

**Table S2.** 52 PHT2 family protein sequences from 49 species.

>PcPHT2.1  
MAKAFNISSRTASAI AIFIAFAALS LPLFMKSLGTGLDLTKILSYATLLFGFYMAWNIGANDVANAM  
GTSVGS GALSRLRQAVVTA AILEFSGAFLMGTHVTNTMQNGILMANVFEGKNTLLFAGLLSSLAAA  
GTWLQVASYYGWPVSTTHCIVGSMVGFGLVYGGAGAVFWSSLARVTSSWVISPVMGAMVSFLV  
YKCIRRFVYSAPNPGQAAAAA APIAVFAGVTGISFAAFPLSKTFPVALVQALACGAAGAFVYRIIHK  
QLGHLLVKANTTQPEPKESTIQNKNIGFLSDIAGPTGTQLEIVYG VFGYMQVLSACFMSFAHGGND  
VSNAIGPLAAALSILHGGASGTEIVIPTDVLAWGGFGIVAGLTMWGYRV IATIGKKITELTPTRGFAA  
EFAAASVVLVASKLGLPISATHL VGAVMGVGFARGLNSVRAETVREIVASWLVTIPAGATFAVLYT  
WILTKLLSSLL

>TaPHT2.1  
MTLPYRFSSVRNHSLLLKTSHLYTPRSALGCFSPKESPFKKNTAQFLSPQKHTSLPLKLCPLASFSS  
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TLPIFMKSLGQGLALKTKLLSYATLLFGFYMAWNIGANDVANAMGTSVGS GALTIRQAVMTAAVL  
EFSGALLMGTHVTSTMQKGILMANV FQGKDMLLFAGLLSSLAAAGTWLQVASYYGWPVSTTHCI  
VGSMVGFGLVYGGAGAVFWSSLAKVASSWVISPLL GALVSFLVYKCIRRFVYSAPNPGQAAAAA  
PVAVFVGVASISSAALPLSKIFPIALSQALACGVAGAIVFDRIIRKQLGHLLAKTKSPETSQNQPKTIGF  
LSDIAGPTGTQLEIVYGIFGYMQVLSACFMSFAHGGNDVSNAIGPLAAALSILQNGAAAGGAEIVIP  
MDVLAWGGFGIVAGLTMWGYRV IATIGKKITELTPTRGFAAEFAAASVVL FASKLGLPISATHL VG  
AVMGVGFARGLNSVRAETVREIVASWLVTIPVGATLSVIYTWIFTKILSFVL

>AcPHT2.1  
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MGLKNKILSYTTLLFGFYMAWNIGANDVANAMGTSVGS GALSRLRQAVLTA AVLEFSGALLMGTH  
VTSTMQKGILVANV FQGKDSLLFTGLLSSLAAAGTWLQVASYYGWPVSTTHCIVGAMVGFGLVY  
GGFGAVFWSSLARVTASWVISPFMGA AVSFIVYKCIRRFVYSAPNPGQAAAAA APVAVFVGVT AIS  
FAAFPLSKIVPVAVAQALACGTVGAILVSRVIHKQLGHLLLSNSSQLETNEDASQNKIGILLSDVA  
GPKGTLKIVYG VFGYMQVLSACFMSFAHGGNDVSNAIGPLAAALSILHGGASGAEIVIPIDVLAW  
GGFGIVAGLMIWGYRV IATIGKKITELTPTRGFAAEFAAASVVL FASKLGLPISATHL VGAVMGVGF  
ARGLNSVRAETVKEIVTSWAITIPIGAILAVFYTWILKRLLSGLL

