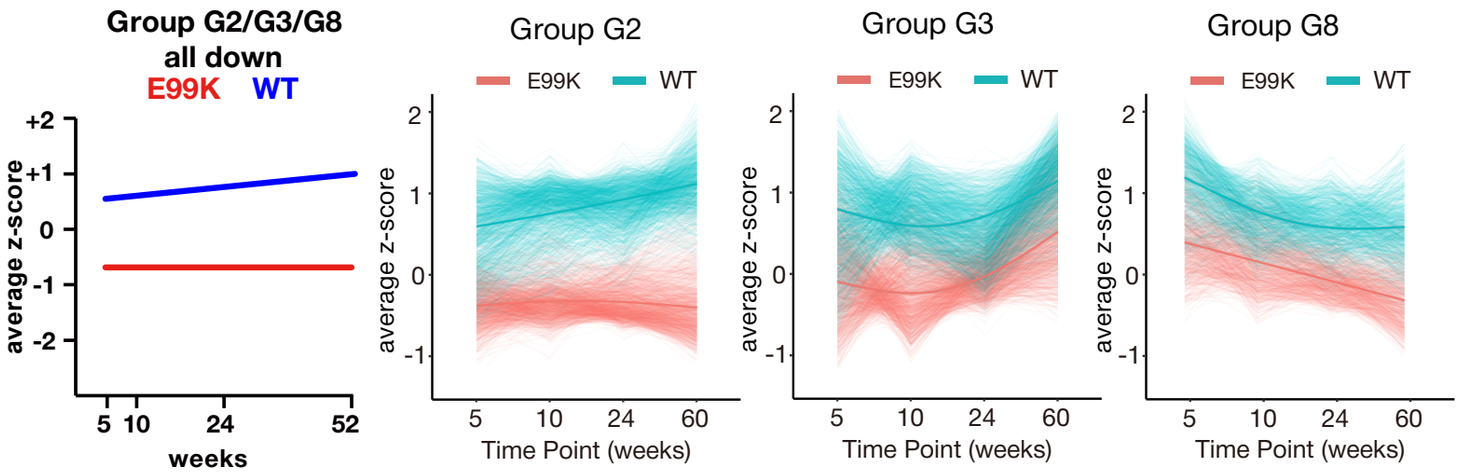

Group 2 main functional clusters

- Tricarboxylic acid cycle
  Sdhd, Immt, Pdhx, Ogdhl, Ndufa10, Slc25a11, Idh1, Idh3g, Dlat, Prdx3, Cs, Pdhb, Mdh1, Idh3b, Ndufv1, Idh2, Ndufs7, Ogdh, Aco2, Uqcrc1, Dlst, Idh3a, Mdh2, Ndufs4, Ndufs1, Ndufs2, Suclg2, Ndufa9, Sucla2, Fh1, Suclg1, Sdhb, Sdha, Sdhc, Foxred1, Glud1, Aldh5a1, Aldh4a1, Bckdha, Mpc1, Ldhb, Me3, Acad9, Apoo, Pdp2, Dmac2, Tmem126b, Ldhd
- Fatty acid β-oxidation
  Etfdh, Etfa, Hadhb, Echs1, Ech1, Eci2, Acadl, Acad8, Acadm, Hsd17b4, Scp2, Hadha, Eci1, Hadh, Gcdh, Echdc2, Acadvl, Cpt2, Ivd, Acat1, Acad11, Mccc2, Pccb, Acaa2, Acads, Mlycd, Auh, Pcca, Acsm5, Slc25a20, Crat, Mccc1, Decr1, Acsl6, Hsd17b10, Hibadh, Acad12, Prxl2a
- Mitochondrial translation
  Mrpl10, Mtrf1, Rpl3l, Mrpl50, Mrpl37, Mrps27, Mrpl39, Mrpl45, Mrpl9, Mrpl44, Mrpl46, Mrpl3, Mrpl49, Mrpl4, Metap1, Zfp30, Hhatl
- Protein targeting to mitochondrion, and ATP-dependent peptidase activity
  Timm44, Timm23, Grpel1, Trap1, Phb, Afg3l1, Clpb, Hspd1, Hspa9, Afg3l2, Dnajb12, Hspa12b, 6430571L13Rik, Tmx1
- Formation of ATP by chemiosmotic couplIng
  Slc25a3, Atp5b, Atp5g1, Atp5g3, Atp5c1, Atp5a1, Atp5pb, Cyc1, Ndufb9, Atpaf2, mt-Atp8, Atpaf1, Dmac2l
- tRNA aminoacylation
  Aars2, Vars2, Cars2, Gatb, Fars2, Sars2, Lrrc47, Qars, Hars2, Wars, Pars2, Nars2
- Ether lipid metabolism
  Enpp2, Ptdss2, Pisd, Pla2g5, Pla2g2c, Pla2g2f, Plb1, Cyp4f14, Cyp4a32, Pafah2, Plbd1, Ttpa
- Mixed, incl. muscle protein, and myofibril assembly
  Ckm, Ckmt2, Itgb1bp2, Unc45b, Tcap, Ano5, Fhl2, Hrc, Sgca, Tmod4, Myl3, Popdc2
- Purine metabolism
  Gmpr, Pde11a, Pde2a, Adsl, Nt5c3b, Entpd6, Entpd5, Slc25a19, Ak4, Ak1, Pde4a
- Peroxisome
  Pex7, Acot3, Pex11a, Abcd1, Pex19, Gnpat, Fndc5, Pex10, Amacr, Fam185a, Acot2

