

hATP7B -----MPEQERQITAREGASAKILSLPFRAMEAMKKSFAFDNVGEGGL
rATP7B -----MPEQERQITARE-ASRKLISLALPTPMGQSGSFAFDNVGEGGL
mAATP7B HDPHNRSLASVTHPEQGVQASASRKLISLALPTPMGQSGSFAFDNVGEGGL
sATP7B -----MPEQ-SPSFLSVISQSP-----GPAAMKHCWCEV
2AtP7b* -----NNKL-SFSPSLAKFISKPDNGPVGQOLCKDKC-----
2AtP7b -----NNKL-SFSPSLAKFISKPDNGPVGQOLCKDKC-----

Metal binding domain (not found in zebrafish)

hATP7B DGLGSSQVPTSTVRLGTMTCQSCVSIEDIRISNLGISMKSLQSGASVYKPSVVC
rATP7B DSTCFILQITVSLGTMTCQSCVSIEDIRISNLGISMKSLQSGASVYKPSVVC
mAATP7B DSTSS-SPATVSLGTMTCQSCVSIEDIRISNLGISMKSLQSGASVYKPSVVC
sATP7B -----CFD-CTGVGAGHCAKADV-----
2AtP7b* -----PLCH-----CPELFCVCLPQNSKDGTEYK-----ENSGSQGWPTX
2AtP7b -----PLCH-----CPELFCVCLPQNSKDGTEYK-----ENSGSQGWPTX

hATP7B LQOVCHQIDMGFEASTLEGAAWSPSLPAQELVVLVBEVGMTCQSCVSIIEGKIRKL
rATP7B LQOICLQIEDMGFEASTLEGAAWSPSLPAQELVVLVBEVGMTCQSCVSIIEGKIRKL
mAATP7B LQOICLQIEDMGFEASTLEGAAWSPSLPAQELVVLVBEVGMTCQSCVSIIEGKIRKL
sATP7B -----HGLDNLAIE-----PSGSESLSPSSPACQ-----ATFALLGLPEBVAHSGVSGSL
2AtP7b* -----HAFDNYCEPDKLHVLV-----HOLPSECEVLTQVEGMTCQSCVSIIEQIQRLL
2AtP7b -----HAFDNYCEPDKLHVLV-----HOLPSECEVLTQVEGMTCQSCVSIIEQIQRLL

Metal binding domain 1

hATP7B QGVVRVKSLSQEAVALITYQYLLIQPEDLRHDIQDMGFEASTLKVAPLSLGPIDIEHLQ
rATP7B QGVVRVKSLSQEAVALITYQYLLIQPEDLRHDIQDMGFEASTLKVAPLSLGPIDIEHLQ
mAATP7B QGVVRVKSLSQEAVALITYQYLLIQPEDLRHDIQDMGFEASTLKVAPLSLGPIDIEHLQ
sATP7B NGVLTASLSASSALANDVDYTSVITTEVLELHDIQDMGFEASTLKVAPLSLGPIDIEHLQ
2AtP7b* NGVLTASLSASSALANDVDYTSVITTEVLELHDIQDMGFEASTLKVAPLSLGPIDIEHLQ
2AtP7b NGVLTASLSASSALANDVDYTSVITTEVLELHDIQDMGFEASTLKVAPLSLGPIDIEHLQ

hATP7B STNPKPLSSANNSNSETLGHQSHVYVQLQRLDGMHCKSVCLNIEEMIQLQOLQVSL
rATP7B STNPKRAAVPQNSHSETLGHQSHVYVQLQRLDGMHCKSVCLNIEEMIQLQOLQVSL
mAATP7B STNPKKETYSVQSLSHHFTLGHQSHVYVQLQRLDGMHCKSVCLNIEEMIQLQOLQVSL
sATP7B -----AVRIGVGMHCKSVCLNIEEMIQLQOLQVSL
2AtP7b* -----AVRIGVGMHCKSVCLNIEEMIQLQOLQVSL
2AtP7b -----AVRIGVGMHCKSVCLNIEEMIQLQOLQVSL

Metal binding domain 2

hATP7B QVSLERKTAQVYQDPSCTSPVALQKALPQNFVSLDQAGASGTDHRSSSSSPQS
rATP7B QVSLERKTAQVYQDPSCTSPVALQKALPQNFVSLDQAGASGTDHRSSSSSPQS
mAATP7B QVSLERKTAQVYQDPSCTSPVALQKALPQNFVSLDQAGASGTDHRSSSSSPQS
sATP7B QVSLQAAALVLIQVPLVQTEELKIDEM-----GFEATL-----LT
2AtP7b* QVSLKSGSVLDFPDSLLTETVGLFLEIPQNFVSLDQAGASGTDHRSSSSSPQS
2AtP7b QVSLKSGSVLDFPDSLLTETVGLFLEIPQNFVSLDQAGASGTDHRSSSSSPQS

