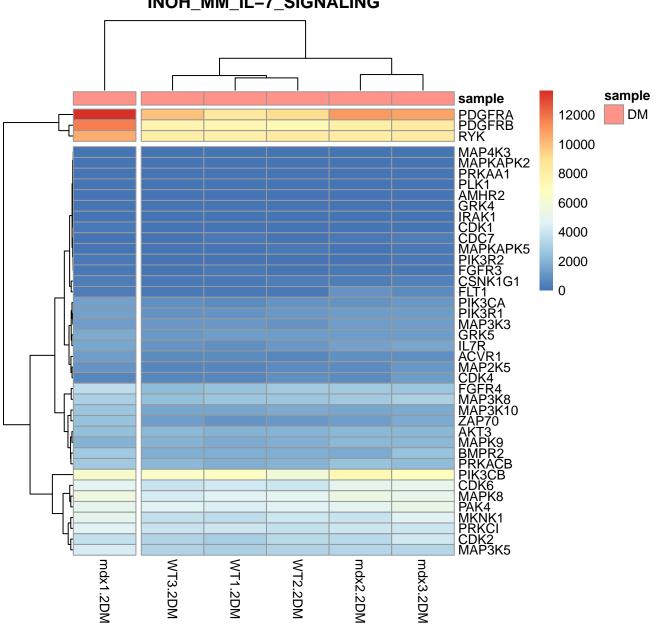
Expressed Matrix from Normalized for genes in INOH_MM_IGF_SIGNALING



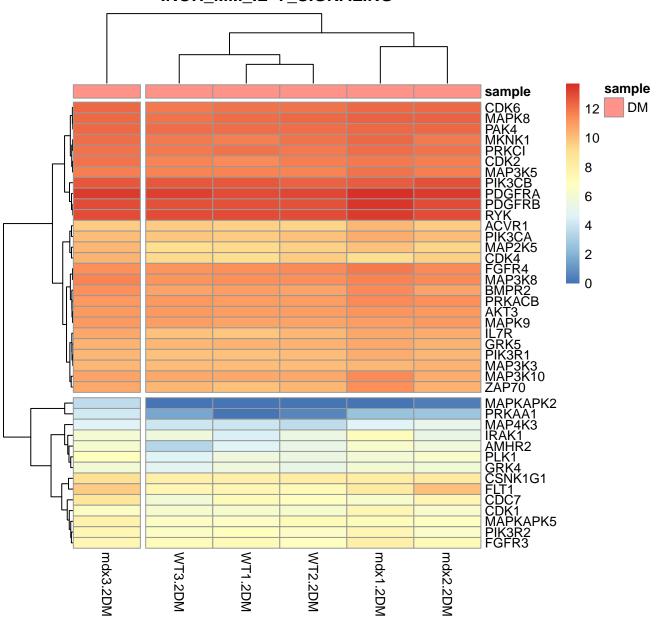
Expressed Matrix for genes active in INOH_MM_IGF_SIGNALING 13 sample sample DM 12.5 PIK3R1 12 11.5 PIK3R2 11 10.5 PIK3CB 10 AKT3 SHC1 IGFBP3 **KRAS** WT1.2DM WT2.2DM WT3.2DM mdx1.2DM mdx2.2DM mdx3.2DM

Scalling expressed matrix for genes active in INOH_MM_IGF_SIGNALING sample sample DM 1.5 IGFBP3 1 0.5 **KRAS** 0 -0.5 PIK3R1 -1 SHC1 PIK3R2 AKT3 PIK3CB WT2.2DM WT1.2DM WT3.2DM mdx1.2DM mdx2.2DM mdx3.2DM

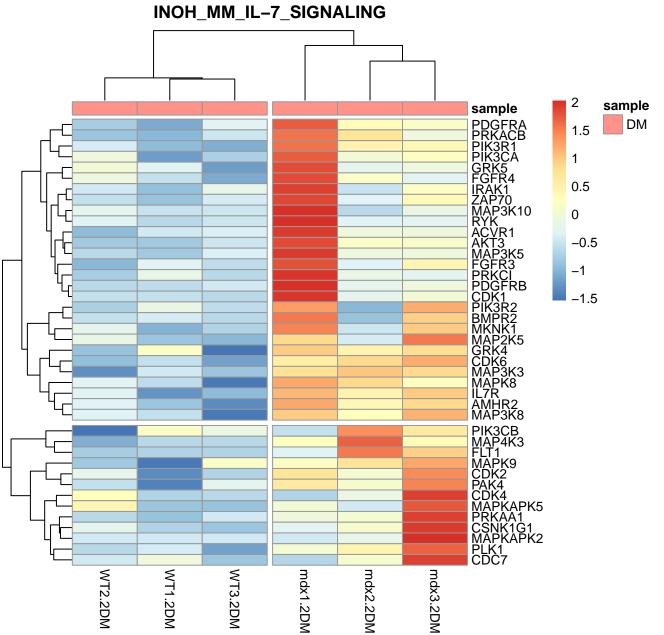
Expressed Matrix from Normalized for genes in INOH_MM_IL-7_SIGNALING



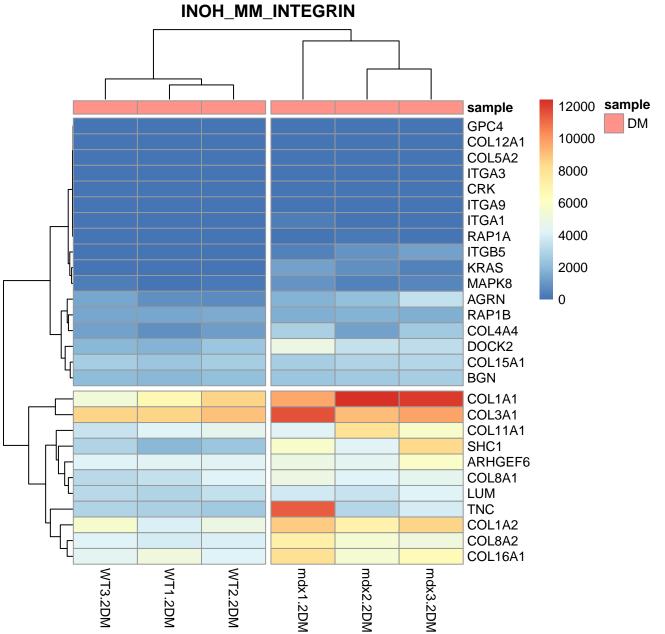
Expressed Matrix for genes active in INOH_MM_IL-7_SIGNALING



