Supplemental data Figure 1. Clustal W alignment of 142 ferrochelatase primary sequences retrieved from the public database.

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CLUSTAL W (1.83) multiple sequence alignment

sp|P42043|HEMH1_ARATH      MQATAL-SSGFN-------PLTKRKDHRFPRSCSQRNSLSLIQCD----- 37
sp|P42044|HEMH_CUCSA       MDAASS-SLALSNIKLHGSTNTLNSDQRISSLCSLPKSRVTFSCKTSGNL 49
sp|P42045|HEMH_HORVU       MECVRSGALDLGR------SGNFLGKSGSTTSCGKVRCSTNLAGSTKCEQ 44
sp|O04921|HEMH2_ARATH      -----------------MNCPAMTASPSSSSSSSYSTFRPPPPLLPQLSN 33
sp|O22101|HEMH_ORYSA       ------------------NSSRVNLSRTYAIKSCSVSSRTG-LCLGQCYH 31
sp|Q8YQR8|HEMH_ANASP       --------------------------------------------------
sp|P54225|HEMH_SYNY3       --------------------------------------------------
sp|Q8DGU6|HEMH_SYNEL       --------------------------------------------------
sp|Q7VD58|HEMH_PROMA       --------------------------------------------------
sp|Q7V2F5|HEMH_PROMP       --------------------------------------------------
sp|Q7V6C6|HEMH_PROMM       --------------------------------------------------
sp|Q7U5G0|HEMH_SYNPX       --------------------------------------------------
sp|Q7NMC7|HEMH_GLOVI       --------------------------------------------------
sp|Q9ZC84|HEMH_RICPR       --------------------------------------------------
sp|Q68VM9|HEMH_RICTY       --------------------------------------------------
sp|Q92FV4|HEMH_RICCN       --------------------------------------------------
sp|Q73FY6|HEMH_WOLPM       --------------------------------------------------
sp|P57777|HEMH_CAUCR       --------------------------------------------------
sp|O67083|HEMH_AQUAE       --------------------------------------------------
sp|P22830|HEMH_HUMAN       -------------------------------------------------M 1
sp|P22315|HEMH_MOUSE       -------------------------------------------------M 1
sp|P22600|HEMH_BOVIN       --------------------------------------------------
sp|O42479|HEMH_CHICK       --------------------------------------------------
sp|O57478|HEMH_XENLA       --------------------------------------------------
sp|Q9V9S8|HEMH_DROME       --------------------------------------------------
sp|O59786|HEMH_SCHPO       --------------------------------------------------
sp|P16622|HEMH_YEAST       --------------------------------------------------
sp|Q6APB0|HEMH_DESPS       --------------------------------------------------
sp|Q747F5|HEMH_GEOSL       --------------------------------------------------
sp|Q9ZKD4|HEMH_HELPJ       --------------------------------------------------
sp|P56107|HEMH_HELPY       --------------------------------------------------
sp|Q7M7P9|HEMH_WOLSU       --------------------------------------------------
sp|Q7VHH1|HEMH_HELHP       --------------------------------------------------
sp|Q9PI08|HEMH_CAMJE       --------------------------------------------------
sp|Q8DFM2|HEMH_VIBVU       --------------------------------------------------
sp|Q7MMR4|HEMH_VIBVY       --------------------------------------------------
sp|Q9KTB6|HEMH_VIBCH       --------------------------------------------------
sp|Q87RH3|HEMH_VIBPA       --------------------------------------------------
sp|Q6LTE0|HEMH_PHOPR       --------------------------------------------------
sp|Q8EFF4|HEMH1_SHEON      --------------------------------------------------
sp|Q8XD39|HEMH_ECO57       --------------------------------------------------
sp|P23871|HEMH_ECOLI       --------------------------------------------------
sp|Q8FK83|HEMH_ECOL6       --------------------------------------------------
sp|Q83SE5|HEMH_SHIFL       --------------------------------------------------
sp|Q8Z8T2|HEMH_SALTI       --------------------------------------------------
sp|P37408|HEMH_SALTY       --------------------------------------------------
sp|Q8ZC98|HEMH_YERPE       --------------------------------------------------
sp|Q05338|HEMH_YERPS       --------------------------------------------------
sp|P43413|HEMH_YEREN       --------------------------------------------------
sp|Q6D7Z4|HEMH_ERWCT       --------------------------------------------------
sp|Q7N0P6|HEMH_PHOLL       --------------------------------------------------
sp|P43868|HEMH_HAEIN       --------------------------------------------------
sp|P57874|HEMH_PASMU       --------------------------------------------------
sp|Q65SV7|HEMH_MANSM       --------------------------------------------------
sp|Q8CWW4|HEMH_STRMU       --------------------------------------------------
sp|Q8D226|HEMH_WIGBR       --------------------------------------------------
sp|Q8EBZ7|HEMH2_SHEON      --------------------------------------------------
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sp|Q6F7N0|HEMH_ACIAD       --------------------------------------------------
sp|Q7WGI0|HEMH_BORBR       --------------------------------------------------
sp|Q7W515|HEMH_BORPA       --------------------------------------------------
sp|Q7VVX8|HEMH_BORPE       --------------------------------------------------
sp|Q62HD1|HEMH_BURMA       --------------------------------------------------
sp|Q63R43|HEMH_BURPS       --------------------------------------------------
sp|Q8XW32|HEMH_RALSO       --------------------------------------------------
sp|Q7NV65|HEMH_CHRVO       --------------------------------------------------
sp|Q82UK8|HEMH_NITEU       --------------------------------------------------
sp|Q9JVA5|HEMH_NEIMA       --------------------------------------------------
sp|Q9K097|HEMH_NEIMB       --------------------------------------------------
sp|Q8PEX0|HEMH_XANAC       --------------------------------------------------
sp|Q8P3H6|HEMH_XANCP       --------------------------------------------------
sp|Q9PFU1|HEMH_XYLFA       --------------------------------------------------
sp|Q87B82|HEMH_XYLFT       --------------------------------------------------
sp|Q607T4|HEMH_METCA       --------------------------------------------------
sp|Q8U9F7|HEMH_AGRT5       --------------------------------------------------
sp|Q92M52|HEMH_RHIME       --------------------------------------------------
sp|Q93TG2|HEMH_BRUME       --------------------------------------------------
sp|Q98H61|HEMH_RHILO       --------------------------------------------------
sp|P28602|HEMH_BRAJA       --------------------------------------------------
sp|Q6NBF3|HEMH_RHOPA       --------------------------------------------------
sp|Q59735|HEMH_RHOCA       --------------------------------------------------
sp|P57779|HEMH_ZYMMO       --------------------------------------------------
sp|Q833G5|HEMH_ENTFA       --------------------------------------------------
sp|Q9CFB4|HEMH_LACLA       --------------------------------------------------
sp|Q67T48|HEMH_SYMTH       --------------------------------------------------
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sp|Q888A2|HEMH_PSESM       --------------------------------------------------
sp|Q88PV4|HEMH_PSEPK       --------------------------------------------------
sp|Q9HVD7|HEMH_PSEAE       --------------------------------------------------
sp|Q6MHT3|HEMH_BDEBA       --------------------------------------------------
sp|Q83FA4|HEMH_COXBU       --------------------------------------------------
sp|Q6MAW8|HEMH_PARUW       --------------------------------------------------
sp|Q7MXP4|HEMH_PORGI       --------------------------------------------------
sp|Q824K8|HEMH_CHLCV       --------------------------------------------------
sp|Q9Z7V1|HEMH_CHLPN       --------------------------------------------------
sp|Q9PJQ6|HEMH_CHLMU       --------------------------------------------------
sp|O84492|HEMH_CHLTR       --------------------------------------------------
sp|Q8GCV0|HEMH_LEPBI       --------------------------------------------------
sp|Q81U22|HEMH1_BACAN      --------------------------------------------------
sp|Q6HM97|HEMH1_BACHK      --------------------------------------------------
sp|Q63ES4|HEMH1_BACCZ      --------------------------------------------------
sp|Q73C98|HEMH1_BACC1      --------------------------------------------------
sp|Q81GW5|HEMH1_BACCR      --------------------------------------------------
sp|P32396|HEMH_BACSU       --------------------------------------------------
sp|Q8ERX9|HEMH_OCEIH       --------------------------------------------------
sp|Q71XF4|HEMH_LISMF       --------------------------------------------------
sp|Q8Y565|HEMH_LISMO       --------------------------------------------------
sp|Q929G2|HEMH_LISIN       --------------------------------------------------
sp|P64124|HEMH_STAAM       --------------------------------------------------
sp|P64125|HEMH_STAAN       --------------------------------------------------
sp|Q6G8A3|HEMH_STAAS       --------------------------------------------------
sp|P64126|HEMH_STAAW       --------------------------------------------------
sp|Q6GFM4|HEMH_STAAR       --------------------------------------------------
sp|Q8CNS1|HEMH_STAEP       --------------------------------------------------
sp|Q81TU9|HEMH2_BACAN      --------------------------------------------------
sp|Q6HM28|HEMH2_BACHK      --------------------------------------------------
sp|Q63EK7|HEMH2_BACCZ      --------------------------------------------------
sp|Q73C08|HEMH2_BACC1      --------------------------------------------------
sp|Q81GN7|HEMH2_BACCR      --------------------------------------------------
sp|Q9KDK9|HEMH_BACHD       --------------------------------------------------
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sp|Q5WHT1|HEMH_BACSK       --------------------------------------------------
sp|Q72L32|HEMH_THET2       --------------------------------------------------
sp|Q9RV98|HEMH_DEIRA       --------------------------------------------------
sp|Q97R30|HEMH_STRPN       --------------------------------------------------
sp|Q8DQ04|HEMH_STRR6       --------------------------------------------------
sp|Q8FTB1|HEMH_COREF       --------------------------------------------------
sp|Q8NQA1|HEMH_CORGL       --------------------------------------------------
sp|Q6NH66|HEMH_CORDI       --------------------------------------------------
sp|Q740Y1|HEMH_MYCPA       --------------------------------------------------
sp|P71765|HEMH_MYCTU       --------------------------------------------------
sp|Q9CBM2|HEMH_MYCLE       --------------------------------------------------
sp|Q5YU18|HEMH_NOCFA       --------------------------------------------------
sp|O07401|HEMH_MYCAV       --------------------------------------------------
sp|Q83H94|HEMH_TROW8       --------------------------------------------------
sp|Q83FJ2|HEMH_TROWT       --------------------------------------------------
sp|Q6AHF2|HEMH_LEIXX       --------------------------------------------------
sp|Q82KJ6|HEMH_STRAW       --------------------------------------------------
sp|O50533|HEMH_STRCO       --------------------------------------------------
sp|Q7UFZ7|HEMH_RHOBA       --------------------------------------------------
sp|P72183|HEMH_PROFR       --------------------------------------------------
sp|Q9HLB8|HEMH_THEAC       --------------------------------------------------
sp|Q978U9|HEMH_THEVO       --------------------------------------------------


sp|P42043|HEMH1_ARATH      -IKERSFGESMTITN--------RGLSF-----KTNVFEQARSV-TGDCS 72
sp|P42044|HEMH_CUCSA       QVRDRSTGLVVSCSSSNGDRDVIQGLHLSGPIEKKSRLGQACCS-VGTFT 98
sp|P42045|HEMH_HORVU       NLHGKAKPLLLSASGKARG---TSGLVHRSPVLKHQHHLSVRSTSTDVCT 91
sp|O04921|HEMH2_ARATH      DSQRSVVMHCTRLPFEAFAATSSNRLLGKHSLPLRAALVTSNPLNISSSS 83
sp|O22101|HEMH_ORYSA       K--KSSACRCK---------------LGWSSQPLSSLRHHLRVHSSASEA 64
sp|Q8YQR8|HEMH_ANASP       --------------------------------------------------
sp|P54225|HEMH_SYNY3       --------------------------------------------------
sp|Q8DGU6|HEMH_SYNEL       --------------------------------------------------
sp|Q7VD58|HEMH_PROMA       --------------------------------------------------
sp|Q7V2F5|HEMH_PROMP       --------------------------------------------------
sp|Q7V6C6|HEMH_PROMM       --------------------------------------------------
sp|Q7U5G0|HEMH_SYNPX       --------------------------------------------------
sp|Q7NMC7|HEMH_GLOVI       --------------------------------------------------
sp|Q9ZC84|HEMH_RICPR       --------------------------------------------------
sp|Q68VM9|HEMH_RICTY       --------------------------------------------------
sp|Q92FV4|HEMH_RICCN       --------------------------------------------------
sp|Q73FY6|HEMH_WOLPM       --------------------------------------------------
sp|P57777|HEMH_CAUCR       --------------------------------------------------
sp|O67083|HEMH_AQUAE       --------------------------------------------------
sp|P22830|HEMH_HUMAN       RSLGANMAAALRAAGVLLRDPLASSSWRVCQPWRWKSGAAAAAVTTETAQ 51
sp|P22315|HEMH_MOUSE       LSASANMAAALRAAGALLREPLVHGSSRACQPWRCQSG-AAVAATTEKVH 50
sp|P22600|HEMH_BOVIN       ------MAAALRSAGVLLRDRLLYGGSRACQPRRCQSGAATAAAATETAQ 44
sp|O42479|HEMH_CHICK       ------MAAAGRAA-----RPLVAGGRQLRVPLRWRGQVAAAAPS----- 34
sp|O57478|HEMH_XENLA       -------MAAFRAAHRLLGHILRNESSAGLVTQRWSSSAAVASVP----- 38
sp|Q9V9S8|HEMH_DROME       ---------------------MFLHNTKFC---RLASGLAGGVRN----- 21
sp|O59786|HEMH_SCHPO       -------------------MSVSSYSSDASSTVMDESPPNGVTKS----- 26
sp|P16622|HEMH_YEAST       ----------------MLSRTIRTQGSFLRRSQLTITRSFSVTFN----- 29
sp|Q6APB0|HEMH_DESPS       --------------------------------------------------
sp|Q747F5|HEMH_GEOSL       --------------------------------------------------
sp|Q9ZKD4|HEMH_HELPJ       -----------------------------------------------MNL 3
sp|P56107|HEMH_HELPY       -----------------------------------------------MDL 3
sp|Q7M7P9|HEMH_WOLSU       --------------------------------------------------
sp|Q7VHH1|HEMH_HELHP       --------------------------------------------------
sp|Q9PI08|HEMH_CAMJE       --------------------------------------------------
sp|Q8DFM2|HEMH_VIBVU       --------------------------------------------------
sp|Q7MMR4|HEMH_VIBVY       --------------------------------------------------
sp|Q9KTB6|HEMH_VIBCH       --------------------------------------------------
sp|Q87RH3|HEMH_VIBPA       --------------------------------------------------
sp|Q6LTE0|HEMH_PHOPR       --------------------------------------------------
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sp|Q8EFF4|HEMH1_SHEON      ----------------------------------------------MLAC 4
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sp|P23871|HEMH_ECOLI       --------------------------------------------------
sp|Q8FK83|HEMH_ECOL6       --------------------------------------------------
sp|Q83SE5|HEMH_SHIFL       --------------------------------------------------
sp|Q8Z8T2|HEMH_SALTI       --------------------------------------------------
sp|P37408|HEMH_SALTY       --------------------------------------------------
sp|Q8ZC98|HEMH_YERPE       --------------------------------------------------
sp|Q05338|HEMH_YERPS       --------------------------------------------------
sp|P43413|HEMH_YEREN       --------------------------------------------------
sp|Q6D7Z4|HEMH_ERWCT       --------------------------------------------------
sp|Q7N0P6|HEMH_PHOLL       --------------------------------------------------
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sp|P57874|HEMH_PASMU       --------------------------------------------------
sp|Q65SV7|HEMH_MANSM       --------------------------------------------------
sp|Q8CWW4|HEMH_STRMU       --------------------------------------------------
sp|Q8D226|HEMH_WIGBR       --------------------------------------------------
sp|Q8EBZ7|HEMH2_SHEON      --------------------------------------------------
sp|Q6F7N0|HEMH_ACIAD       --------------------------------------------------
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sp|Q7W515|HEMH_BORPA       --------------------------------MFLRLFKYLWPERYLPEI 18
sp|Q7VVX8|HEMH_BORPE       --------------------------------MFLRLFKYLWPERYLPET 18
sp|Q62HD1|HEMH_BURMA       -------------------------------MSFDSVPRHALSMRFDLEP 19
sp|Q63R43|HEMH_BURPS       -------------------------------MSFDSVPRHALSMRFDLEP 19
sp|Q8XW32|HEMH_RALSO       -------------------------------------------MPFLPEP 7
sp|Q7NV65|HEMH_CHRVO       ----------------------------------------MAMPRYLTEP 10
sp|Q82UK8|HEMH_NITEU       ------------------------------------------MTRMLPEP 8
sp|Q9JVA5|HEMH_NEIMA       ------------------------------------------MLPFLPEP 8
sp|Q9K097|HEMH_NEIMB       ------------------------------------------MLPFFPEP 8
sp|Q8PEX0|HEMH_XANAC       --------------------------------------------------
sp|Q8P3H6|HEMH_XANCP       --------------------------------------------------
sp|Q9PFU1|HEMH_XYLFA       --------------------------------------------------
sp|Q87B82|HEMH_XYLFT       --------------------------------------------------
sp|Q607T4|HEMH_METCA       --------------------------------------------------
sp|Q8U9F7|HEMH_AGRT5       -----------------------------------------MATELSALP 9
sp|Q92M52|HEMH_RHIME       ---------------------------------------------MDAN- 4
sp|Q93TG2|HEMH_BRUME       ---------------------------------MSGTDKVRVNVSQTAQT 17
sp|Q98H61|HEMH_RHILO       --------------------------------MTSAIAVDPKAAKPVGVT 18
sp|P28602|HEMH_BRAJA       ----------------------------------------MSTAAPNETT 10