>AtPHT2.1  
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ATGDFSGMAQAFHISSTTARAISIVIAFSALTLPIMKSLGQGLALKTKLLSYATLLFGFYMAWNIGA  
NDVANAMGTSVGS GALTIRQAVMTAAVLEFSGALLMGTHVTSTMQKGILMANV FQGKDMLLFA  
GLLSSLAAAGTWLQVASYYGWPVSTTHCIVGSMVGFGLVYGGAGAVFWSSLAKVASSWVISPLG  
ALVSFLVYKCIRRFVYSAPNPGQAAAAA APVAVFVGVASISSAALPLSKIFPIALSQALACGVAGAIV  
FDRIIRKQLGHLLAKTKSPETSQNQPKTIGFLSDIAGPTGTQLEIVYGIFGYMQVLSACFMSFAHGGN  
DVSNAIGPLAAALSILQNGAAAGGAEIVIPMDVLAWGGFGIVAGLTMWGYRV IATIGKKITELTPTR  
GFAAEFAAASVVL FASKLGLPISATHL VGAVMGVGFARGLNSVRAETVREIVASWLVTIPVGATLA  
VIYTWIFTKILSFVL

>BoPHT2.1  
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YAEGDGDQQIQNSHDSDEKGNAAVGD FSGMANAFHISSTARAITIVIAFSALS LPLFMKSLGQG

LALKTKLLSYATLLFGFYMAWNIGANDVANAMGTSVGSALTIRQAVITAAAVLEFSGALLMGTHVT  
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GAGAVFWSSLAKVASSWVISPLMGALVSFLVYKCIRRFVYSAPNPGQAAATAAPAAVFLGVASISF  
AAFPLSKIFPIALSQALACGAAGAIIFDRIIRDKLGHLLAKTKPLDTPQNQPKSIGFLSDIAGPTDTQLEI  
VYGVFGYMQVLSACFMSFAHGGSDVSNAIGPLAAALSILQRGATGGGGDIVIPMDVLAWGGFGI  
VAGLTMWGYRVIAITIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLVGAVMGVGFARGL  
NSVRAETVKEIVASWLVTIPVGGTLAVIYTWVFTKLLSFVL

>BoPHT2.2

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LFMKSLGQGLARKTKILSYATLLFGFYMAWNIGANDVANAMGTSVGSALTIRQAVITAAAVLEFSG  
ALLMGTHVTSTMQKGILMANVVFQGKDMLLFAGLLSSLAAAGTWLQVASYYGWPVSTTHCIVGS  
MVGFGLVYGGAGAVFWSSLAKVASSWVISPVMGALVSFLVYKCIRRFVYSAPNPGQAAAAAAPV  
AVFVGIASISSAAFPLSKTFPIALSQALACGAAGAIIFDRIIRNKLGHLLAKTKPLDTAQTQPKDIGFLS  
EIAGPTGTQLKIVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAAALSILQRGAGAGGGGEIVIP  
IDVLAWGGFGIVAGLTMWGYRVIAITIGKKITELTPTRGFAAEFAAATVVLFAASKLGLPISATHTLVGA  
VMGVGFARGLNSVRAETVKEIVASWLVTIPVGATLAVVYTWVFTKILSFVL

>BsPHT2.1

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EFSGALLMGTHVTSTMQKGIIMANVVFQGKDMLLFAGLLSSLAAAGTWLQVASYYGWPVSTTHCI  
VGSMVGFGLVYGGAGAVFWSSLAKVASSWVISPLMGALVSFLVYKCIRRFVYSAPNPGQAAAAAA  
PVAVFVGVTICISSAALPLSKIFPIALSQALACGVAGAIVFDRIIRKQLGHLLAKTKTPETSQNQPKTIGF  
LSDIAGPTGTQLEIVYGIFGYMQVLSACFMSFAHGGNDVSNAIGPLAAALSILQSGAAAGGGEIVIP  
MDVLAWGGFGIVAGLTMWGYRVIAITIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLVG  
AVMGVGFARGLNSVRAETVREIVASWLVTIPVGGTLAVIYTWIFTKILSFVL