Scalling expressed matrix for genes active in



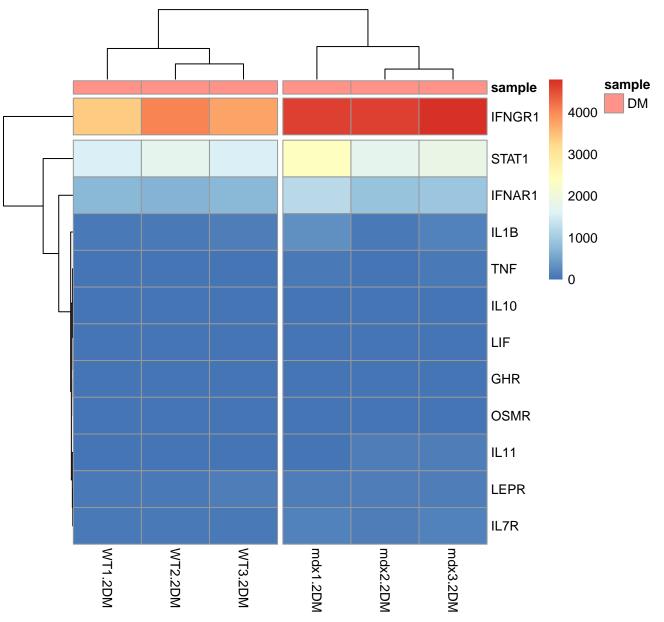
Expressed Matrix from Normalized for genes in



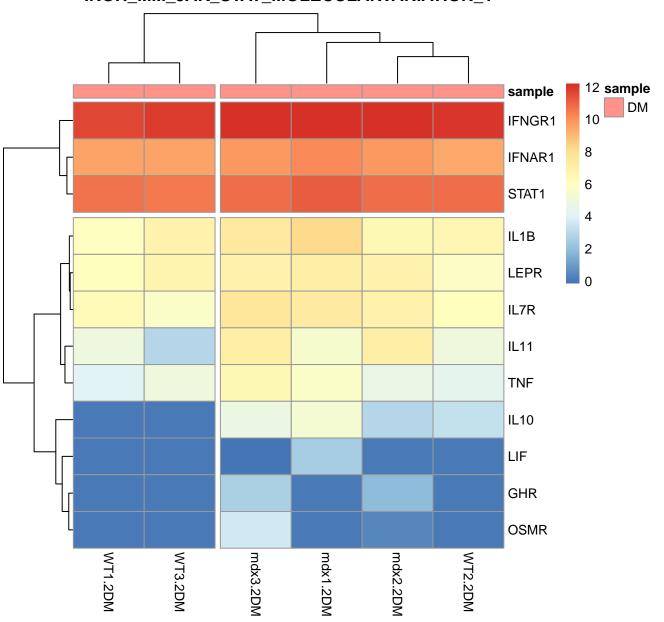
Expressed Matrix for genes active in INOH_MM_INTEGRIN sample sample DM 12 DOCK2 COL15A1 10 BGN RAP1B 8 AGRN COL4A4 6 COL1A1 COL3A1 4 COL1A2 COL11A1 2 ARHGEF6 COL8A2 0 COL16A1 TNC SHC1 COL8A1 LUM GPC4 RAP1A MAPK8 KRAS ITGB5 ITGA1 COL12A1 ITGA9 CRK COL5A2 ITGA3 WT2.2DN WT3.2DN mdx1.2DM mdx2.2DM mdx3.2DM

Scalling expressed matrix for genes active in INOH_MM_INTEGRIN 2 sample sample DM COL8A1 1.5 LUM COL1A2 1 COL4A4 COL12A1 0.5 TNC 0 ITGA1 DOCK2 -0.5**KRAS** COL8A2 -1 COL16A1 COL3A1 MAPK8 COL5A2 ARHGEF6 ITGA9 SHC1 COL11A1 RAP1A RAP1B GPC4 COL15A1 COL1A1 **BGN** CRK **AGRN** ITGA3 ITGB5 WT2.2DN WT1.2DN WT3.2DM mdx1.2DM mdx2.2DM mdx3.2DM

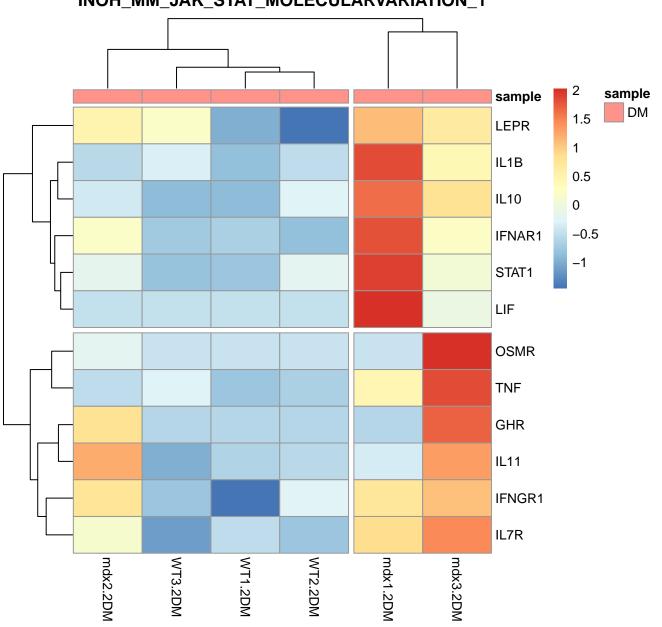
Expressed Matrix from Normalized for genes in INOH_MM_JAK_STAT_MOLECULARVARIATION_1



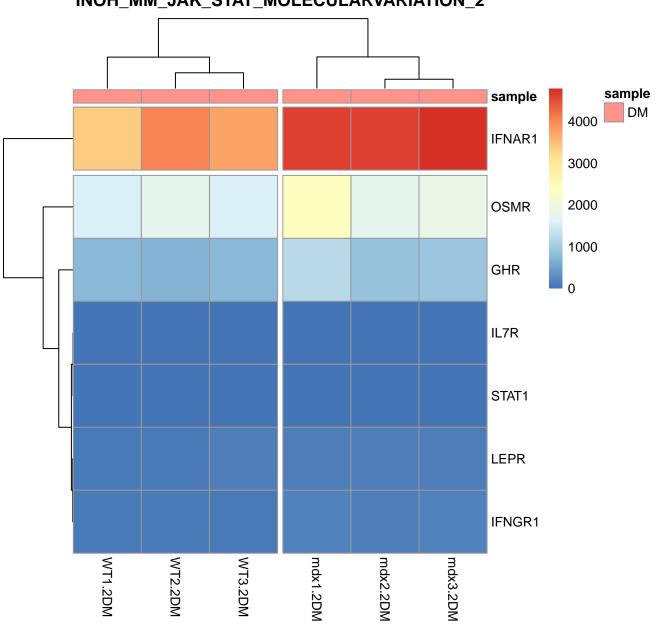
Expressed Matrix for genes active in INOH_MM_JAK_STAT_MOLECULARVARIATION_1