sp|Q6NBF3|HEMH_RHOPA       ----------------------------------------MSVIVPIHGP 10
sp|Q59735|HEMH_RHOCA       --------------------------------------MTIANRILPHAP 12
sp|P57779|HEMH_ZYMMO       -----------------------------------------------MTD 3
sp|Q833G5|HEMH_ENTFA       --------------------------------------------------
sp|Q9CFB4|HEMH_LACLA       --------------------------------------------------
sp|Q67T48|HEMH_SYMTH       --------------------------------------------------
sp|Q88XC3|HEMH_LACPL       --------------------------------------------------
sp|P57778|HEMH_PSEFL       --------------------------------------------------
sp|Q888A2|HEMH_PSESM       --------------------------------------------------
sp|Q88PV4|HEMH_PSEPK       --------------------------------------------------
sp|Q9HVD7|HEMH_PSEAE       --------------------------------------------------
sp|Q6MHT3|HEMH_BDEBA       --------------------------------------------------
sp|Q83FA4|HEMH_COXBU       --------------------------------------------------
sp|Q6MAW8|HEMH_PARUW       --------------------------------------------------
sp|Q7MXP4|HEMH_PORGI       --------------------------------------------------
sp|Q824K8|HEMH_CHLCV       --------------------------------------------------
sp|Q9Z7V1|HEMH_CHLPN       --------------------------------------------------
sp|Q9PJQ6|HEMH_CHLMU       --------------------------------------------------
sp|O84492|HEMH_CHLTR       --------------------------------------------------
sp|Q8GCV0|HEMH_LEPBI       --------------------------------------------------
sp|Q81U22|HEMH1_BACAN      --------------------------------------------------
sp|Q6HM97|HEMH1_BACHK      --------------------------------------------------
sp|Q63ES4|HEMH1_BACCZ      --------------------------------------------------
sp|Q73C98|HEMH1_BACC1      --------------------------------------------------
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sp|Q81GW5|HEMH1_BACCR      --------------------------------------------------
sp|P32396|HEMH_BACSU       --------------------------------------------------
sp|Q8ERX9|HEMH_OCEIH       --------------------------------------------------
sp|Q71XF4|HEMH_LISMF       --------------------------------------------------
sp|Q8Y565|HEMH_LISMO       --------------------------------------------------
sp|Q929G2|HEMH_LISIN       --------------------------------------------------
sp|P64124|HEMH_STAAM       --------------------------------------------------
sp|P64125|HEMH_STAAN       --------------------------------------------------
sp|Q6G8A3|HEMH_STAAS       --------------------------------------------------
sp|P64126|HEMH_STAAW       --------------------------------------------------
sp|Q6GFM4|HEMH_STAAR       --------------------------------------------------
sp|Q8CNS1|HEMH_STAEP       --------------------------------------------------
sp|Q81TU9|HEMH2_BACAN      --------------------------------------------------
sp|Q6HM28|HEMH2_BACHK      --------------------------------------------------
sp|Q63EK7|HEMH2_BACCZ      --------------------------------------------------
sp|Q73C08|HEMH2_BACC1      --------------------------------------------------
sp|Q81GN7|HEMH2_BACCR      --------------------------------------------------
sp|Q9KDK9|HEMH_BACHD       --------------------------------------------------
sp|Q5WHT1|HEMH_BACSK       --------------------------------------------------
sp|Q72L32|HEMH_THET2       --------------------------------------------------
sp|Q9RV98|HEMH_DEIRA       --------------------------------------------------
sp|Q97R30|HEMH_STRPN       --------------------------------------------------
sp|Q8DQ04|HEMH_STRR6       --------------------------------------------------
sp|Q8FTB1|HEMH_COREF       --------------------------------------------------
sp|Q8NQA1|HEMH_CORGL       --------------------------------------------------
sp|Q6NH66|HEMH_CORDI       --------------------------------------------------
sp|Q740Y1|HEMH_MYCPA       --------------------------------------------------
sp|P71765|HEMH_MYCTU       --------------------------------------------------
sp|Q9CBM2|HEMH_MYCLE       --------------------------------------------------
sp|Q5YU18|HEMH_NOCFA       --------------------------------------------------
sp|O07401|HEMH_MYCAV       --------------------------------------------------
sp|Q83H94|HEMH_TROW8       -------------------------------------MIRRSAVSRVVAE 13
sp|Q83FJ2|HEMH_TROWT       -------------------------------------MIRRSAVSRVVAE 13
sp|Q6AHF2|HEMH_LEIXX       -------------------------------------MLGATPAAAGVAE 13
sp|Q82KJ6|HEMH_STRAW       -------------------------------------MPEALDAS----- 8
sp|O50533|HEMH_STRCO       -------------------------------------MPDVLDAS----- 8
sp|Q7UFZ7|HEMH_RHOBA       ----------------------------------------MSELP----- 5
sp|P72183|HEMH_PROFR       --------------------------------------------------
sp|Q9HLB8|HEMH_THEAC       --------------------------------------------------
sp|Q978U9|HEMH_THEVO       --------------------------------------------------


sp|P42043|HEMH1_ARATH      YDETSAKARSHVVAEDKIGVLLLNLGGPE--TLNDVQPFLYNLFADPDII 120
sp|P42044|HEMH_CUCSA       VGEFALESQSQAV-DDKVGVLLLNLGGPE--TLDDVQPFLYNLFADPDII 145
sp|P42045|HEMH_HORVU       TFDEDVKGVSSHAVEEKVGVLLLNLGGPE--TLNDVQPFLFNLFADPDII 139
sp|O04921|HEMH2_ARATH      VISDAISSSSVITDDAKIGVLLLNLGGPE--TLDDVQPFLFNLFADPDII 131
sp|O22101|HEMH_ORYSA       VLTSQSDFTKLLVGNEKIGVLLLNLGGPE--TLDDVQPFLFNLFADPDII 112
sp|Q8YQR8|HEMH_ANASP       --------------MGRVGVLLLNLGGPD--KLEDVAPFLFNLFSDPEII 34
sp|P54225|HEMH_SYNY3       --------------MGRVGVLLLNLGGPE--KLEDVRPFLFNLFADPEII 34
sp|Q8DGU6|HEMH_SYNEL       -------------MASQTGVLLLNLGGPD--RPEDVRPFLYNLFSDPEII 35
sp|Q7VD58|HEMH_PROMA       --------------MTRVGVLLMNLGGPE--RIKDVGPFLYNLFSDPEII 34
sp|Q7V2F5|HEMH_PROMP       --------------MEKVGVLLMNLGGPE--RITDVGPFLYNLFSDPEII 34
sp|Q7V6C6|HEMH_PROMM       --------------MARVGVLLMNLGGPE--RIQDVGPFLFNIFADPEII 34
sp|Q7U5G0|HEMH_SYNPX       --------------MSRVGVVLLNLGGPE--RIQDVGPFLYNLFADPEII 34
sp|Q7NMC7|HEMH_GLOVI       --------------MAEVGVLLLNLGGPD--KQEDVRPFLYNLFADPEII 34
sp|Q9ZC84|HEMH_RICPR       -------------MNKRIAIVLFNLGGPE--DIEYVKPFLFNLFYDKAII 35
sp|Q68VM9|HEMH_RICTY       -------------MKKRIAIVLFNLGGPE--DIEYVKPFLFNLFYDKAII 35
sp|Q92FV4|HEMH_RICCN       -------------MKKRIAIVLFNLGGPK--NLKSVKPFLFNLFYDKAII 35
sp|Q73FY6|HEMH_WOLPM       -------------MKK--AVILFNLGGPD--SLNAVRPFLFNLFYDRRII 33
sp|P57777|HEMH_CAUCR       -------------MTQKLAVVLFNLGGPD--GPDAVRPFLFNLFRDPAII 35
sp|O67083|HEMH_AQUAE       -------------MKK--GVILINLGGPD--SLEAVEPFLYNLFSDPDIF 33
sp|P22830|HEMH_HUMAN       HAQGAKPQVQPQKRKPKTGILMLNMGGPE--TLGDVHDFLLRLFLDQDLM 99
sp|P22315|HEMH_MOUSE       HAKTTKPQAQPERRKPKTGILMLNMGGPE--TLGEVQDFLQRLFLDRDLM 98
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sp|P22600|HEMH_BOVIN      RARSPKPQAQPGNRKPRTGILMLNMGGPE--TVEEVQDFLQRLFLDQDLM 92
sp|O42479|HEMH_CHICK      ----TKPQAEPETRKPKTGILMLNMGGPE--RLDDVHDFLLRLFLDRDLM 78
sp|O57478|HEMH_XENLA      KSSDPKPHAQPDKRKPKTGILMLNMGGPE--TLDDVHGFLLRLFLDKDLM 86
sp|Q9V9S8|HEMH_DROME      ----------LSGQKPKTAILMLNMGGPT--HTDQVHDYLLRIMTDRDMI 59
sp|O59786|HEMH_SCHPO      ----------VSGKGP-TAVVMMNMGGPS--NLDEVGPFLERLFTDGDII 63
sp|P16622|HEMH_YEAST      --------MQNAQKRSPTGIVLMNMGGPS--KVEETYDFLYQLFADNDLI 69
sp|Q6APB0|HEMH_DESPS      ------------MQNIPTGVILLNMGGPT--QTKDVRPFLYNLFSDREII 36
sp|Q747F5|HEMH_GEOSL      ------------MSDK-TAVLLLQMGGPD--SLDAVEPFLLNLFSDRDII 35
sp|Q9ZKD4|HEMH_HELPJ      INEKLNNLENSATKSPKEAVVLLNMGGPN--SLYEVGVFLKNMFDDPFIL 51
sp|P56107|HEMH_HELPY      INEKLNNLENNATKSPKEAVILLNMGGPN--SLYEVGVFLKNMFDDPFIL 51
sp|Q7M7P9|HEMH_WOLSU      ---------------MKKAVILLNMGGPS--SLLEVDMFLKNMFNDPRIL 33
sp|Q7VHH1|HEMH_HELHP      ------------------------MGSPN--SLFEVESFLKNMFNDPLIL 24
sp|Q9PI08|HEMH_CAMJE      ----------------MKLVLFLNMGGAT--NLQDCEVFLKNMFNDPYIL 32
sp|Q8DFM2|HEMH_VIBVU      -----------MNNTKKRGVLLVNLGTPEEATAPAVKRFLSQFLHDQRVV 39
sp|Q7MMR4|HEMH_VIBVY      -----------MNNTKKRGVLLVNLGTPEEATAPAVKRFLSQFLHDQRVV 39
sp|Q9KTB6|HEMH_VIBCH      -----------MNNHKKLGILLANLGTPQAPTSQAVKAFLSQFLHDQRVV 39
sp|Q87RH3|HEMH_VIBPA      -----------MQTKNKQGVLLVNLGTPDEPTAPAVKRFLSQFLHDHRVV 39
sp|Q6LTE0|HEMH_PHOPR      -----------MKNNN-YGVLLVNLGTPDEASPAAIKRFLSEFLHDKRVV 38
sp|Q8EFF4|HEMH1_SHEON     RGIWLIKGSTLTSPSPAFGVLLVNLGTPDEPTPKAVKRFLKQFLSDPRVV 54
sp|Q8XD39|HEMH_ECO57      ------------MRQTKTGILLANLGTPDAPTPEAVKRYLKQFLSDRRVV 38
sp|P23871|HEMH_ECOLI      ------------MRQTKTGILLANLGTPDAPTPEAVKRYLKQFLSDRRVV 38
sp|Q8FK83|HEMH_ECOL6      ------------MRQTKTGILLANLGTPDAPTPEAVKRYLKQFLSDRRVV 38
sp|Q83SE5|HEMH_SHIFL      ------------MRQTKTGILLANLGTPDAPTPEAVKRYLKQFLSDRRVV 38
sp|Q8Z8T2|HEMH_SALTI      ------------MRQTKTGILLANLGTPDAPTPEAVKRYLKQFLSDRRVV 38
sp|P37408|HEMH_SALTY      ------------MRQTKTGILLANLGTPDAPTPEAVKRYLKQFLSDRRVV 38
sp|Q8ZC98|HEMH_YERPE      ------------MMQSKPGVLMVNLGTPDAPTSKAIKRYLAEFLSDRRVV 38
sp|Q05338|HEMH_YERPS      ------------MMQSKPGVLMVNLGTPDAPTSKAIKRYLAEFLSDRRVV 38
sp|P43413|HEMH_YEREN      ------------MKQSKLGVLMVNLGTPDAPTPQAVKRYLAEFLSDRRVV 38
sp|Q6D7Z4|HEMH_ERWCT      ------------MKQEKYGVLMVNLGTPDAPTPQAVRRYLAEFLSDRRVV 38
sp|Q7N0P6|HEMH_PHOLL      ------------MNNGKFGVLLVNLGTPDKPTTAAIRRYLAEFLSDKRVI 38
sp|P43868|HEMH_HAEIN      -----------MTKPAKIGVLLANLGTPDSPTPKSISRYLWQFLTDPRVV 39
sp|P57874|HEMH_PASMU      -----------MNK-AKTGVLLVNLGTPESPTPKAISRYLWQFLTDPRVV 38
sp|Q65SV7|HEMH_MANSM      ------------MKSSKTGILLANLGTPDTPSPKAISRYLKEFLSDPRVV 38
sp|Q8CWW4|HEMH_STRMU      ------------MSQQKIGVLLVNLGTPEHPTAPAIRKFLKPFLADSRVI 38
sp|Q8D226|HEMH_WIGBR      -------------MKNNIGIIISNVGTPSHPNKKSVKKYLSEFLSDKRVI 37
sp|Q8EBZ7|HEMH2_SHEON     -MGHAA--------RGKVGVLLLNLGTPDAPTASAVRRYLAEFLSDPRVV 41
sp|Q6F7N0|HEMH_ACIAD      -MPIFP--------KPKVTVILANLGTPDVPTASAVRAFLKQFLSDQRVI 41
sp|Q7WGI0|HEMH_BORBR      PAQDPFDENPPPCGPGRVGVLLVNLGTPDEPTRGAIRRYLGEFLSDPRVI 68
sp|Q7W515|HEMH_BORPA      PAQDPFDENPPPCGPGRVGVLLVNLGTPDEPTRGAIRRYLGEFLSDPRVI 68
sp|Q7VVX8|HEMH_BORPE      PAQDPFDENPPPCGPGRVGVLLVNLGTPDEPTRGAIRRYLGEFLSDPRVI 68
sp|Q62HD1|HEMH_BURMA      PSHASA--------AHRVAVLLVNLGTPDAPTPRAVRRYLAQFLSDPRVV 61
sp|Q63R43|HEMH_BURPS      PSHASA--------AHRVAVLLVNLGTPDAPTPRAVRRYLAQFLSDPRVV 61
sp|Q8XW32|HEMH_RALSO      LFQHGQ--------PDRTAILLVNLGTPDGTSPREVGRYLRQFLSDPRVV 49
sp|Q7NV65|HEMH_CHRVO      AFRHDY--------APKTGVLLINLGTPDAPTAQALRPYLKQFLSDPRVI 52
sp|Q82UK8|HEMH_NITEU      AYRHGS--------VGKIGVLMINLGTPDAPTAKALRAYLKQFLSEPRIV 50
sp|Q9JVA5|HEMH_NEIMA      SLSYTQ--------QNRTAVLLLNLGTPDAPTAQAVRPYLKSFLTDRRVV 50
sp|Q9K097|HEMH_NEIMB      SLSYTQ--------QNRTAVLLLNLGTPDAPTAQAVRPYLKSFLTDRRVV 50
sp|Q8PEX0|HEMH_XANAC      -MN----------TTPDTALLVVNLGTPESPTAPAVRRYLAEFLSDRRVV 39
sp|Q8P3H6|HEMH_XANCP      -MN----------TTSDTALLVVNLGTPESPTVPAVRRYLAEFLSDRRVV 39
sp|Q9PFU1|HEMH_XYLFA      -MN----------HTSDTALLIVNLGTPEAPTAAAVRRYLGEFLSDRRVV 39
sp|Q87B82|HEMH_XYLFT      -MN----------HTSDTALLIVNLGTPEAPTAAAVRRYLGEFLSDRRVV 39
sp|Q607T4|HEMH_METCA      -MHP---------TAARTGVLLINLGTPEAPTPKAVRRYLREFLSDPRVV 40
sp|Q8U9F7|HEMH_AGRT5      ANHPRV-------TFGKVGVLLVNLGTPDGTDYWPMRRYLAEFLSDKRVI 52
sp|Q92M52|HEMH_RHIME      TEHPAV-------GYGKLGVLLVNLGTPDGTDVTSMRRYLREFLSDRRVI 47
sp|Q93TG2|HEMH_BRUME      PLHTSA-------KLPKVGVLLVNLGTPDGTSYGPMRRYLAEFLSDRRVI 60
sp|Q98H61|HEMH_RHILO      AGHAPA-------GAGKVGVLLVNLGTPDGTEFKPMWRYLREFLSDPRVI 61
sp|P28602|HEMH_BRAJA      QPTVQS-------GQKRVGVLLVNLGTPDTADAPGVRVYLKEFLSDARVI 53
sp|Q6NBF3|HEMH_RHOPA      AIAPAP-------APERVGVLLVNLGTPDSCDTKGVRIYLREFLSDPRVI 53
sp|Q59735|HEMH_RHOCA      ADHPPV-------PVPRVGVLLANLGTPDATDYWSMRRYLNEFLSDRRVI 55
sp|P57779|HEMH_ZYMMO      SNNPLP-------ISEKIGVLLVNLGTPDAPNAKALRRYLGQFLSVQRVI 46
sp|Q833G5|HEMH_ENTFA      --------------MKRTGILLVNLGTPKDSSKTEVRKYLKTFLSDRRVI 36
sp|Q9CFB4|HEMH_LACLA      -------------MDKKKGILLVALGTPRSCEADDVRDYLKEFLGDPLVI 37
sp|Q67T48|HEMH_SYMTH      --------------MEKTAVLLVNLGTPSAPEPDAVRPYLAEFLGDWWVI 36
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sp|Q88XC3|HEMH_LACPL       ---------------MHPGLLLVNLGSPASPRTKDVKAYLQEFLSDPSVI 35
sp|P57778|HEMH_PSEFL       ---------MTDH-----ALLLVNLGSPASTSVADVRSYLNQFLMDPYVI 36
sp|Q888A2|HEMH_PSESM       ---------MTDH-----ALLLVNLGSPASTQVADVRSYLNQFLMDPYVI 36
sp|Q88PV4|HEMH_PSEPK       ---------MTDH-----ALLLVNLGSPASTSVADVRRYLNQFLMDPYVI 36
sp|Q9HVD7|HEMH_PSEAE       ---------MTEN-----ALLLLNLGSPDSTRVEDVRRYLDQFLMDPYVV 36
sp|Q6MHT3|HEMH_BDEBA       ---------MGKK-----GLLLINIGSPKSYQVNDVKKYLSEFLMDEDVI 36
sp|Q83FA4|HEMH_COXBU       ---------MAVKNNNKIGVLLINLGTPDEPSVPAVRRYLRQFLSDPKVI 41
sp|Q6MAW8|HEMH_PARUW       ---------MNQR----TGILLVNLGTPKTPRPKDVYRYLNEFLTDGRVI 37
sp|Q7MXP4|HEMH_PORGI       ---MADRRRTDDNKGAREVVLLLNIGSPDSPEEKDVARYLNSFLTDRRII 47
sp|Q824K8|HEMH_CHLCV       --------------MVS-AYLLANFGGPR--HSNDIEVFLTSLLTDRDVT 33
sp|Q9Z7V1|HEMH_CHLPN       --------------MTTPAYLLANFGGPR--HAKDLQEFLISLLTDRDVT 34
sp|Q9PJQ6|HEMH_CHLMU       --------------MTV--YLLANFGGPR--ISQEIPSFLHALLTDQDVT 32
sp|O84492|HEMH_CHLTR       --------------MVT--YLLANFGGPR--TSQEIVSFLQALLTDRDVT 32
sp|Q8GCV0|HEMH_LEPBI       -----------MITNKVKTLILVNLGGPR--TPSEIEVFLRDLFSDPFVF 37
sp|Q81U22|HEMH1_BACAN      -------------MKKKIGLLVMAYGTPY--KEEDIERYYTH-------- 27
sp|Q6HM97|HEMH1_BACHK      -------------MKKKIGLLVMAYGTPY--KEEDIERYYTH-------- 27
sp|Q63ES4|HEMH1_BACCZ      -------------MKKKIGLLVMAYGTPY--KEEDIERYYTH-------- 27
sp|Q73C98|HEMH1_BACC1      -------------MKKKIGLLVMAYGTPY--KEEDIERYYTH-------- 27
sp|Q81GW5|HEMH1_BACCR      -------------MKKKIGLLVMAYGTPY--KEEDIERYYTH-------- 27
sp|P32396|HEMH_BACSU       ------------MSRKKMGLLVMAYGTPY--KEEDIERYYTH-------- 28
sp|Q8ERX9|HEMH_OCEIH       ------------MEKKKIGLLVMAYGTPY--KEEDIEPYYTH-------- 28
sp|Q71XF4|HEMH_LISMF       -------------MTKKVGLLVMAYGTPY--KDEDIERYYTD-------- 27
sp|Q8Y565|HEMH_LISMO       -------------MTKKVGLLVMAYGTPY--KDEDIERYYTD-------- 27
sp|Q929G2|HEMH_LISIN       -------------MTKKVGLLVMAYGTPY--KDEDIERYYTD-------- 27
sp|P64124|HEMH_STAAM       -------------MTKKMGLLVMAYGTPY--KESDIEPYYTD-------- 27
sp|P64125|HEMH_STAAN       -------------MTKKMGLLVMAYGTPY--KESDIEPYYTD-------- 27
sp|Q6G8A3|HEMH_STAAS       -------------MTKKMGLLVMAYGTPY--KESDIEPYYTD-------- 27
sp|P64126|HEMH_STAAW       -------------MTKKMGLLVMAYGTPY--KESDIEPYYTD-------- 27
sp|Q6GFM4|HEMH_STAAR       -------------MTKKMGLLVVAYGTPY--KESDIEPYYTD-------- 27
sp|Q8CNS1|HEMH_STAEP       -------------MTKTIGLLVMAYGTPY--KESDIEPYYTD-------- 27
sp|Q81TU9|HEMH2_BACAN      ------------MKKKKIGLLVMAYGTPD--SLDEVEAYYTH-------- 28
sp|Q6HM28|HEMH2_BACHK      ------------MKKKKIGLLVMAYGTPD--SLDEVEAYYTH-------- 28
sp|Q63EK7|HEMH2_BACCZ      ------------MKKKKIGLLVMAYGTPE--SLEDVEAYYTH-------- 28
sp|Q73C08|HEMH2_BACC1      ------------MAKKKIGLLVMAYGTPE--SLEDVEAYYTH-------- 28
sp|Q81GN7|HEMH2_BACCR      ------------MKKKKIGLLVMAYGTPE--SLDDVEAYYTH-------- 28
sp|Q9KDK9|HEMH_BACHD       ------------MTKKKIGLLVMAYGTPR--TKEEIEPYYTH-------- 28
sp|Q5WHT1|HEMH_BACSK       ------------MEKKKIGLLVMAYGTPR--KKEEIEPYYTH-------- 28
sp|Q72L32|HEMH_THET2       -----------------MNVLLMAYGTPY--APEEVEPYYTD-------- 23
sp|Q9RV98|HEMH_DEIRA       --------MTTLTNQKPLGVLFMAYGGPE--NLGEMPGYLAD-------- 32
sp|Q97R30|HEMH_STRPN       ---------------MKKAILMMTFGSPEEIIFEGVADFFTN-------- 27
sp|Q8DQ04|HEMH_STRR6       ---------------MKKAILMMTFGSPEEITFEGVADFFTN-------- 27
sp|Q8FTB1|HEMH_COREF       ----MNARTPDTKSDSYDALLVLSFGGPE--GPEEVRPFLEN-------- 36
sp|Q8NQA1|HEMH_CORGL       ----MNERT----SDAFDALLVLSFGGPE--GHEEVRPFLEN-------- 32
sp|Q6NH66|HEMH_CORDI       ----MLPLPTWTLSD-VDAILVLSFGGPE--GQQDVIPFLEN-------- 35
sp|Q740Y1|HEMH_MYCPA       --------------MDFDAVLLLSFGGPE--GPEQVRPFLEN-------- 26
sp|P71765|HEMH_MYCTU       --------------MQFDAVLLLSFGGPE--GPEQVRPFLEN-------- 26
sp|Q9CBM2|HEMH_MYCLE       --------------MLFDAALLLSFGGPD--GPEQVRPFLEN-------- 26
sp|Q5YU18|HEMH_NOCFA       --------------MAVEALLLLSFGGPE--RPEDVMPFLEN-------- 26
sp|O07401|HEMH_MYCAV       --------------MDFDAVLLLSFGGPE--GPSRFGRSWRTSPG----- 29
sp|Q83H94|HEMH_TROW8       GSAIASDSGFALGASQYDAVVLLSFGGPE--GPEDVVPFLKK-------- 53
sp|Q83FJ2|HEMH_TROWT       GSAIASDSGFALGASQYDAVVLLSFGGPE--GPEDVVPFLKK-------- 53
sp|Q6AHF2|HEMH_LEIXX       HVTEP---------VAYDAILLAGFGGPE--GQDDVIPFLRN-------- 44
sp|Q82KJ6|HEMH_STRAW       ---------------PYDALLLLSFGGPE--GPDDVVPFLEN-------- 33
sp|O50533|HEMH_STRCO       ---------------PYDALLLLSFGGPE--GPDDVVPFLEN-------- 33
sp|Q7UFZ7|HEMH_RHOBA       ---------------PYDSFLLVSFGGPE--GQDDVMPFLEN-------- 30
sp|P72183|HEMH_PROFR       -------------MTSFDALLVAGFGGPE--SMAEVPDFLQR-------- 27
sp|Q9HLB8|HEMH_THEAC       ---------------MKSALLLLSYGSPE--RIEDLDEYLKN-------- 25
sp|Q978U9|HEMH_THEVO       ---------------MKTAVLLLSYGSPE--KMSDIDEYLSK-------- 25
                                                    * .

sp|P42043|HEMH1_ARATH      RLPRPFQFLQGTIAKFISVVRAPKSKEGYAAIGGGS------PLRKITDE 164
sp|P42044|HEMH_CUCSA       RLPRLFRFLQEPLAKLISTYRAPKSKEGYASIGGGS------PLRKITDE 189
sp|P42045|HEMH_HORVU       RLPRLFRFLQRPLAKLISTFRAPKSNEGYASIGGGS------PLRKITDE 183
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sp|O04921|HEMH2_ARATH      RLPPVFQFLQKPLAQFISVARAPKSKEGYASIGGGS------PLRHITDA 175
sp|O22101|HEMH_ORYSA       RLPRLFRFLQKPLAQFISVVRAPKSKEGYASIGGGS------PLRQITDA 156
sp|Q8YQR8|HEMH_ANASP       RLP--FRWLQKPLAWFIASRRTKTSQENYKQIGGGS------PLRRITEA 76
sp|P54225|HEMH_SYNY3       RLP--FPWLQKPLAWLISTLRAKKSQANYAEIGGGS------PLLQITEA 76
sp|Q8DGU6|HEMH_SYNEL       RLP--FRWLQKPLAWFISTSRARRSQANYAQIGGGS------PLRRITEQ 77
sp|Q7VD58|HEMH_PROMA       RLP--LPIFQKPLAWFISTLRSSKSQKAYQAIGGGS------PLRRITEQ 76