Metal binding domain 3

hATP7B PPRNGVQGTCTTILAIAGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC
rATP7B QSGQPGFCITAVLITVIGPDSVQPMHDLQSGASVYKPSVVC
mAATP7B SAKGQPGFCITAVLITVIGPDSVQPMHDLQSGASVYKPSVVC
sATP7B ADQGVNOSTTITVITVIGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC
2AtP7b* SRLNASSTPTSVITVIGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC
2AtP7b SRLNASSTPTSVITVIGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC

hATP7B SPEELKAAELDEMGFEASTLEGAAWSPSLPAQELVVLVBEVGMTCQSCVSIIEGKIRKL
rATP7B SSDLKTAEDMGFEASTLEGAAWSPSLPAQELVVLVBEVGMTCQSCVSIIEGKIRKL
mAATP7B SDDLKTAEDMGFEASTLEGAAWSPSLPAQELVVLVBEVGMTCQSCVSIIEGKIRKL
sATP7B SDDLKTAEDMGFEASTLEGAAWSPSLPAQELVVLVBEVGMTCQSCVSIIEGKIRKL
2AtP7b* CESELKAAELDEMGFEASTLEGAAWSPSLPAQELVVLVBEVGMTCQSCVSIIEGKIRKL
2AtP7b CESELKAAELDEMGFEASTLEGAAWSPSLPAQELVVLVBEVGMTCQSCVSIIEGKIRKL

Metal binding domain 4

hATP7B NHAPDILASQPSGTAVAP-CFVLQITVIGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC
rATP7B HGGQVSLSDSPSPGGTAS-CFVLQITVIGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC
mAATP7B HGGQVSHSSTSPSPGGTAS-CFVLQITVIGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC
sATP7B KSGVSGTSLHNTTSGVGVSCFVCTVIGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC
2AtP7b* KPSVSGTSLHNTTSGVGVSCFVCTVIGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC
2AtP7b KPSVSGTSLHNTTSGVGVSCFVCTVIGMTCQSCVSIIEGKIRKLQSGASVYKPSVVC

Metal binding domain 5

hATP7B RTNGITVASALATSALVDFPEIIGPDIIRKIEEGIFHAGSLQNNNAHLDHKEI
rATP7B RTNGITVASALATSALVDFPEIIGPDIIRKIEEGIFHAGSLQNNNAHLDHKEI
mAATP7B RTNGITVASALATSALVDFPEIIGPDIIRKIEEGIFHAGSLQNNNAHLDHKEI
sATP7B RTNGITVASALATSALVDFPEIIGPDIIRKIEEGIFHAGSLQNNNAHLDHKEI
2AtP7b* RTNGITVASALATSALVDFPEIIGPDIIRKIEEGIFHAGSLQNNNAHLDHKEI
2AtP7b RTNGITVASALATSALVDFPEIIGPDIIRKIEEGIFHAGSLQNNNAHLDHKEI

Metal binding domain 6

hATP7B KQWKSFLSLVFGIPVWGLAIYMLSSRPHO-----SHVLDHNIPLGSLNLDTFFLCT
rATP7B KQWKSFLSLVFGIPVWGLAIYMLSSRPHO-----SHVLDHNIPLGSLNLDTFFLCT
mAATP7B KQWKSFLSLVFGIPVWGLAIYMLSSRPHO-----SHVLDHNIPLGSLNLDTFFLCT
sATP7B KQWKSFLSLVFGIPVWGLAIYMLSSRPHO-----SHVLDHNIPLGSLNLDTFFLCT
2AtP7b* KQWKSFLSLVFGIPVWGLAIYMLSSRPHO-----SHVLDHNIPLGSLNLDTFFLCT
2AtP7b KQWKSFLSLVFGIPVWGLAIYMLSSRPHO-----SHVLDHNIPLGSLNLDTFFLCT

Metal binding domain 7

hATP7B VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
rATP7B VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
mAATP7B VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
sATP7B VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
2AtP7b* VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
2AtP7b VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP

Metal binding domain 8

hATP7B DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
rATP7B DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
mAATP7B DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
sATP7B DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
2AtP7b* DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
2AtP7b DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL

Metal binding domain 9

hATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
rATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
mAATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
sATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
2AtP7b* VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
2AtP7b VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL