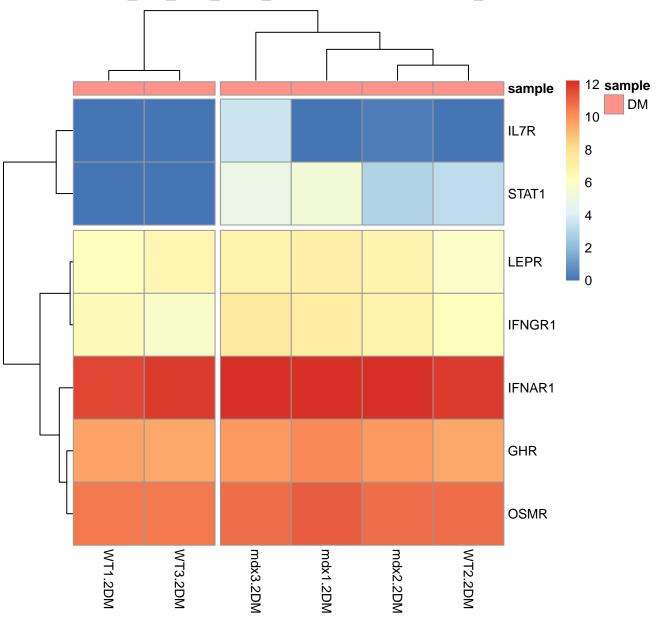
Scalling expressed matrix for genes active in INOH_MM_JAK_STAT_MOLECULARVARIATION_1



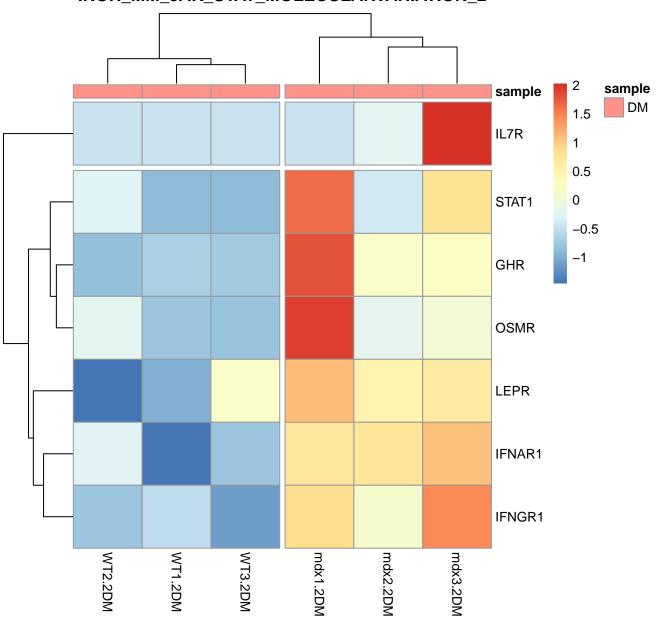
Expressed Matrix from Normalized for genes in INOH_MM_JAK_STAT_MOLECULARVARIATION_2



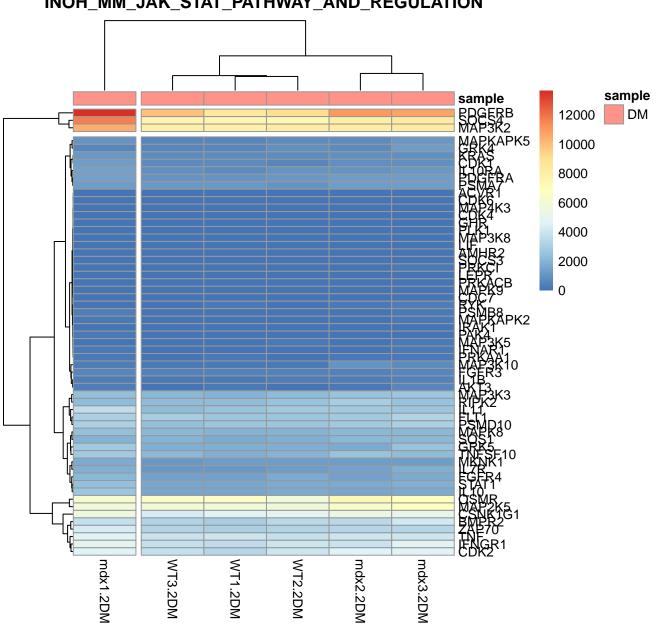
Expressed Matrix for genes active in INOH_MM_JAK_STAT_MOLECULARVARIATION_2



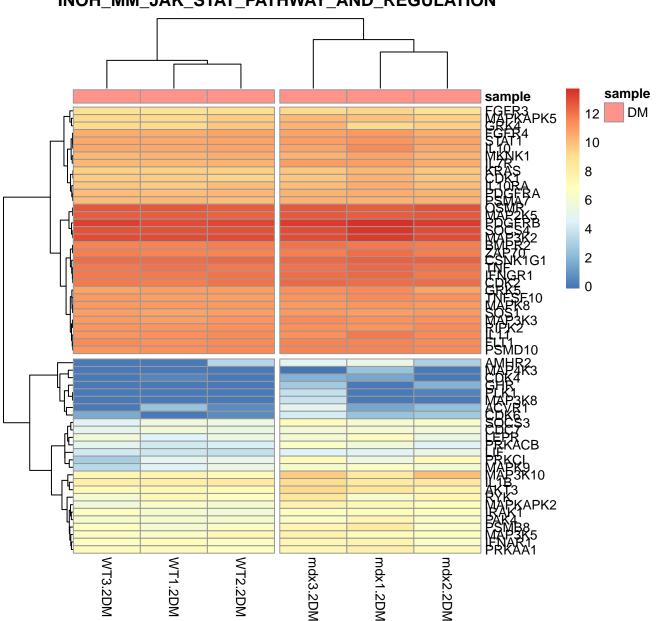
Scalling expressed matrix for genes active in INOH_MM_JAK_STAT_MOLECULARVARIATION_2