sp|Q7V2F5|HEMH_PROMP       RLP--VPAFQKPLAWLISTLRSTTSQQAYLSIGGGS------PIRRITEQ 76
sp|Q7V6C6|HEMH_PROMM       RLP--NPALQRPLAWLISTLRSSKSEQAYRSIGGGS------PLRRITEQ 76
sp|Q7U5G0|HEMH_SYNPX       RLP--SPALQKPLAWLISTLRSGKSQEAYRSIGGGS------PLRRITEQ 76
sp|Q7NMC7|HEMH_GLOVI       RIP--VPPLQKPLAWLISTLRAPKSRKNYQAIGGGS------PLRAITNQ 76
sp|Q9ZC84|HEMH_RICPR       NLPN---PLRYIIAKIISITREKKSQKIYSLIGSKS------YLIQETEK 76
sp|Q68VM9|HEMH_RICTY       NLPN---PLRYVIAKIISIVRERKSQKIYSLIGRKS------YLIQETEK 76
sp|Q92FV4|HEMH_RICCN       NLPN---PLRYIIAKIISITREKKSQKIYSLIGGKS------SLLQETEE 76
sp|Q73FY6|HEMH_WOLPM       NLPN---PFRFLLAKFISAKRENTARKIYEEIGGKS------PILENTKM 74
sp|P57777|HEMH_CAUCR       GAPA---LIRYPLAALISTTREKSAKANYAIMGGGS------PLLPETEK 76
sp|O67083|HEMH_AQUAE       SLP-----FQKVLAKIIAKLRAKKTRHYYELMGGKS------PQYEQTLE 72
sp|P22830|HEMH_HUMAN       TLP-----IQNKLAPFIAKRRTPKIQEQYRRIGGGS------PIKIWTSK 138
sp|P22315|HEMH_MOUSE       TLP-----IQNKLAPFIAKRRTPKIQE--RRIGGGS------PIKMWTSK 135
sp|P22600|HEMH_BOVIN       TLP-----VQDKLGPFIAKRRTPKIQEQYRRIGGGS------PIKMWTSK 131
sp|O42479|HEMH_CHICK       TLP-----AQNKLAPFIAKRRTPRIQEQYSRIGGGS------PIKKWTAV 117
sp|O57478|HEMH_XENLA       TLP-----AQSKLAPFIAKRRTPKIQEQYSKIGGGS------PIKKWTEQ 125
sp|Q9V9S8|HEMH_DROME       QLP-----VQSRLGPWIAQRRTPEVQKKYKEIGGGS------PILKWTEL 98
sp|O59786|HEMH_SCHPO       PLGY----FQNSLGKFIAKRRTPKVQNHYSDIGGGS------PILHWTRI 103
sp|P16622|HEMH_YEAST       PISA---KYQKTIAKYIAKFRTPKIEKQYREIGGGS------PIRKWSEY 110
sp|Q6APB0|HEMH_DESPS       PLGP--RLMQKPLAWLIAKRRAPKSAATYERIGGGS------PLKQITEA 78
sp|Q747F5|HEMH_GEOSL       RIGP--AFLQPFIARLIAKRRSPGVERKYEEIGGKS------PIRELTES 77
sp|Q9ZKD4|HEMH_HELPJ       TIKN--NFMRKMVGKMIVNSRIEKSKKIYEKLGGKS------PLTPITFA 93
sp|P56107|HEMH_HELPY       TIKN--NFMRKMVGKMIVNSRIEKSKKIYEKLGGKS------PLTPITFA 93
sp|Q7M7P9|HEMH_WOLSU       PIKS--PFFRSLVASFIANRRSETAKANYRKIGGKS------PLIGHTFN 75
sp|Q7VHH1|HEMH_HELHP       GIKN--TFARKMLASFITHSRVEETKKNYQAIGGKS------PLTAHTLN 66
sp|Q9PI08|HEMH_CAMJE       GIKN--RFLRKFVAWIITKARVKAMQENYKKMGGKS------PLNELTQS 74
sp|Q8DFM2|HEMH_VIBVU       D--MTRWLWCPILHGIILPIRSPKVAKLYQTVWMKE----GSPLMVYSKR 83
sp|Q7MMR4|HEMH_VIBVY       D--MTRWLWCPILHGIILPIRSPKVAKLYQTVWMKE----GSPLMVYSKR 83
sp|Q9KTB6|HEMH_VIBCH       D--MSRWLWCPLLHGIILPTRSPKVAKLYQSIWMDE----GSPLMVYSRR 83
sp|Q87RH3|HEMH_VIBPA       D--MTRWLWCPILHGVILPIRSPKVAKLYESVWMEE----GSPLMVYSKR 83
sp|Q6LTE0|HEMH_PHOPR       D--MTRWLWCPILHGVILPIRSPKVAKLYQSVWMED----GSPLMVYSQR 82
sp|Q8EFF4|HEMH1_SHEON      D--LSPWLWQPILQGIILNTRPKKVAKLYQSVWTEQ----GSPLMVISQC 98
sp|Q8XD39|HEMH_ECO57       D--TSRLLWWPLLRGVILPLRSPRVAKLYASVWMEG----GSPLMVYSRQ 82
sp|P23871|HEMH_ECOLI       D--TSRLLWWPLLRGVILPLRSPRVAKLYASVWMEG----GSPLMVYSRQ 82
sp|Q8FK83|HEMH_ECOL6       D--TSRLLWWPLLRGVILPLRSPRVAKLYASVWMEG----GSPLMVYSRQ 82
sp|Q83SE5|HEMH_SHIFL       D--TSRLLWWPLLRGVILPLRSPRVAKLYASVWMED----GSPLMVYSRQ 82
sp|Q8Z8T2|HEMH_SALTI       D--TPRLLWWPLLRGVILPLRSPRVAKLYQSIWMDG----GSPLMVYSRE 82
sp|P37408|HEMH_SALTY       D--TPRLLWWPLLRGVILPLRSPRVAKLYQSIWMDG----GSPLMVYSRE 82
sp|Q8ZC98|HEMH_YERPE       D--TSPLLWWPLLHGVILPLRSPRVAKLYQSVWMEE----GSPLLVYSRR 82
sp|Q05338|HEMH_YERPS       D--TSPLLWWPLLHGVILPLRSPRVAKLYQSVWMEE----GSPLLVYSRR 82
sp|P43413|HEMH_YEREN       D--TSPWLWWPLLRGVILPIRSPRVAKLYQSVWMDE----GSPLLVYSRR 82
sp|Q6D7Z4|HEMH_ERWCT       D--TPRLLWWPLLRGIILPIRSPRVAKLYQSVWMEG----GSPLLVISRR 82
sp|Q7N0P6|HEMH_PHOLL       D--LSRFIWKPILYGFVLPFRSSRVAKLYQKIWTDE----GSPLLVYGRR 82
sp|P43868|HEMH_HAEIN       D--LPRCKWYPLLKAIILPLRSKRIAKNYQAIWTEQ----GSPLLAISRQ 83
sp|P57874|HEMH_PASMU       D--LPRYKWFPLLKGIILPLRAKRVAKNYASIWTEQ----GSPLLTITRE 82
sp|Q65SV7|HEMH_MANSM       D--LPRWKWLPLLNGIILPIRSRRIAKNYGAIWTEQ----GSPLFAITQK 82
sp|Q8CWW4|HEMH_STRMU       D--YPKFLWKPILYSFILPFRPRKVKPLYQHVWTNE----GSPLYANAIG 82
sp|Q8D226|HEMH_WIGBR       D--ISRFFWIPYLHLYFLPLKSYKSVNLYKKIWEKD----GSPLMINSLN 81
sp|Q8EBZ7|HEMH2_SHEON      E--IPKLLWMLILYGIVLRVRPAKSAALYQKVWTEAG----SPLMDISLR 85
sp|Q6F7N0|HEMH_ACIAD       E--IPKLLWKIILYSFVLPFRPKRVAHAYASVWGQD-----SPMREILFA 84
sp|Q7WGI0|HEMH_BORBR       E--IPRYLWMPILHGLVLAMRPKKLAPRYAGIWMEE----GSPLLVYSQR 112
sp|Q7W515|HEMH_BORPA       E--IPRYLWMPILHGLVLAMRPKKLAPRYAGIWMEE----GSPLLVYSQR 112
sp|Q7VVX8|HEMH_BORPE       E--IPRYLWMPILHGLVLTMRPKKLAPRYAGIWMEE----GSPLLVYSQR 112
sp|Q62HD1|HEMH_BURMA       E--IPQLVWQVILCTLILPLRGRASAKKYAAVWLPE----GSPLRVYTER 105
sp|Q63R43|HEMH_BURPS       E--IPQLVWQVILRTLILPLRGRASAKKYAAVWLPE----GSPLRVYTER 105
sp|Q8XW32|HEMH_RALSO       E--IPRAAWWFILNVLILPLRSRASAHKYETVWLREANMTGSPLLVYSER 97
sp|Q7NV65|HEMH_CHRVO       E--IPRLPWWLILNGIILNTRPKQSAKKYASIWTKE----GSPLLLHTRS 96
sp|Q82UK8|HEMH_NITEU       E--FPRWLWWFILNGIILNVRPAKSAKKYEQIWTSE----GSPLRVHTAR 94
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sp|Q9JVA5|HEMH_NEIMA       E--LPKWLWYPILHGLVLTLRPKKSAHAYEKIWFKE----GSPLEVYTAR 94
sp|Q9K097|HEMH_NEIMB       E--LPKWLWYPILHGLVLTLRPKKSAHAYEKIWFKE----GSPLEVYTAR 94
sp|Q8PEX0|HEMH_XANAC       A--IPPLFWKPLLYGVILPIRGPKSAEKYAKVWLPE----GSPLAVYTRR 83
sp|Q8P3H6|HEMH_XANCP       A--IPPLFWKPLLYGVILPIRGPKSAEKYAKVWLPD----GSPLAVYTRR 83
sp|Q9PFU1|HEMH_XYLFA       S--IPPLFWKPLLHMVILPIRGPRSASKYAKVWLQE----GSPLSVYTRR 83
sp|Q87B82|HEMH_XYLFT       S--IPPLFWKPLLHMVILPIRGPRSASKYAKVWLQE----GSPLSVYTRR 83
sp|Q607T4|HEMH_METCA       E--IPRVLWWPILNLVVLRTRSRKSAHAYRTIWTER----GSPLLAYTQD 84
sp|Q8U9F7|HEMH_AGRT5       E--WSRLYWYPILYGIVLNKRPQKVGKAYEEIWNHERN--ESYLRTYTRS 98
sp|Q92M52|HEMH_RHIME       E--WSRLFWYPILYGIVLNTRPRKVGKAYELIWNKDLN--ESWLRTYTRN 93
sp|Q93TG2|HEMH_BRUME       E--WSRLIWYPILYGIVLNTRPRRSGRLYDRIWNHENN--ESPLRTYTRA 106
sp|Q98H61|HEMH_RHILO       E--LNKAIWYPILYGLVLTTRPKKSGANYARIWNQERN--ESPLRTYTRA 107
sp|P28602|HEMH_BRAJA       E--DQGLVWKVVLNGIILRSRPRTKALDYQKIWNNEKN--ESPLKTITRS 99
sp|Q6NBF3|HEMH_RHOPA       E--NQGLFWKLALNGIILNTRPARKAKDYQKIWNHEKN--ESPLKTITRA 99
sp|Q59735|HEMH_RHOCA       D--YPIWKWQPLLQLIILSKRPFTSGNNYRSIWNEERD--ESPLMTITRD 101
sp|P57779|HEMH_ZYMMO       E--LPAVFWQIILRGIILPFRAPRSARAYQKIWTNE----GSPLAAITKK 90
sp|Q833G5|HEMH_ENTFA       K--IHPIIWKPILNGIILNIRPKKSAKLYQKICTEN----GFPLLEYTEK 80
sp|Q9CFB4|HEMH_LACLA       Q--KPRWLWLPILNGIILKVRPQKSAEMYKKIWTDE----GSPLMIYTVA 81
sp|Q67T48|HEMH_SYMTH       D--KPRWQWLPILHGIILRVRPPRVAKIYQKIWLPE----GSPLLHYSRL 80
sp|Q88XC3|HEMH_LACPL       E--MPAALWQPLLRGIILPTRSWRSATFYQDSWLPQ----GSPLIVYSQA 79
sp|P57778|HEMH_PSEFL       D--LPWPVRRLLVSLILIKRPA-QSAHAYASIWWDE----GSPLVVLSRR 79
sp|Q888A2|HEMH_PSESM       D--IPWPLRRLLVSLILIKRPE-QSAHAYASIWWDE----GSPLVVLSKR 79
sp|Q88PV4|HEMH_PSEPK       D--LPWPVRRLLVSLVLIKRPE-QSAHAYASIWWEE----GSPLVVLTRR 79
sp|Q9HVD7|HEMH_PSEAE       D--LPWPLRRLLVSLILIKRPA-ESAHAYSSIWWDE----GSPLIVLSRR 79
sp|Q6MHT3|HEMH_BDEBA       T--LPYVLRWPLVNLLIVPRRAPFSAENYKKVWMKE----GSPIAVYTRR 80
sp|Q83FA4|HEMH_COXBU       D--VPSLVRWIIVHLCILPFRPKRSAKLYQKIWMPE----GSPLLVYSEM 85
sp|Q6MAW8|HEMH_PARUW       D--LPWLKRQLLVRCIIVPFRYKQSSMLYQKLWTAE----GSPLLVHGIA 81
sp|Q7MXP4|HEMH_PORGI       T--LPFLLRQLLVRGIITPFRKKSSAQKYRTVWDES----TRSFPLISHT 91
sp|Q824K8|HEMH_CHLCV       GGFLPSFIHKRLFS-FIAKKRALKVLPQYNCI--GG----FSPIYQDTEL 76
sp|Q9Z7V1|HEMH_CHLPN       GTFLPRVLHRHLFT-FIAKKRVPKVLPQYQSL--QN----WSPIYFDTET 77
sp|Q9PJQ6|HEMH_CHLMU       GGRIPPWLHRPLFS-YIAKRRAHRVAEQYAYL--GG----RSPIFQDTEK 75
sp|O84492|HEMH_CHLTR       GGMIPSMLHRPLFS-YIAKRRAPHVARQYAYL--GG----GSPIFQDTER 75
sp|Q8GCV0|HEMH_LEPBI       DLPLPEFLRLRLAR-FIAKKRAPKVQKSYESMGFGG----GSPLVEETAK 82
sp|Q81U22|HEMH1_BACAN      ----------IRRGRKPSPEMLEDLTERYRAIGGIS------PLATITLE 61
sp|Q6HM97|HEMH1_BACHK      ----------IRRGRKPSPEMLEDLTERYRAIGGIS------PLATITLE 61
sp|Q63ES4|HEMH1_BACCZ      ----------IRRGRKPSPEMLEDLTERYRAIGGIS------PLATITLE 61
sp|Q73C98|HEMH1_BACC1      ----------IRRGRKPSPEMLEDLTERYRAIGGIS------PLATITLE 61
sp|Q81GW5|HEMH1_BACCR      ----------IRRGRKPSPEMLEDLTERYRAIGGIS------PLATITLE 61
sp|P32396|HEMH_BACSU       ----------IRRGRKPEPEMLQDLKDRYEAIGGIS------PLAQITEQ 62
sp|Q8ERX9|HEMH_OCEIH       ----------IRHGRKPDPEALQDLKERYEAIGGIS------PLAKITEE 62
sp|Q71XF4|HEMH_LISMF       ----------IRHGHKPSEEMIADLRGRYHAIGGLS------PLAKITEA 61
sp|Q8Y565|HEMH_LISMO       ----------IRHGHKPSEEMIADLRGRYHAIGGLS------PLAKITEA 61
sp|Q929G2|HEMH_LISIN       ----------IRHGHKPSEEMIADLRGRYHAIGGLS------PLAKITEA 61
sp|P64124|HEMH_STAAM       ----------IRHGKRPSEEELQDLKDRYEFIGGLS------PLAGTTDD 61
sp|P64125|HEMH_STAAN       ----------IRHGKRPSEEELQDLKDRYEFIGGLS------PLAGTTDD 61
sp|Q6G8A3|HEMH_STAAS       ----------IRHGKRPSEEELQDLKDRYEFIGGLS------PLAGTTDD 61
sp|P64126|HEMH_STAAW       ----------IRHGKRPSEEELQDLKDRYEFIGGLS------PLAGTTDD 61
sp|Q6GFM4|HEMH_STAAR       ----------IRHGKRPSEEELQDLKDRYEFIGGLS------PLAGTTDD 61
sp|Q8CNS1|HEMH_STAEP       ----------IRRGKKPTEEELQDLKDRYEFIGGLS------PLAGTTDR 61
sp|Q81TU9|HEMH2_BACAN      ----------IRHGRKPSEEALQDLIGRYKAIGGIS------PLAKITKE 62
sp|Q6HM28|HEMH2_BACHK      ----------IRHGRKPSEEALQDLIGRYKAIGGIS------PLAKITKE 62
sp|Q63EK7|HEMH2_BACCZ      ----------IRHGRKPSEEALQDLIGRYKAIGGIS------PLAKITKE 62
sp|Q73C08|HEMH2_BACC1      ----------IRHGRKPSEEALQDLIGRYKAIGGIS------PLAKITKE 62
sp|Q81GN7|HEMH2_BACCR      ----------IRHGRKPSEEALEDLIGRYKAIGGIS------PLAKITKE 62
sp|Q9KDK9|HEMH_BACHD       ----------IRHGRKPSQELLDDLTERYEAIGGVS------PLAKITDD 62
sp|Q5WHT1|HEMH_BACSK       ----------IRHGRKPSEEALADLQERYEAIGGTS------PLARITDE 62
sp|Q72L32|HEMH_THET2       ----------IRRGRRPSEELLKELAERYEAIG-KS------PLNEITLA 56
sp|Q9RV98|HEMH_DEIRA       ----------IRAGRVTSQAILDEITNNYRLIGGKS------PLPEFTRA 66
sp|Q97R30|HEMH_STRPN       ----------IRRGVRPQDHEIQTLYDNYVRIG-GT------PLQKITRQ 60
sp|Q8DQ04|HEMH_STRR6       ----------IRRGVRPQDHEIQTLYDNYVRIG-GT------PLQKITRQ 60
sp|Q8FTB1|HEMH_COREF       ----------VTRGRGIPPERLDEVGAHYYHFGGVS------PLNRLNKE 70
sp|Q8NQA1|HEMH_CORGL       ----------VTHGRGIPPERLDEVAVHYHHFGGIS------PINALNRE 66
sp|Q6NH66|HEMH_CORDI       ----------VTRGRGIPRERLEEVAVHYRHFGGIS------PLNALNRE 69
sp|Q740Y1|HEMH_MYCPA       ----------VTRGRGVPPERLDHVAEHYLHFGGVS------PINGINRA 60
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sp|P71765|HEMH_MYCTU       ----------VTRGRGVPAERLDAVAEHYLHFGGVS------PINGINRT 60
sp|Q9CBM2|HEMH_MYCLE       ----------VTRGCNVPPERLDEVTKHYLHFGGVS------PINGINLA 60
sp|Q5YU18|HEMH_NOCFA       ----------VTRGRGVPRARLEEVAQHYLHFGGVS------PINALNRD 60
sp|O07401|HEMH_MYCAV       ----------AAACRGTSRPRRRTLPAFRRGVADQR------HQPRADRA 63
sp|Q83H94|HEMH_TROW8       ----------VTSGRGVPDERLYEVAEHYNHFSGIS------PINDCNRR 87
sp|Q83FJ2|HEMH_TROWT       ----------VTSGRGVPDERLYEVAEHYNHFSGIS------PINDCNRR 87
sp|Q6AHF2|HEMH_LEIXX       ----------VTRGRGILDERLEEVAQHYRHFGGVS------PINDQNRA 78
sp|Q82KJ6|HEMH_STRAW       ----------VTRGRGIPRERLKEVGQHYFLFGGIS------PINDQNRA 67
sp|O50533|HEMH_STRCO       ----------VTRGRGIPKERLKEVGQHYFLFGGVS------PINDQNRA 67
sp|Q7UFZ7|HEMH_RHOBA       ----------VLRGKNVPRERMLEVAEHYKHFGGVS------PINEQNRQ 64
sp|P72183|HEMH_PROFR       ----------VSGG-HIPPDRLAEVEHHYARFGGVS------PVNAQHRA 60
sp|Q9HLB8|HEMH_THEAC       ----------IFNGKPVPESVREENLRKYEMFGGRS------PSNRIIES 59
sp|Q978U9|HEMH_THEVO       ----------IFGGKPVPKGVAEENYRKYEMFGGLS------PSNRIIQS 59


sp|P42043|HEMH1_ARATH      QADAIKMSLQA-----------------KNIAANVYVGMRYWYPFTEEAV 197
sp|P42044|HEMH_CUCSA       QAQALKMALAE-----------------KNMSTNVYVGMRYWYPFTEEAI 222
sp|P42045|HEMH_HORVU       QANALKVALKS-----------------KNLEADIYVGMRYWYPFTEEAI 216
sp|O04921|HEMH2_ARATH      QAEELRKCLWE-----------------KNVPAKVYVGMRYWHPFTEEAI 208
sp|O22101|HEMH_ORYSA       QAEALRKALCD-----------------KDIPAKVYVGMRYWHPFTEEAI 189
sp|Q8YQR8|HEMH_ANASP       QGEALKEQLHY-----------------LGQEANIYVGMRYWHPYTEEAI 109
sp|P54225|HEMH_SYNY3       QASALTTRLER-----------------LGQDAKVYIGMRYWHPFTEEAV 109
sp|Q8DGU6|HEMH_SYNEL       QARALKDALEG-----------------IGIEANLYIGMRYWHPFTEEAI 110
sp|Q7VD58|HEMH_PROMA       QARELQSALRN-----------------RGINATSYVAMRYWHPFTESAV 109
sp|Q7V2F5|HEMH_PROMP       QARELQSKLRD-----------------KGLNVTTYIAMRYWHPFTESAI 109
sp|Q7V6C6|HEMH_PROMM       QARELQSLLRQ-----------------RGIDATSYVAMRYWHPFTESAV 109
sp|Q7U5G0|HEMH_SYNPX       QARELQSLLRQ-----------------RGLDATTYVAMRYWHPFTESAV 109
sp|Q7NMC7|HEMH_GLOVI       QGRVLKKALAA-----------------RGLDIEVYVGMRYWHPFTEEAV 109
sp|Q9ZC84|HEMH_RICPR       QKLAITEKLKEFI---------------K-EDFIIFINMRYSTPFAKEVI 110
sp|Q68VM9|HEMH_RICTY       QKLAITKKLKEIL---------------K-EDFIIFISMRYSTPFAKEVI 110
sp|Q92FV4|HEMH_RICCN       QKLALTEKLKQLI---------------K-EDFAIFINMRYSAPFAKEVI 110
sp|Q73FY6|HEMH_WOLPM       QANASELKLNENR---------------N-HVHKVFICMRYWRPFADEVI 108
sp|P57777|HEMH_CAUCR       QARALEAALALAM---------------PGVEAKCFIAMRYWHPLTDETA 111
sp|O67083|HEMH_AQUAE       QAKALQERLG--------------------EDYKVVVGMRYWKPYIKDAL 102
sp|P22830|HEMH_HUMAN       QGEGMVKLLDELSP--------------NTAPHKYYIGFRYVHPLTEEAI 174
sp|P22315|HEMH_MOUSE       QGEGMVKLLDELSP--------------ATAPHKYYIGFRYVHPLTEEAI 171
sp|P22600|HEMH_BOVIN       QGEGMVKLLDELSP--------------HTAPHKYYIGFRYVHPLTEEAI 167
sp|O42479|HEMH_CHICK       QGEGMVKLLDSMSP--------------QTAPHKYYIGFRYVHPLTEEAI 153
sp|O57478|HEMH_XENLA       QGEGMVKLLDELSP--------------ATAPHKYYIGFRYVRPLTEAAI 161
sp|Q9V9S8|HEMH_DROME       QGQLMCEQLDRISP--------------ETAPHKHYVGFRYVNPLTENTL 134
sp|O59786|HEMH_SCHPO       QGSEMCKILDKKCP--------------ESAPHLPFVAFRYAPPLTEDML 139
sp|P16622|HEMH_YEAST       QATEVCKILDKTCP--------------ETAPHKPYVAFRYAKPLTAETY 146
sp|Q6APB0|HEMH_DESPS       QAEALEKSLQAHG------------------NFTVTYAMRYWPPYCDEAL 110
sp|Q747F5|HEMH_GEOSL       QARALEDVLGDG--------------------YRCFVAMRYWKPSTMEAL 107
sp|Q9ZKD4|HEMH_HELPJ       LTERLNELDPS---------------------RFYTYAMRYTPPYASMVL 122
sp|P56107|HEMH_HELPY       LTERLNKLDPS---------------------RFYTYAMRYTPPYASMVL 122
sp|Q7M7P9|HEMH_WOLSU       LIQKLQSLDPS---------------------RFYTYAMRYTPPMTDMAV 104
sp|Q7VHH1|HEMH_HELHP       LTNKLNELDCK---------------------RFYTYAMRYTPPFAYQVL 95
sp|Q9PI08|HEMH_CAMJE       LCDKLNLKQDE---------------------FKFDFVNLYVPPFATEIL 103
sp|Q8DFM2|HEMH_VIBVU       QQVELQAKL----------------------NCPVEIGMTYGTPSVLDGV 111
sp|Q7MMR4|HEMH_VIBVY       QQVELQAKL----------------------NCPVEIGMTYGTPSVLDGV 111
sp|Q9KTB6|HEMH_VIBCH       QRDKLAELS----------------------QRPVELGMTYGEPSLLEGV 111
sp|Q87RH3|HEMH_VIBPA       QAKKLAQHL----------------------DMPVELGMTYGNPSLQSGF 111
sp|Q6LTE0|HEMH_PHOPR       QRQALEKQL----------------------NVPVALGMTYGTPSIATGL 110
sp|Q8EFF4|HEMH1_SHEON      QAQKLATDLSATF----------------NQTIPVELGMSYGNPSIESGF 132
sp|Q8XD39|HEMH_ECO57       QQQALAQRLP---------------------ETPVALGMSYGSPSLESAV 111
sp|P23871|HEMH_ECOLI       QQQALAQRLP---------------------EMPVALGMSYGSPSLESAV 111
sp|Q8FK83|HEMH_ECOL6       QQQALAQRLP---------------------ETPVALGMSYGSPSLESAV 111
sp|Q83SE5|HEMH_SHIFL       QQQALAQRLP---------------------DTPVALGMSYGSPSLESSV 111
sp|Q8Z8T2|HEMH_SALTI       QQQALAARLP---------------------DTPVALGMSYGSPSLESAV 111
sp|P37408|HEMH_SALTY       QQQALAARLP---------------------DTPVALGMSYGSPSLESAV 111
sp|Q8ZC98|HEMH_YERPE       QQKALAARMP---------------------DIPVELGMSYGSPNLPEAI 111
sp|Q05338|HEMH_YERPS       QQKALAARMP---------------------DIPVELGMSYGSPNLPEAI 111
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sp|P43413|HEMH_YEREN       QQKALAERMP---------------------EIPVELGMSYGSPNLPDAI 111
sp|Q6D7Z4|HEMH_ERWCT       QHQALAARMP---------------------DTPVELGMSYGSPSLRSAL 111
sp|Q7N0P6|HEMH_PHOLL       QQKLLAERLA---------------------GIPVELGMNYGSPSLEQAI 111
sp|P43868|HEMH_HAEIN       QKDALQAYLDNQ-----------------NIDTQVEIAMTYGNPSMQSAV 116
sp|P57874|HEMH_PASMU       QQHALQTYFKQQ-----------------EKNIVVEVAMTYGEPSIKSAM 115
sp|Q65SV7|HEMH_MANSM       QKALLTEFFQQR-----------------QQNVIIEIGMTYGNPSMQYAI 115
sp|Q8CWW4|HEMH_STRMU       QEKALQAHFDQS-----------------EHGVLVRATMAYSKPSISDVV 115
sp|Q8D226|HEMH_WIGBR       QRNYLINKFP---------------------NFKIELGMRYGDPSICVAI 110
sp|Q8EBZ7|HEMH2_SHEON      QTAKLSDKLTADG---------------HQVSVHLA--MRYGNPSVASTL 118
sp|Q6F7N0|HEMH_ACIAD       QTDALKRQLISHY---------------PQLDLNIVPAMTYGNPGVQHIL 119
sp|Q7WGI0|HEMH_BORBR       QAAGVRQGLAARG-----------------VHAEVELAMRYGKPSIPAAI 145
sp|Q7W515|HEMH_BORPA       QAAGVRQGLAARG-----------------VHAEVELAMRYGKPSIPAAI 145
sp|Q7VVX8|HEMH_BORPE       QAAGVRQGLAARG-----------------VHAEVELAMRYGKPSIPAAI 145
sp|Q62HD1|HEMH_BURMA       QVESVKPLFAANG-----------------YRVIVDYAMRYGTPSIADVL 138
sp|Q63R43|HEMH_BURPS       QVESVKPLFAANG-----------------YRVIVDYAMRYGTPSIADVL 138
sp|Q8XW32|HEMH_RALSO       QAHALQQLLDAQG-----------------HDVVVACAMRYGNPSIPSVM 130
sp|Q7NV65|HEMH_CHRVO       QAKLLKGQLGEMG---------------L-HNLAVDYAMRYGNPSIESVI 130
sp|Q82UK8|HEMH_NITEU       QTALVAALLEQQA---------------D-SSLVVEYAMIIGNPSIAEKL 128
sp|Q9JVA5|HEMH_NEIMA       QAAALAKRMP---------------------DLIVRHAMTYGNPSVADVL 123
sp|Q9K097|HEMH_NEIMB       QAAALAKRMP---------------------DLIVRHAMTYGNPSVADVL 123
sp|Q8PEX0|HEMH_XANAC       LAGGLQAVMP---------------------DWHVEWAMRYGEPALRKTL 112
sp|Q8P3H6|HEMH_XANCP       LTEGLQQVMP---------------------DWHVTWAMRYGAPALRKAL 112
sp|Q9PFU1|HEMH_XYLFA       IAEGLTQHLP---------------------DWRVAWAMRYGAPALTKAL 112
sp|Q87B82|HEMH_XYLFT       IAEGLTQHLP---------------------DWRVAWAMRYGAPALTKAL 112
sp|Q607T4|HEMH_METCA       LRDRLAADGR---------------------FAAVEIAMRYGNPSVRLKL 113
sp|Q8U9F7|HEMH_AGRT5       QGELMAAALKDFP------------------NVVVDWAMRYGQPSIASRI 130
sp|Q92M52|HEMH_RHIME       QAALMAEAFGGQP------------------QVVVDWAMRYGQPSIASRI 125
sp|Q93TG2|HEMH_BRUME       QGEKLAKALSDQP------------------NVVVDWAMRYGQPSIESIT 138
sp|Q98H61|HEMH_RHILO       QSEKLAEALGDLP------------------DVTVDWAMRYGNPSTASVA 139
sp|P28602|HEMH_BRAJA       QSDKLAAALSDRD------------------HVVVDWAMRYGNPSIKSGI 131
sp|Q6NBF3|HEMH_RHOPA       QAEKLSASLGDRG------------------HLIVDWAMRYGNPSLRDRI 131
