PORPHYRIN AND CHLOROPHYLL METABOLISM Ferritin-Fe Transferrin-Fe 1.16.1.2 Uroporphyrin I **♣o**°Fe K13624... 4,5-Dioxopentanoate Coproporphyrin I ^ე Uroporphyrinogen 🎾 Apoferitin Apotransferrin Coproporphyrinogen I Uroporphyrin III Coproporphyrin III Fe-coproporphyrin III PMT_1240 2.6.1.43 spontaneous Uropor-HemD phyrinogen III HemE HemY HemF 5-Amino-HemH HemB HemC 5-Oxo-δ-bilirubin levulinate 🛡 K00231 PMT_1240 PMT_1547 PMT_1273 K07145 **PO** (3Z)-Phytochromobilin K00230 Protoporphynin IX Protoheme Porphobilinogen Hydroxymethyl-Copropor K08101 phyrinogen III HemN HemG (Heme) bilane CysG PMT_2237 Protopor-K00510... Biliverdin phyrinogen IX PMT_1339 PMT_1296 PMT 0590 HemL (Anaerobic pathway) 3Z)-Phycocyanobilin (Aerobic pathway) PMT_1685 PMT_0815. Siroheme <u>CysG</u> Sirohydrochlorin CysG ▼Precomin 2 ФHeme О **→**O Peroxidase K00643 K02302... CON-PMT_1340 PMT_1687 PMT_0901 ്**്**41Glutamate-CbiK Mg-protoporphyrin IX **►**○ Myoglobin 1-semialdehyde (3Z)-Phycoerythrobilin 15,16-Dihydro-°**©**°Co-sirohydrochlorin ^c ජීHeme A PMT_0901 K00214... biliverdin **₽**0° PMT_0567 PMT_2040 PMT_0198 PMT_0198 HemA CbiL CobI Cytochrome a K08100 Glycine O Co-factor 3 K01764 Ni-sirohydro-catoo °Ф̂Ртесоттіп ЗА ▼ Mg-protoporphyrin IX ©°13-monomethyl ester _Glutamyl_c tRNA(Glú) Cytochrome c K02229 CobG D-Urobilinogen **₩**084 (Aerobic (Anaerobic **PO** Catalase pathway) ்**ூ**©o-precomin 3 ©Precomin 3B pathway) PMT_1104 PMT_1308. D-Urobilin Bilirubin Bilirubin PMT_1772 CbiH CobJ K04034 PMT_2196 β-diglucuronide Ni-sirohydro- thlorin chlorin ▼Co-precomin 4 Ò Oxyhemoglobin Hemoglobin L-Glutamate C00028 °🍄 Precomin 4 FO I-Urobilinogen Zn-Bacterioa,c-diamide PMT_1325 PMT_1325 CobM chlorophyll a CbiF I-Urobilin ୍ରତ୍ୟ3¹-Hydroxy-Mg-protoporphyrin IX 13-monomethyl ester K21610.. °**©**Precorrin 5 °**°**Co-precomin 5A Alanine, aspartate and K04034 PMT_2196 glutamate metabolism PMT_1772 CbiG **FO** L-Stercobilinogen L-Stercobilin c. 43¹-Oxo-Mg-protoporphyrin IX 13-monomethyl ester CobF 15,17³-Seco-F 430-17³-acid ♥ °♥³Co-precorrin 5B CbiD 12-Ethyl-8-isobutyl-3-vinyl-bacteriochlorophyllide <u>d</u> K04034 PMT_2196 K21612 °**Ç**°2Co-precomin 6A. °🍄 Precomin 6A K13603 K19073 PMT_1264 CbiJ CobK Divinylproto-chlorophyllide **≠**©°Protochlorophyllide K13601 Ó °**Ò**"Co-precorrin 6B °©Precorrin 6B K04036 Coenzyme F430 12-Ethyl-8-propyl-3-vinyl-bacteriochlorophyllide d K13603 CbiT PMT_0370 🗘 Co-precomin 7 Bacterio-K13601 chlorophyllide c K03399 CbiE 8,12-Diethyl-3-vinyl-K13605 **PO** K13603 bacteriochlorophyllide d Bacterio-°**⊙**•Co-precomin 8X °**⊙**Precomin 8X chlorophyll c K13604 K13602 PMT_0480. PMT_0480. PMT_1215... PMT_0075 CbiC PMT_0075 CobH K13603 K13605 **₽**0° K21058 °Ф°Соbyrinate °**⊘**Hydrogenobyrinate Glycine, threonine Bacterio-Bacterio-8-Ethyl-12-methyl-3-vinyl-bacteriochlorophyllide d metabolism chlorophyllide d chlorophyll d PMT_1104 CbiA PMT_1104 CobB Geranylgeranyl-bacteriochlorophyllide b Hydrogenobyrinate Bacterio-3-Hydroxyethyl-chlorophyllide a chlorophyllid<u>e</u> b PMT_0727 CobNST Cob(II)yrinate a,c diamide Bacterio-chlorophyll b K11336 **₽**054 3-Hydroxyethyl-bacteriochlorophyllide a **₽©** K11337 3-Vinylbacterio-chlorophyllide a Bacterio-pheophytins K13786 Bacterio-Geranylgeranyl-bacteriochlorophyllide a Bacteriochlorophyllide a Cob(I)yrinate a,c diamide chlorophyll a K11333... **₽**0 04 Pheophorbide a Chlorophyllide a CobA PMT_1243... CobO K19073 K13071 For Red chlorophyll catabolite Divinyl-Adenosyl cobyrinate chlorophyllide a K13600 K13600 CbiP PMT_1183 CobQ K13544 K13545 -Chloro-K13606 (R)-1-Amino-Adenosyl cobyrinate hexaamide phyllide b propan-2-ol 7-Hydroxy-chlorophyllide a CobC CobD K08099 K08099 PMT_0312 CbiB CbiZprotein α PMT_0272 PMT_0272 cobinamide C Pyro-pheophorbide a Primary fluorescent chlorophyll catabolite PMT_1243... 7-Hydroxy-chlorophyl<u>l a</u> __CO_____ (R)-1-Amino-propan-2-yl phosphate CobU PMT_0749 CobP Cobinamide L-Threonine ^{_}©്7Chlorophyll b K18010 04 phosphate Adenosyl cobinamide Divinyl-Ó PMT_0312 Chlorophyll a chloróphyll a PMT_0749 CobP Cyanocob(III)alamin L-Threonine CobU CobU α-Ribazole-5'-P α-Ribazole Adenosine-GDP-cobinamide Riboflavin Pheophytins K02226 1.16.1.6 metabolism Dimethyl- CobT benzimidazole PMT_1861 CobC CobV PMT_1243.. C00094 1.16.1.4 1.16.1.5 Aquacob(III)alamin Vitamin B12 Vitamin B12s Vitamin B12r coenzyme 00860 4/26/17 (c) Kanehisa Laboratories