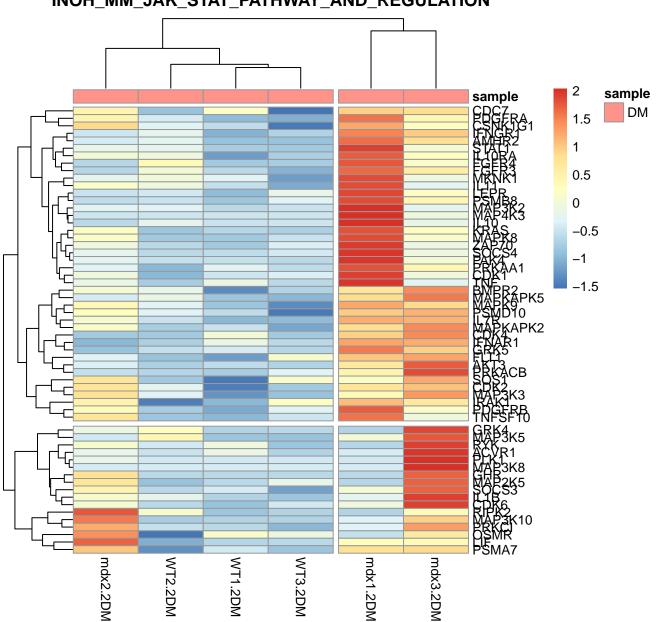
Expressed Matrix from Normalized for genes in INOH_MM_JAK_STAT_PATHWAY_AND_REGULATION



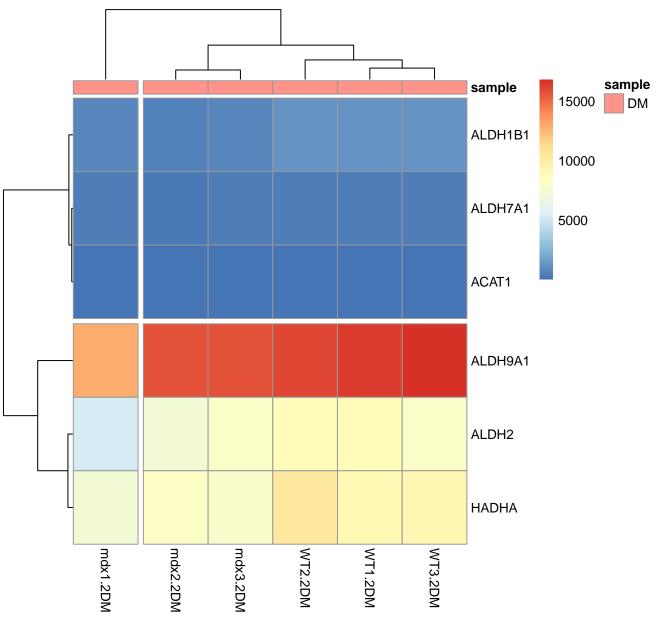
Expressed Matrix for genes active in INOH_MM_JAK_STAT_PATHWAY_AND_REGULATION



Scalling expressed matrix for genes active in INOH_MM_JAK_STAT_PATHWAY_AND_REGULATION



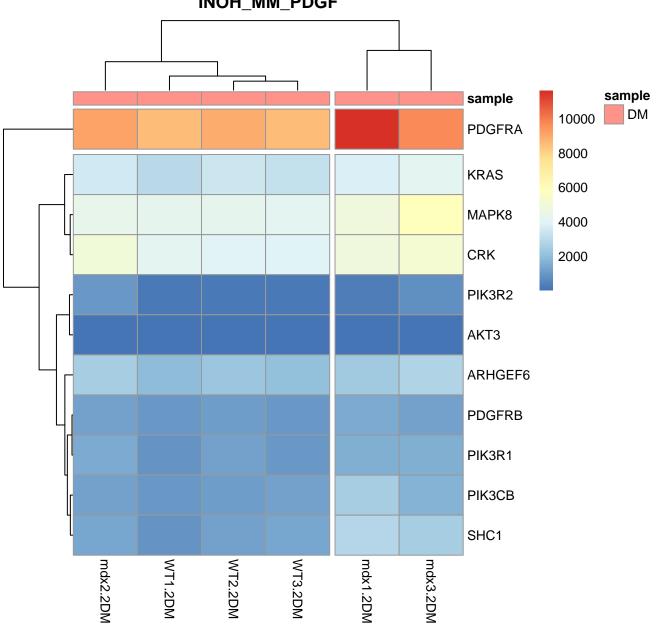
Expressed Matrix from Normalized for genes in INOH_MM_LYSINE_DEGRADATION

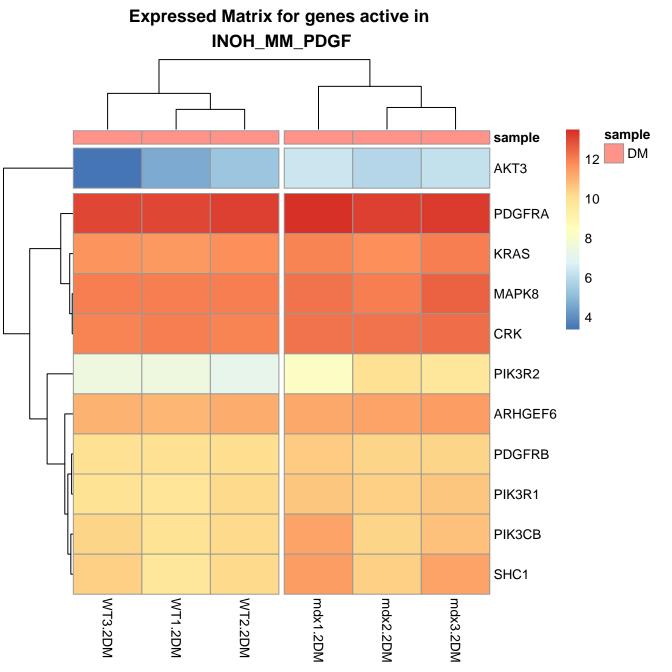


Expressed Matrix for genes active in INOH_MM_LYSINE_DEGRADATION ¹⁴ sample sample DM 12 ALDH9A1 10 8 ALDH2 6 **HADHA** ACAT1 ALDH7A1 ALDH1B1 mdx2.2DM WT2.2DM WT1.2DM WT3.2DM mdx1.2DM mdx3.2DM