sp|Q59735|HEMH_RHOCA       QVRKLRAAVETRY---------------GAGNVVVDFCMRYGNPSTRDVL 136
sp|P57779|HEMH_ZYMMO       QAQGLQKRMP---------------------NITVDYAMRYGTPSISSRL 119
sp|Q833G5|HEMH_ENTFA       QMENLKN--ICP-------------------EVEVTIGMSYSEPSIETAL 109
sp|Q9CFB4|HEMH_LACLA       QAKQLQD--MRE-------------------DFDVRFAMTYGEPRIDKVI 110
sp|Q67T48|HEMH_SYMTH       QQAALQQRLEPE-------------------GIRVALGMTYGQPSVKSAL 111
sp|Q88XC3|HEMH_LACPL       ICQQVQAALP---------------------DWNVRLAMTYGQPDIGATL 108
sp|P57778|HEMH_PSEFL       LQQQMTAQWTQG---------------------PVELAMRYGEPSIESVL 108
sp|Q888A2|HEMH_PSESM       LQQAMKKEWSHG---------------------PVELAMRYGEPSIETVL 108
sp|Q88PV4|HEMH_PSEPK       LQAAMAEHWPHG---------------------PVEIAMRYGQPALPDVL 108
sp|Q9HVD7|HEMH_PSEAE       LQEAMKPHWPHG---------------------PVELAMRYGQPAIEKVL 108
sp|Q6MHT3|HEMH_BDEBA       FAALLQEELKDQF--------------------VVKVGLQYSEPSVESAL 110
sp|Q83FA4|HEMH_COXBU       LRERVGETLGDDF--------------------CVALGMRYGKPSIETAL 115
sp|Q6MAW8|HEMH_PARUW       VQTKLQMILGESF--------------------QVELAMRYQNPSIEEGL 111
sp|Q7MXP4|HEMH_PORGI       KAIARALAHTGR---------------------EVHVAMRYGKPAVADVL 120
sp|Q824K8|HEMH_CHLCV       LAETLSSHLDAP-------------------VITFHRYLPDTHPHTIQQL 107
sp|Q9Z7V1|HEMH_CHLPN       LAKTLSEILRAP-------------------VIPFHRYLPSTHEKTLLAL 108
sp|Q9PJQ6|HEMH_CHLMU       LAQNLSQELQAP-------------------VISFHRYLTETHQDTLAAL 106
sp|O84492|HEMH_CHLTR       LAQNLSQELQAS-------------------VIPFHRYLPETHRETLQAL 106
sp|Q8GCV0|HEMH_LEPBI       QAHALELALNERS----------------SEQWNVKVAMACGYPNMRDIE 116
sp|Q81U22|HEMH1_BACAN      QAKKLEKRLNEVQD---------------EVEYHMYLGLKHIEPFIEDAV 96
sp|Q6HM97|HEMH1_BACHK      QAKKLEKRLNEVQD---------------EVEYHMYLGLKHIEPFIEDAV 96
sp|Q63ES4|HEMH1_BACCZ      QAKKLEKRLNEVQD---------------EVEYHMYLGLKHIEPFIEDAV 96
sp|Q73C98|HEMH1_BACC1      QAKKLEKRLNEVQD---------------EVEYHMYLGLKHIEPFIEDAV 96
sp|Q81GW5|HEMH1_BACCR      QAKKLEKRLNEVQD---------------EVEYHMYLGLKHIEPFIEDAV 96
sp|P32396|HEMH_BACSU       QAHNLEQHLNEIQD---------------EITFKAYIGLKHIEPFIEDAV 97
sp|Q8ERX9|HEMH_OCEIH       QTKALEKKLNANQD---------------QYEFKAYIGLKHIHPFIEDTV 97
sp|Q71XF4|HEMH_LISMF       QAYGLEKALNESQD---------------EVEFKAYIGLKHIEPFIEDAV 96
sp|Q8Y565|HEMH_LISMO       QAYGLEKALNDSQD---------------EVEFKAYIGLKHIEPFIEDAV 96
sp|Q929G2|HEMH_LISIN       QAYGLEKALNDAQD---------------EVEFKAYIGLKHIEPFIEDAV 96
sp|P64124|HEMH_STAAM       QADALVSALNKAYA---------------DVEFKLYLGLKHISPFIEDAV 96
sp|P64125|HEMH_STAAN       QADALVSALNKAYA---------------DVEFKLYLGLKHISPFIEDAV 96
sp|Q6G8A3|HEMH_STAAS       QADALVSALNKAYA---------------DVEFKLYLGLKHISPFIEDAV 96
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sp|P64126|HEMH_STAAW       QADALVSALNKAYA---------------DVEFKLYLGLKHISPFIEDAV 96
sp|Q6GFM4|HEMH_STAAR       QADALVSALNKAYA---------------DVEFKLYLGLKHISPFIEDAV 96
sp|Q8CNS1|HEMH_STAEP       QAEALLEALNKEQD---------------DVNFKLYIGLKHISPYIEEAV 96
sp|Q81TU9|HEMH2_BACAN      QAHKLTDSMNNMFT---------------EYEFNCYLGLKHTAPFIEDAV 97
sp|Q6HM28|HEMH2_BACHK      QAHKLTDSMNNMFT---------------EYEFNCYLGLKHTAPFIEDAV 97
sp|Q63EK7|HEMH2_BACCZ      QAHKLTDSMNNMFT---------------EYEFNCYLGLKHTAPFIEDAV 97
sp|Q73C08|HEMH2_BACC1      QAHKLTDSMNNIFT---------------EYEFNCYLGLKHIAPFIEDAV 97
sp|Q81GN7|HEMH2_BACCR      QAHKLTDSMNNIFT---------------EYEFTCYLGLKHTAPFIEDAV 97
sp|Q9KDK9|HEMH_BACHD       QAIALEQKLNELYD---------------DIEFKSYLGLKHIDPFIEDAV 97
sp|Q5WHT1|HEMH_BACSK       QANGLAAVLNEQQE---------------DIVFVPYLGLKHIDPFIEDAV 97
sp|Q72L32|HEMH_THET2       QAVRLQALLNLEAPPYPKRLLGPFPPRAPHGPARVYVGTKHWHPSIGEAV 106
sp|Q9RV98|HEMH_DEIRA       QVEATMEQLASTGR-----------------PLKAYIGMRHWSPWIEDAV 99
sp|Q97R30|HEMH_STRPN       EVALVEARLGSEYS--------------------VYFANKFSSPFIPDVI 90
sp|Q8DQ04|HEMH_STRR6       EVTLVEARLGNEYS--------------------VYFANKFSSPFIPDVI 90
sp|Q8FTB1|HEMH_COREF       IIANVKAELAARGY-----------------DIPVYFGNRNWKPFDNEAA 103
sp|Q8NQA1|HEMH_CORGL       IIANVEKELASRDH-----------------KLPVYFGNRNWKPFDNEAA 99
sp|Q6NH66|HEMH_CORDI       IIGNIIEVLSSRGL-----------------EIPVYFGNRNWHPFVNDTA 102
sp|Q740Y1|HEMH_MYCPA       LIEQLR-----AAQ-----------------DLPVYFGNRNWEPYVEDTV 88
sp|P71765|HEMH_MYCTU       LIAELE-----AQQ-----------------ELPVYFGNRNWEPYVEDAV 88
sp|Q9CBM2|HEMH_MYCLE       LVNELQ-----VEL-----------------DLPVYFGNRNWEPYIEDSV 88
sp|Q5YU18|HEMH_NOCFA       IIAGVERELDEAGI-----------------DLPVYFGNRNWHPMVEDTV 93
sp|O07401|HEMH_MYCAV       AAGRPE---PARLL-----------------RQPQLGALRRRH---GEGH 90
sp|Q83H94|HEMH_TROW8       LRGALEKELFSRGI-----------------RIPVLWANRNWQPQLEEVL 120
sp|Q83FJ2|HEMH_TROWT       LRGALEKELFSRGI-----------------RIPVLWANRNWQPQLEEVL 120
sp|Q6AHF2|HEMH_LEIXX       LKAALEAELASRGI-----------------DLPVLWGNRNWDPYLADAL 111
sp|Q82KJ6|HEMH_STRAW       LLDALRKDFAEHGL-----------------NLPVYWGNRNWAPYLTDTL 100
sp|O50533|HEMH_STRCO       LLDALRKDFAEHGL-----------------DLPVYWGNRNWAPYLTDTL 100
sp|Q7UFZ7|HEMH_RHOBA       LIAALQKRFDANGI-----------------DLPIYWGNRNWDPYFADTL 97
sp|P72183|HEMH_PROFR       LAAALGEALVARGI-----------------DVPIANANRHSMPYMDQAL 93
sp|Q9HLB8|HEMH_THEAC       IARKLH-EKIG--D-----------------DMDVILAYKHWNPSIEEAV 89
sp|Q978U9|HEMH_THEVO       IRDRLQ-KRFDQSG-----------------DVDVFTAFKHWYPSIGEVV 91


sp|P42043|HEMH1_ARATH      QQIKKD-KITRLVVLPLYPQYSISTTGSSIRVLQDLFR--KDPYLAGVPV 244
sp|P42044|HEMH_CUCSA       QQIKRD-GITRLVVLPLYPQYSISTTGSSIRVLQKMFR--EDAYLSSLPV 269
sp|P42045|HEMH_HORVU       DQIKKD-KITKLVVLPLYPQYSISTSGSSIRVLQNIVK--EDPYFAGLPI 263
sp|O04921|HEMH2_ARATH      EQIKRD-GITKLVVLPLYPQFSISTSGSSLRLLERIFR--EDEYLVNMQH 255
sp|O22101|HEMH_ORYSA       EQIKRD-GITKLVVLPLYPQFSISTSGSSLRLLEGIFR--EDEYLVNMQH 236
sp|Q8YQR8|HEMH_ANASP       ALLTQD-NLDNLVILPLYPQFSISTSGSSFRLLERLWQ--EDPKLQRLEY 156
sp|P54225|HEMH_SYNY3       EKIKGD-RLQRLVILPLYPHFSISTSGSSFRVLEEMWH--NDPSLRQLDY 156
sp|Q8DGU6|HEMH_SYNEL       AQIKAD-QIRELVILPLYPQFSISTSGSSFRLLESLWN--QDPELQKIRY 157
sp|Q7VD58|HEMH_PROMA       EDIKAD-NINEVVVLPLYPHFSISTSGSSFRELRRLRE--VDKEFQKLSI 156
sp|Q7V2F5|HEMH_PROMP       ADMKAD-GVDQIVVLPLYPHFSISTSGSSFRELKKLRD--SDSEFQKIPM 156
sp|Q7V6C6|HEMH_PROMM       ADIKAD-GIDQVVVLPLYPHFSISTSGSSFRELQRLRQ--TDESFRKLPI 156
sp|Q7U5G0|HEMH_SYNPX       ADMKAD-GMDEVVVLPLYPHFSISTSGSSFRELQRLRQ--GDAAFEQLPI 156
sp|Q7NMC7|HEMH_GLOVI       RKIKAD-GIRRLVLLPLYPQYSISTSGSSFKLLDQIWA--RDPSLKAIER 156
sp|Q9ZC84|HEMH_RICPR       GQIKEY-NPSEIILLPLYPQFSSTTTGSSVKNFLQNID-------IDIPI 152
sp|Q68VM9|HEMH_RICTY       CQIKEY-NPSEIILLPLYPQFSSTTTGSSVKNFLQNID-------IDIPI 152
sp|Q92FV4|HEMH_RICCN       GQIKKY-NPSEIILLPLYSQFSSTTTGSSVKNFLQNLD-------IDIPI 152
sp|Q73FY6|HEMH_WOLPM       ESVKQF-DPDEVILLPLYPQYSTTTTLSSIENWQKNAK--RY--GLKCNT 153
sp|P57777|HEMH_CAUCR       RQVAAF-APDQVVLLPLYPQFSTTTTGSSLKAWKKTYK-------GSGVQ 153
sp|O67083|HEMH_AQUAE       SELLKE-GINEVILLPLYPQYSKTTTGSAFNEFERSKK--ALK-ADHIKV 148
sp|P22830|HEMH_HUMAN       EEMERD-GLERAIAFTQYPQYSCSTTGSSLNAIYRYYN--QVGRKPTMKW 221
sp|P22315|HEMH_MOUSE       EEMERD-GLERAIAFTQYPQYSCSTTGSSLNAIYRYYN--EVGQKPTMKW 218
sp|P22600|HEMH_BOVIN       EEMERD-GLERAVAFTQYPQYSCSTTGSSLNAIYRYYN--EVGRKPTMKW 214
sp|O42479|HEMH_CHICK       EEMEDD-GIERAIAFTQYPQYSCSTTGSSLNAIYRYYN--KKGKKPKMKW 200
sp|O57478|HEMH_XENLA       EEMERD-GVERAIAFTQYPQYSCSTTGSSLNAIYRYYN--AKGTQPKMKW 208
sp|Q9V9S8|HEMH_DROME       AEIEKD-KPERVVLFSQYPQYSCATSGSSFNSIFTHYR--SNNLPSDIKW 181
sp|O59786|HEMH_SCHPO       DELKKA-NVSRAVAFSQYPQWSCATSGASLNELRRKLI--EKGMEKDFEW 186
sp|P16622|HEMH_YEAST       KQMLKD-GVKKAVAFSQYPHFSYSTTGSSINELWRQIK--ALDSERSISW 193
sp|Q6APB0|HEMH_DESPS       DYLLSK-GVERLVALSLYPHYSKATTGSSLTQLHKTLK--KKN--ISLPL 155
sp|Q747F5|HEMH_GEOSL       AAIRRE-GISRVIALSLYPHYSRATTGSSVNELKRVLS--QSG--VQFQM 152
sp|Q9ZKD4|HEMH_HELPJ       QDLALK-EIESLVFFSMYPQYSSTTTLSSFNDAFNALK--SLET-FRPKV 168
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sp|P56107|HEMH_HELPY       QDLALK-EVESLVFFSMYPQYSSTTTLSSFNDAFNALK--SLET-FRPKV 168
sp|Q7M7P9|HEMH_WOLSU       RELAQK-EIEEVTLFSLYPQYSTTTTLSSI-EEFHKQC--ALLS-YFPKT 149
sp|Q7VHH1|HEMH_HELHP       EDIKTQ-GIQSVVLFSLYPQFSYSTIASSLIDAKAALQ--KLA--FTPTL 140
sp|Q9PI08|HEMH_CAMJE       QKYTLN-ASDEIILFPLYPHHSCTTVTSSLEVLQNEIS--KQK--IQAKV 148
sp|Q8DFM2|HEMH_VIBVU       NKLQAQ-GVDEICVLPLYPQYSGTTTGAAYDALAHALR--KVAV--VPSI 156
sp|Q7MMR4|HEMH_VIBVY       NKLQAQ-GVDEICVLPLYPQYSGTTTGAAYDALAHALR--KVAV--VPSI 156
sp|Q9KTB6|HEMH_VIBCH       RKLQQQ-GVEQIVVLPLYPQYSATTTAAVFDGLAKALR--QLPV--VPEL 156
sp|Q87RH3|HEMH_VIBPA       EALIAQ-GVEEVIVLPLYPQYSGTTTAAVSDGITKAFK--QLPV--MPAF 156
sp|Q6LTE0|HEMH_PHOPR       AELKQQ-GCNKVLVLPLYPQYSGTTTAAVFDRIAKELK--QQPH--IPEL 155
sp|Q8EFF4|HEMH1_SHEON      AKLKAQ-GAERIVVLPLYPQYSCSTVASVFDAVAHYLT--RVRD--IPEL 177
sp|Q8XD39|HEMH_ECO57       DELLAE-HVDHIVVLPLYPQFSCSTVGAVWDELARILA--RKRS--IPGI 156
sp|P23871|HEMH_ECOLI       DELLAE-HVDHIVVLPLYPQFSCSTVGAVWDELARILA--RKRS--IPGI 156
sp|Q8FK83|HEMH_ECOL6       DELLAE-HVDHIVVLPLYPQYSCSTVGAVWDELARILA--RKRS--IPGI 156
sp|Q83SE5|HEMH_SHIFL       DELLAE-HVDHIVVLPLYPQFSCSTVGAVWDELARILA--RKRS--IPGI 156
sp|Q8Z8T2|HEMH_SALTI       DELLAS-DVDHIVVLPLYPQYSCSTVGAVWDELGRILA--RKRR--IPGI 156
sp|P37408|HEMH_SALTY       DELLAS-DVDHIVVLPLYPQYSCSTVGAVWDELGRILA--RKRR--IPGI 156
sp|Q8ZC98|HEMH_YERPE       EKLLAQ-GVTNLVILPLYPQYSCSTSAAVWDAVARVLK--GYRR--LPSI 156
sp|Q05338|HEMH_YERPS       EKLLAQ-GVTNLVILPLYPQYSCSTSAAVWDAVARVLK--GYRR--LPSI 156
sp|P43413|HEMH_YEREN       DKLLAQ-GVTKLVVLPLYPQYSCSTSAAVWDAVARILK--GYRR--LPSI 156
sp|Q6D7Z4|HEMH_ERWCT       DKLLAQ-GVTQLVVLPMYPQYSCSTTAAVWDGLAAQLR--DNRQ--LPAI 156
sp|Q7N0P6|HEMH_PHOLL       DNLLKQ-NVEQLIVLPLYPQYSGSSSAAVFDGVSLVLQ--KYRT--IPGM 156
sp|P43868|HEMH_HAEIN       KNLLKN-QVERIIVLPLYPQYSSSTTGAVFDAFANALK--EERG--LLPF 161
sp|P57874|HEMH_PASMU       QRLSTQ-QVDNLIVFPLYPQYSSSTTGAVFDAFAQVLK--TQRG--VLPF 160
sp|Q65SV7|HEMH_MANSM       DNLIEQ-KVDKIIVLPLYPQYSSTTTAPVFDVFAQALK--RHRH--IVPF 160
sp|Q8CWW4|HEMH_STRMU       DEFLKE-KVAKMIVLPLFPQYSSTTTAAIFDAFAQSLK--KKKD--IPPF 160
sp|Q8D226|HEMH_WIGBR       KKMIKIYNVNKLIILPMYPQYSCTTTASVLDSVCEVIK--KYRN--IPSI 156
sp|Q8EBZ7|HEMH2_SHEON      REMHKQ-GIDKLVVLPLYPQYAAPTTGSAFDAIAKELS--QWRY--LPSL 163
sp|Q6F7N0|HEMH_ACIAD       KDLAAS-PQEHVILLPLFPQYSATSTAPLYDAFANWIP--KQRH--LPGL 164
sp|Q7WGI0|HEMH_BORBR       TALRER-GCDHILAVPLYPQYAASTTATVVDAVTRHAG--RLRD--QPAL 190
sp|Q7W515|HEMH_BORPA       TALRER-GCDHILAVPLYPQYAASTTATVVDAVTRHAG--RLRD--QPAL 190
sp|Q7VVX8|HEMH_BORPE       TALRER-GCDHILAVPLYPQYAASTTATVVDAVTRHAG--RLRD--QPAL 190
sp|Q62HD1|HEMH_BURMA       AQLKRA-GAERVLLLPMYPQYSSSTTATAFDAAFAALG--RMRN--QPEV 183
sp|Q63R43|HEMH_BURPS       AQLKRA-GAERVLLLPMYPQYSSSTTATAFDAAFAALG--RMRN--QPEV 183
sp|Q8XW32|HEMH_RALSO       QTLRKQ-GVERILVLPMYPQYSGTTTATAFDEVFRVMG--QMRN--QPEL 175
sp|Q7NV65|HEMH_CHRVO       GKMREQ-GVERLLLLPLYPQYAASSSATALDEAFRVLS--RLRN--MPEV 175
sp|Q82UK8|HEMH_NITEU       QQMKVQ-GCDRILVLPLFPQYAASSTGCVLDGVFSELR--KMRN--IPDI 173
sp|Q9JVA5|HEMH_NEIMA       SELKAQ-GAGRLLVIPMYPQYAASSSGAAVDKVCEQLL--LQRN--QMSV 168
sp|Q9K097|HEMH_NEIMB       SELKAQ-GAGRLLVIPMYPQYAASSSGAAVDKVCEQLL--LQRN--QMSV 168
sp|Q8PEX0|HEMH_XANAC       DRLRAR-GIKRIVVLPLYPQYSTTTTASIQD-VVDAWR--TSAP--EIAV 156
sp|Q8P3H6|HEMH_XANCP       DGLRAR-GIKRIVVLPLYPQYSTTTTASIQD-VVDAWR--PSAP--EIAV 156
sp|Q9PFU1|HEMH_XYLFA       DALQAQ-QVRRIVILPLYPQYSTTTTASVQD-VVEAWC--KRTP--QVQV 156
sp|Q87B82|HEMH_XYLFT       DALQAQ-QVRRIVILPLYPQYSTTTTASVQD-VVEAWC--KRTP--QVQV 156
sp|Q607T4|HEMH_METCA       EELRNR--VETIVVLPLYPQYSAATTGSAFDAVCDTLK--TWRH--IPSL 157
sp|Q8U9F7|HEMH_AGRT5       DALKEQ-GCEKILLFPLYPQYAASTTATVNDKAFEHLM--KLRW--QPAI 175
sp|Q92M52|HEMH_RHIME       EALQKA-GCERILVFPLYPQYAAATTATVNDKAFEALL--KMRW--QPAL 170
sp|Q93TG2|HEMH_BRUME       DRLLQQ-GCERIVIFPLYPQYSATTTATVNDKFFEALM--KKRF--MPAI 183
sp|Q98H61|HEMH_RHILO       ERLVAQ-GCDRILSFPLYPQYSATTTATANDQLFRALM--KLRR--APAI 184
sp|P28602|HEMH_BRAJA       DALIAE-GCDRILAVPLYPQYSASTSATVCDEVFRVLA--RLRA--QPTL 176
sp|Q6NBF3|HEMH_RHOPA       EALVAK-GCTRLLVVPLYPQYSAATSATVCDQAFRVLR--ELRA--QPTL 176
sp|Q59735|HEMH_RHOCA       DDMLAQ-GCERILFLPLYPQYAGATSATANDQFFRALM--QVKR--QPAA 181
sp|P57779|HEMH_ZYMMO       EKLIAF-RCRRILLAPLYPQYSAASTATVQDEAYRYLQ--KIRW--QPNL 164
sp|Q833G5|HEMH_ENTFA       DTLLSK-EIEELNVIPMYPQYSGTTVGSVFDSVMNYFI--KSDR--IVDI 154
sp|Q9CFB4|HEMH_LACLA       AEMKES-GVEEITVLPLYPQYSLTTVEPVIQQVKKIDD--K--------I 149
sp|Q67T48|HEMH_SYMTH       EELRGW-GVRRLLVLPLFPQYSSTTTAAVWSKVQKALD--GWRD--LPEQ 156
sp|Q88XC3|HEMH_LACPL       KAMVAD-GCEKPIILPLFPQYTQSTHGGIHRQVEATGL--P--------H 147
sp|P57778|HEMH_PSEFL       TRLAGQ-GISKVTLAPLYPQFADSTVTTVIEEARRVVR--DKQL--DLQF 153
sp|Q888A2|HEMH_PSESM       TRLSEQ-GFKKVTLAPLYPQFADSTVTTVIEEAKRVVR--AKSL--KMQF 153
sp|Q88PV4|HEMH_PSEPK       ARLAAQ-GVRKVTLAPLYPQFADSTVTTVIEQAKQTVS--EHQL--PLQM 153
sp|Q9HVD7|HEMH_PSEAE       LDLARR-GIRRVTLAPLYPQFADSTTTTAEQEVRRVIA--AHRL--GLEV 153
sp|Q6MHT3|HEMH_BDEBA       KDLQQA-GVDEILVAPMFPQYAEATNGSSFKLAERMAK--KLHL--TAPL 155
sp|Q83FA4|HEMH_COXBU       KKLQEA-QCRQLIVLPLFPQYSTSTTASALEEVR------AKNS--FKEM 156
sp|Q6MAW8|HEMH_PARUW       ERLKLA-NVKEIVIFPLFPQYASATTGSVHQEVMKHLQ--QWQN--IPTL 156
sp|Q7MXP4|HEMH_PORGI       KELPHG---RSLVVLPLFPHYAMSSYETAVEHCKAEIR--RLCP--NLSF 163
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sp|Q824K8|HEMH_CHLCV       KTLGDF----PIVGVPLFPHFTYAVTGSIVRFIHNQLP--LLNI--S--- 146
sp|Q9Z7V1|HEMH_CHLPN       RTLHTR----HVIGIPLFPHFTYSVTGSIVRFFMKHVP--EIPI--S--- 147
sp|Q9PJQ6|HEMH_CHLMU       RESAG-----DIIGIPLFPHYTFAVTGSIIRFFLERIP--EKPM--A--- 144
sp|O84492|HEMH_CHLTR       QESQG-----SIVGIPLFPHYTFAVTGSIIRFFLQHLP--EKPI--S--- 144
sp|Q8GCV0|HEMH_LEPBI       FGKPNQ----DTVYLPLYPQFSRSTVLSTLAILETKFG--ECPV--GS-G 157
sp|Q81U22|HEMH1_BACAN      KEMHND-GIQDAIALVLAPHYSTFSVKSYVGRAQEEAE----KLGN-LTI 140
sp|Q6HM97|HEMH1_BACHK      KEMHND-GIQDAIALVLAPHYSTFSVKSYVGRAQEEAE----KLGN-LTI 140
sp|Q63ES4|HEMH1_BACCZ      KEMHND-GIQDAIALVLAPHYSTFSVKSYVGRAQEEAE----KLGN-LTI 140
sp|Q73C98|HEMH1_BACC1      KDMHND-GIQDAIALVLAPHYSTFSVKSYVGRAQEEAE----KLGN-LTI 140
sp|Q81GW5|HEMH1_BACCR      KDMHND-GIQDAIALVLAPHYSTFSVKSYVGRAQEEAE----KLGN-LTI 140
sp|P32396|HEMH_BACSU       AEMHKD-GITEAVSIVLAPHFSTFSVQSYNKRAKEEAE----KLGG-LTI 141
sp|Q8ERX9|HEMH_OCEIH       EEMAKD-GIKEAISLVLAPHYSTFSVKSYNKRANETAE----KYG--IQL 140
sp|Q71XF4|HEMH_LISMF       EAMHKD-GIEEAISIVLAPHYSSFSVEAYNKRAKDAAD----KLGG-LRI 140
sp|Q8Y565|HEMH_LISMO       EAMHKD-GIEEAISIVLAPHYSSFSVEAYNKRAKEAAD----KLGG-PRI 140
sp|Q929G2|HEMH_LISIN       EAMHKD-GIEEAISIVLAPHYSSFSVEAYNKRAKDAAD----KLGG-IHI 140
sp|P64124|HEMH_STAAM       EQMHND-GITEAITVVLAPHYSSFSVGSYDKRADEEAA----KYG--IQL 139
sp|P64125|HEMH_STAAN       EQMHND-GITEAITVVLAPHYSSFSVGSYDKRADEEAA----KYG--IQL 139
sp|Q6G8A3|HEMH_STAAS       EQMHND-GITEAITVVLAPHYSSFSVGSYDKRADEEAA----KYG--IQL 139
sp|P64126|HEMH_STAAW       EQMHND-GITEAITVVLAPHYSSFSVGSYDKRADEEAA----KYG--IQL 139
sp|Q6GFM4|HEMH_STAAR       EQMHKD-GITEAITVVLAPHYSSFSVGSYDKRADEEAA----KYG--IQL 139
sp|Q8CNS1|HEMH_STAEP       EQMHND-GIKEAVTVVLAPHYSSFSVGSYDQRAQEKAD----EYG--IQL 139
sp|Q81TU9|HEMH2_BACAN      EEMKRD-GIEQAISIVLAPHYSTFSIKAYNERAIRLSE----EIGG-PVI 141
sp|Q6HM28|HEMH2_BACHK      EEMKRD-GIEQAISIVLAPHYSTFSIKAYNERAIRLSE----EIGG-PVI 141
sp|Q63EK7|HEMH2_BACCZ      EEMKRD-GIEQAISIVLAPHYSTFSIKAYNERAIRLSE----EIGG-PVI 141
sp|Q73C08|HEMH2_BACC1      EEMKRD-GIEQAISIVLAPHYSTFSIKAYNDRAIRLSE----EIGG-PVI 141
sp|Q81GN7|HEMH2_BACCR      EEMKRN-GIEQTISIVLAPHYSTFSIKAYNDRAIRLSK----EIGG-PVI 141
sp|Q9KDK9|HEMH_BACHD       EQMKED-GVQEAVSIVLAPHFSTFSVKSYNGRAHEESK----KIGG-PRI 141
sp|Q5WHT1|HEMH_BACSK       QKMKND-GIETAVSIVLAPHFSTFSVQSYNKRAQEEAD----RIGG-PTI 141
sp|Q72L32|HEMH_THET2       AAMHED-GVRRAVAIVAAPHYSLRSVAEYREKVDSALK----TLPEPIDF 151
sp|Q9RV98|HEMH_DEIRA       REMLDD-GIEQAIAIVLAPQYSSLSVAKYQKKIKAALE----MNHGHIDF 144
sp|Q97R30|HEMH_STRPN       GQMEAD-GIEQCICLILEPHYSFYSVMGYEKFLESKQ----------IQF 129
sp|Q8DQ04|HEMH_STRR6       GQMEAD-GIEQCICLILEPHYSFYSVMGYEKFLESKQ----------IQF 129
sp|Q8FTB1|HEMH_COREF       EQMAAD-GIRNALVFATSAWGGYSGCRQYHEDIQGMRAHLEEIGAPEVTF 152
sp|Q8NQA1|HEMH_CORGL       EQMADD-GVKNALVLATSAWGGYSGCRQYQEDIQGMIKHLESQGQ-SITF 147
sp|Q6NH66|HEMH_CORDI       EKMVRD-GVRNVAVFATSAWGGYSGCRQYDEDIVRMNHHLEEKELPTLNC 151
sp|Q740Y1|HEMH_MYCPA       KVMRDN-GIRRAAVFTTSAWSGYSSCTQYVEDIARAR---TAAGTGAPEL 134
sp|P71765|HEMH_MYCTU       TAMRDN-GVRRAAVFATSAWSGYSSCTQYVEDIARAR---RAAGRDAPEL 134
sp|Q9CBM2|HEMH_MYCLE       VTMRDD-GIRCAAVFITSAWSGYSSCTRYVEAIARAR---RRAGTGAPNL 134
sp|Q5YU18|HEMH_NOCFA       AEMARD-GVTGALVFPTSAWGGYSGCRQYHEDIERAR---AAVGPAAPHL 139
sp|O07401|HEMH_MYCAV       TRQRDS-ACRGVHHLRLERLLQLHAVRRGHRPGAHRG------RAGRART 133
sp|Q83H94|HEMH_TROW8       REAYDR-GFRAFLTLFTSAYSCYSSCRQYREDIAHAVERAGLSGR--IIV 167
sp|Q83FJ2|HEMH_TROWT       REAYDR-GFRAFLTLFTSAYSCYSSCRQYREDIAHAVERAGLSGR--IIV 167
sp|Q6AHF2|HEMH_LEIXX       TEADQR-GFTKLIAVATSAYSSYSSCRQYREDFARALRETGLEGR--IQI 158
sp|Q82KJ6|HEMH_STRAW       REMAAD-GRRRILVLATSAYASYSGCRQYRENLAGALATLEAEGLEVPRV 149
sp|O50533|HEMH_STRCO       REMVGD-GRRRILVLATSAYASYSGCRQYRENLADALAALESEGLELPKI 149
sp|Q7UFZ7|HEMH_RHOBA       RQMKAD-GKKRSLAFFTSMFSCYSGCRQYRENIIQAR---EEVGEGAPLV 143
sp|P72183|HEMH_PROFR       ADLQSR-GIRRVLTLVPTPYASYSGCRAYREELLAGTR-IDDEGRPALQV 141
sp|Q9HLB8|HEMH_THEAC       KGLG---SYDNIVAIPLFSFYSQNVKDSYLNPLESALR----RYGFSPRL 132
sp|Q978U9|HEMH_THEVO       PDLK---GYDNIVSIPLFSFFSENVKASYYKPLAEALE----KNDIRTKM 134


sp|P42043|HEMH1_ARATH      AIIKSWYQRRGYVNSMADLIEKELQTFSDPK---------------EVMI 279
sp|P42044|HEMH_CUCSA       SIIKSWYQREGYIKSMADLMQAELKNFANPQ---------------EVMI 304
sp|P42045|HEMH_HORVU       SIIESWYQREGYVKSMADLIEKELSVFSNPE---------------EVMI 298
sp|O04921|HEMH2_ARATH      TVIPSWYQREGYIKAMANLIQSELGKFGSPN---------------QVVI 290
sp|O22101|HEMH_ORYSA       TVIPSWYQREGYIKAMATLIEKELRTFSEPQ---------------KVMI 271
sp|Q8YQR8|HEMH_ANASP       TVIPSWYKEPGYLQAMAELIRQEIEQFPHPD---------------QVHV 191