Group 3 main functional clusters

- Mitochondrial translation
  Chchd1, Eef1d, Mrpl42, Rpl7a, Mrps7, Mrps11, Rps13, Mrps12, Mrps15, Imp3, Ssbp1, Mrps5, Mrpl28, Gadd45gip1, Mrpl21, Mrps36, Mrpl40, Mrpl41, Mrps33, Mrpl43, Mrps21, Mrpl55, Mrpl58, Mrpl30, Mrpl2, Aurkaip1, Mrps34, Pdcd2l, Rps2, Mrps28,Mrpl14, Mrpl13, Mrps22, Mrpl22, Ears2, Noa1, Hspbp1, Mrpl11, Malsu1, Tars2, Mrps9, Rpl8, Psmg1, Mrpl32, Mrps14, Mrpl24,Ccdc124, Mrps18a, Mrpl27, Tsfm, Mrpl16, Mrps16, Mrpl36, Mrpl20, Mrpl12, Btf3l4, Nme5, Farsa, Farsb, Kcng2, Cisd3, Mrm2,Ak2, Pdcd5, Nop53, Abcf3, Sec61g, 1700021F05Rik, Srp19, Mrm3, Pebp1, Abcf2, Srp68, Mtg1, Rps17, Edf1, Mrps17, Hmgn2,Hmgn1, Mrps23, Mrps26, Mrpl23, Mrps24, Mrpl38, Mrps18c, Mrpl51, Eif5a, Rpl7l1, Rpl36, Mrps25, Mrpl48, Mrpl18, Mrps35,Mrpl34, Dap3, Mrpl15, Mrpl19, Eif1, Eif3k, Tpt1, Eif1b, Eif3j1, Dgcr2, Dgcr6, Rbfa, Mrm1, Smim11, Slc7a4, 2510002D24Rik, Rsph3b, Cfap410, Pepd, Patz1
- Oxidative phosphorylation
  Cox5a, Atp5mpl, Timm8b, Wbp2, Cox16, Cox14, Coa3, R3hdm4, Cox17, Cox11, Atp5e, Higd2a, Atp5g2, Atp5md, Ndufb1-ps, Ndufv3, Ndufa3, Atp5j2, Ndufc1, Yjefn3, Ndufa11, Higd1a, Ndufa7, Ndufb11, Atp5j, Ndufs5, Atp5l, Ndufb3, Cox8b, Ndufa13, Atp5k, Coa6, Ndufa2, Pmpcb, Cox6b2, Ndufa5, Ndufab1, Ndufb7, Cox7a2l, Ndufb4, Cox7a1, Atp5o, Atp5d, Ndufs6, Ndufa6, Cox7a2, Ndufa8, Ndufb10, Ndufb5, Ndufb8, Ndufs8, Atp5h, Ndufv2, Ndufa12, Ndufa4, Ndufs3, Uqcrh, Ndufb6, Cox7b, Cox6a2, Cox4i1, Cox7c, Uqcrfs1, Uqcr10, Cox6c, Uqcr11, Cox6b1, Uqcrq, Uqcrb, Cox5b, Spa17, Ndufaf7, Smdt1, Ndufaf6, Romo1, Timmdc1, Phpt1, Dmac1, Ndufaf2, Ndufaf3, Ndufaf1, Ndufaf8, Uqcc2
- Ubiquitin mediated proteolysis
  Rbx1, Ube2n, Rad23a, Ube2m, Cops7a, Cops6, Anapc11, Btbd6, Commd1, Commd3, Commd9, Dcun1d5, Rnf7, Ube2l3, Ube2s, Ube2k, Ube2j2, Neurl2, Ube2e3, Ube2a, Ankrd9, Ube2r2, Ube2f, Cdc34, Anapc16, Anapc13, Phc1, Pttg1, Tbc1d22a, Trpc4ap, Zfp706, Tmem243
- RNA polymerase
  Polr2f, Polr2c, Nelfcd, Nelfb, Med16, Med25, Med4, Polr2l, Polr2i, Polr2k, Polr2j, Elof1, Rtf1, Polr3gl, Maf1, Snapc5, Pcp4l1
- Regulation of ornithine decarboxylase (ODC)
  Psmb6, Psmb4, Psmc3, Psmb5, Psmb7, Oaz2, Akirin2, Oaz1, Mpnd, Psmg2, Psme1, Psmd12, Psmb2, Psmb3
- U12-type spliceosomal complex
  Ubl5, Zcrb1, Sf3b2, Cwc15, Snrnp25, Scnm1, Lsm6, Snrnp48, Snrpb, Rnf113a2, Snrpd3, Snrpd2, Snrpf, Tmem258
- Drug metabolism - cytochrome P450
  Ddt, Gstt2, Gstp1, Gstm5, Adh1, Gstp2, Gstm6, Gstm1, Mgst3, Mgst1, Gstm2, Prdx6, Gsto1
- Iron-sulfur cluster assembly
  Hscb, Lyrm4, Iscu, Bola1, Isca2, Glrx5, Nfu1, Ciapin1, Glrx2, Lias, Bola3, Kcmf1
- Anchoring of the basal body to the plasma membrane
  Rab11a, Rab11b, Rab3ip, Rabl6, Cep63, Ehd1, Cep131, Nde1, Rab4a, Ggnbp1, Rab2a, Poc1a
- Mixed, incl. HDACs deacetylate histones, and Sin3 complex
  Ctbp1, Hdac2, Cbx4, Ss18l2, Csnk2b, Sap30l, Hmg20b, Sap18, Rcor2, Deaf1