>BdPHT2.1

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KMKMLAYLTLLSGFYMAWNIGANDVANAMGTSVGSALTIRQAVLTAAVLEFSGAFLMGTHVT  
STMQKGILVASVVFQGNDSLLFAGLLSSLAAAGTWLQVASSYGWPVSTTHCIVGAMVGFGLVYGG  
VNAVFWSSLARVSSSWVISPLMGAASVFLVYKCIRRFVYSAPNPGQAAAAAIAVFTGVTASFA  
AFPLSKIFSIAVLQALGCGAIGAIFVSRAIKKQLGDLLSSEAEKIASASNTDGQQGGFLSDVAGPTGA  
QLQIVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAAALSLLQGVATSAEIVIPTEVLAWGGFGI  
VAGLTMWGYRVIAITIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLVGAVMGVGFARGL  
NRVRAETVREIVSWVVTIPVGALLAVFYTLILTILKYFM

>BrPHT2.1

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SLPLFMKSLGQGLALKTKILSYATLLFGFYMAWNIGANDVANAMGTSVGSALTIRQAVITAAAVLE  
FSGALLMGTHVTSTMQKGILMANVVFQGKDMLLFAGLLSSLAAAGTWLQVASYYGWPVSTTHCIV  
GSMVGFGLVYGGAGAVFWSSLAKVASSWVISPVMGALVSFLVYKCIRRFVYSAPNPGQAAAAAA  
PVAVFVGIASISSAAFPLSKTFPIALSQALACGAAGAIIFDRIIRNKLGHLLAKTKPLDTAQTQPKDIGF

LSEIAGPTGTQLKIVYGVFGYMQVLSACFMSFAHGGNDVSNAGPLAAALSILQRGAGAGGGGGE  
IVIPIDVLAWGGFGIVAGLTMWGYRVATIGKKITELTPTRGFAAEFAAATVVLFAASKLGLPISATHTLV  
GAVMGVGFARGLNSVRAETVKEIVASWLVTIPVGATLAVIYTWVFTKILSFVL

>BrPHT2.2

MTLPYGLSSVRNHSLLLKTSHLCVPRALGRFSPKESPLFKKNSALFLSPQKHTSLPLKLVHPLASFSS  
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LALKTKLLSYATLLFGFYMAWNIGANDVANAMGTSVGSGALTIRQAVITAAVLEFSGALLMGTHVT  
STMQKGILMANVVFQKDMLLFAGLLSSLAAAGTWLQVASYFGWPVSTTHCIVGSMVGFGLVYG  
GAGAVFWSSLAKVASSWVISPLMGALVSFLVYKCIRRFVYSAPNPGQAAATAAPVAVFLGVASISF  
AAFPLSKIFPIALSQALACGAAGAIIFDRIIRDKLGHLLAKTKPQDTPQNQPKSIGFLSEIAGPTDTQLE  
IVYGVFGYMQVLSACFMSFAHGGSDVSNAGPLAAALSILQRGAAGGGGDIVIPMDVLAWGGFGI  
VAGLTMWGYRVATIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLVGAVMGVGFARGL  
NSVRAETVKEIVASWLVTIPVGGTLAVIYTWVFTKILSFVL

>BtPHT2.1

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TIKMKMLAYLTLLSGFYMAWNIGANDVANAMGTSVGSGALTIRQAVLTAAVLEFSGAFLMGTHV  
TSTMQKGILVASVVFQGNDLFLAGLLSSLAAAGTWLQVASSYGWVSTTHCIVGAMVGFGLVYG  
GVNAVFWSSLARVSSWVISPLMGAASVFLVYKCIRRFVYSAPNPGQAAAAAIAVFTGVTAISF  
AAFPLSKIISIAVLQALGCGAIGAIFVSRAIKKQLGDLLSSEAEKIASASNTDGGQGGFLSDVAGPTGA  
QLQIVYGVFGYMQVLSACFMSFAHGGNDVSNAGPLAAALSLLQGVATSAEIVIPTEVLAWGGFGI  
VAGLTMWGYRVATIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLVGAVMGVGFARGL  
NRVRAETVREIVSVWVTIPVGALLAVFYTLILTILKILKYFM