sp|P54225|HEMH_SYNY3       SLIPSWYDHPGYLQAMADLIAQELKKFPNPD---------------QAHI 191
sp|Q8DGU6|HEMH_SYNEL       TLIPSWYNHPGYVAAMADLIRQELDRCPNPD---------------EAVI 192
sp|Q7VD58|HEMH_PROMA       RCIRSWFDNTGYIASMAELIEQEISSCESPN---------------AAHI 191
sp|Q7V2F5|HEMH_PROMP       RCVRSWFSQSGYLKSMVELISEQISLCESPD---------------SAHI 191
sp|Q7V6C6|HEMH_PROMM       RCIRSWYDHPGYVRAMAELIAEQVRLSDVPE---------------EAQV 191
sp|Q7U5G0|HEMH_SYNPX       RCIRSWFDHPGYIKAMAELIAEEVRNSDDPE---------------KAHV 191
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sp|Q7NMC7|HEMH_GLOVI       ITINSWYSRPGYIRAMGERVREGLDKFDNPD---------------GVHI 191
sp|Q9ZC84|HEMH_RICPR       KTICCYPIEEDFIKAHVSIIKE--KLYDKN-----------------FRI 183
sp|Q68VM9|HEMH_RICTY       KTICCYPIEEDFIKAHVSIIKE--KLYDKN-----------------FRI 183
sp|Q92FV4|HEMH_RICCN       KTICCYPLEKDFIKAHVSLIKE--KLYDKN-----------------FRI 183
sp|Q73FY6|HEMH_WOLPM       KMIHRYYDNQDFIEAHTNLIAKYYKLARKIG---------------KPRV 188
sp|P57777|HEMH_CAUCR       TTVGCYPTEGGLIEAHARMIRESWEKAGSPT---------------NIRL 188
sp|O67083|HEMH_AQUAE       KKIEHFYDHPLYIKAWAEQIKQS---VEKPE---------------EYHF 180
sp|P22830|HEMH_HUMAN       STIDRWPTHHLLIQCFADHILKELDHFPLEKR-------------SEVVI 258
sp|P22315|HEMH_MOUSE       STIDRWPTHPLLIQCFADHILKELNHFPEEKR-------------SEVVI 255
sp|P22600|HEMH_BOVIN       STIDRWPTHPLLIQCFADHILKELDHFPPEKR-------------REVVI 251
sp|O42479|HEMH_CHICK       SIIDRWPTHPLLIQCFADHIQKELDLFPPDKR-------------KDVVI 237
sp|O57478|HEMH_XENLA       SVIDRWPTHPLLIQCFADHIQKELNMFPADKR-------------GEVVI 245
sp|Q9V9S8|HEMH_DROME       SIIDRWGTHPLLIKTFAQRIRDELAKFVETKR-------------NDVVI 218
sp|O59786|HEMH_SCHPO       SIVDRWPLQQGLINAFAENIEETLKTYPEDVR-------------DDVVI 223
sp|P16622|HEMH_YEAST       SVIDRWPTNEGLIKAFSENITKKLQEFPQPVR-------------DKVVL 230
sp|Q6APB0|HEMH_DESPS       TEIPSWPKQRDYIAAIAANIKKGLATFHG----------------EKTEI 189
sp|Q747F5|HEMH_GEOSL       MYVDRFFDHPLYIDALAEKIREGLDDFHPL---------------AEVQV 187
sp|Q9ZKD4|HEMH_HELPJ       RVIERFYADKKLNEIILNTILSALNNCKSQD----------------FVL 202
sp|P56107|HEMH_HELPY       RVIERFYASKKLNKIILNTILNTLNNRKSQD----------------FVL 202
sp|Q7M7P9|HEMH_WOLSU       KEIDRYFEDSNYNEAIIDRILEALGGDNPEE----------------FTL 183
sp|Q7VHH1|HEMH_HELHP       YEISSYHTHPDYISCIIERIKESLGADNPNE----------------FVL 174
sp|Q9PI08|HEMH_CAMJE       KTIDIFYKNELYNEMIVSHILAKKSKFDAK------------------IL 180
sp|Q8DFM2|HEMH_VIBVU       QFIRDYHDHPLYIKALAESVRQSWQVQGK-----------------GDYL 189
sp|Q7MMR4|HEMH_VIBVY       QFIRDYHDHPLYIKALAESVRQSWQAQGK-----------------GDYL 189
sp|Q9KTB6|HEMH_VIBCH       HFIRDYHDHPLYIQALAKSVRASWQQHGQ-----------------GDLL 189
sp|Q87RH3|HEMH_VIBPA       SFIRDYHDHPMYIEALAHSVRQYWEEHGK-----------------GDYL 189
sp|Q6LTE0|HEMH_PHOPR       RFINHYFDHPDYIDALALSVTDFWAENGE-----------------PDYL 188
sp|Q8EFF4|HEMH1_SHEON      RFNKQYFAHEAYIAALAHSVKRHWKTHGQ-----------------AEKL 210
sp|Q8XD39|HEMH_ECO57       SFIRDYADNHDYINALANSVRASFAKHGE-----------------PDLL 189
sp|P23871|HEMH_ECOLI       SFIRDYADNHDYINALANSVRASFAKHGE-----------------PDLL 189
sp|Q8FK83|HEMH_ECOL6       SFIRDYADNHDYINALANSVRASFAKHGE-----------------PDLL 189
sp|Q83SE5|HEMH_SHIFL       SFIRDYADNHDYINALANSVRASFAKHGE-----------------PDLL 189
sp|Q8Z8T2|HEMH_SALTI       SFIRDYADDGAYIDALAKSARESFARHGE-----------------PDLL 189
sp|P37408|HEMH_SALTY       SFIRDYADDGAYIDALAKSARESFARHGE-----------------PDVL 189
sp|Q8ZC98|HEMH_YERPE       SFIRDYAEHPAYISALKQSVERSFAEHGQ-----------------PDRL 189
sp|Q05338|HEMH_YERPS       SFIRDYAEHPAYISALKQSVERSFAEHGQ-----------------PDRL 189
sp|P43413|HEMH_YEREN       SFIRDYAEHPAYISALKQSVENSFVQHGK-----------------PDRL 189
sp|Q6D7Z4|HEMH_ERWCT       RFIRDYAEHPAYIAALKHRVEQSFAEHGE-----------------PDRL 189
sp|Q7N0P6|HEMH_PHOLL       HFIRSYADHPAYISALKETIEQSFDKHGQ-----------------PDRL 189
sp|P43868|HEMH_HAEIN       DFIHSYHIDENYINALADSIKVRLKSD--------------------EFL 191
sp|P57874|HEMH_PASMU       DFIHSYHTNEDYIAALVTTIQEHFQPD--------------------EFL 190
sp|Q65SV7|HEMH_MANSM       EFIHSYHLDENYIEALVKSIKVRLKND--------------------EFL 190
sp|Q8CWW4|HEMH_STRMU       DFIHHYYERPSYIQALAQTI--HLQEN--------------------EHL 188
sp|Q8D226|HEMH_WIGBR       IFIRDYADNINYINAITNSIKKSFNKNGI-----------------PEML 189
sp|Q8EBZ7|HEMH2_SHEON      HFINTYHDNPDFIAALVNSIRDDFDKHGK-----------------PQKL 196
sp|Q6F7N0|HEMH_ACIAD       TIIKDYYRHPVFIQALVSSVQRFQQQHGK-----------------PQKL 197
sp|Q7WGI0|HEMH_BORBR       RFVKRFHNDPAYVEAQAGRIAEFWQAHGR-----------------PQKL 223
sp|Q7W515|HEMH_BORPA       RFVKRFHNDPAYVEAQAGRIAEFWQAHGR-----------------PQKL 223
sp|Q7VVX8|HEMH_BORPE       RFVKRFHNDPAYVEAQAGRIAEFWQAHGR-----------------PQKL 223
sp|Q62HD1|HEMH_BURMA       RTVRHYADHPAYIHALAEQVRQYWAAHGRPA------------FDAGDKL 221
sp|Q63R43|HEMH_BURPS       RTVRHYADHPAYIHALAEQVRQYWAAHGRPA------------FDAGDKL 221
sp|Q8XW32|HEMH_RALSO       RLVKHFHDHPAYINALHQQVGAYWAQHGAPD------------FARGDKL 213
sp|Q7NV65|HEMH_CHRVO       RTVRHFHDDPGYIAALAAQIRKHWQYGQR-----------------PDKL 208
sp|Q82UK8|HEMH_NITEU       RTVRHYHDDPGYIAALAQNVRDYWEKHGQ-----------------PDKL 206
sp|Q9JVA5|HEMH_NEIMA       RTVSRFYDDTGYIDAMKNHILRYWAEHGR-----------------GKKL 201
sp|Q9K097|HEMH_NEIMB       RTVSRFYDDTGYIDAMKNHILRYWAEHGR-----------------GKKL 201
sp|Q8PEX0|HEMH_XANAC       EVIQDYCEDTGWVAAIAESIRAHWQVHGR-----------------SEKL 189
sp|Q8P3H6|HEMH_XANCP       EVIQDYCEDAGWVAAIADSIRTHWQVHGR-----------------SEKL 189
sp|Q9PFU1|HEMH_XYLFA       ECIQDYAEDSAWVAAVAASIRRHWQAHGR-----------------SEKL 189
sp|Q87B82|HEMH_XYLFT       ECIQDYAEDPAWVAAVAASIRRHWQAHGR-----------------SEKL 189
sp|Q607T4|HEMH_METCA       HFIGDYHRSPKYLEAVAASIRSFWQEHGR-----------------PERL 190
sp|Q8U9F7|HEMH_AGRT5       RTVPPYHDDPAYIEGLAASVKNHLATLDWE----------------PEML 209
sp|Q92M52|HEMH_RHIME       RTVPPYHDDPVYIDALATSINKHLATLDWE----------------PELV 204
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sp|Q93TG2|HEMH_BRUME       RTVPSYEAEPVYIDALARSVEKHLATLSFK----------------PEVI 217
sp|Q98H61|HEMH_RHILO       RSVPPYYAEPVYIEALASSIERHLATLDFE----------------PEVV 218
sp|P28602|HEMH_BRAJA       RVTPPYYEDEAYIEALAVSIETHLATLPFK----------------PELI 210
sp|Q6NBF3|HEMH_RHOPA       RVTPPYYRDSAYIDALATSIKSHLASLTFE----------------PELI 210
sp|Q59735|HEMH_RHOCA       RTVPEYFARPSYIEALASSVERVYATLDTR----------------PDVL 215
sp|P57779|HEMH_ZYMMO       RSLEPYYTHPAYIQTLKKNIEDQIKALDFK----------------PDSL 198
sp|Q833G5|HEMH_ENTFA       KFIRSFYNNPQYIDYFSKKINEALNESP------------------IDAI 186
sp|Q9CFB4|HEMH_LACLA       KVIRDFHKVESYSDLLAESIREKWQAND------------------YDKL 181
sp|Q67T48|HEMH_SYMTH       IFIRDFPTHPKYLAFLTERISGYIAEKGR-----------------PDAL 189
sp|Q88XC3|HEMH_LACPL       TFIDSFYDQPTYIHLLATKVWQSYQAHHY------------------DAV 179
sp|P57778|HEMH_PSEFL       SILQPFYDQPEYLDALVASARPHLQQD-------------------YDHL 184
sp|Q888A2|HEMH_PSESM       SVLQPFYDQPEYVSALVESVRPHLEQP-------------------YDHL 184
sp|Q88PV4|HEMH_PSEPK       RVLQPFYEHPAYIEALAASARPYLEQG-------------------YDHL 184
sp|Q9HVD7|HEMH_PSEAE       STLPPFYDQPVYLDALVESVRPYLQQP-------------------HDHL 184
sp|Q6MHT3|HEMH_BDEBA       RRLPAFFDDASFVGTSVKLVEETLQDKE------------------VDHY 187
sp|Q83FA4|HEMH_COXBU       TVIDRFFEEPHYIDSMTTLIHENLNEFQ------------------PDYF 188
sp|Q6MAW8|HEMH_PARUW       TFINSYPDHPGLVGAFCERAKQYDLSI-------------------YDYF 187
sp|Q7MXP4|HEMH_PORGI       RVVQPFYAHEAYIRVLADNIRPYLTKP-------------------FDKL 194
sp|Q824K8|HEMH_CHLCV       -WVSHFGNHPEFISCMMDHILKFLQSHD--------------ISTHDCCL 181
sp|Q9Z7V1|HEMH_CHLPN       -WIPQFGSDSKFVSLITCHIRDFLQKLG--------------ILEKECCF 182
sp|Q9PJQ6|HEMH_CHLMU       -WITHFGVHPQFISCMREHIQDCLIAQG--------------IVAEDCFF 179
sp|O84492|HEMH_CHLTR       -WITQFGVHPEFVSCMQQHIRDCLAAQQ--------------IAVEDCYF 179
sp|Q8GCV0|HEMH_LEPBI       GYVPHFGLDPNFHSISAKFIYEFFTNQLPKDQYLHYPEEKPNCDWRNLDL 207
sp|Q81U22|HEMH1_BACAN      HGIDSWYKEPKFIQYWVDAVKSIYSGMSDAER-------------EKAVL 177
sp|Q6HM97|HEMH1_BACHK      HGIDSWYKEPKFIQYWVDAVKGIYSGMSDAER-------------EKAVL 177
sp|Q63ES4|HEMH1_BACCZ      HGIDSWYKEPKFIQYWVDAVKGIYNGMSDAER-------------EKAVL 177
sp|Q73C98|HEMH1_BACC1      HGIDSWYKEPKFIQYWVDAVKGIYNGMSDAER-------------EKAVL 177
sp|Q81GW5|HEMH1_BACCR      HGIDSWYKEPKFIQYWVDAVKGIYNGMSDAER-------------EKAVL 177
sp|P32396|HEMH_BACSU       TSVESWYDEPKFVTYWVDRVKETYASMPEDER-------------ENAML 178
sp|Q8ERX9|HEMH_OCEIH       DSVEDWYTEPGFIKFWADGIKATYAEMTEEER-------------NNSVL 177
sp|Q71XF4|HEMH_LISMF       KAINDWYKQPKFIQMWADRINETAKQIPADEL-------------LDTVL 177
sp|Q8Y565|HEMH_LISMO       NAINDWYKQPKFIQMWADRINETAKQIPADEL-------------LDTVL 177
sp|Q929G2|HEMH_LISIN       QAINDWYKQPKFIQMWADRINETAKQIPAEEL-------------IDTVL 177
sp|P64124|HEMH_STAAM       THVKHYYEQPKFIEYWTNKVNETLAQIPEEEH-------------KDTVL 176
sp|P64125|HEMH_STAAN       THVKHYYEQPKFIEYWTNKVNETLAQIPEEEH-------------KDTVL 176
sp|Q6G8A3|HEMH_STAAS       THVKHYYEQPKFIEYWTNKVNETLAQIPEEEH-------------KDTVL 176
sp|P64126|HEMH_STAAW       THVKHYYEQPKFIEYWTNKVNETLAQIPEEEH-------------KDTVL 176
sp|Q6GFM4|HEMH_STAAR       THVKHYYEQPKFIEYWTNKVNETLAQIPEEEH-------------KDTVL 176
sp|Q8CNS1|HEMH_STAEP       THIKHYYQQPKFIKYWTEKINETLEQIPNQEH-------------DETVL 176
sp|Q81TU9|HEMH2_BACAN      KPIDQWYDEPKFISYWADQIKETFTKIEDKE---------------KAVV 176
sp|Q6HM28|HEMH2_BACHK      EPIDQWYDEPKFISYWADQIKETFTKIEDNE---------------KAVV 176
sp|Q63EK7|HEMH2_BACCZ      EPIDQWYDEPKFISYWADQIKETFTKIEDKE---------------KAVV 176
sp|Q73C08|HEMH2_BACC1      EPIEQWYDEPKFISYWADQIKETFTKIEDKE---------------KAVV 176
sp|Q81GN7|HEMH2_BACCR      ESIEQWYDEPKFISYWADQIKETFTEIDDKE---------------KAVV 176
sp|Q9KDK9|HEMH_BACHD       QSVESWYDEPLFIQYWVDQVNDTMAKIEDKD---------------KACV 176
sp|Q5WHT1|HEMH_BACSK       YTIESWYKEPGFLQFWKEQIENEMKKADSID---------------DLCV 176
sp|Q72L32|HEMH_THET2       VWVESYEAHPGLIAAYARRLEEVIWRLKNPG---------------KAAY 186
sp|Q9RV98|HEMH_DEIRA       AYIDNYHTEPGYITALADRVRIGIQEFPEDER-------------DDVHV 181
sp|Q97R30|HEMH_STRPN       LVIKDWYQEEALLNYWADEIAKILKEEVKQD---------------SFKV 164
sp|Q8DQ04|HEMH_STRR6       LVIKDWYQEEALLNYWADEIAKILKEEVKQD---------------SFKV 164
sp|Q8FTB1|HEMH_COREF       TKLRQFYDHPRFVRTMAQYVRESFDKL-----P--------EDLRDEARL 189
sp|Q8NQA1|HEMH_CORGL       TKLRQFYDHPRFVSTMAQLVQDSYAKL-----P--------DELRDEARL 184
sp|Q6NH66|HEMH_CORDI       LKLRQFFDHPLFIEEMSSVVFQAARELGISA-L--------DELQLHQKV 192
sp|Q740Y1|HEMH_MYCPA       VKLRPYFDHPLFVEMFAGAIADAAAKVPA-----------------GARL 167
sp|P71765|HEMH_MYCTU       VKLRPYFDHPLFVEMFADAITAAAATVRG-----------------DARL 167
sp|Q9CBM2|HEMH_MYCLE       VKLRPYFDHPLFVEMFVDAITAAAASLPAA-------------LRSEARL 171
sp|Q5YU18|HEMH_NOCFA       TKLRQYFDHPLLIEAFADAIRAALERLPAD-------------RRDRARL 176
sp|O07401|HEMH_MYCAV       GQAAAVFRPSAVRGDVRRRDADAAAKVPAG-----------------ARL 166
sp|Q83H94|HEMH_TROW8       DKLRQFFDHPGFVLPFIEGIQDCLEQVKERG-----------FKVSRTAI 206
sp|Q83FJ2|HEMH_TROWT       DKLRQFFDHPGFVLPFIEGIQDCLEQVKERG-----------FKVSRTAI 206
sp|Q6AHF2|HEMH_LEIXX       DKVRQFFDHPGFVEPFIEGVKNAVEELRERAPE--------IHPATGVRI 200
sp|Q82KJ6|HEMH_STRAW       DKLRHYFNHPGFVEPMTEGVLRSLAELP-------------EDVRPGAHI 186
sp|O50533|HEMH_STRCO       DKLRHYFNHPGFVEPMVDGVVRSLAELP-------------AEVRDGAHI 186
```

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sp|Q7UFZ7|HEMH_RHOBA       EKVRMGFNHPGFIAAMADNVSKAAQTIG-------------ASPAR-TKV 179
sp|P72183|HEMH_PROFR       VKLDPYADLPALVTAQVQLLRAALADHP------------------DAHL 173
sp|Q9HLB8|HEMH_THEAC       EFVNGLANSDLFLPMWANIISEDASEDS--------------------FY 162
sp|Q978U9|HEMH_THEVO       EFVNGISNYDLFIPMWIHLIEEKEKGDS--------------------FY 164


sp|P42043|HEMH1_ARATH      FFSAHGVPVSYVENAG-----------------------DPYQKQMEECI 306
sp|P42044|HEMH_CUCSA       FFSAHGVPVSYVENAG-----------------------DPYKDQMEECI 331
sp|P42045|HEMH_HORVU       FFSAHGVPLTYVKDAG-----------------------DPYRDQMEDCI 325
sp|O04921|HEMH2_ARATH      FFSAHGVPLAYVEEAG-----------------------DPYKAEMEECV 317
sp|O22101|HEMH_ORYSA       FFSAHGVPLAYVEEAG-----------------------DPYKAEMEECV 298
sp|Q8YQR8|HEMH_ANASP       FFSAHGVPKSYVEEAG-----------------------DPYQQEIEECT 218
sp|P54225|HEMH_SYNY3       FFSAHGVPQSYVDEAG-----------------------DPYQAEIEACT 218
sp|Q8DGU6|HEMH_SYNEL       FFSAHGVPKSYVTEAG-----------------------DPYQEEIEACV 219
sp|Q7VD58|HEMH_PROMA       CFTAHGVPKSYVEEAG-----------------------DPYKDEIQDCA 218
sp|Q7V2F5|HEMH_PROMP       FFTAHGVPKSYVEEAG-----------------------DPYKEQIEDCS 218
sp|Q7V6C6|HEMH_PROMM       FFSAHGVPKSYVEQAG-----------------------DPYQKEIEACT 218
sp|Q7U5G0|HEMH_SYNPX       FFSAHGVPKSYVEEAG-----------------------DPYQQQIEACT 218
sp|Q7NMC7|HEMH_GLOVI       LFSAHGVPRTYVDQDG-----------------------DPYQRQTEETV 218
sp|Q9ZC84|HEMH_RICPR       LFSAHGLPKRIIK-AG-----------------------DPYSFQIKETV 209
sp|Q68VM9|HEMH_RICTY       LFSAHGLPKRIIK-AG-----------------------DPYSFQIKETV 209
sp|Q92FV4|HEMH_RICCN       LFSAHGLPEKIIK-AG-----------------------DPYSFQIKETV 209
sp|Q73FY6|HEMH_WOLPM       LFSAHSLPLSIIK-KG-----------------------DPYASQVERSV 214
sp|P57777|HEMH_CAUCR       LFSAHGLPEKVIL-AG-----------------------DPYQKQVEATA 214
sp|O67083|HEMH_AQUAE       LFSAHSLPKKLIE-EG-----------------------DPYQEQTEKTV 206
sp|P22830|HEMH_HUMAN       LFSAHSLPMSVVN-RG-----------------------DPYPQEVSATV 284
sp|P22315|HEMH_MOUSE       LFSAHSLPMSVVN-RG-----------------------DPYPQEVGATV 281
sp|P22600|HEMH_BOVIN       LFSAHSLPMSVVN-RG-----------------------DPYPQEVGATV 277
sp|O42479|HEMH_CHICK       LFSAHSLPMSVVN-RG-----------------------DPYPQEVGATV 263
sp|O57478|HEMH_XENLA       LFSAHSLPMSVVN-RG-----------------------DPYPQEVGATV 271
sp|Q9V9S8|HEMH_DROME       LFTAHSLPLKAVN-RG-----------------------DAYPSEIGASV 244
sp|O59786|HEMH_SCHPO       VFSAHSLPMSQVA-KG-----------------------DPYVYEIAATS 249
sp|P16622|HEMH_YEAST       LFSAHSLPMDVVN-TG-----------------------DAYPAEVAATV 256
sp|Q6APB0|HEMH_DESPS       VYSAHSLPTSFIE-AG-----------------------DPYVEHTKQSI 215
sp|Q747F5|HEMH_GEOSL       LFSAHSLPQSFID-EG-----------------------DPYLDHIRETV 213
sp|Q9ZKD4|HEMH_HELPJ       IFSVHGLPKSIVD-AG-----------------------DTYQQECEHHV 228
sp|P56107|HEMH_HELPY       IFSVHGLPKSVID-AG-----------------------DTYQQECEHHV 228
sp|Q7M7P9|HEMH_WOLSU       IFSAHGLPQSVID-AG-----------------------DPYEKEVHANI 209
sp|Q7VHH1|HEMH_HELHP       LLSAHSLPQSRID-EG-----------------------DPYQKQCEENK 200
sp|Q9PI08|HEMH_CAMJE       IFSAHSLPQSIID-KG-----------------------DLYEKHVNDHV 206
sp|Q8DFM2|HEMH_VIBVU       LCSYHGIPQRYADNG------------------------DVYPLHCEMTT 215
sp|Q7MMR4|HEMH_VIBVY       LCSYHGIPQRYADNG------------------------DIYPLHCEMTT 215
sp|Q9KTB6|HEMH_VIBCH       LCSYHGIPKRYAQNG------------------------DIYPEHCLKTT 215
sp|Q87RH3|HEMH_VIBPA       LCSYHGIPKRYADNG------------------------DIYPQHCEATT 215
sp|Q6LTE0|HEMH_PHOPR       LCSYHGIPKRYADNG------------------------DPYPQHCHATT 214
sp|Q8EFF4|HEMH1_SHEON      ILSFHGIPLRYATEG------------------------DPYPEQCRTTA 236
sp|Q8XD39|HEMH_ECO57       LLSYHGIPQRYADEG------------------------DDYPQRCRTTT 215
sp|P23871|HEMH_ECOLI       LLSYHGIPQRYADEG------------------------DDYPQRCRTTT 215
sp|Q8FK83|HEMH_ECOL6       LLSYHGIPQRYADEG------------------------DDYPQRCRTTT 215
sp|Q83SE5|HEMH_SHIFL       LLSYHGIPQRYADEG------------------------DDYPQRCRTTT 215
sp|Q8Z8T2|HEMH_SALTI       LLSYHGIPQRYADEG------------------------DDYPQRCRDTT 215
sp|P37408|HEMH_SALTY       LLSYHGIPQRYADEG------------------------DDYPQRCRDTT 215
sp|Q8ZC98|HEMH_YERPE       VMSFHGIPKRYAQLG------------------------DDYPIRCEDTS 215
sp|Q05338|HEMH_YERPS       VMSFHGIPKRYAQLG------------------------DDYPIRCEDTS 215
sp|P43413|HEMH_YEREN       VLSFHGIPKRYAQLG------------------------DDYPQRCEDTS 215
sp|Q6D7Z4|HEMH_ERWCT       VISYHGIPVRYANEG------------------------DDYPQRCRATT 215
sp|Q7N0P6|HEMH_PHOLL       LLSYHGIPQRFVDTG------------------------DIYAEQCKLTT 215
sp|P43868|HEMH_HAEIN       LFSYHGIPLRYEKMG------------------------DYYREHCKQTT 217
sp|P57874|HEMH_PASMU       LFSFHGIPVRYENMG------------------------DYYREHCKQTV 216
sp|Q65SV7|HEMH_MANSM       LFSFHGIPKRYEQEG------------------------DFYRPQCEQTA 216
sp|Q8CWW4|HEMH_STRMU       LFSFHGIPQRYVIEG------------------------DYYTEHCQQTA 214
sp|Q8D226|HEMH_WIGBR       IMSFHGIPKKYIKDG------------------------DDYLKRCNVTK 215
sp|Q8EBZ7|HEMH2_SHEON      VLSYHGMPERNLHLG------------------------DPYYCFCMKTT 222
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sp|Q6F7N0|HEMH_ACIAD       LMSFHGIPQPYADKG------------------------DPYADRCRETA 223
sp|Q7WGI0|HEMH_BORBR       VMSFHGLPRYSIELG------------------------DPYYRDCLDTA 249
sp|Q7W515|HEMH_BORPA       VMSFHGLPRYSIELG------------------------DPYYRDCLDTA 249
sp|Q7VVX8|HEMH_BORPE       VMSFHGLPRYSIELG------------------------DPYYRDCLDTA 249
sp|Q62HD1|HEMH_BURMA       VLSFHGVPKRTLDLG------------------------DPYHDQCQQTA 247
sp|Q63R43|HEMH_BURPS       VLSFHGVPKRTLDLG------------------------DPYHDQCQQTA 247
sp|Q8XW32|HEMH_RALSO       LLSFHGVPRRTLELG------------------------DPYHCACLKTG 239
sp|Q7NV65|HEMH_CHRVO       VMSFHGVPRFTRDKG------------------------DPYHCECQKTG 234
sp|Q82UK8|HEMH_NITEU       IISFHGVPRKTLEMG------------------------DPYHCECQKTG 232
sp|Q9JVA5|HEMH_NEIMA       MLSFHGVPQKHYDLG------------------------DPYPDECRHTA 227
sp|Q9K097|HEMH_NEIMB       MLSFHGVPQKHHDLG------------------------DPYPDECRHTA 227
sp|Q8PEX0|HEMH_XANAC       MFSFHGLPQRVADAG------------------------DPYPQQCERSA 215
sp|Q8P3H6|HEMH_XANCP       MFSFHGLPQRVANAG------------------------DPYPQQCERSA 215
sp|Q9PFU1|HEMH_XYLFA       MFSFHGLPQRVANNG------------------------DPYPQRCQVSA 215
sp|Q87B82|HEMH_XYLFT       MFSFHGLPQRVANNG------------------------DPYPQRCQVSA 215
sp|Q607T4|HEMH_METCA       VFSFHGLPKCCIDRG------------------------DPYASQCQATA 216
sp|Q8U9F7|HEMH_AGRT5       ITSFHGIPQSYFKKG------------------------DPYYCHCQKTA 235
sp|Q92M52|HEMH_RHIME       LASFHGIPKSYFEKG------------------------DPYYCQCQKTA 230