Scalling expressed matrix for genes active in INOH_MM_LYSINE_DEGRADATION 1.5 sample sample DM 1 ALDH9A1 0.5 0 -0.5 ALDH2 -1 -1.5ACAT1 **HADHA** ALDH7A1 ALDH1B1 WT2.2DM WT1.2DM mdx1.2DM mdx2.2DM mdx3.2DM

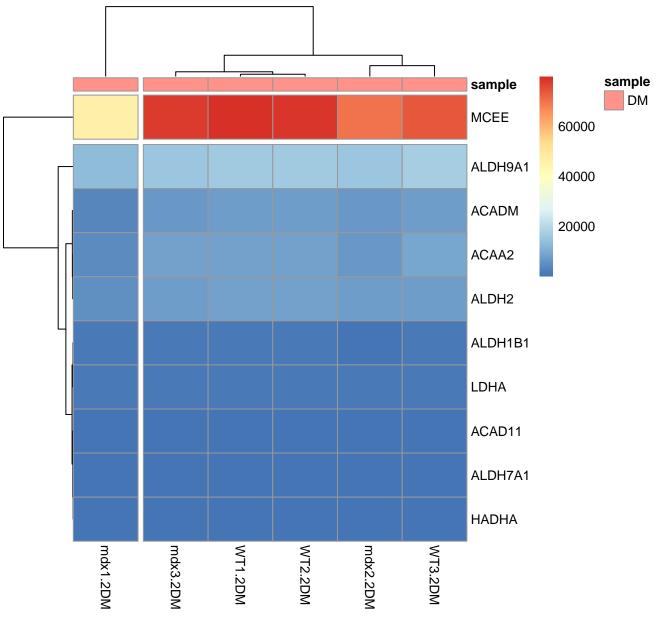
Expressed Matrix from Normalized for genes in INOH_MM_PDGF



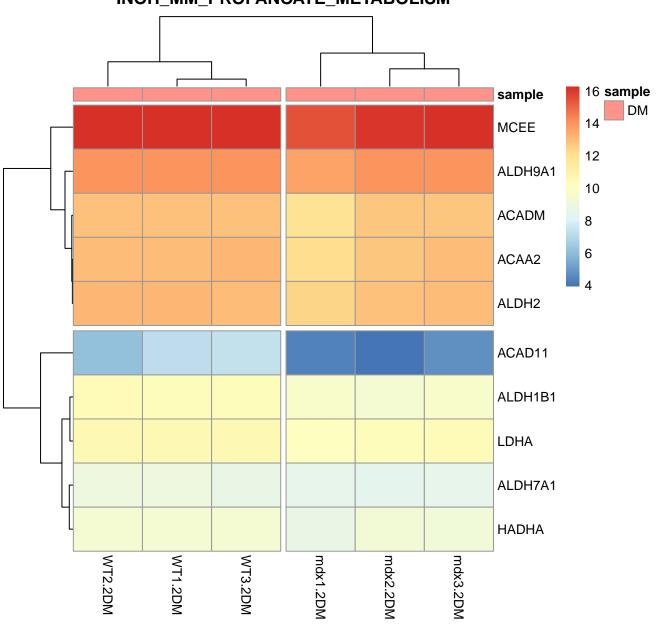


Scalling expressed matrix for genes active in INOH_MM_PDGF sample sample DM 1.5 PIK3R2 1 **CRK** 0.5 0 **PDGFRB** -0.5 PIK3R1 -1 AKT3 SHC1 **PDGFRA** PIK3CB MAPK8 **KRAS** ARHGEF6 WT2.2DM WT1.2DM WT3.2DM mdx1.2DM mdx2.2DM mdx3.2DM

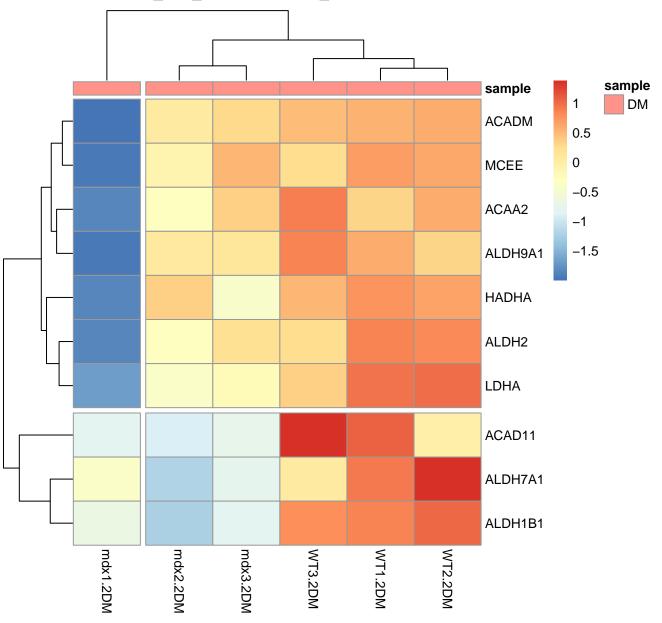
Expressed Matrix from Normalized for genes in INOH_MM_PROPANOATE_METABOLISM



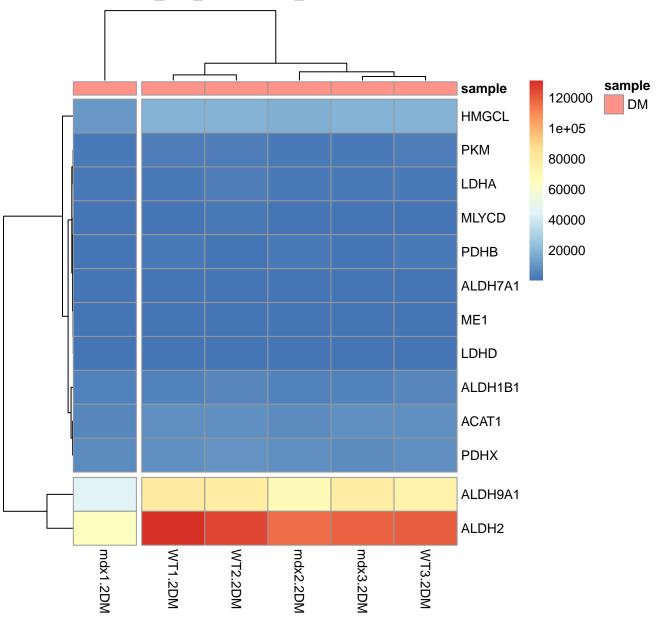
Expressed Matrix for genes active in INOH_MM_PROPANOATE_METABOLISM