>CgPHT2.1

MTLPYRFSSVRNHSLLLKTSHLCTPRSPGCFSPKESPLFKKNTALFLSPQKHTSLPLKLVCPPLASFSSY  
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CLPLFMKSLGQGLALKTKLLSYATLLFGFYMAWNIGANDVANAMGTSVGSGALTIRQAVMTAAV  
LEFSGALLMGTHVTSTMQKGIIMANVVFQKDMLLFAGLLSSLAAAGTWLQVASYYGWPVSTTHCI  
VGSMVGFGLVYGGAGAVFWSSLAKVASSWVISPLLALVSFLVYKCIRRFVYSAPNPGQAAAAAA  
PVAVFVGVASISSVALPLSKIFPIALSQALACGVAGAIVFDRIIRKQLGHLLAKTKSPETSQNTPKAIGF  
LSDIAGPTGTQLEIVYGIFGYMQVLSACFMSFAHGGNDVSNAGPLAAALSILQNGAAAGGAEIVIP  
MDVLAWGGFGIVAGLTMWGYRVATIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLVG  
AVMGVGFARGLNSVRAETVKEIVASWLVTIPVGATLAVIYTWIFTKILAFVL

>CrPHT2.1

MTLPYRFSSVRNHSLLLKTSHLCTPRALGCFSPKESPLFKKNTALFLSSQKHTSLPLKLVCPPLASFSS  
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LCLPLFMKSLGQGLALKTKLLSYATLLFGFYMAWNIGANDVANAMGTSVGSGALTIRQAVMTAA  
VLEFSGALLMGTHVTSTMQKGIIMANVVFQKDMLLFAGLLSSLAAAGTWLQVASYYGWPVSTTH  
CIVGSMVGFGLVYGGAGAVFWSSLAKVASSWVISPLLALVSFLVYKCIRRFVYSAPNPGQAAAAA  
APVAVFVGVASISSVALPLSKIFPIALSQALACGVAGAIVFDRIIRKQLGHLLAKTKSPETSQNTPKAIG  
FLSDIAGPTGTQLEIVYGIFGYMQVLSACFMSFAHGGNDVSNAGPLAAALSILQNGAAAGGAEIVI  
PMDVLAWGGFGIVAGLTMWGYRVATIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLV  
GAVMGVGFARGLNSVRAETVKEIVASWLVTIPVGATLAVIYTWIFTKILAFVFLSCRQSKLGDVLLL

>CcPHT2.1

MPPPFCSSSSRNTVSPEAFLFHKHRSSSSALLKPNLSLPRSSYSLLSLKNSRLTHSFASISSFAEAEGE  
EEQNEGLQVQEHHHDEPAKTEAGDDELPGMAQAFHISSTASAIICIALAALTLPFFMKSLGQGL  
DIKTKLLSHATLLFGFYMAWNIGANDVANAMGTSVGSGALT LRQAVLTAAVLEFSGALLMGTHVT  
STMQKGILVASVFQGKDTLLFAGLLSSLAAAGTWLQVASYYGWPVSTTHCIVGSMVGFGLVYGGA  
GAVFWSSLARVTSSWVISPLGALVSFLVYKCIRRFVYSAPNPGQAAAAA APIAVFVGVGTGISFAAFP  
LSKIFPLALAQALAFGAAGAFVYRIIQQLGHLLVKSTSLQPEPKDTNIHNK SIGIFSDIAGPKGTQLE  
IVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAAALSILHGSASGTKIVIPIDVLAWGGFGIVSGL  
MIWGYRVIATIGKKITELTPTRGFAAEFAAASVVL FASKLGLPISATHLVGAVMGVGFARGLNSVR  
AETVKEIVLSWAVTIPVGATFAVFYTWILTKLLSFIY