sp|Q93TG2|HEMH_BRUME       LTSYHGIPKSYSDKG------------------------DPYRQQCLETT 243
sp|Q98H61|HEMH_RHILO       ITSYHGIPKPYSDKG------------------------DPYQAHCLETT 244
sp|P28602|HEMH_BRAJA       VASFHGMPKSYVDKG------------------------DPYQEHCIATT 236
sp|Q6NBF3|HEMH_RHOPA       VASFHGMPQAYIDKG------------------------DPYQAQCVATV 236
sp|Q59735|HEMH_RHOCA       VASYHGMPKRYHREG------------------------DPYHCQCQKTS 241
sp|P57779|HEMH_ZYMMO       LLSYHGMPVKTRELG------------------------DPYYFQCQATS 224
sp|Q833G5|HEMH_ENTFA       VFSYHGIPMSYVKDG------------------------DNYPKECTKTT 212
sp|Q9CFB4|HEMH_LACLA       VLSYHGIPLSYVTKKK-----------------------DAYEEQCKETT 208
sp|Q67T48|HEMH_SYMTH       VLSYHSIPQAYTASG------------------------DDYAAQCESTT 215
sp|Q88XC3|HEMH_LACPL       IFSYHSIPTAMVRHG------------------------DPYQRECEATT 205
sp|P57778|HEMH_PSEFL       LFSFHGLPERHLNKLNPGHSLE--GSGDCCANASPEVRTTCYRGQCFSVA 232
sp|Q888A2|HEMH_PSESM       LLSFHGLPERHLHKRDPTGKHC--LKDDCCMTAPAQVVATCYRAQCLQSA 232
sp|Q88PV4|HEMH_PSEPK       LLSFHGLPERHLKKLFPKGVKHDLRAADCCHGATAEVSSVCYRGQCLATA 234
sp|Q9HVD7|HEMH_PSEAE       LLSFHGLPERHIRKLVKDPAHD--LLAENSRNVSPEALALCYRSQCLRTA 232
sp|Q6MHT3|HEMH_BDEBA       LFSFHGLPESHVRKIP--GCLT---TEDCCFEKNACAKN-CYRAQCFATA 231
sp|Q83FA4|HEMH_COXBU       LFSYHGLPERHLVKSGCQLAICN--RKNNCSPISSSNEN-CYRAQCFETS 235
sp|Q6MAW8|HEMH_PARUW       LFSFHGLPERQIRKGDSTGKCL----TENCCQVICSDNAFCYKAQCYRTA 233
sp|Q7MXP4|HEMH_PORGI       ILSYHGIPRDHLDKTTRQALNLR--HPEGCCTEEDPTANVCYRYQTYRTT 242
sp|Q824K8|HEMH_CHLCV       LFSAHGLPMRHVNKG------------------------DPYNMQCEKSF 207
sp|Q9Z7V1|HEMH_CHLPN       LFSVHGLPVRYISQG------------------------DPYSKQCYESF 208
sp|Q9PJQ6|HEMH_CHLMU       LFSVHGLPMRHIRLG------------------------DPYAKQCQDSF 205
sp|O84492|HEMH_CHLTR       LFSVHGLPQRHIRLG------------------------DPYAQQCQASF 205
sp|Q8GCV0|HEMH_LEPBI       VFSAHGVPMRLIHKG------------------------DRYMEEVELSV 233
sp|Q81U22|HEMH1_BACAN      IVSAHSLPEKIIA-MGDP-----------------------YPDQLNETA 203
sp|Q6HM97|HEMH1_BACHK      IVSAHSLPEKIIA-MGDP-----------------------YPDQLNETA 203
sp|Q63ES4|HEMH1_BACCZ      IVSAHSLPEKIIA-MGDP-----------------------YPDQLNETA 203
sp|Q73C98|HEMH1_BACC1      IVSAHSLPEKIIA-MGDP-----------------------YPEQLHETA 203
sp|Q81GW5|HEMH1_BACCR      IVSAHSLPEKIIA-MGDP-----------------------YPDQLNETA 203
sp|P32396|HEMH_BACSU       IVSAHSLPEKIKE-FGDP-----------------------YPDQLHESA 204
sp|Q8ERX9|HEMH_OCEIH       IVSAHSLPEKILK-DGDP-----------------------YKHQLEETA 203
sp|Q71XF4|HEMH_LISMF       IVSAHSLPEKIKQ-HNDP-----------------------YPDQLQETA 203
sp|Q8Y565|HEMH_LISMO       IVSAHSLPEKIKQ-HNDP-----------------------YPNQLQETA 203
sp|Q929G2|HEMH_LISIN       IVSAHSLPEKIKQ-HNDP-----------------------YPDQLQETA 203
sp|P64124|HEMH_STAAM       VVSAHSLPKGLIEKNNDP-----------------------YPQELEHTA 203
sp|P64125|HEMH_STAAN       VVSAHSLPKGLIEKNNDP-----------------------YPQELEHTA 203
sp|Q6G8A3|HEMH_STAAS       VVSAHSLPKGLIEKNNDP-----------------------YPQELEHTA 203
sp|P64126|HEMH_STAAW       VVSAHSLPKGLIEKNNDP-----------------------YPQELEHTA 203
sp|Q6GFM4|HEMH_STAAR       VVSAHSLPKGLIEKNNDP-----------------------YPQELEHTA 203
sp|Q8CNS1|HEMH_STAEP       VVSAHSLPKGLIERNNDP-----------------------YPHELHETA 203
sp|Q81TU9|HEMH2_BACAN      IFSAHSLPEKIIA-AGDP-----------------------YVEQLQHTA 202
sp|Q6HM28|HEMH2_BACHK      IFSAHSLPEKIIA-AGDP-----------------------YVEQLQYTA 202
sp|Q63EK7|HEMH2_BACCZ      IFSAHSLPEKIIA-AGDP-----------------------YVEQLQHTA 202
sp|Q73C08|HEMH2_BACC1      IFSAHSLPEKIIA-AGDP-----------------------YVKQLQHTA 202
sp|Q81GN7|HEMH2_BACCR      IFSAHSLPEKIIA-AGDP-----------------------YVEQLKHTA 202
sp|Q9KDK9|HEMH_BACHD       IFSAHSLPEKIVD-YGDP-----------------------YPQQLKETA 202
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sp|Q5WHT1|HEMH_BACSK       IFSAHSLPEKIIQ-ANDP-----------------------YPEQLRETA 202
sp|Q72L32|HEMH_THET2       VFTAHSIPLSAVE-KGDP-----------------------YPRQVEKTA 212
sp|Q9RV98|HEMH_DEIRA       ILSAHSLPVRIIK-EGDP-----------------------YADQLHETA 207
sp|Q97R30|HEMH_STRPN       IFSAHSVPIFALD-FGDP-----------------------YIDQIFENS 190
sp|Q8DQ04|HEMH_STRR6       IFSAHSVPIFALD-FGDP-----------------------YIDQIFENS 190
sp|Q8FTB1|HEMH_COREF       VFTAHSIPLNSKDADGNPIDG------------------SIYSRQVEESS 221
sp|Q8NQA1|HEMH_CORGL       VFTAHSIPLTADNAAGTPEDG------------------SLYSTQVKEAS 216
sp|Q6NH66|HEMH_CORDI       VFTAHSIPEVANENSGRKEDG------------------PLYSRQVYEAA 224
sp|Q740Y1|HEMH_MYCPA       VFTAHSVPVAADERLGP----------------------RLYSRQVAYAA 195
sp|P71765|HEMH_MYCTU       VFTAHSIPTAADRRCGP----------------------NLYSRQVAYAT 195
sp|Q9CBM2|HEMH_MYCLE       VFTAHSVPVATDRRCGP----------------------ALYSRQVGYAA 199
sp|Q5YU18|HEMH_NOCFA       VFTAHSVPVAADAAAGPPADGG-----------------ELYSRQVADAA 209
sp|O07401|HEMH_MYCAV       VFTAHSVPVAADERLGP----------------------RLYSRQVAYAA 194
sp|Q83H94|HEMH_TROW8       LFSTHSIPELDAAFSGPED--------------AHFGKYGAYVSQHKAVV 242
sp|Q83FJ2|HEMH_TROWT       LFSTHSIPELDAAFSGPED--------------AHFGKYGAYVSQHKAVV 242
sp|Q6AHF2|HEMH_LEIXX       LFSTHSIPSTDAGKSGPSGRPDS---------GEPWGEGGAYAAQHLAVA 241
sp|Q82KJ6|HEMH_STRAW       AFTTHSIPTAAADTSGPVE---------------EHGDGGAYVKQHLDVA 221
sp|O50533|HEMH_STRCO       AFCTHSIPTSAADGSGPVE---------------EHGDGGAYVRQHLDVA 221
sp|Q7UFZ7|HEMH_RHOBA       LFTAHSIPMGMADN-------------------------CDYEKQLRESC 204
sp|P72183|HEMH_PROFR       VFTTHSIPTAMAETSGPHG--------------------NAYIPQHLALI 203
sp|Q9HLB8|HEMH_THEAC       LFDAHSLPAPDREED--------------------------YLFWLRYST 186
sp|Q978U9|HEMH_THEVO       LFDAHSLPHPENEED--------------------------YLFWLRYST 188
                               *.:*                                 *

sp|P42043|HEMH1_ARATH      DLIMEELKAR-G---VLNDHKLAYQSRVGPVQWLKPYTDEVLVDLGKSG- 351
sp|P42044|HEMH_CUCSA       CLIMQELKAR-G---IGNEHTLAYQSRVGPVQWLKPYTDEVLVELGQKG- 376
sp|P42045|HEMH_HORVU       ALIMEELKSR-G---TLNDHTLAYQSRVGPVQWLKPYTDEVLVELGQKG- 370
sp|O04921|HEMH2_ARATH      DLIMEELDKR-K---ITNAYTLAYQSRVGPVEWLKPYTEEAITELGKKG- 362
sp|O22101|HEMH_ORYSA       DLIMEELEKR-G---ITNSCTLAYQSRVGPVEWLRPYTDETIIELGQKG- 343
sp|Q8YQR8|HEMH_ANASP       ALIMQTLNR-------PNPHTLAYQSRVGPVEWLQPYTEDALKELGAQG- 260
sp|P54225|HEMH_SYNY3       RLIMRTLDR-------PNQYTLAYQSRVGPVEWLKPYTEEALQKLGAEG- 260
sp|Q8DGU6|HEMH_SYNEL       RLIMAALNR-------PNAHVLAYQSRVGPVEWLQPYTEDVILELAAQG- 261
sp|Q7VD58|HEMH_PROMA       LLIIDKVEKSLG---FSNSYTLSYQSRVGPEEWLKPYTEEVLEELGANG- 264
sp|Q7V2F5|HEMH_PROMP       LLIIDELEKYLG---HTNPYTLSYQSRVGPVEWLKPYTEEVLTDLGKAK- 264
sp|Q7V6C6|HEMH_PROMM       TLIMAELENLLG---YGNPHSLAYQSRVGPEEWIQPYTDQVIEQLGEAG- 264
sp|Q7U5G0|HEMH_SYNPX       DLIMKSLAEHMG---HSNPHTLAYQSRVGPVEWLKPYTEEALEQLGEAK- 264
sp|Q7NMC7|HEMH_GLOVI       DLVMQSLGR-------PNAHSLAYQSRVGPVEWLKPYTEDTINELAQKG- 260
sp|Q9ZC84|HEMH_RICPR       NKIVKELNIK------DLDYKITYQSRVGPIEWLKPNTEDEIE-LAGKL- 251
sp|Q68VM9|HEMH_RICTY       NKIVKELNIK------DLDYKITYQSRVGPIEWLKPSTEYEIE-LAGKL- 251
sp|Q92FV4|HEMH_RICCN       QAIVKELNIK------DLDYKITYQSRVGPIEWLKPNTEDEIE-LAGKL- 251
sp|Q73FY6|HEMH_WOLPM       ELIVEKLAIN------NLDWSICYQSKIGPVKWLEPSTESELL-RAKAD- 256
sp|P57777|HEMH_CAUCR       AAVAAHLPP-------QIEWTVCYQSRVGPLKWIGPSTDDEIR-RAGGE- 255
sp|O67083|HEMH_AQUAE       KLIMENFPE--------VEYTLAYQSKVGFGKWLEPSTDEVIRNLIKKE- 247
sp|P22830|HEMH_HUMAN       QKVMERLEYCN-------PYRLVWQSKVGPMPWLGPQTDESIKGLCERG- 326
sp|P22315|HEMH_MOUSE       HKVMEKLGYPN-------PYRLVWQSKVGPVPWLGPQTDEAIKGLCERG- 323
sp|P22600|HEMH_BOVIN       QRVMDKLGYSN-------PYRLVWQSKVGPMPWLGPQTDEAIKGLCKRG- 319
sp|O42479|HEMH_CHICK       QRVMEKLNHSN-------PYRLVWQSKVGPMPWLVPQTDETIKGLCQRG- 305
sp|O57478|HEMH_XENLA       QKVMERLGFSN-------PYRLVWQSKVGPMAWLGPQTDESIKGLCQRG- 313
sp|Q9V9S8|HEMH_DROME       HMVMQELGQTN-------PYSLAWQSKVGPLPWLAPATDDAIKGYVKQG- 286
sp|O59786|HEMH_SCHPO       QAVMKRLNYKN-------KFVNAWQSKVGPLPWMSPATDFVIEQLGNRG- 291
sp|P16622|HEMH_YEAST       YNIMQKLKFKN-------PYRLVWQSQVGPKPWLGAQTAEIAEFLGPK-- 297
sp|Q6APB0|HEMH_DESPS       G-AIEEITGK--------RGRLCFQSKSGPVEWLEPSTPDVLIQLAQEG- 255
sp|Q747F5|HEMH_GEOSL       RLVMERFEGV--------THHLAFQSRAGPVKWLEPSTDEMLEHLAAHQ- 254
sp|Q9ZKD4|HEMH_HELPJ       SLLKELMQQKNI---PFKEVLLSYQSKLGPMKWLEPSTEELIE---KHR- 271
sp|P56107|HEMH_HELPY       SLLKELMQQKNT---PFKEVLLSYQSKLGPMKWLEPSTEELIE---KHR- 271
sp|Q7M7P9|HEMH_WOLSU       QALTKLLEERGI---TFKKITHAYQSKVGPMKWLEPSLDEVLK---LHA- 252
sp|Q7VHH1|HEMH_HELHP       EVIQKALESEGI---VFKKIALAYQSKVGRMKWIGPSTKETIT---KYK- 243
sp|Q9PI08|HEMH_CAMJE       EILKEKLKDH------FDEFILAYQSKLGPVKWLEPNTSDVLA---NLN- 246
sp|Q8DFM2|HEMH_VIBVU       E-LLRLELGL-----DKSQIGTTYQSRFGREEWLQPYTDKTLESLPAKG- 258
sp|Q7MMR4|HEMH_VIBVY       E-LLRLELGL-----DKSQIGTTYQSRFGREEWLQPYTDKTLESLPAKG- 258
sp|Q9KTB6|HEMH_VIBCH       E-LLAQALGL-----PQDKVMMTYQSQFGKEEWLQPYTDKTMEALPRQG- 258
sp|Q87RH3|HEMH_VIBPA       R-LLGEALGL-----SSDQIGMAYQSRFGREEWLQPYTDKTLETITSKG- 258
sp|Q6LTE0|HEMH_PHOPR       E-KLAERLAM-----PREKMSMSYQSIFGREEWLQPYTEVTIEALAQKG- 257
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sp|Q8EFF4|HEMH1_SHEON      K-LLAQALGL-----TDGQWQVCFQSRFGKEEWLTPYADELLADLPRQG- 279
sp|Q8XD39|HEMH_ECO57       R-ELASALGM-----APEKVMMTFQSRFGREPWLMPYTDETLKMLGEKG- 258
sp|P23871|HEMH_ECOLI       R-ELASALGM-----APEKVMMTFQSRFGREPWLMPYTDETLKMLGEKG- 258
sp|Q8FK83|HEMH_ECOL6       R-ELASALEM-----APEKVMMTFQSRFGREPWLMPYTDETLKMLGEKG- 258
sp|Q83SE5|HEMH_SHIFL       R-ELASALGM-----VPEKVMMTFQSRFGREPWLMPYTDETLKMLGEKG- 258
sp|Q8Z8T2|HEMH_SALTI       R-ELVSALGL-----PPEKVMMTFQSRFGREPWLTPYTDETLKMLGEKG- 258
sp|P37408|HEMH_SALTY       R-ELVSALGL-----PPEKVMMTFQSRFGREPWLTPYTDETLKMLGEKG- 258
sp|Q8ZC98|HEMH_YERPE       R-ALRAALPL-----PAEKIIMTYQSRFGREPWLTPYTDETLKSLPSQG- 258
sp|Q05338|HEMH_YERPS       R-ALRAALPL-----PAEKIIMTYQSRFGREPWLTPYTDETLKSLPSQG- 258
sp|P43413|HEMH_YEREN       R-ALRAEIAL-----PAEQIMMTYQSRFGREPWLTPYTDETLKSLPSQG- 258
sp|Q6D7Z4|HEMH_ERWCT       E-ALIAALGL-----PEGKIMMTFQSRFGREPWLTPYTDETMQGLPAQG- 258
sp|Q7N0P6|HEMH_PHOLL       R-LLKQAINY-----PTEQVMMAYQSRFGREQWLTPYVDQTMKTLPNQG- 258
sp|P43868|HEMH_HAEIN       I-AVVNKLGL-----TENQWRMTFQSRFGREEWLQPYTDKFLESAAAQN- 260
sp|P57874|HEMH_PASMU       L-AVIDRLGL-----TENQWGLSFQSRFGKEEWLQPYTDQFLAQAPSQN- 259
sp|Q65SV7|HEMH_MANSM       Q-AVVQKLGL-----KKEQWRLCFQSRFGSEPWLQPYTDKFLETAAQQG- 259
sp|Q8CWW4|HEMH_STRMU       Q-LIAVAAGL-----SEEQWQVSYQSRFGPEEWTRPYTDETLIQLPKQG- 257
sp|Q8D226|HEMH_WIGBR       K-LVLSKLNF-----SRKKVIMSFQSKFGNIPWITPITSEVISFLPKKG- 258
sp|Q8EBZ7|HEMH2_SHEON      R-LVAEQLGL-----SKDEFAITFQSRFGKAKWLQPYTDATMAALPSQG- 265
sp|Q6F7N0|HEMH_ACIAD       R-LVAKQLGL-----TPDDWAISFQSRFGKQEWVKPYTDELLTTWAANG- 266
sp|Q7WGI0|HEMH_BORBR       R-LLRERLGL-----REDEVEVTFQSRFGSARWLEPYTEPTLAELARQG- 292
sp|Q7W515|HEMH_BORPA       R-LLRERLGL-----REDEVEVTFQSRFGSARWLEPYTEPTLAELARQG- 292
sp|Q7VVX8|HEMH_BORPE       R-LLRERLGL-----REDEVEVTFQSRFGSARWLEPYTEPTLAELARQG- 292
sp|Q62HD1|HEMH_BURMA       A-LLMSALGL-----TTFECRVTFQSRFGKAEWLQPYTAPTLKELGAAG- 290
sp|Q63R43|HEMH_BURPS       A-LLMSALGL-----TTFECRVTFQSRFGKAEWLQPYTAPTLKELGAAG- 290
sp|Q8XW32|HEMH_RALSO       R-LLGEALGL-----QPGQYLVTFQSRFGRAEWLQPYTAPTLEELGRVG- 282
sp|Q7NV65|HEMH_CHRVO       R-LLAEALQL-----RPDQYVISFQSRFGRTEWLKPYTSEVLEALGKAK- 277
sp|Q82UK8|HEMH_NITEU       R-LLAEALEL-----ADDRYQICFQSRFGFAQWLGPYTAEILAELGKQK- 275
sp|Q9JVA5|HEMH_NEIMA       K-LLAEALEL-----TEDQYVVSFQSQFGRAKWVTPSTQDLFGKLPKQG- 270
sp|Q9K097|HEMH_NEIMB       K-LLAEALEL-----TEDQYVVSFQSQFGRAKWVTPSTQDLFGKLPKQG- 270
sp|Q8PEX0|HEMH_XANAC       Q-AIVAALGL-----GADEWQMGYQSRFGAERWLQPYAEPTLWKLAEGG- 258
sp|Q8P3H6|HEMH_XANCP       Q-AIVTALGL-----GPDAWQMGYQSRFGAERWLQPYAEPTLWALAEGG- 258
sp|Q9PFU1|HEMH_XYLFA       S-LIAAALDL-----NESEWVLGYQSRFGAERWLQPYAEPTLWALAESG- 258
sp|Q87B82|HEMH_XYLFT       S-LIAAALNL-----NESEWVLGYQSRFGAERWLQPYAEPTLWALAESG- 258
sp|Q607T4|HEMH_METCA       Q-GIARLLEL-----SDDEWLLTYQSRFGRAEWLRPYCIDTLRELPSQG- 259
sp|Q8U9F7|HEMH_AGRT5       R-LLREALGR-----TEKNFMITFQSRFGPEEWLQPYTDKTVEKLASEG- 278
sp|Q92M52|HEMH_RHIME       R-LLREKLGW-----PQDRLQVTFQSRFGPEEWLQPYTDATVERLAKEG- 273
sp|Q93TG2|HEMH_BRUME       R-LLRERLGL-----GEDEMRATFQSRFGPEEWLQPYTDETVKELAKNG- 286
sp|Q98H61|HEMH_RHILO       R-LLREKLGW-----DEKKLITTFQSRFGAQEWLQPYTDKTVEKLGKDG- 287
sp|P28602|HEMH_BRAJA       E-ALRRRLGV-----DASKLLLTFQSRFGNDEWLQPYTDKTMERLAKEG- 279
sp|Q6NBF3|HEMH_RHOPA       E-ALRERMGV-----ADDKLLLTFQSRFGFDQWLQPYTDKTIEALARKG- 279
sp|Q59735|HEMH_RHOCA       R-LLRERLGW-----GPDSIDTTFQSVFGTEEWLRPYTVEHVVQLAEAG- 284
sp|P57779|HEMH_ZYMMO       Q-ALSSLLDI-----P---VITSFQSRFGSQKWFTPATDMTLKELPSKN- 264
sp|Q833G5|HEMH_ENTFA       K-LIMDKLG-------DIRYYQTYQSKFGPSEWLKPATDDTLKKLPSKG- 253
sp|Q9CFB4|HEMH_LACLA       R-LVVSKLGL-----REEEYEHTYQSKFGPEKWLEPATIDRVAELPKEN- 251
sp|Q67T48|HEMH_SYMTH       D-AVRDRFP-------DLKIVMGYQSKFGNDPWLEPATDEVLRELVRTG- 256
sp|Q88XC3|HEMH_LACPL       KAVLAERPEL-----PADKVITAYQSKFGPMPWLKPYLKNELMQLVELG- 249
sp|P57778|HEMH_PSEFL       R-DFAARMGL-----PDDKWSVAFQSRLGRAKWIEPYTEARLEALAQQG- 275
sp|Q888A2|HEMH_PSESM       A-AFAKRMGI-----PDGKWSVSFQSRLGRAKWIEPYTEARLDELAAQG- 275
sp|Q88PV4|HEMH_PSEPK       K-AFAQSMGI-----PDGKWSVSFQSRLGRDKWIEPYTETRLDELAKAG- 277
sp|Q9HVD7|HEMH_PSEAE       E-AFAERAGL-----EQGRWSVSFQSRLGRAKWIEPYTDAKLDELVQRG- 275
sp|Q6MHT3|HEMH_BDEBA       T-AIAESLNL-----APSHWSVAFQSRLGRAEWLKPATDHSLEVLAKTG- 274
sp|Q83FA4|HEMH_COXBU       R-LIAKKLNL-----TDQQYGVAFQSRLGRAKWIEPYTDKYLIELSKKG- 278
sp|Q6MAW8|HEMH_PARUW       K-AIASKLRI-----KLEQYTVCFQSRLGKETWIQPYTSDLLKDCLAKN- 276
sp|Q7MXP4|HEMH_PORGI       A-LIREALGL-----AEEQVEQVFQSRVGHTEWLRPYLIERLSAWPQEE- 285
sp|Q824K8|HEMH_CHLCV       R-AISERL-------PNIETHLCYQSKFGPGKWLSPSTKDLCATLKTDK- 248
sp|Q9Z7V1|HEMH_CHLPN       S-AITTNF-------KQSENFLCFQSKFGPGKWLSPSTAQLCQNIDTDK- 249
sp|Q9PJQ6|HEMH_CHLMU       N-ALIG----------ESEGVLSFQSKFGIGEWLVPSTKEICQSLCTKK- 243
sp|O84492|HEMH_CHLTR       E-ALRG----------ELEGKIAFQSKFGIGKWLDPSTQEVCQSLRTKK- 243
sp|Q8GCV0|HEMH_LEPBI       K-GIADELSKFG---FNGGVHISYQSKVGPAKWTEPSTIQMISSLAKQG- 278
sp|Q81U22|HEMH1_BACAN      DYIARGAEVAN-----YAVGW--QSAGNTPDPWIGPDVQDLTRELNEKYG 246
sp|Q6HM97|HEMH1_BACHK      DYIARGAEVAN-----YAVGW--QSAGNTPDPWIGPDVQDLTRELNEKYG 246
sp|Q63ES4|HEMH1_BACCZ      DYIARGAEVAN-----YAVGW--QSAGNTPDPWIGPDVQDLTRELNEKYG 246
sp|Q73C98|HEMH1_BACC1      DYIARGAEVAN-----YAVGW--QSAGNTPDPWIGPDVQDLTRELNEKHG 246
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sp|Q81GW5|HEMH1_BACCR      DYIARGAEVAN-----YAVGW--QSAGNTPDPWIGPDVQDLTRELNEKHG 246
sp|P32396|HEMH_BACSU       KLIAEGAGVSE-----YAVGW--QSEGNTPDPWLGPDVQDLTRDLFEQKG 247
sp|Q8ERX9|HEMH_OCEIH       KLIVEEADVKN-----YAVGW--QSEGNTPDPWLGPDVQDLTRELYESEG 246
sp|Q71XF4|HEMH_LISMF       DFIFEKVVVPH-----YALGW--QSEGKTGEPWLGPDVQDLTRELYGREK 246
sp|Q8Y565|HEMH_LISMO       DFIFEKVVVPH-----YALGW--QSEGKTGEPWLGPDVQDLTRELYGREK 246
sp|Q929G2|HEMH_LISIN       DLIFDKVAVPH-----YALGW--QSEGKTGEPWLGPDVQDLTRELYGREK 246
sp|P64124|HEMH_STAAM       LLIKEQSNIEH-----IAIGW--QSEGNTGTPWLGPDVQDLTRDLYEKHQ 246
sp|P64125|HEMH_STAAN       LLIKEQSNIEH-----IAIGW--QSEGNTGTPWLGPDVQDLTRDLYEKHQ 246
sp|Q6G8A3|HEMH_STAAS       LLIKEQSNIEH-----IAIGW--QSEGNTGTPWLGPDVQDLTRDLYEKHQ 246
sp|P64126|HEMH_STAAW       LLIKEQSNIEH-----IAIGW--QSEGNTGTPWLGPDVQDLTRDLYEKHQ 246
sp|Q6GFM4|HEMH_STAAR       LLIKEQSNIEH-----IAIGW--QSEGNTGTPWLGPDVQDLTRDLYEKHQ 246
sp|Q8CNS1|HEMH_STAEP       EILKQESNIIH-----VAEGW--QSEGNTGTPWLGPDVQDLTRDLYKEHQ 246
sp|Q81TU9|HEMH2_BACAN      DLIAAAANIQN-----YTIGW--QSAGNTPDPWIGPDVQDLTRDLFEEYR 245
sp|Q6HM28|HEMH2_BACHK      DLIAAAANIQN-----YTIGW--QSAGNTSDSWIGPDVQDLTRDLFEEHR 245
sp|Q63EK7|HEMH2_BACCZ      DLIAAAANIQN-----YTIGW--QSAGNTSDPWIGPDVQDLTRELFEEHR 245
sp|Q73C08|HEMH2_BACC1      DLIAAAANIQN-----YTIGW--QSAGNTPDPWIGPDVQDLTRDLFEEHR 245
sp|Q81GN7|HEMH2_BACCR      DLIAEAANIQN-----YTIGW--QSAGNTPDPWIGPDVQDLTKDLYEEHG 245
sp|Q9KDK9|HEMH_BACHD       DLIAKGAGITN-----YAVGW--QSEGNTPEPWLGPDVQDLTRDLYETHG 245
sp|Q5WHT1|HEMH_BACSK       DLLADMANVPN-----YEIGW--QSEGNTPEPWLGPDVQDLTRELYAKKG 245
sp|Q72L32|HEMH_THET2       ELIAKKLALPR-----FHVAY--QSAGRTPEPWLGPDINELLRTLKEE-G 254
sp|Q9RV98|HEMH_DEIRA       RLVAAQAGLTD-----EQWSWSYQSAGRSPEPWLGPQLDEHLRDLNEQ-G 251
sp|Q97R30|HEMH_STRPN       KLVAEKLGLSS-----EQYTNTWQSESDIGIPWIKPDVLEYLREQTEH-- 233
sp|Q8DQ04|HEMH_STRR6       KLVAEKLGLSS-----EQYTNTWQSESDIGIPWIKPDVLEYLREQTEH-- 233
sp|Q8FTB1|HEMH_COREF       ALIAREAGIDD-----FDVVW-QSRSGSPHVPWLEPDIVDHAVELNENNG 265
sp|Q8NQA1|HEMH_CORGL       ALIAEAVGVSD-----FDVVW-QSRSGSPHTPWLEPDIVDHAVELNEK-G 259
sp|Q6NH66|HEMH_CORDI       SLVAKHLGISQE---RYDVVW-QSASGNGQIPWLEPDILDYAKCQHDE-G 269
sp|Q740Y1|HEMH_MYCPA       RLVAAAAGYAE-----HDLVW-QSRSGPPQVRWLEPDVADHLRALAES-G 238
sp|P71765|HEMH_MYCTU       RLVAAAAGYCD-----FDLAW-QSRSGPPQVPWLEPDVTDQLTGLAGA-G 238
sp|Q9CBM2|HEMH_MYCLE       RLVAAGAGYAD-----YDLTW-QSRSGPPYVPWLAPDVGDQLMTLASA-G 242
sp|Q5YU18|HEMH_NOCFA       RLCAAATGFAD-----HDLVW-QSRSGPPQVPWLEPDIVDHLEDLAGR-G 252
sp|O07401|HEMH_MYCAV       RLVAAAAGYAE-----HDLVW-QSRSGPPQVRWLEPDVADHLRALAES-G 237
sp|Q83H94|HEMH_TROW8       EVIMSRLRVTDPDLQNYQLVY-QSRSGDPSTPWLEPDINDAIRVL--RG- 288
sp|Q83FJ2|HEMH_TROWT       EVIMSRLRVTDPDLQNYQLVY-QSRSGDPSTPWLEPDINDAIRVL--RG- 288
sp|Q6AHF2|HEMH_LEIXX       EIVS--HEATGGTIG-WDLVY-QSRSGPPSMPWLEPDINDRIAELPELG- 286
sp|Q82KJ6|HEMH_STRAW       RLIADAVREETGIDHPWQLVY-QSRSGAPHIPWLEPDICDHLQELHGAG- 269
sp|O50533|HEMH_STRCO       RLIADAVRERTGVDHPWQLVY-QSRSGAPHIPWLEPDICDHLEERQAAG- 269
sp|Q7UFZ7|HEMH_RHOBA       RLVADACGAVD-----WDLVY-QSRSGPPSQPWLEPDVLDAIAEMDDAKK 248
sp|P72183|HEMH_PROFR       DAVMAELAALG-LRPSWELAY-QSRSGSPRTPWLEPDINDVITRLAGEG- 250
sp|Q9HLB8|HEMH_THEAC       YKISQILGLSR-----SDFGF-QGG----HLGWLGPSIYDVLNRIDAS-- 224
sp|Q978U9|HEMH_THEVO       YKITQIMGLRS-----SDFGF-QGG----HEGWLGPSIYNVYRKAKEK-- 226
                                                           *  .