Metal binding domain 10

hATP7B IKATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
rATP7B IKATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
mAATP7B IKATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
sATP7B VEATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
2AtP7b* VEATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
2AtP7b VEATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF

hATP7B IDPFFVQRYFPNKHISQTEITIFAFQTSITVLICACPSGLGAPTAVHWGTGVAQAQ
rATP7B IDPFFVQRYFPNKHISQTEITIFAFQTSITVLICACPSGLGAPTAVHWGTGVAQAQ
mAATP7B IDPFFVQRYFPNKHISQTEITIFAFQTSITVLICACPSGLGAPTAVHWGTGVAQAQ
sATP7B IDPFFVQRYFPNKHISQTEITIFAFQTSITVLICACPSGLGAPTAVHWGTGVAQAQ
2AtP7b* IDPFFVQRYFPNKHISQTEITIFAFQTSITVLICACPSGLGAPTAVHWGTGVAQAQ
2AtP7b IDPFFVQRYFPNKHISQTEITIFAFQTSITVLICACPSGLGAPTAVHWGTGVAQAQ

Phosphorylation

hATP7B NGILIGGKPELMAHRIKTVDGDTGTITNGVPMNVLILLGDVATPLKRLVLAUGTAE
rATP7B NGILIGGKPELMAHRIKTVDGDTGTITNGVPMNVLILLGDVATPLKRLVLAUGTAE
mAATP7B NGILIGGKPELMAHRIKTVDGDTGTITNGVPMNVLILLGDVATPLKRLVLAUGTAE
sATP7B NGILIGGKPELMAHRIKTVDGDTGTITNGVPMNVLILLGDVATPLKRLVLAUGTAE
2AtP7b* NGILIGGKPELMAHRIKTVDGDTGTITNGVPMNVLILLGDVATPLKRLVLAUGTAE
2AtP7b NGILIGGKPELMAHRIKTVDGDTGTITNGVPMNVLILLGDVATPLKRLVLAUGTAE

hATP7B ASSEHPLGVAITHYKEELGTGLYCYDTPQVPPGCGICKSVNVEGLIAHSEPL----
rATP7B ASSEHPLGVAITHYKEELGTGLYCYDTPQVPPGCGICKSVNVEGLIAHSEPL----
mAATP7B ASSEHPLGVAITHYKEELGTGLYCYDTPQVPPGCGICKSVNVEGLIAHSEPL----
sATP7B ASSEHPLGVAITHYKEELGTGLYCYDTPQVPPGCGICKSVNVEGLIAHSEPL----
2AtP7b* ASSEHPLGVAITHYKEELGTGLYCYDTPQVPPGCGICKSVNVEGLIAHSEPL----
2AtP7b ASSEHPLGVAITHYKEELGTGLYCYDTPQVPPGCGICKSVNVEGLIAHSEPL----

ATP binding

hATP7B ANTDHEMGQTALVADVGCLNIAIADAVPEAALAVHTLSMGVDVLTGCDNRKTA
rATP7B ANTDHEMGQTALVADVGCLNIAIADAVPEAALAVHTLSMGVDVLTGCDNRKTA
mAATP7B ANTDHEMGQTALVADVGCLNIAIADAVPEAALAVHTLSMGVDVLTGCDNRKTA
sATP7B ANTDHEMGQTALVADVGCLNIAIADAVPEAALAVHTLSMGVDVLTGCDNRKTA
2AtP7b* ANTDHEMGQTALVADVGCLNIAIADAVPEAALAVHTLSMGVDVLTGCDNRKTA
2AtP7b ANTDHEMGQTALVADVGCLNIAIADAVPEAALAVHTLSMGVDVLTGCDNRKTA

ATP binding

hATP7B KAIATQGVINKVFAEVLPSHVKARVQELQNGKRVKMGDGVNDPALAAGDNGVATGTT
rATP7B KAIATQGVINKVFAEVLPSHVKARVQELQNGKRVKMGDGVNDPALAAGDNGVATGTT
mAATP7B KAIATQGVINKVFAEVLPSHVKARVQELQNGKRVKMGDGVNDPALAAGDNGVATGTT
sATP7B KAIATQGVINKVFAEVLPSHVKARVQELQNGKRVKMGDGVNDPALAAGDNGVATGTT
2AtP7b* KAIATQGVINKVFAEVLPSHVKARVQELQNGKRVKMGDGVNDPALAAGDNGVATGTT
2AtP7b KAIATQGVINKVFAEVLPSHVKARVQELQNGKRVKMGDGVNDPALAAGDNGVATGTT