>DcPHT2.1

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GQGMSLTKLLSYGTLLFGFYMAWNIGANDVANAMGTSVGSGALT LRQAVVTAAVLEFSGALLM  
GKHVTGTIQKGILVADVFGKDTLLLAGLLSSLAAAGTWLQVASYYGLPVSTTHCIIGSMVGFGLIY  
GGRDAVFWGSLARVTSSWLISPVTGAAVSFLVYKCIRRFVYSAPNPGQAAAAA APIGVFIGVTGISF  
IAFPLSKILSVAIVQALALGTVGAFLFDRIIRKQLGHLLVKSVAQSDPKEDTIHQKNIGLLAEVAGPK  
GTQLEIVYKVFYMQVLSACFMSFAHGGNDVANAIGPLAGALSILQGGTSGGELIIPIDVIAWGGF  
GIVAGLMMWGYRVIATIGNKITELTPTRGFAAEFAAASVVMFASNGLPISATHLVGAVMGVGFAR  
RGLNSVRAETVKEIVTSWAVTIPVGAVLAIVYTWILNRLLSYVL

>EgPHT2.1

MAQAFGISSRTASAIICIAFAALLPLAMRSLGQGMVKTALSYGTLLFGFYMAWNIGANDVAN  
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AGTWLQVASFYGWPVSTTHCIIGSMVGFGLVYGGAGAVFWNSVVRVTSSWVISPLMGALVSFLV  
YKCIRRFVYSAPNPGQAAAAA APIAVFLSVTGISFAAFPLSKTIPLALAQALACGTAGAFVLRMIRK  
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DVANAIGPLASALSILQGGATGTDIVIPIDVLAWGGFGIVAGLIMWGYRVIATIGKKITELTPTRGFAA  
EFAAASVVL FASKLGLPISATHLVGAVLGVGFARGLNSVRAETVKEIVVSWAVTIPVGAVFAVFYT  
WILTKLLSYIL

>EgPHT2.2

MTSSYFLSSTKQYATTPEPLFLLRRRRHHLPRHRVLSLLSSDIGEAHFPRKPSTFPLQLLRPSHRLGKP  
SFATTISSSFEGEEGEQRQDEVPEGMAEAFHISSTATAISVLI AVAVFSFLLMKSQLGAGAPLKS  
RALT YVTLLFGFYMAWNIGANDVANAMGTSVGSGALT LRQAVVTAGVLEFSGALLMGTHVTSTM  
QKGILVAGVFQGD SLLFAGLLSSLAAAGTWLQIASYYGWPVSTTHCIVGSMVGFGLVYGGPGAV  
FWTSLARVMSSWVVSPLMGALVSFVYKCIRRFVYSAPNPGQAAAAA APVAVFVGVTAISFVAFP  
LSKSFPLAVAQALACGTAGAVLVNRIIWKQLGHLLDKAGSSGMEPKEAPALNQNIGFLTEIAGPKG  
TQLEIVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAGALSILHGGAGGA EIVPTDVLAWGGF  
GIVAGLMMWGYRVIATIGKKITELTPTRGFAAEFAAATVVL FASKLGLPISATHLVGAVMGVGFAR  
GLNSVRAETVREIVASWAVTIPVGAFVAVYTWILTKLLSYVF

>CpPHT2.1

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FFMKSLAQSLDLRTKLMSYATILLGFYMAWNIGANDVANAMGTSVGSGALT LRQAVVTAAILEFS  
GALLMGSHVTGTMQKGILVASVFQGKDTLLFTGLLSSLASAGVWLQVASYYGWPVSTTHCIVGS  
MVGFGLVYGGAGAVFWSSLARVTSSWVISPLMGALASFLVYKCIRRFVYSAPNPGQAAAAA APIA

VFLGVTGISFAAFPLSKNFPVALVQALACGATGAVLVDRIIRKQLGHLLAKSTSSQKETKENTTRHK  
NLGLLSDIAGPKGTQLEIVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAAALSILHGTSSGAELI  
IPTDVLAWGGFGIVAGLMMWGYRVIATIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLV  
GAVMGVGFARGLNSVRSETVREIVASWAVTIPVGATLSVIFTWILTLLSCLL