sp|P42043|HEMH1_ARATH      VKSLLAVPVSFVSEHIETLEEIDMEYREL-ALESGVENWGRVPALGLTPS 400
sp|P42044|HEMH_CUCSA       IKSLLAVPVSFVSEHIETLEEIDMEYKHL-ALESGIQNWGRVPALNCNSS 425
sp|P42045|HEMH_HORVU       VKSLLAVPVSFVSEHIETLEEIDMEYREL-ALESGIENWGRVPALGCTSS 419
sp|O04921|HEMH2_ARATH      VENLLAVPISFVSEHIETLEEIDVEYKEL-ALKSGIKNWGRVPALGTEPM 411
sp|O22101|HEMH_ORYSA       VKSLLAVPISFVSEHIETLEEIDVEYKEL-ALESGIKHWGRVPALGCEPT 392
sp|Q8YQR8|HEMH_ANASP       VKDLVVVPISFVSEHIETLQEIDIEYREI-AEEAGIHNFRRVPAPNTHPV 309
sp|P54225|HEMH_SYNY3       IDDLLVVPISFVSEHIETLQEIDIEYREI-AEEAGIDNFQRVPALNTHPV 309
sp|Q8DGU6|HEMH_SYNEL       VKTLVVVPISFVSEHIETLQEIDIEYREI-AAEAGIEVFRRVPALNDHNG 310
sp|Q7VD58|HEMH_PROMA       VKELIVVPISFVSEHIETLQEIDIEYKKI-ALNNGIINFRRVKALDTYPL 313
sp|Q7V2F5|HEMH_PROMP       VNDLIVVPISFVGEHIETLQEIDIEYKEI-AEKAGIVNFRRVKALNTHPT 313
sp|Q7V6C6|HEMH_PROMM       TRDLVVVPISFVSEHIETLAELDIEYREL-ATEAGIVHFRRVPALDTYPT 313
sp|Q7U5G0|HEMH_SYNPX       TNDLVVVPISFVSEHIETLEEIDIEYREL-ATEAGVVNFRRVRALDTYPP 313
sp|Q7NMC7|HEMH_GLOVI       VRSLLAVPVSFISEHIETLQEIEIEYREV-AEAAGIHDFRRAKALNVNKT 309
sp|Q9ZC84|HEMH_RICPR       KKDIIIVPISFVSEHVETLVELDIEYKLI-ADKYKI-QYTRIPTLGTNKI 299
sp|Q68VM9|HEMH_RICTY       KKDIIIVPISFVSEHVETLVELDIEYKFI-ADKYNI-QYTRIPTLGTNKI 299
sp|Q92FV4|HEMH_RICCN       KKDIIIVPISFVSEHVETLVELDIEYKLI-ADKYEI-QYIRIPTLGTNKI 299
sp|Q73FY6|HEMH_WOLPM       GVPVVLSPISFVSEHSETLVELDIEYKAI-IKDG---YYFRVPTLSTDPL 302
sp|P57777|HEMH_CAUCR       DKGVMITPIAFVSEHVETLVELDHEYAEL-AEEVGAAPYLRVSALGTAPE 304
sp|O67083|HEMH_AQUAE       VKKLLVIPISFVSEHSETLYELDKQYREL-AQELGYEEFVRVPTLRTNPY 296
sp|P22830|HEMH_HUMAN       RKNILLVPIAFTSDHIETLYELDIEYSQVLAKECGVENIRRAESLNGNPL 376
sp|P22315|HEMH_MOUSE       RKNILLVPIAFTSDHIETLYELDIEYSQVLAQKCGAENIRRAESLNGNPL 373
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sp|P22600|HEMH_BOVIN       RKNILLVPIAFTSDHIETLYELDIEYSQVLASECGLENIRRAESLNGNPL 369
sp|O42479|HEMH_CHICK       KKNMLLVPIAFTSDHIETLYELDIEYAQVLANECGVENIRRAESLNGNPL 355
sp|O57478|HEMH_XENLA       KKNILLVPIAFTSDHIETLYELDIEYAQVLAKECGVENIRRSESLNGNPL 363
sp|Q9V9S8|HEMH_DROME       LKNFILVPIAFVNEHIETLHELDIEYCDELAKEVGVEEIRRAATPNDHPL 336
sp|O59786|HEMH_SCHPO       QKNMILVPIAFTSDHIETLKEL--EDYIEDAKQKGITGVKRVSSINGSMT 339
sp|P16622|HEMH_YEAST       VDGLMFIPIAFTSDHIETLHEIDLGVIGESEYK---DKFKRCESLNGNQT 344
sp|Q6APB0|HEMH_DESPS       VKNILMVPISFVSDHVETLYEIDILYKKQ-AKKLG-MRLTSCPSLNTQEQ 303
sp|Q747F5|HEMH_GEOSL       VKNLLIVPLSFVSDHIETLHEIDIEYAQE-AHKLGYSRFRRSPSLNTSPT 303
sp|Q9ZKD4|HEMH_HELPJ       KSNIIIYPLAFTIDNSETLYELDMQYRLM-AERLAVKEYLVCPCLNDSIE 320
sp|P56107|HEMH_HELPY       KSHIIIYPLAFTIDNSETLYELDMQYRLM-AERLAVKEYLVCPCLNDSIE 320
sp|Q7M7P9|HEMH_WOLSU       KEKILLYPIAFTLDNSETDFELRIEYQEK-ATHLGITDYRVASCLNDSTR 301
sp|Q7VHH1|HEMH_HELHP       KHKMIIFPLSFTLDNSETEYELKILYASL-AKELNVPQYRVCSCFNDNER 292
sp|Q9PI08|HEMH_CAMJE       -DKALIYPISFCIDCSETIFELGMEY-----KHLSKYNYDLISCPNDSDE 290
sp|Q8DFM2|HEMH_VIBVU       IKSLDVITPAFSVDCLETLEEISEQGQES-FLHAGGEQYRFIPCLNDAPS 307
sp|Q7MMR4|HEMH_VIBVY       IKSLDVITPAFSVDCLETLEEISEQGQES-FLHAGGEQYRFIPCLNDAPS 307
sp|Q9KTB6|HEMH_VIBCH       IKKLDVICPAFSVDCLETLEEIAEQNQEI-FLHSGGEAFHYVPCLNDSQS 307
sp|Q87RH3|HEMH_VIBPA       VKKIDIMTPAFSSDCLETLEEIAGENKEI-FMEAGGEQFHYIPCLNDDDM 307
sp|Q6LTE0|HEMH_PHOPR       IKRLDVMCPAFSVDCLETLEEIAEQCKET-FIKAGGDVFNLIPCLNDNEA 306
sp|Q8EFF4|HEMH1_SHEON      VKSVDVICPAFATDCLETLEEISIGAKET-FLHAGGEAYHFIPCLNDDEL 328
sp|Q8XD39|HEMH_ECO57       VGHIQVMCPGFAADCLETLEEIAEQNREV-FLGAGGKKYEYIPALNATPE 307
sp|P23871|HEMH_ECOLI       VGHIQVMCPGFAADCLETLEEIAEQNREV-FLGAGGKKYEYIPALNATPE 307
sp|Q8FK83|HEMH_ECOL6       VGHIQVMCPGFAADCLETLEEIAEQNREV-FLGAGGKKYEYIPALNATPE 307
sp|Q83SE5|HEMH_SHIFL       VGHIQVMCPGFAADCLETLEEIAEQNREV-FLGAGGKKYEYIPALNATPE 307
sp|Q8Z8T2|HEMH_SALTI       TGHIQVMCPGFAADCLETLEEIAEQNREI-FLEAGGKKYAYIQALNATPE 307
sp|P37408|HEMH_SALTY       TGHIQVMCPGFAADCLETLEEIAEQNREI-FLEAGGKKYAYIPALNATPE 307
sp|Q8ZC98|HEMH_YERPE       VKHIQLICPGFSADCLETLEEIKEQNREF-FLHAGGEKFEYIPALNDDEG 307
sp|Q05338|HEMH_YERPS       VKHIQLICPGFSADCLETLEEIKEQNREF-FLHAGGEKFEYIPALNDDEG 307
sp|P43413|HEMH_YEREN       VKHIQLICPGFSADCLETLEEIKEQNREV-FIHAGGEKFEYIPALNDDKG 307
sp|Q6D7Z4|HEMH_ERWCT       IKHIQIMCPGFAADCLETLEEIQEQNREI-FLHAGGEAFHYIPALNDDPL 307
sp|Q7N0P6|HEMH_PHOLL       IKHIQVLCPGFSSDCLETLEEIKQLNKEM-FLNAGGEKFEYIPALNDNAS 307
sp|P43868|HEMH_HAEIN       IQKIAVICPGFSVDCLETIEEIDEENREN-FLNNGGQSYQYIPALNVEHA 309
sp|P57874|HEMH_PASMU       IQKMAVICPGFAADCLETLEEIEEENKEI-FLANGGISYRYIPALNARPE 308
sp|Q65SV7|HEMH_MANSM       ITKLAVICPGFSADCLETLEEIKEENKRI-FLAYGGESYHYIPALNDSPE 308
sp|Q8CWW4|HEMH_STRMU       KKKLAVICPGFAADCLETLEEIDITNRKH-FMAAGGQAYRYIPALNASPA 306
sp|Q8D226|HEMH_WIGBR       IKNIQVICPGFSSDCLETLEEIKIQNKKI-FKDNGGKKFHYIPALNYSKI 307
sp|Q8EBZ7|HEMH2_SHEON      VRDVAIVCPAFSADCLETLEEIVGENGHI-FTHAGGEKFRYIPALNDNDD 314
sp|Q6F7N0|HEMH_ACIAD       IKSVQILSPAFSADCLETLEELEIQNAEL-FLEAGGTSYQYIPALNTSVE 315
sp|Q7WGI0|HEMH_BORBR       VTEVDVVCPGFVADCLETLEEISQECRDA-FVAAGGRQFRYIPALNDCPP 341
sp|Q7W515|HEMH_BORPA       VTEVDVVCPGFVADCLETLEEISQECRDA-FVAAGGRQFRYIPALNDCPP 341
sp|Q7VVX8|HEMH_BORPE       VTEVDVVCPGFVADCLETLEEISQECRDA-FVAAGGRQFRYIPALNDCPP 341
sp|Q62HD1|HEMH_BURMA       VRRADVFCPGFTADCLETIEEIGIEVRDE-FVHGGGKEFHRIPCLNASPA 339
sp|Q63R43|HEMH_BURPS       VRRADVFCPGFTADCLETIEEIGIEVRDE-FVHGGGKEFHRIPCLNASPA 339
sp|Q8XW32|HEMH_RALSO       TGRVDVFCPGFPADCLETLEEIAMEGQST-FRVAGGKDFHYIPCLNDSEP 331
sp|Q7NV65|HEMH_CHRVO       TARVDVVCPGFVGDCLETLEEIAMEGKET-FLSHGGGEFRYIPCLNEDPQ 326
sp|Q82UK8|HEMH_NITEU       TGRVDVVCPGFVSDCLETLEEIALEGKAI-FTEAGGGEFHYIPSLNEHPL 324
sp|Q9JVA5|HEMH_NEIMA       VTELDVFCPGFLADCLETMEEIALMGREQ-FYEAGGKSYRYIPCLNDNPD 319
sp|Q9K097|HEMH_NEIMB       VTELDVFCPGFLADCLETMEEIALMGREQ-FYEAGGKSYRYIPCLNDNPD 319
sp|Q8PEX0|HEMH_XANAC       VRSFDLVCPGFATDCLETLEEVALG-FSE-TLAERGATLSYIPCLNASDA 306
sp|Q8P3H6|HEMH_XANCP       VRSFDLVCPGFATDCLETLEEVALG-FAE-TLAERGATLSYIPCLNDSTT 306
sp|Q9PFU1|HEMH_XYLFA       IRRFDLVCPGFSVDCLETLEEVALG-FSE-TLAARGATMRYIPCLNDDPA 306
sp|Q87B82|HEMH_XYLFT       IRRFDLVCPGFSVDCLETLEEVALG-FSE-TLAARGATMRYIPCLNDDPA 306
sp|Q607T4|HEMH_METCA       IRHVDVVCPGFAVDCLETLEEIAIANRNE-FLGAGGKNYRYIPALNASPA 308
sp|Q8U9F7|HEMH_AGRT5       IKRIAVMNPGFVSDCLETLEEIAGEAGEI-FLHNGGEKFTHIPCLNDSTE 327
sp|Q92M52|HEMH_RHIME       VKRIAVINPGFVSDCLETLEEIAGQAAES-FHHNGGEKFAHIPCLNDSPE 322
sp|Q93TG2|HEMH_BRUME       VKSVAVLNPGFVADCLETVDEIGNEAAEE-FLENGGENFSHIPCLNDSEE 335
sp|Q98H61|HEMH_RHILO       VKSIAIVNPGFSVDCIETLDEIGREAAET-FHHAGGKNFAHIPCLNDSAE 336
sp|P28602|HEMH_BRAJA       VRRIAVVTPGFAADCLETLEEIAQENAEI-FKHNGGEQFSAIPCLNDSEP 328
sp|Q6NBF3|HEMH_RHOPA       VRKLAVVMPGFSADCLETLEEIAQENAEI-FMEHGGEEFTAIPCLNDSDA 328
sp|Q59735|HEMH_RHOCA       KKNIAVISPAFSADCIETLEEINGEIREA-FEHAGGESFTYVPCLNDDDL 333
sp|P57779|HEMH_ZYMMO       IRNLAVAMPGFSADCLETLEEIALQGKST-FLEAGGENFAALRCLNDSEE 313
sp|Q833G5|HEMH_ENTFA       IKNILIVAPGFVVDCLETIEELEHENRNY-FLENGGEVYKYVHPFNGDIE 302
sp|Q9CFB4|HEMH_LACLA       AKKVLICSPAFVADCLETLFELEIENKEV-FVENGGETFDFVHPFNDSLD 300
sp|Q67T48|HEMH_SYMTH       HRHVAVMAPGFAADCIETLHELEVEYAEE-FVKAGGERYDYLPAANDHPL 305
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sp|Q88XC3|HEMH_LACPL       KRNVLVVTPSFVVDCLETLEEDYVQNYQT-FRASGGDRFDLVPPMNKDTG 298
sp|P57778|HEMH_PSEFL       VKKLLVMCPAFVADCIETLEEIGDRGLEQ-FREAGGEELVLVPCLNDDPQ 324
sp|Q888A2|HEMH_PSESM       VKKLLVMCPAFVADCIETLEEIGDRGAEQ-FKEAGGEELILVPCLNDDPN 324
sp|Q88PV4|HEMH_PSEPK       VKKLLVMCPAFVADCIETLEEIGMRGSEQ-FVEAGGQELVLVPCLNDHPE 326
sp|Q9HVD7|HEMH_PSEAE       VKRLLVMCPAFVADCIETLEEIGMRGREQ-FISAGGEDLVLIPCLNDHPA 324
sp|Q6MHT3|HEMH_BDEBA       KKNIAVICPSFVADCIETLEEIGIGGQET-FHEHGGDQYYLVPCVNDNPK 323
sp|Q83FA4|HEMH_COXBU       IKKLMVVCPSFPVDCLETLEEIGIRAQSQ-WQRLDGETLKLIPSLNAHPQ 327
sp|Q6MAW8|HEMH_PARUW       RKKILVFCPAFVCDCLETTCEVSIEYAEE-FKHLGGDTLHLVEGLNSHPV 325
sp|Q7MXP4|HEMH_PORGI       TKRILIACPSFVCDCLESLEEVADHGQSI-FKKAGGADFTYIPCLNSGAN 334
sp|Q824K8|HEMH_CHLCV       -KHVLIVPFGFTSDHIETLYEIEKEYIAV-LIDKG-YQALRVPAIYQSSQ 295
sp|Q9Z7V1|HEMH_CHLPN       -PNVIVVPFGFISDHLETLYEIERDYLPL-LRSRG-YRALRIPAIYSSPL 296
sp|Q9PJQ6|HEMH_CHLMU       -RYIVVVPFGFVSDHIETLYEIDHLYVPM-LLQRG-YRVVRVPAINTSDR 290
sp|O84492|HEMH_CHLTR       -RYIVIVPFGFVSDHIETLHEIDHLYVPI-LLQKG-YRVVRIPAINASSR 290
sp|Q8GCV0|HEMH_LEPBI       -KHIAVYPISFVSDHIETLEEIGEQFKDL-TWEMGGKSFVRIPALGIYPS 326
sp|Q81U22|HEMH1_BACAN      YTSFVYAPVGFVAEHLEVLYDNDFECKVV--TDEIGAKYYRPEMPNASDA 294
sp|Q6HM97|HEMH1_BACHK      YTSFVYAPVGFVAEHLEVLYDNDFECKVV--TDEIGAKYYRPEMPNASDA 294
sp|Q63ES4|HEMH1_BACCZ      YTSFVYAPVGFVAEHLEVLYDNDFECKVV--TDEIGAKYYRPEMPNASDA 294
sp|Q73C98|HEMH1_BACC1      YTSFVYAPVGFVAEHLEVLYDNDFECKVV--TDEIGAKYYRPEMPNASDA 294
sp|Q81GW5|HEMH1_BACCR      YTSFVYAPVGFVAEHLEVLYDNDFECKVV--TDEIGAKYYRPEMPNASDA 294
sp|P32396|HEMH_BACSU       YQAFVYVPVGFVADHLEVLYDNDYECKVV--TDDIGASYYRPEMPNAKPE 295
sp|Q8ERX9|HEMH_OCEIH       YKAFIYTPVGFVADHLEVLYDNDYECKVV--CDEIGASYYRPDMPNVHPE 294
sp|Q71XF4|HEMH_LISMF       YKHFIYTPVGFVAEHLEVLYDNDYECKVV--TDEVGATYHRPPMPNSDPE 294
sp|Q8Y565|HEMH_LISMO       YKHFIYTPVGFVAEHLEVLYDNDYECKVV--TDEVGAAYHRPPMPNSDPE 294
sp|Q929G2|HEMH_LISIN       YKHFIYTPVGFVAEHLEVLYDNDYECKVV--TDEVGAAYHRPPMPNADPE 294
sp|P64124|HEMH_STAAM       YKNFIYTPVGFVCEHLEVLYDNDYECKVV--CDDIGANYYRPKMPNTHPL 294
sp|P64125|HEMH_STAAN       YKNFIYTPVGFVCEHLEVLYDNDYECKVV--CDDIGANYYRPKMPNTHPL 294
sp|Q6G8A3|HEMH_STAAS       YKNFIYTPVGFVCEHLEVLYDNDYECKVV--CDDIGANYYRPKMPNTHPL 294
sp|P64126|HEMH_STAAW       YKNFIYTPVGFVCEHLEVLYDNDYECKVV--CDDIGANYYRPKMPNTHPL 294
sp|Q6GFM4|HEMH_STAAR       YKNFIYTPVGFVCEHLEVLYDNDYECKVV--CDDIGANYYRPKMPNTHPL 294
sp|Q8CNS1|HEMH_STAEP       FKHFIYTPVGFVCEHLEVLYDNDYECKVV--CDDIGVNYYRPEMPNTHPL 294
sp|Q81TU9|HEMH2_BACAN      YESFIYCPVGFVAEHLEVLYDNDYECKVV--TDELNAAYFRPNMPNAQST 293
sp|Q6HM28|HEMH2_BACHK      YESFIYCPVGFVAEHLEVLYDNDYECKVV--TDELNAAYFRPTMPNAQST 293
sp|Q63EK7|HEMH2_BACCZ      YEAFIYCPVGFVAEHLEVLYDNDYECKVV--TDELNAAYFRPNMPNAQST 293
sp|Q73C08|HEMH2_BACC1      YESFIYCPVGFVAEHLEVLYDNDYECRVV--TDEINAAYFRPNMPNSQSI 293
sp|Q81GN7|HEMH2_BACCR      YESFIYCPVGFVAEHLEVLYDNDYECKVV--TDELNAKYFRPNMPNAQSA 293
sp|Q9KDK9|HEMH_BACHD       YTSMIYCPVGFVADHLEVLYDNDYECKVV--TDELGIDYYRPEMPNAKPE 293
sp|Q5WHT1|HEMH_BACSK       YKTFMYCPVGFVAEHLEVLYDNDYECKLV--TDELGVRYLRPPMPNADTR 293
sp|Q72L32|HEMH_THET2       YEEVAVQAVGFPADHLEVFYDLDLEAQAT--ARELGLRLLRARSLNADLD 302
sp|Q9RV98|HEMH_DEIRA       IKKVVSIAIGFVSDHVEILFDIDIAAQEV--AHELGMTLVRPPALNTDPL 299
sp|Q97R30|HEMH_STRPN       PDHYIFVPISFISEHIEVLFDNDVECYDL--CQEFGVNYHRPPMPNTDSR 281
sp|Q8DQ04|HEMH_STRR6       PDHYIFVPISFISEHIEVLFDNDVECYDL--CQEFGVNYHRPPMPNTDSR 281
sp|Q8FTB1|HEMH_COREF       QKALVVCPVGFISDHMEVIWDLDSELMDE--ATRRGMVIERVATVGPSDE 313
sp|Q8NQA1|HEMH_CORGL       QKALVVCPVGFISDHMEVIWDLDSELMEE--AEKRNMVVERVATVGPTDE 307
sp|Q6NH66|HEMH_CORDI       VSELVVAPIGFISDHMEVVWDLDHELQDL--ASDLGMSISRAATVGHTDS 317
sp|Q740Y1|HEMH_MYCPA       TRAVIVCPIGFVADHIEVVWDLDEELRAQ--AESAGMLMARASTPNAQPR 286
sp|P71765|HEMH_MYCTU       INAVIVCPIGFVADHIEVVWDLDHELRLQ--AEAAGIAYARASTPNADPR 286
sp|Q9CBM2|HEMH_MYCLE       TKAVIVCPIGFVADHIEVVWDLDHELRSQ--ADAAGVAFARAATPNADRR 290
sp|Q5YU18|HEMH_NOCFA       VDAVVVCPVGFVSDHLEVIWDLDNEAKDK--AAELGMAFARASTPGTDPR 300
sp|O07401|HEMH_MYCAV       TRAVIVCPIGFVADHIEVVWDLDEELRAQ--AESAGMLMARASTPNGQPR 285
sp|Q83H94|HEMH_TROW8       CEAVLIVPLGFISDHMEVLWDLDNESMQT--ARECGLFAIRTPTPGTHPL 336
sp|Q83FJ2|HEMH_TROWT       CEAVLIVPLGFISDHMEVLWDLDNESMQT--ARECGLFAIRTPTPGTHPL 336
sp|Q6AHF2|HEMH_LEIXX       VKAIIIVPLGFVSDHMEVLWDLDTEAMES--SEENGLLAVRVPTPGTHAK 334
sp|Q82KJ6|HEMH_STRAW       VPAVVMAPIGFVSDHMEVLYDLDTEAKAK--AEELGLPVRRSATVGADAR 317
sp|O50533|HEMH_STRCO       VPAVVMAPIGFVSDHMEVLYDLDTEATAK--AEELGLPVRRSATVGADPR 317
sp|Q7UFZ7|HEMH_RHOBA       LESLVILPIGFVSDHMEVLFDLDEEAAQL--CRERGIKMARASAAGTHPD 296
sp|P72183|HEMH_PROFR       VRDVICSPIGFLTDHMEVVWDLDTEAAAT--AAEHSMAFTRVATVGTLPV 298
sp|Q9HLB8|HEMH_THEAC       --KITVIPISFLYDHLEILYDLDYEFRKA--VEAKGMHYRRVRMPNDSAM 270
sp|Q978U9|HEMH_THEVO       --KIIAVPISFLYDHLEILYDLDYEFRKK--IEEDGYSYERVPMPNDSAI 272
                                    .*  :  *   :

sp|P42043|HEMH1_ARATH      FITDLADAVIESLPSA----------------EAMSNPNAVVDSEDSE-- 432
sp|P42044|HEMH_CUCSA       FISDLADAVIEALPSA----------------TALAPHTSSTDADD---- 455
sp|P42045|HEMH_HORVU       FISDLADAVVEALPSA----------------SAMATRKVKDTDSD---- 449
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sp|O04921|HEMH2_ARATH      FISDLADAVVESLPYVGAMAVSNLEARQSLVPLGSVEELLATYDSQRREL 461
sp|O22101|HEMH_ORYSA       FITDLADAVIESLPYVGAMAVSNLEARQPLVPLGSVEELLAAYDSKRDEL 442
sp|Q8YQR8|HEMH_ANASP       FIRALADLVIDALNKP----------SFKLSQAAQIKKMVKMYPPES--- 346
sp|P54225|HEMH_SYNY3       FIDALAQMVMDSLNDP----------PCTFETVPHPKKNMKMYPQER--- 346
sp|Q8DGU6|HEMH_SYNEL       FISALAQLVKEALAAP----------PRTFAEVNQSRKRVKLYPQER--- 347
sp|Q7VD58|HEMH_PROMA       FINGLADLVASCLSGP----------EISLDEAAKLPEKVKLYPQEK--- 350
sp|Q7V2F5|HEMH_PROMP       FIDGLSELVVSCLEGP----------IINIEKASELPEKVKLYPQEK--- 350
sp|Q7V6C6|HEMH_PROMM       FIEGLADLVGSSLEGP----------EINLDEAAKLAGRVKFYPQER--- 350
sp|Q7U5G0|HEMH_SYNPX       FIEGLADLVTTSLEGP----------EVSLDAAAELPTKVKLYPQEK--- 350
sp|Q7NMC7|HEMH_GLOVI       FIDDLAEMVIENLG---------------------------VYSR----- 327
sp|Q9ZC84|HEMH_RICPR       FINSLTNILLRFIN------------------------------------ 313
sp|Q68VM9|HEMH_RICTY       FINSLTNILIRFIN------------------------------------ 313
sp|Q92FV4|HEMH_RICCN       FINSLTNILLRFIN------------------------------------ 313
sp|Q73FY6|HEMH_WOLPM       FIKCLADLCINLP------------------------------------- 315
sp|P57777|HEMH_CAUCR       FIDGLAKAVRDSVG------------------------------------ 318
sp|O67083|HEMH_AQUAE       FISALEDLVKNEV------------------------------------- 309
sp|P22830|HEMH_HUMAN       FSKALADLVHSHIQSNEL-------------------------------- 394
sp|P22315|HEMH_MOUSE       FSKALADLVHSHIQSNKL-------------------------------- 391
sp|P22600|HEMH_BOVIN       FSKALADLVHSHLQSKER-------------------------------- 387
sp|O42479|HEMH_CHICK       FSKALADLVCSHIQSNEI-------------------------------- 373
sp|O57478|HEMH_XENLA       FSKALADLVLSHMKSSEI-------------------------------- 381
sp|Q9V9S8|HEMH_DROME       FIDALTNVVADHLKSQQA-------------------------------- 354
sp|O59786|HEMH_SCHPO       AIQGMADLVAEHLKAKVP-------------------------------- 357
sp|P16622|HEMH_YEAST       FIEGMADLVKSHLQSNQL-------------------------------- 362
sp|Q6APB0|HEMH_DESPS       FITGLRQLVLESSVNSD--------------------------------- 320
sp|Q747F5|HEMH_GEOSL       FISCLADLVRR--VEG---------------------------------- 317
sp|Q9ZKD4|HEMH_HELPJ       FAKFIIELVKN---LKSE-------------------------------- 335
sp|P56107|HEMH_HELPY       FAQFIIERVKN---LKE--------------------------------- 334
sp|Q7M7P9|HEMH_WOLSU       FAHAIIKLISQ---GEIS-------------------------------- 316
sp|Q7VHH1|HEMH_HELHP       FAKSIMNILEEHLRGKAEV------------------------------- 311
sp|Q9PI08|HEMH_CAMJE       FMEFILKYLSD---LN---------------------------------- 303
sp|Q8DFM2|HEMH_VIBVU       HIEMMARLVTER-------------------------------------- 319
sp|Q7MMR4|HEMH_VIBVY       HIEMMARLVTER-------------------------------------- 319
sp|Q9KTB6|HEMH_VIBCH       HIELMAALVKVDC------------------------------------- 320
sp|Q87RH3|HEMH_VIBPA       HIDMMAELVRSKL------------------------------------- 320
sp|Q6LTE0|HEMH_PHOPR       HIRMMKNLVTQHSQGW---------------------------------- 322
sp|Q8EFF4|HEMH1_SHEON      HIELLRLLVQEQTQSWISAE------------------------------ 348
sp|Q8XD39|HEMH_ECO57       HIEMMANLVAAYR------------------------------------- 320
sp|P23871|HEMH_ECOLI       HIEMMANLVAAYR------------------------------------- 320
sp|Q8FK83|HEMH_ECOL6       HIEMMANLVAAYR------------------------------------- 320
sp|Q83SE5|HEMH_SHIFL       HIEMMANLVAAYR------------------------------------- 320
sp|Q8Z8T2|HEMH_SALTI       HIDMILKLTAPYR------------------------------------- 320
sp|P37408|HEMH_SALTY       HIDMMLKLTAPYR------------------------------------- 320
sp|Q8ZC98|HEMH_YERPE       HIALLEQLIRHNI------------------------------------- 320
sp|Q05338|HEMH_YERPS       HIALLEQLIRHNI------------------------------------- 320
sp|P43413|HEMH_YEREN       HIDLLEQLVRDHLSC----------------------------------- 322
sp|Q6D7Z4|HEMH_ERWCT       HIDLLEQLVGKVE------------------------------------- 320
sp|Q7N0P6|HEMH_PHOLL       HILLLEELVNGFVRNRDE-------------------------------- 325
sp|P43868|HEMH_HAEIN       HIEMMGKLILEKLT------------------------------------ 323
sp|P57874|HEMH_PASMU       HIQMMANLILNKLNQTSK-------------------------------- 326
sp|Q65SV7|HEMH_MANSM       HIACLGNLLLKRMTI----------------------------------- 323
sp|Q8CWW4|HEMH_STRMU       HIQLLAELISERL------------------------------------- 319
sp|Q8D226|HEMH_WIGBR       HIECLANIIRTHLK------------------------------------ 321
sp|Q8EBZ7|HEMH2_SHEON      HIAMMANLVKPYL------------------------------------- 327
sp|Q6F7N0|HEMH_ACIAD       HLELLRQLLQAHLDALNYSLAYSAH------------------------- 340
sp|Q7WGI0|HEMH_BORBR       WIEGLTDLVERQLRGWPTGNP----------------------------- 362
sp|Q7W515|HEMH_BORPA       WIEGLTDLVERQLRGWPTGNP----------------------------- 362
sp|Q7VVX8|HEMH_BORPE       WIEGLTDLVERQLRGWPTGNP----------------------------- 362
sp|Q62HD1|HEMH_BURMA       WIAALGEIAAENLQGWP-------VRVAMAPEAVS--------------- 367
sp|Q63R43|HEMH_BURPS       WIAALGEIAAENLQGWP-------VRVAMAPEAVS--------------- 367
sp|Q8XW32|HEMH_RALSO       WIAGLADIAQAHLQGWPLALPHPHVLEASRTRAQSKGAAA---------- 371
sp|Q7NV65|HEMH_CHRVO       WISSLAGIVRNNLAGWTEIR-AEDSQQR-AALAHDMGASA---------- 364