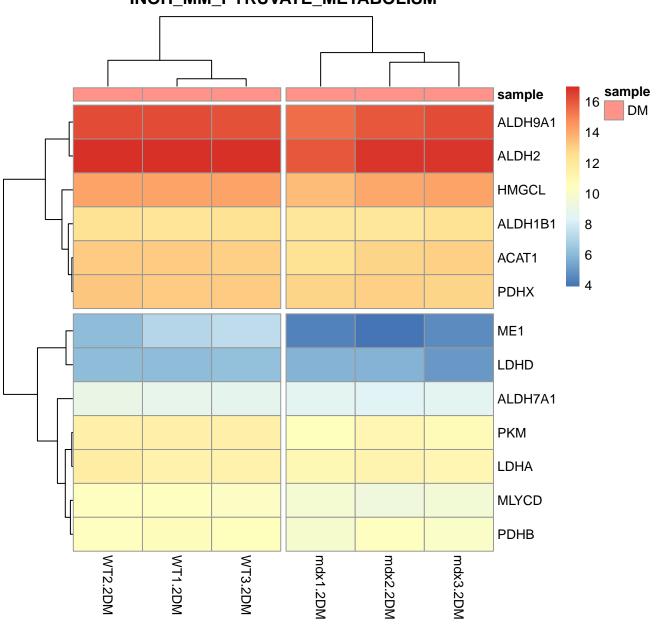
Scalling expressed matrix for genes active in INOH_MM_PROPANOATE_METABOLISM



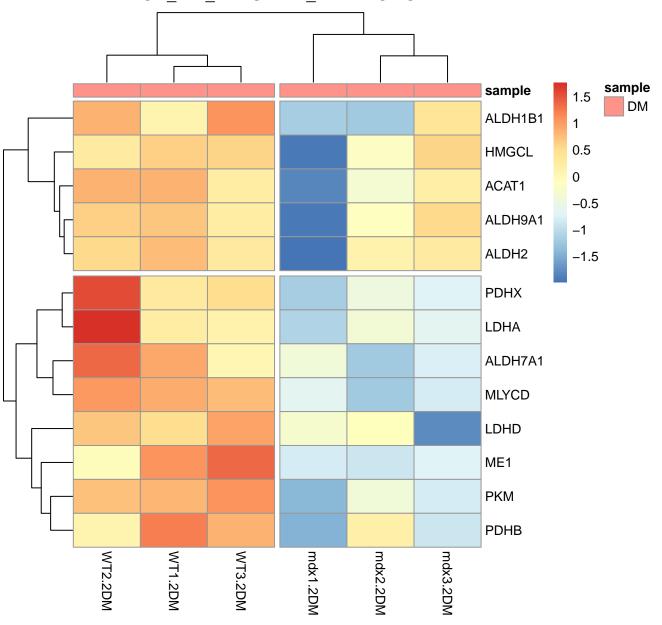
Expressed Matrix from Normalized for genes in INOH_MM_PYRUVATE_METABOLISM



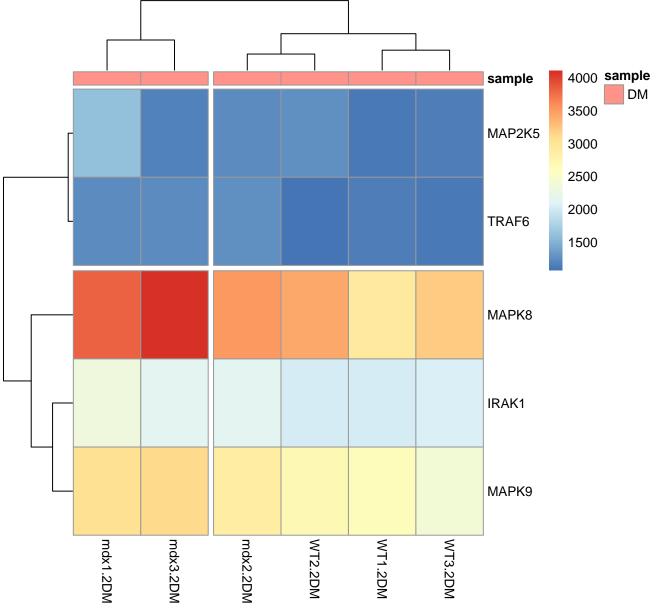
Expressed Matrix for genes active in INOH_MM_PYRUVATE_METABOLISM