>GmPHT2.1

MNPSCRFSSTKHTSFLHNSHTHLSKTTSPYVFLGHSHSQKPFLSPITTTPYPFNNILRFRNIKLSYP  
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VLKTKVLSYATLLFGFYMAWNIGANDVANAMGTSVGSGALT LRQAVLTA AVLEFSGALMMGTHV  
TSTMQKGILVANVFNGKDSLLFAGLLSSLAAGTWLQFASYYGWPVSTTHCIVGAMVGFGLAYG  
GAGAVFWGSLARVISSWVVSPLMGA AVSFLVYKCIRRFVYSAPNPG LAAAAA APIAVFLGVTGISF  
VAFPLSKSPFALVQALASGTVGAFLVDRIIRKQLGHLLVKSSTPEPEPKEDTVHHHNIGFLDDVAG  
KGAQLEIVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAGALAILQGSTMGTETIPTDVLAWG  
GFGIVAGLMMWGYRVIATIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLVGAVMGVGF  
ARGFNSVRSETVKEIVASWVVTIPVGASLSVLYTWILT KILSYIL

>GmPHT2.2

MNPSCRFSSTKHTPFLHNSKPTSPFFLRHSHSHSHQVKPFPLSPITTTTAKPYPLNLRNRNIKLSH  
PLATLSSFAEGEEENQKEGAESPNNDELGGIAKAFNISSRTASAI SICMALAVLTFPLFMTSLGQGM  
ALKTKVLSYATLLFGFYMAWNIGANDVANAMGTSVGSGALT LRQAVLTA AVLEFSGALMMGTHV  
TSTMQKGILVANVFNGKDSLLFAGLLSSLAAGTWLQFASYYGWPVSTTHCIVGAMVGFGLAYG  
GAGAVFWGSLARVISSWVVSPLMGA AVSFLVYKCIRRFVYSAPNPG LAAAAA APIAVFLGVTGISF  
VAFPLSKNFP LALA QALACGTVGAFLVDRIIRKQLGHLLVKSNTPEPEPKEDSVHHHNIGFLDDVAG  
PKGAQLEIVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAGALAILQGGAGTEIVIPTDVLAW  
GGFGIVAGLMMWGYRVIATIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLVGAVMGVGF  
FARGLNSVRSETVKEIVASWVVTIPVGATLSVLYTWILT KILSYIL

>GrPHT2.1

MTPFSCLP CARSTTSPDAFLRYPHLR LPKCRHYEHL PKIENLMFRPFQVPTRPYLPILSLRNSRRT  
HPCANISSFAEAEGGKEQNDEAIHLGTRQEDAKPNEEYLPGMAQAFNISSRTASAI AIFAFAALTLP  
FFMKSLGQGVGVKTKFLSYATLLFGFYMAWNIGANDVANAMGTSVGSGALT LRQAVVTAAILEFS  
GALLMGTHVTGTMQNGILVANMFQGKDTLLFAGLLSSLASAGTWLQVASYYGWPVSTTHCIVGS  
MVGFGLAYGGAGAVFWTSLARVASSWVISPVLGALVSFLVYKCIRRFVYSARNPGQAAAAA APIA  
VFLGVTGISFAAFPLSKSPIALA QALGCGAVGAVLVYNLIRKQLGHLL EKSSASHSEPQESNTQTKN  
LGLLSDVAGPKGTQLEIVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAGALSILQGGASSAEIV  
IPNDVLAWGGFGIVAGLLIWGYRVIATIGKKITELTPTRGFAAEFAAASVVLFAASKLALPISATHTLVG  
AVMGVGFARGLNSVRAETVREIVTSWAVTIPVGASLAVLYTWILT KLLSFIL

>ZePHT2.1

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RSLVCHGTFRMNALAYFTLLSGFYMAWNIGANDVANAMGTSVGSGALT LRQAVLTA AVLEFSGA  
FLMGTHVTSTMQKGILVASAFQGKDSLLFAGLISSLAAGTWLQVASSYGWPVSTTHCIVGAMVG  
FGLVYGGVD AVFWSSLARVSSSWVISPLMGA AVSFLVYKCIRRFVYSAPNPGQAAAAA APIAVFTG  
VTAISFAAFPLSKVFSIAILQAVSSGAIGAIIVSRVIQKQLGDLLSSEAEKIASAEKSSAQQAGFLSDIAG  
PTGAQLQIVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAAALSILQGVASSAEIVIPTEVLAW  
GGFGIVAGLTMWGYRVIATIGKKITELTPTRGFAAEFAAASVVLFAASKLGLPISATHTLVGAVMGVGF  
ARGLNRVRAETVREIVASWLVVTIPVGAVLSIFYTLILT KILAYFM