sp|Q82UK8|HEMH_NITEU       WIEAIGNIIQTHLTGWADRRLSEEAAERSRKRALALGARE---------- 364
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sp|Q9JVA5|HEMH_NEIMA       WIDALVALAEENLGGWR--------------------------------- 336
sp|Q9K097|HEMH_NEIMB       WIDALVALAEENLGSWR--------------------------------- 336
sp|Q8PEX0|HEMH_XANAC       HAHALAAMARRA-------------------------------------- 318
sp|Q8P3H6|HEMH_XANCP       HAQALAAVARRA-------------------------------------- 318
sp|Q9PFU1|HEMH_XYLFA       HVQALAGLAQRALL------------------------------------ 320
sp|Q87B82|HEMH_XYLFT       HVQALAGLAQRALP------------------------------------ 320
sp|Q607T4|HEMH_METCA       HADILIGLLEPYLALTA--------------------------------- 325
sp|Q8U9F7|HEMH_AGRT5       GMNVLEKVVRRELQGWV--------------------------------- 344
sp|Q92M52|HEMH_RHIME       GMAVLNHVVRRELEGWL--------------------------------- 339
sp|Q93TG2|HEMH_BRUME       GMKVIETLVRRELLGWV--------------------------------- 352
sp|Q98H61|HEMH_RHILO       GMTVIEAMVRRELSGWV--------------------------------- 353
sp|P28602|HEMH_BRAJA       GMDVIRTLVLRELQGWI--------------------------------- 345
sp|Q6NBF3|HEMH_RHOPA       GVQVIRQLVLRELQGWL--------------------------------- 345
sp|Q59735|HEMH_RHOCA       HIAALLEVVEENLAGWID-------------------------------- 351
sp|P57779|HEMH_ZYMMO       SLAMLEILVNQGLYGWLKSWE----------------------------- 334
sp|Q833G5|HEMH_ENTFA       FAKLVKDIISL--------------------------------------- 313
sp|Q9CFB4|HEMH_LACLA       FTRVLSEVVDQNRL------------------------------------ 314
sp|Q67T48|HEMH_SYMTH       FIDCLEDLVRRHLPR----------------------------------- 320
sp|Q88XC3|HEMH_LACPL       FSQFLADLAIQKQEASNHAITSSSKS------------------------ 324
sp|P57778|HEMH_PSEFL       WAVALNTLCERAPVSL---------------------------------- 340
sp|Q888A2|HEMH_PSESM       WAKELNRLCERAPLML---------------------------------- 340
sp|Q88PV4|HEMH_PSEPK       WVRVLADMCEKA-------------------------------------- 338
sp|Q9HVD7|HEMH_PSEAE       WVGALAEMSGRLARPL---------------------------------- 340
sp|Q6MHT3|HEMH_BDEBA       WVQGFADLVKSI-------------------------------------- 335
sp|Q83FA4|HEMH_COXBU       WVNAIAKMAKKSLQLF---------------------------------- 343
sp|Q6MAW8|HEMH_PARUW       WIEAIKTIIQEHLPHPHSQFSR---------------------------- 347
sp|Q7MXP4|HEMH_PORGI       WIDALRNILEE--------------------------------------- 345
sp|Q824K8|HEMH_CHLCV       WVESLATIIQSTPHVEKKSLIKS--------------------------- 318
sp|Q9Z7V1|HEMH_CHLPN       WVSTLVDIVKENSTVVAEELIKSGKKHTGIR------------------- 327
sp|Q9PJQ6|HEMH_CHLMU       WVSALASIVKSSPHETILEPLLMPKRR----------------------- 317
sp|O84492|HEMH_CHLTR       WVSSLAAIVRSSPQETSLEPLLMP-------------------------- 314
sp|Q8GCV0|HEMH_LEPBI       FIQFLAEKVMHSDRKIQHCICREKGGESLQHCRFKD-------------- 362
sp|Q81U22|HEMH1_BACAN      FIDCLTDVVVKKKESVM--------------------------------- 311
sp|Q6HM97|HEMH1_BACHK      FIDCLTDVVVKKKESVM--------------------------------- 311
sp|Q63ES4|HEMH1_BACCZ      FIDSLTDVVVKKKESVM--------------------------------- 311
sp|Q73C98|HEMH1_BACC1      FIDCLTDVVLKKKESVL--------------------------------- 311
sp|Q81GW5|HEMH1_BACCR      FIDCLTDVVLKKKESVL--------------------------------- 311
sp|P32396|HEMH_BACSU       FIDALATVVLKKLGR----------------------------------- 310
sp|Q8ERX9|HEMH_OCEIH       FIETLANVVMKKAKSEVR-------------------------------- 312
sp|Q71XF4|HEMH_LISMF       FLEVLRTVVWEKYSN----------------------------------- 309
sp|Q8Y565|HEMH_LISMO       FLEVLRTVVWEKYSN----------------------------------- 309
sp|Q929G2|HEMH_LISIN       FLEVLRTVVWDAYTK----------------------------------- 309
sp|P64124|HEMH_STAAM       FIGAIVDEIKSIF------------------------------------- 307
sp|P64125|HEMH_STAAN       FIGAIVDEIKSIF------------------------------------- 307
sp|Q6G8A3|HEMH_STAAS       FIGAIVDEIKSIF------------------------------------- 307
sp|P64126|HEMH_STAAW       FIGAIVDEIKSIF------------------------------------- 307
sp|Q6GFM4|HEMH_STAAR       FIGAIVDEIKSIF------------------------------------- 307
sp|Q8CNS1|HEMH_STAEP       FIGAIVDEIQSHI------------------------------------- 307
sp|Q81TU9|HEMH2_BACAN      FIDCLATIVSRKMKEIVDKELILNNN------------------------ 319
sp|Q6HM28|HEMH2_BACHK      FIDCLATIVSRKMKEIVDKELILNNN------------------------ 319
sp|Q63EK7|HEMH2_BACCZ      FIDCLATIVSKKMKEIVDKELILNNN------------------------ 319
sp|Q73C08|HEMH2_BACC1      FIDCLTEIVSKKMKEVVDKDLVLNNN------------------------ 319
sp|Q81GN7|HEMH2_BACCR      FIDCLAEIVSKKVKEIVDKDLVLNNN------------------------ 319
sp|Q9KDK9|HEMH_BACHD       FIDCLATVIQKKLAEKE--------------------------------- 310
sp|Q5WHT1|HEMH_BACSK       FLKALADVVTKRLAAVVTK------------------------------- 312
sp|Q72L32|HEMH_THET2       YIQVLKDLVEAAWPR----------------------------------- 317
sp|Q9RV98|HEMH_DEIRA       FIGTLASVIERKAAEVA--------------------------------- 316
sp|Q97R30|HEMH_STRPN       LIDALVNTVRVNENQEFKEFLPEEETFDELVPSDETKNILAESQDLQMPE 331
sp|Q8DQ04|HEMH_STRR6       LIDALVNTVRVNENQEFKEFLPEEETFDELVPSDETKNILAESEDLQMPE 331
sp|Q8FTB1|HEMH_COREF       FATMVVDLIDEMEMKRVIERLG---TLPVRGSTVNGEPCVPGCCAPRRRP 360
sp|Q8NQA1|HEMH_CORGL       FAALVVDLIEEAELKRVIERLG---KLPARGSSVNGAPCGDGCCGTAKHK 354
sp|Q6NH66|HEMH_CORDI       FATMIVELVEESLGVKPHQNLG---TVPSKGCSFNGEPCEVNCCKPVQRP 364
sp|Q740Y1|HEMH_MYCPA       FARLAADLIDELRCGRTPARVTGPDPVPGCLASVNGAPCRPPHCAAQATG 336
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sp|P71765|HEMH_MYCTU       FARLARGLIDELRYGRIPARVSGPDPVPGCLSSINGQPCRPPHCVASVSP 336
sp|Q9CBM2|HEMH_MYCLE       FARLAASLIDELTHDRVPVRVNGSDPVPGCLASINGVPCDLPHCVA---- 336
sp|Q5YU18|HEMH_NOCFA       FPRLVVELMREHLDGLAPRRLG---AEPGYGCTIDGMPCASGCCAPQRRP 347
sp|O07401|HEMH_MYCAV       FGRLAADLIDELRCGRTPARVTGPDQVPGCLASVNGAPCRPPHCAAQATG 335
sp|Q83H94|HEMH_TROW8       YISGMVDLIVERLEGVPRSA-----RPAMTDLGPWFDVCQPGCCKNSRSG 381
sp|Q83FJ2|HEMH_TROWT       YISGMVDLIVERLEGVPRSA-----RPAMTDLGPWFDVCQPGCCKNSRSG 381
sp|Q6AHF2|HEMH_LEIXX       YVKGLVDLVLERRDGLPVAQ-----RPSLTTLGPWYDVCRPGCCENVRLG 379
sp|Q82KJ6|HEMH_STRAW       FAAAVRELVVERAAVESGQKVT---PCALGALGPSHQLCPVGCCPARAP- 363
sp|O50533|HEMH_STRCO       FAAAVRDLVLERAGDERGQEVT---PCALGTLGASHNLCPVGCCPARAP- 363
sp|Q7UFZ7|HEMH_RHOBA       FVEMICGLVQERLGKLNEK-------PALGELGPWHDVCPQDCCLYTPR- 338
sp|P72183|HEMH_PROFR       FIEGLADLIVAALSTKPGTG---------PDAPAARHWCTPDCCPNARIA 339
sp|Q9HLB8|HEMH_THEAC       MVNMIERAARSAITHLSGEK-------------INGSIIGQPRIADTDNG 307
sp|Q978U9|HEMH_THEVO       FITLLERIVSSSITHLSGEL-------------IGN---GKEKSENFI-- 304


sp|P42043|HEMH1_ARATH      ------SSDAFSYIVKMFFG--SILAFVLLLSPKMFHAFRN--L------ 466
sp|P42044|HEMH_CUCSA       -------HDPFLYAIKLLFG--SVLAFILLLSPKAFMVFRNNFLLNYTRI 496
sp|P42045|HEMH_HORVU       -------MDMMHYLTKMFLG--SVLAFFLLLSPRLVSAFRNTLQ------ 484
sp|O04921|HEMH2_ARATH      PAPVTMWEWGWTKSAETWNGRAAMLAVLALLVLEVTTGKGFLHQWGILPS 511
sp|O22101|HEMH_ORYSA       PPPVTVWEWGWTKSAETWNGRAAMLAVLALLVLEVTTGEGFLHQWGILPL 492
sp|Q8YQR8|HEMH_ANASP       ------WEWGMTSSAEVWNGRIAMLGFIALII-ELVTGQGLLHMIGLLQ- 388
sp|P54225|HEMH_SYNY3       ------WEWGLTTAAEVWNGRLAMLGFIALLV-ELISGQGPLHFVGLL-- 387
sp|Q8DGU6|HEMH_SYNEL       ------WEWGMTSAAERWNGRLAMLGFLALMI-ELISGQGPLHMLGLL-- 388
sp|Q7VD58|HEMH_PROMA       ------WQWGWNNSAEVWNGRVAMFVFIICFF-ELVIGNGPLHYIGLL-- 391
sp|Q7V2F5|HEMH_PROMP       ------WQWGWNNSSEVWNGRVAMIVFLILFI-ELISGSGPLHKLGIL-- 391
sp|Q7V6C6|HEMH_PROMM       ------WQWGLNTSSEAWNGRIAMLGFAAFLL-ELISGHGPLHAIGLL-- 391
sp|Q7U5G0|HEMH_SYNPX       ------WEWGWNNSSEVWNGRLAMLGFSAFLL-ELISGHGPLHALGLL-- 391
sp|Q7NMC7|HEMH_GLOVI       --------------------------------------------------
sp|Q9ZC84|HEMH_RICPR       -------NTNTNLVMSSSSKRICPNKFTKCLCNLTN-------------- 342
sp|Q68VM9|HEMH_RICTY       -------KTDTNLVMSSSSKRICPNKFTKCLCNLIN-------------- 342
sp|Q92FV4|HEMH_RICCN       -------KVDTNLVMSSSSTRICPNEFTKCLCKLTS-------------- 342
sp|Q73FY6|HEMH_WOLPM       --------------------------------------------------
sp|P57777|HEMH_CAUCR       -------KAPG--TVSSACGWRCGADWSKCPCREGASA------------ 347
sp|O67083|HEMH_AQUAE       --------------------------------------------------
sp|P22830|HEMH_HUMAN       ------CSKQLTLSCPLCV-NPVCRETKSFFTSQQL-------------- 423
sp|P22315|HEMH_MOUSE       ------CSTQLSLNCPLCV-NPVCRKTKSFFTSQQL-------------- 420
sp|P22600|HEMH_BOVIN       ------CSTQLTLSCPLCV-NPTCRETKSFFTSQQL-------------- 416
sp|O42479|HEMH_CHICK       ------CSKQLTLCCPLCV-NPVCRETKAFFTNQQL-------------- 402
sp|O57478|HEMH_XENLA       ------CSKQLSLRCPMCV-NPVCGEAKSFFTKQQQQ------------- 411
sp|Q9V9S8|HEMH_DROME       ------VNPKFLMRCPMCS-NPKCRESKSWYRQLCSN------------- 384
sp|O59786|HEMH_SCHPO       ------YSRQFTQRCPGCT-SESCAERINFFQDF---------------- 384
sp|P16622|HEMH_YEAST       ------YSNQLPLDFALGKSNDPVKDLSLVFGNHEST------------- 393
sp|Q6APB0|HEMH_DESPS       --------------------------------------------------
sp|Q747F5|HEMH_GEOSL       --------------------------------------------------
sp|Q9ZKD4|HEMH_HELPJ       --------------------------------------------------
sp|P56107|HEMH_HELPY       --------------------------------------------------
sp|Q7M7P9|HEMH_WOLSU       --------------------------------------------------
sp|Q7VHH1|HEMH_HELHP       --------------------------------------------------
sp|Q9PI08|HEMH_CAMJE       --------------------------------------------------
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sp|Q87RH3|HEMH_VIBPA       --------------------------------------------------
sp|Q6LTE0|HEMH_PHOPR       --------------------------------------------------
sp|Q8EFF4|HEMH1_SHEON      --------------------------------------------------
sp|Q8XD39|HEMH_ECO57       --------------------------------------------------
sp|P23871|HEMH_ECOLI       --------------------------------------------------
sp|Q8FK83|HEMH_ECOL6       --------------------------------------------------
sp|Q83SE5|HEMH_SHIFL       --------------------------------------------------
sp|Q8Z8T2|HEMH_SALTI       --------------------------------------------------
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sp|Q8ZC98|HEMH_YERPE       --------------------------------------------------
sp|Q05338|HEMH_YERPS       --------------------------------------------------
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sp|P57874|HEMH_PASMU       --------------------------------------------------
sp|Q65SV7|HEMH_MANSM       --------------------------------------------------
sp|Q8CWW4|HEMH_STRMU       --------------------------------------------------
sp|Q8D226|HEMH_WIGBR       --------------------------------------------------
sp|Q8EBZ7|HEMH2_SHEON      --------------------------------------------------
sp|Q6F7N0|HEMH_ACIAD       --------------------------------------------------
sp|Q7WGI0|HEMH_BORBR       --------------------------------------------------
sp|Q7W515|HEMH_BORPA       --------------------------------------------------
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sp|Q63R43|HEMH_BURPS       --------------------------------------------------
sp|Q8XW32|HEMH_RALSO       --------------------------------------------------
sp|Q7NV65|HEMH_CHRVO       --------------------------------------------------
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sp|Q9JVA5|HEMH_NEIMA       --------------------------------------------------
sp|Q9K097|HEMH_NEIMB       --------------------------------------------------
sp|Q8PEX0|HEMH_XANAC       --------------------------------------------------
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sp|Q607T4|HEMH_METCA       --------------------------------------------------
sp|Q8U9F7|HEMH_AGRT5       --------------------------------------------------
sp|Q92M52|HEMH_RHIME       --------------------------------------------------
sp|Q93TG2|HEMH_BRUME       --------------------------------------------------
sp|Q98H61|HEMH_RHILO       --------------------------------------------------
sp|P28602|HEMH_BRAJA       --------------------------------------------------
sp|Q6NBF3|HEMH_RHOPA       --------------------------------------------------
sp|Q59735|HEMH_RHOCA       --------------------------------------------------
sp|P57779|HEMH_ZYMMO       --------------------------------------------------
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sp|Q9HVD7|HEMH_PSEAE       --------------------------------------------------
sp|Q6MHT3|HEMH_BDEBA       --------------------------------------------------
sp|Q83FA4|HEMH_COXBU       --------------------------------------------------
sp|Q6MAW8|HEMH_PARUW       --------------------------------------------------
sp|Q7MXP4|HEMH_PORGI       --------------------------------------------------
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sp|Q81U22|HEMH1_BACAN      --------------------------------------------------
sp|Q6HM97|HEMH1_BACHK      --------------------------------------------------
sp|Q63ES4|HEMH1_BACCZ      --------------------------------------------------
sp|Q73C98|HEMH1_BACC1      --------------------------------------------------
sp|Q81GW5|HEMH1_BACCR      --------------------------------------------------
sp|P32396|HEMH_BACSU       --------------------------------------------------
sp|Q8ERX9|HEMH_OCEIH       --------------------------------------------------
sp|Q71XF4|HEMH_LISMF       --------------------------------------------------
sp|Q8Y565|HEMH_LISMO       --------------------------------------------------
sp|Q929G2|HEMH_LISIN       --------------------------------------------------
sp|P64124|HEMH_STAAM       --------------------------------------------------
sp|P64125|HEMH_STAAN       --------------------------------------------------
sp|Q6G8A3|HEMH_STAAS       --------------------------------------------------
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sp|Q63EK7|HEMH2_BACCZ      --------------------------------------------------
sp|Q73C08|HEMH2_BACC1      --------------------------------------------------
sp|Q81GN7|HEMH2_BACCR      --------------------------------------------------
sp|Q9KDK9|HEMH_BACHD       --------------------------------------------------
sp|Q5WHT1|HEMH_BACSK       --------------------------------------------------
sp|Q72L32|HEMH_THET2       --------------------------------------------------
sp|Q9RV98|HEMH_DEIRA       --------------------------------------------------
sp|Q97R30|HEMH_STRPN       FVKKLIEKKGRENVKMPYLIKKMLEKAGKLPKE----------------- 364
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sp|Q5YU18|HEMH_NOCFA       AA------AGR--------------------------------------- 352
sp|O07401|HEMH_MYCAV       --------------------------------------------------
sp|Q83H94|HEMH_TROW8       FKPAYGGVAP---------------------------------------- 391
sp|Q83FJ2|HEMH_TROWT       FKPAYGGVAP---------------------------------------- 391
sp|Q6AHF2|HEMH_LEIXX       FKPAVAGLTP---------------------------------------- 389
sp|Q82KJ6|HEMH_STRAW       -KPAAAGADSPYA------------------------------------- 375
sp|O50533|HEMH_STRCO       -RPAAAGADSPYA------------------------------------- 375
sp|Q7UFZ7|HEMH_RHOBA       -RPPVAGGRPVQAN------------------------------------ 351
sp|P72183|HEMH_PROFR       GRPTIPGFAAGPR------------------------------------- 352
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sp|Q978U9|HEMH_THEVO       --------------------------------------------------


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sp|P42044|HEMH_CUCSA       YGYRGERSEFFWVRLIFT 514
sp|P42045|HEMH_HORVU       ------------------
sp|O04921|HEMH2_ARATH      L----------------- 512
sp|O22101|HEMH_ORYSA       FH---------------- 494
sp|Q8YQR8|HEMH_ANASP       ------------------
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sp|Q6AHF2|HEMH_LEIXX       ------------------
sp|Q82KJ6|HEMH_STRAW       ------------------
sp|O50533|HEMH_STRCO       ------------------
sp|Q7UFZ7|HEMH_RHOBA       ------------------
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sp|Q9HLB8|HEMH_THEAC       ------------------
sp|Q978U9|HEMH_THEVO       ------------------
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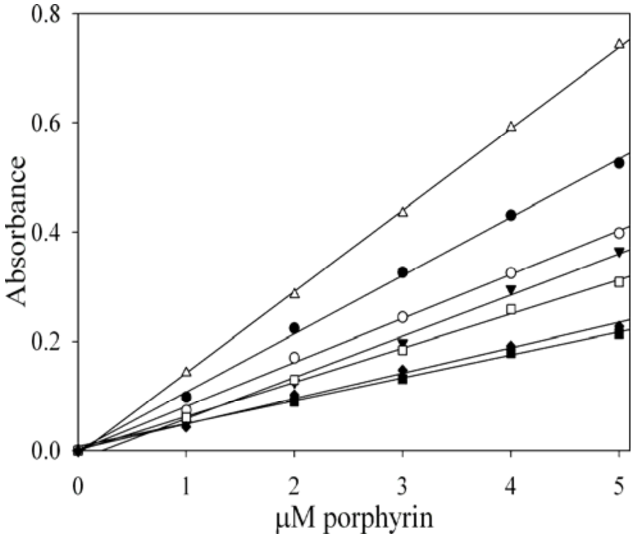

Supplemental data Figure 2. Standard curves for determination of apparent extincition coefficients of protoporphyrin IX and metallated porphyrins in ferrochelatase reaction buffer. The apparent extinction coefficients were: zinc protoporphyrin IX (triangles); 149,000 L/(mol·cm) at 417 nm, protoporphyrin IX (filled circles); 107,000 L/(mol·cm) at 407 nm, protoporphyrin IX (circles); 80,500 L/(mol·cm) at 417 nm, cobalt protoporphyrin IX (filled triangles); 75,400 L/(mol·cm) at 407 nm, copper protoporphyrin IX (squares); 62,600 L/(mol·cm) at 417 nm, iron protoporphyrin IX (filled triangles); 41,500 L/(mol·cm) at 407 nm**,** and nickel protoporphyrin IX (filled squares); 41,900 L/(mol·cm) at 417 nm. Data were collected at 30ºC.

Supplemental data Figure 3. Spectral characterization of transition metal ion insertion into protoporphyrin IX catalyzed by ferrochelatase. 0.1 µM yeast ferrochelatase was incubated with 5 µM protoporphyrin IX and 10 µM of the indicated divalent transition metal (as the chloride salt) at 30ºC in ferrochelatase reaction buffer. Spectra were recorded at regular intervals until the reaction reached completion. Arrows indicate the direction of spectral changes during the transformation of protoporphyrin IX into each of the various metalloporphyrins.