Group 8 main functional clusters

- Wnt signalling pathway
  Dvl1, Frat2, Ptch1, Wnt5a, Wif1, Fzd6, Fzd3, Fzd8, Notum, Celsr3, Prickle1, Dixdc1
- Regulation of TOR signalling
  Itfg2, Mlst8, Flcn, Slc38a9, Tbc1d7, Castor2, Rragb, Nprl3, Wdr24, Szt2, Tbc1d22b
- Salivary secretion
  Prkaca, Rps6ka5, Phka2, Olfr78, Adrb1, Atp1b2, Pde4c, Adcy6, Akap5, Adra1b
- Mixed, incl. long-chain fatty acid-CoA ligase activity, and carnitine O-palmitoyltransferase N-terminus
  Ppard, Acsl3, Slc27a1, Ucp3, Pdk4, Srebf1, Cpt1b
- RET signalling
  Vav2, Ret, Gdnf, Gab1, Plcg1, Ntf3, Impa2
- Histone lysine demethylation
  Setd1b, Kdm4b, Kdm4a, Kdm6b, Setd1a, Kdm8, Has3
- Cell communication involved in cardiac conduction
  Jup, Actc1, Gja1, Dsc2, Gja5, Ptgfr
- Kinesin complex
  Kifc2, Ywhae, Kif28, Kif26a, Mlf1, Nav2
- RNA polymerase II preinitiation complex assembly
  Med24, Taf4, Ercc2, Med26, Ddb2, Cops8
- Peroxisomal protein import
  Acot1, Nudt19, Zfand6, Pex26, Pex5, Mb21d2