Transmembrane

hATP7B TVDAIEAADVILIRNDLDVASIELSKRTVQIRINVFVALLYNLNLGIPFAAGVFPNIG
rATP7B TVDAIEAADVILIRNDLDVASIELSKRTVQIRINVFVALLYNLNLGIPFAAGVFPNIG
mAATP7B TVDAIEAADVILIRNDLDVASIELSKRTVQIRINVFVALLYNLNLGIPFAAGVFPNIG
sATP7B TVDAIEAADVILIRNDLDVASIELSKRTVQIRINVFVALLYNLNLGIPFAAGVFPNIG
2AtP7b* TVDAIEAADVILIRNDLDVASIELSKRTVQIRINVFVALLYNLNLGIPFAAGVFPNIG
2AtP7b TVDAIEAADVILIRNDLDVASIELSKRTVQIRINVFVALLYNLNLGIPFAAGVFPNIG

Transmembrane

hATP7B LVLOLNGSAAHASSVSVLSLLRLFPDLERYEAGHGRKMLPTASQSVHIGMD
rATP7B LVLOLNGSAAHASSVSVLSLLRLFPDLERYEAGHGRKMLPTASQSVHIGMD
mAATP7B LVLOLNGSAAHASSVSVLSLLRLFPDLERYEAGHGRKMLPTASQSVHIGMD
sATP7B LVLOLNGSAAHASSVSVLSLLRLFPDLERYEAGHGRKMLPTASQSVHIGMD
2AtP7b* LVLOLNGSAAHASSVSVLSLLRLFPDLERYEAGHGRKMLPTASQSVHIGMD
2AtP7b LVLOLNGSAAHASSVSVLSLLRLFPDLERYEAGHGRKMLPTASQSVHIGMD

Transmembrane

hATP7B DWRRD-----SPKATPDQSVYSQVLSLSLSDPSHSAADODGDWRLKHGDEQVI
rATP7B DWRRD-----SPKATPDQSVYSQVLSLSLSDPSHSAADODGDWRLKHGDEQVI
mAATP7B DWRRD-----SPKATPDQSVYSQVLSLSLSDPSHSAADODGDWRLKHGDEQVI
sATP7B DWRRD-----SPKATPDQSVYSQVLSLSLSDPSHSAADODGDWRLKHGDEQVI
2AtP7b* DWRRD-----SPKATPDQSVYSQVLSLSLSDPSHSAADODGDWRLKHGDEQVI
2AtP7b DWRRD-----SPKATPDQSVYSQVLSLSLSDPSHSAADODGDWRLKHGDEQVI

Transmembrane

hATP7B VQWSPVLPKPGSGAGATPALSQGL-----YSTPOT-----YNTGSISV
rATP7B VQWSPVLPKPGSGAGATPALSQGL-----YSTPOT-----YNTGSISV
mAATP7B VQWSPVLPKPGSGAGATPALSQGL-----YSTPOT-----YNTGSISV
sATP7B VQWSPVLPKPGSGAGATPALSQGL-----YSTPOT-----YNTGSISV
2AtP7b* VQWSPVLPKPGSGAGATPALSQGL-----YSTPOT-----YNTGSISV
2AtP7b VQWSPVLPKPGSGAGATPALSQGL-----YSTPOT-----YNTGSISV

Transmembrane

hATP7B VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
rATP7B VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
mAATP7B VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
sATP7B VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
2AtP7b* VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP
2AtP7b VQGLKAYFYVQAYSLRHSANNVILVILATSIAVYSVLVILVAVAAKAS-SPVTFP

Transmembrane

hATP7B DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
rATP7B DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
mAATP7B DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
sATP7B DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
2AtP7b* DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL
2AtP7b DTPMLFVFIALGNIHVAKSKTSEALAKMSIQATATVTLGEDNLIREQVPMEL

Transmembrane

hATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
rATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
mAATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
sATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
2AtP7b* VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
2AtP7b VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL

Transmembrane

hATP7B IKATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
rATP7B IKATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
mAATP7B IKATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
sATP7B VEATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
2AtP7b* VEATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
2AtP7b VEATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF

Transmembrane

hATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
rATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
mAATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
sATP7B VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
2AtP7b* VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL
2AtP7b VQGGDIKVVVPGGKFPVDFVLEGNTADESLTGPMPVTKKPGSVIAGSINARGSVL

Transmembrane

hATP7B IKATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
rATP7B IKATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
mAATP7B IKATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
sATP7B VEATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
2AtP7b* VEATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF
2AtP7b VEATHVNDTTLAQIVKLVEAQMSKAPIQQLADRFSGVPPVFIISLTLVWIIIGF