>VvPHT2.1

MAWNIGANDVANAMGTSVGSGALT LRQAVLTA AVLEFSGALLMGTHVTSTMQKGILVANVFQ  
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WVISPLMGAMVSFLVYKCIRRFVYSAPNPGQAAAAA APLAVFVGVTGISFAAFPLGDSLPSALPKA  
LACGVAGAF LVYRIHKQLGTQLEIVYGVFGYMQILSACFMSFAHGGNDVSNAIGPLAAALSILQG  
GTGGSEIVIPLDVLAWGGFGIVAGLMMWGYRVISTIGKKITELTPTRGFAAEFAAASVVL FASKLGLP  
ISATHTLVGAVMGVGFARGLNSVRAETVREIVSWAVTIPVGALLSVFYTWILT KLLAFIP

>KfPHT2.1

MTTSYYCLSFARNVAGAAKLENLKPSYTRHIHLPKIRASKVHPGSLSFVGDELRLKPSTFRHPFASLSS  
FAEAGGGEEEDNEHGRGKSSHEAPSKGDEDNSSGMAQAFNISSRTATAISVVIAFAALS FPLFMQS  
VSAGLDLKIRALSYATLLFGFYMAWNIGANDVANAMGTSVGSGALT LRQAVLTA AVLEFSGALLM  
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>KIPHT2.1

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>OsPHT2.1

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>MePHT2.1

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>MpPHT2.1

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>MtPHT2.1

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>MgPHT2.1

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>CsPHT2.1

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VGD

>PhPHT2.1

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>PvPHT2.1

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>StPHT2.1

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>PvPHT2.1

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IVYG VFGYMQVLSACFMSFAHGGNDVSNAIGPLAGAILQGAAGAEIVIPIDVLAWGGFGIVA  
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>PtPHT2.1

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DVLAWGGFGIVAGLMMWGYRVIATIGKKITELTPTRGFAAEFAAASVVLVASKLGLPISATHTLVGA  
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>PtPHT2.2

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>PpPHT2.1

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>PePHT2.1

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APIAVFVGVS GISFAAFPLGENLALALARALACGIAGAVLVYRIIRKQLGHLLKSTSSEAEQKEGTIHP  
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>SpPHT2.1

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>SiPHT2.1

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>SvPHT2.1

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>SbPHT2.1

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>SPHT2.2

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>SfPHT2.1

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>TcPHT2.1

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>EsPHT2.1

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PMDVLAWGGFGIVAGLTMWGYRVIATIGKKITELTPTRGFAAEFAAASVVL FASKLGLPISATHTLV  
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>TpPHT2.1

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VGFGLVYGGAGAVFWGSLARVISSWIFSPLLGA AVSFLVYKCIRRFVYSASNPGQAAAASAPIAVFL  
GVTGISFSAFPLSKTFPIALSQALACGTVGAFLVNRTIRKQLGHLLDKPNTTQSEPKDDDTAHQNIG  
FFSDITGPKGAQLEIVYGVFGYMQVLSACFMSFAHGGNDVSNAIGPLAAALAILQGA AKGAEIPI  
DVLAWGGFGIVAGLMMWGYRVIATIGKKITELTPTRGFAAEFAAASVVL FASKLGLPISATHTLVGA  
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>ZaPHT2.1

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RSLVCHGTFRMNALAYFTLLSGFYMAWNIGANDVANAMGTSVGSGALT LRQAVLTA AAVLEFSGA  
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VTAISFAAFPLSKVFSIAILQAVSSGAIGAIIVSRVIQKQLGDLLSSEA EKIASAEKSSVQQAGFLSDIAG  
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GGFGIVAGLTMWGYRVIATIGKKITELTPTRGFAAEFAAASVVL FASKLGLPISATHTLVGAVMGVGF