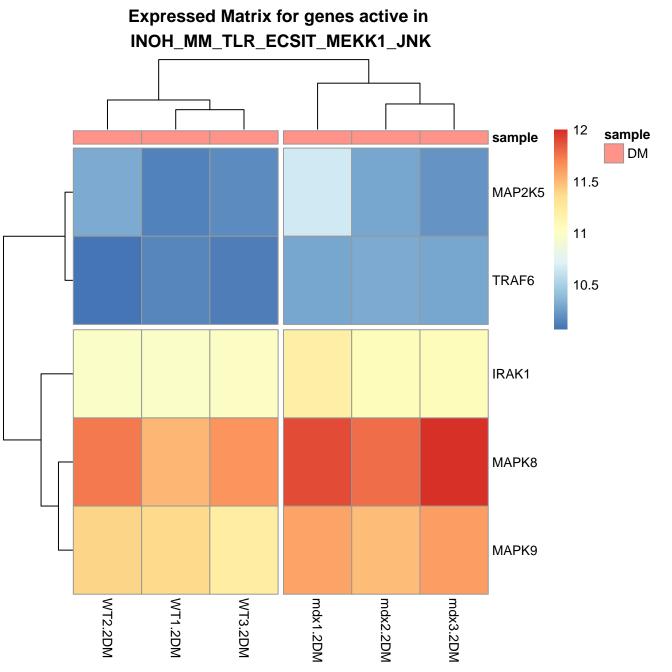


Scalling expressed matrix for genes active in INOH_MM_PYRUVATE_METABOLISM



Expressed Matrix from Normalized for genes in INOH_MM_TLR_ECSIT_MEKK1_JNK sample

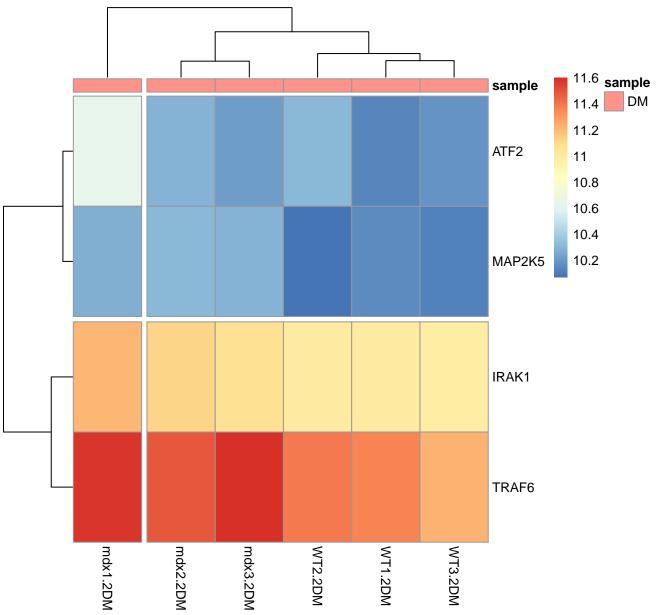




Scalling expressed matrix for genes active in INOH_MM_TLR_ECSIT_MEKK1_JNK sample sample DM 1.5 1 IRAK1 0.5 0 -0.5 MAP2K5 -1 TRAF6 MAPK8 MAPK9 WT2.2DM WT1.2DM mdx1.2DM mdx2.2DM mdx3.2DM

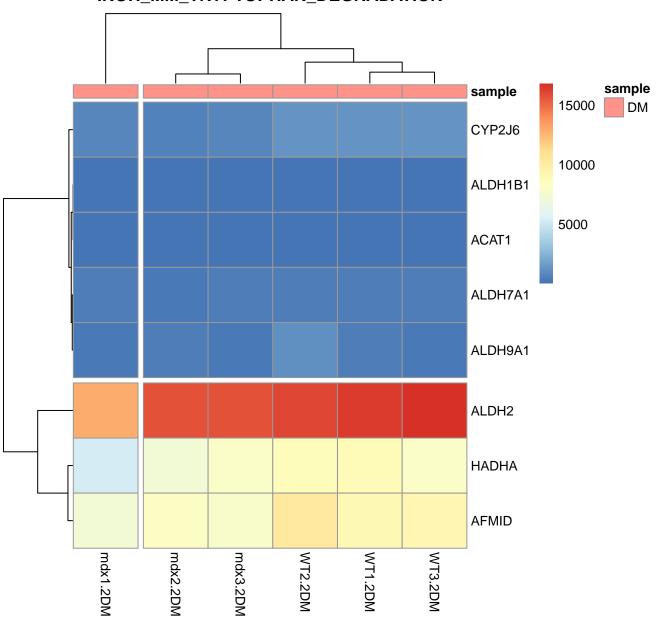
Expressed Matrix from Normalized for genes in INOH_MM_TLR_ECSIT_MEKK1_P38 3000 sample sample DM 2500 ATF2 2000 1500 MAP2K5 IRAK1 TRAF6 WT1.2DM mdx3.2DM mdx1.2DM mdx2.2DM

Expressed Matrix for genes active in INOH_MM_TLR_ECSIT_MEKK1_P38

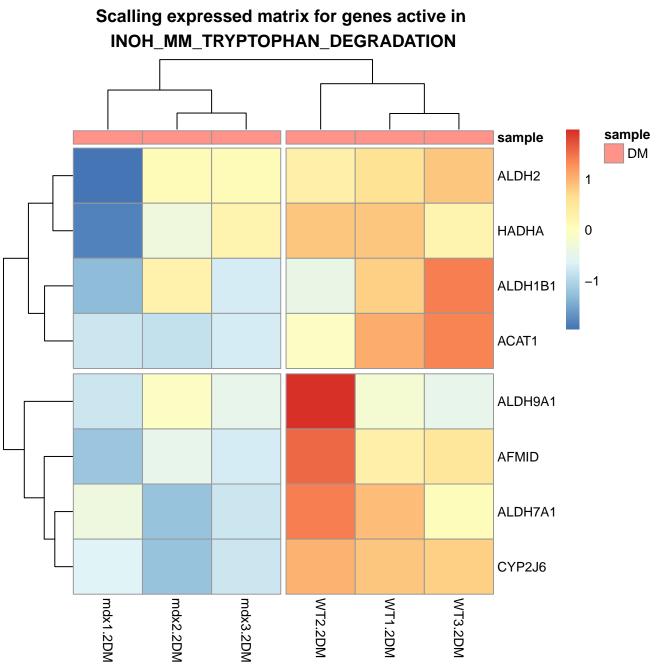


Scalling expressed matrix for genes active in INOH_MM_TLR_ECSIT_MEKK1_P38 sample sample DM 1.5 1 IRAK1 0.5 0 -0.5 -1 ATF2 MAP2K5 TRAF6 WT2.2DM WT1.2DM mdx1.2DM mdx2.2DM mdx3.2DM

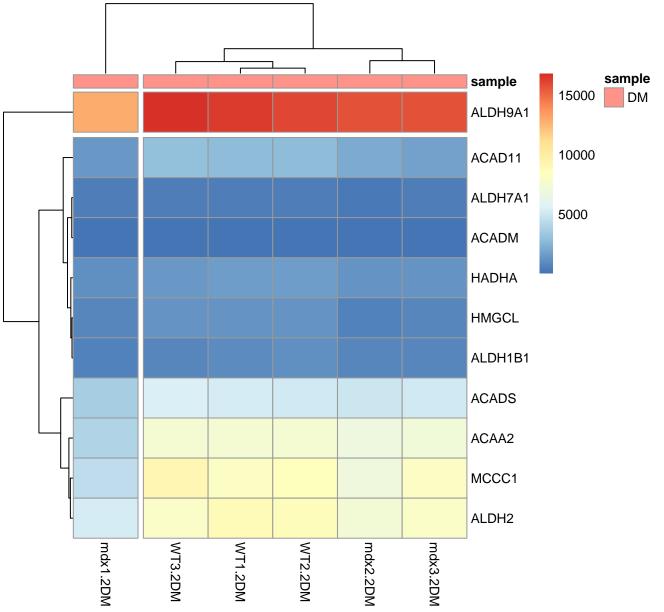
Expressed Matrix from Normalized for genes in INOH_MM_TRYPTOPHAN_DEGRADATION