ARGLNRVRAETVREIVASWLV TIPVGAVLSIFYTLILT KILAYFM

>CaPHT2.1

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GQGLALKTKMLS YGTL LFGFYMAWNIGANDVANAMGTSV GSGALSRLQAVLTA AVLEFSGALLM  
GTHVTSTMQKG ILVANVFQ GKDTLLFAGLLSSLAAAGTWLQFASYYGWPVSTTHCIVGAMVGF  
LVYGGAGAVFWGSLARVISSWIFSP LLGAAVSFIVYK CIRRFVYSASNPGQAAAAA APIAVFLGVTGI  
SFAAFPLSKIFPI ALSQALACGTVGAFLVNRTIRKQLGHLLDKSNTPDLEPVPQNI SFFSDITGPKGTQ  
LEIVYGVFGYMQVLSACFMSFAHGGNDVSN AIGPLAGALAILQGA AKGADIVIPIDVLAWGGFGIV  
AGLMMWGYRVIATIGKKITELTPTRGFAAEFAAASV VLFASKLGLPISGTHTLVGAVMGVGFARGF  
NNVRSETVKEICASWAVTIPVGATLSVIYT WILTKLLSYVL

>SmPHT2.1

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TKMKVLAYLTLLSGFYMAWNIGANDVANAMGTSV GSGALT LRQAVLTA AVLEFSGAFLMGTHVT  
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VNAVFWSSLARVSSSWLISPLMGA AVSFLVYK CIRRFVYSAPNPGQAAAA SAPIAVFTGVT AISFAA  
FPLSRTFSIAVLQALVCGAIGAVFVSRAIKKQLGDLLSSEA EKIATADNTDVQ QGGFDVAGPRGAQL  
QIVYGVFGYMQVLSACFMSFAHGGNDVSN AIGPLAAALSLLQGVASSAEIVIPTEVLAWGGFGIVA  
GLTMWGYRVIATNWQEK SPELTPTRGFAAEFAAASV VLFASKLGLPISATHTLVGAVMGVGFARG  
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>TaPHT2.1

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LCFFRFWLGF GIGGDYPLSATIMSEYANKKTRGAFIAAVFAMQGF GILAGGMVAIIVSAAFKGA FPA  
QTYQTDPLGSTVSQAD FVWRIILMFGAIPAAMTY YWRMKMPETARYTALVAKNLKQAANDMSK  
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WIPPAQTMNALEE VYKIARAQTLIALCSTVPGYWFTVFFIDKIGRF AIQLMGFFFM TVFMFALAI P YH  
HWT LKDN RIGFVIMYSLTFFFANFGPNATT FVVP AEIFPARLRSTCHGISAAAGKAGAMIGA FGLY  
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>PHO84

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RIYGMELIIMIVCTILQTTVAHSPAINFVAVLTFYRIVMGIGIGGDYPLSSIITSEFATTKWRGAIMGAV  
FANQAWGQISGGIILVAAYKGELEYANSGAECDARCQKACDQMWRILIGLGTVLGLACLYFRL  
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CRHFGQWKY G KILLGTAGSWFTLDVAFYGLSLNSAVILQTIGYAGSKNVYKKLYDTAVGNLILICAG  
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>PHO89

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KGSPNLHDDLSETETAVSIVLTGAIASIVYFIFYPFYRRKVLQDWTCLKLIDIFRGPSFYFKSTDDIPP  
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WWSLLKQGPKKWPLLFVLVISHGWTQDVIHAQVNDRDMLSGDLKGMYSKFDNRVEYIYSV  
LQAITAATMSFAHGANDVANATGPLSAVYVIWKTNTIGAKSEVPVWVLAYGGVALVIGCWYGY  
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AWCYSGWFLTLPIAGLIAGIINGIILNAPRFGVEYQMT