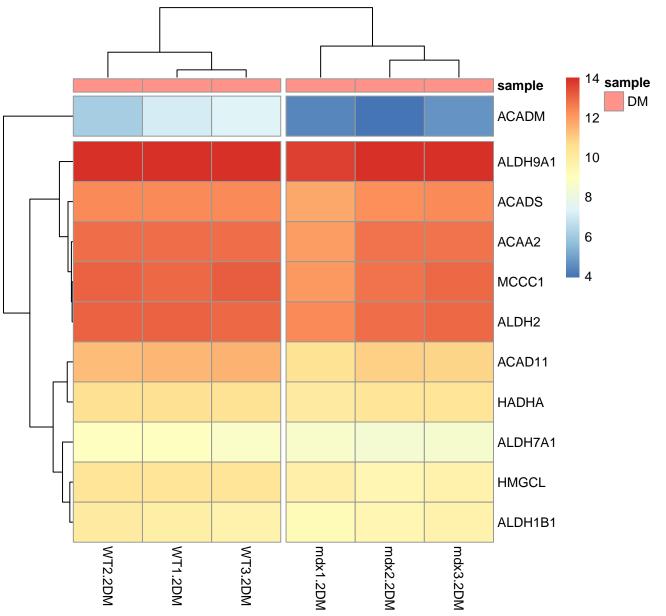
Expressed Matrix for genes active in INOH_MM_TRYPTOPHAN_DEGRADATION ¹⁴ sample sample DM 12 ALDH2 10 **HADHA** 8 **AFMID** 6 CYP2J6 ALDH7A1 ALDH9A1 ALDH1B1 ACAT1 WT2.2DM WT1.2DM WT3.2DM mdx2.2DM mdx1.2DM mdx3.2DM



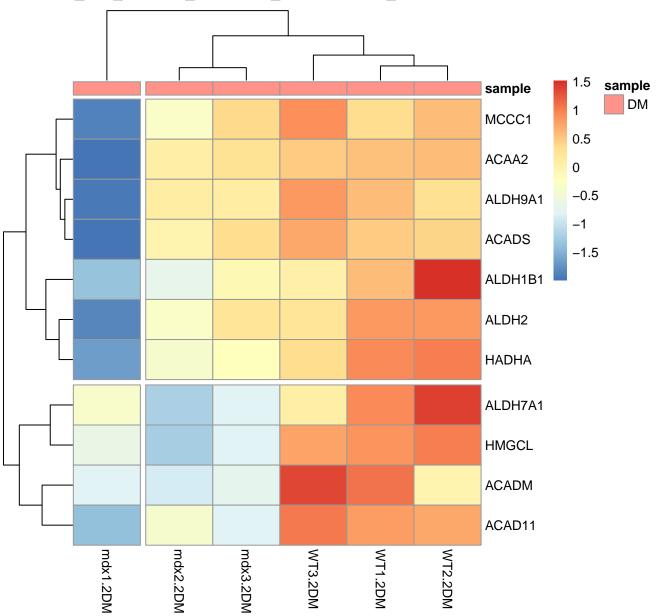
Expressed Matrix from Normalized for genes in INOH_MM_VALINE_LEUCINE_ISOLEUCINE_DEGRADATION



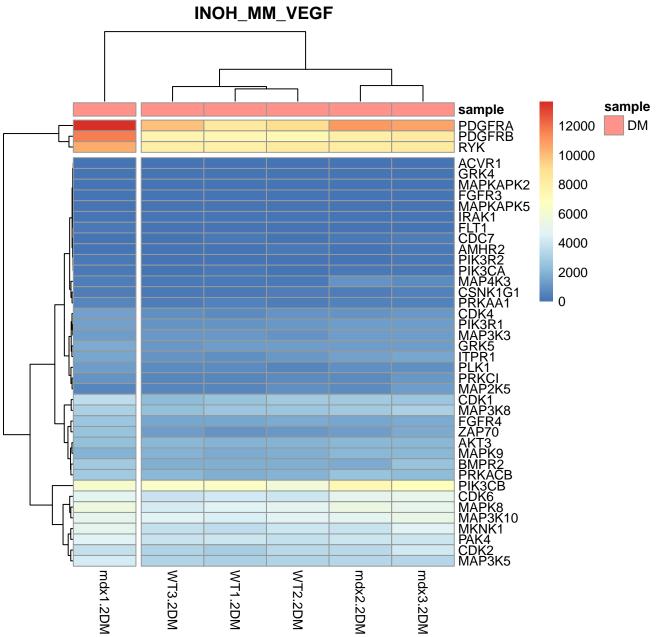
Expressed Matrix for genes active in INOH_MM_VALINE_LEUCINE_ISOLEUCINE_DEGRADATION

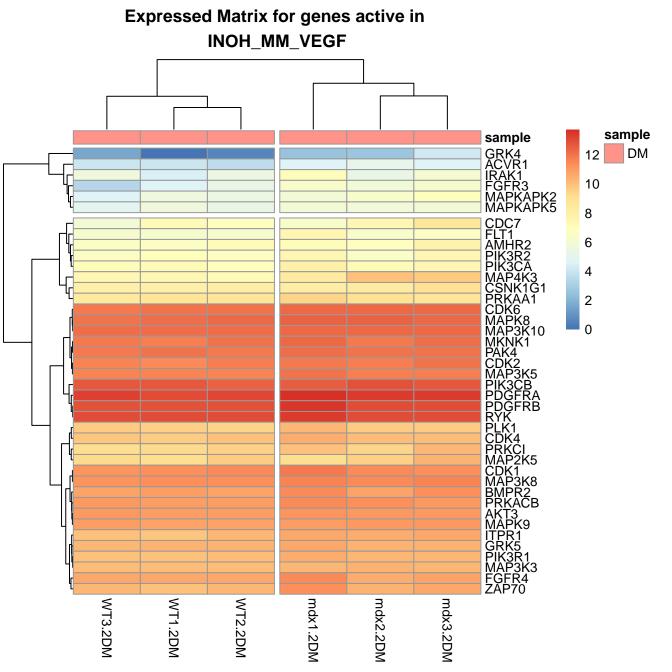


Scalling expressed matrix for genes active in INOH_MM_VALINE_LEUCINE_ISOLEUCINE_DEGRADATION



Expressed Matrix from Normalized for genes in





Scalling expressed matrix for genes active in

