

S19. Text Multi-species analysis of PDF-R PD isoforms
Supporting Figure 22

CLUSTAL Line-ups; Genbank Reference IDs below
 5th, 6th and 7th Predicted TM domain in **YELLOW**
 BBS sequences in **RED**

Serrata	MTLLSSILDSCGG-----GISAQRFTRLLRQSSSTSSSSSSSS-----SASASGS	43
Kikkawei	MTLLSSILDSCGG-----SISAQRFTRLLRQSSSTSSSS-----SVSASAS	39
Rhopalao	MTLLSNILDCGG-----GISAQCLTRSLRESSSPGS-P-----GSPESGAFESKS	44
Elegans	MTLLSNILDCGG-----GIPAQLARLLRQSSSSSGSTP-----SGSASGPFESKS	45
Fichsuphila	MTLLASILDSCGG-----GISAQRFTRLLAQSSLLASSASASASASASASAGTFASES	52
Takahashi	MTLLSNILDCGG-----GISAQRFARLLRQSSSSGSPASASSASSSSSGTSFESKS	52
Suzuki	MTLLSNILDCGG-----GISAQRFTRLLRQSSSSSGSPSS-----SSSGTTFESKS	45
Biarmipes	MTLLSNILDCGG-----GISAQRFTRLLRQSSSPGFLSS-----SSLGTTFESKS	45
Eugracilis	MTLLSNILDSCGG-----GISAQRFTRLLRQSSSSSGSSASAS-----ASSYGTLESKS	48
Erecta	MTLLSNILDCGG-----CISAQRFTRLLRQSGSSVP---SPS---APAPGTFESIS	45
Melanogaster	MTLLSNILDCGG-----CISAQRFTRLLRQSGSSGP---SPS---APTAGTFESKS	45
Sechellia	MTLLSNILDCGG-----CISDQRFTHLLRQSGSSGP---SPS---APAPGTFESKS	45
Simulans	-----	0
Mauritania	MTLLSNILDCGG-----CISAQRFTRLLRQSGSSGP---SPS---APAPGTFESKS	45
Bipectinate	MTLLSSILDSCGG-----SVSVQRLTRLLRQSSPSASA-----SGTALASES	41
Anannassae	MTLLSSILDSCGG-----SVSVQRLTRLLRQSSSTSSA-----SGPSLASDS	41
Mojavensis	-MQLAGDSEAGSMPTIITSTSSNSFLQRIALKAVTAATTTKDR-----L----IS	46
Virilism	-----	0
Grimshawi	MMQLPGINKPGCIPTISTSSIIIPQ---RFARRAARVASTSTAT-----VTTLMS	48

Serrata	MLEPTSSQLPINDVLGGGRIPFLHDNGTGES-----LPLPDADALDPNFVLDGV-	92
Kikkawei	MLEPTSSQLPNNDVLGGGRIPFLPNATGESSSSSPPLPSPSLPDADALDPNFVLDGV-	98
Rhopalao	MLEPTSSHI-LPT---GRVPVLHDFNASS-----TDSP--GTFLLDGV-	81
Elegans	MLEPTTSHI-LPT---GRVPILHDFGSSS-----TESPLTGTYLLDGV-	84
Fichsuphila	MLEPTSSHI-LPT---GRVPVLHGFDST-----TTESTTSTYVLDGV-	90
Takahashi	MLEPTSSQN-LPT---GRVPILHDFDFDPT-----TTTESPGNYVLDGV-	94
Suzuki	MLEPTSSHI-LPT---GRVPILHDFDFDS-----LTTESTGTHVLDGV-	84
Biarmipes	MLEPTSSHV-LPT---GRVPVLHDFDFDS-----STTELPRILVLDGV-	84
Eugracilis	MLEPTSSHT-LPG---GRVPILHDFDS-----STTESPGAYLLDGV-	85
Erecta	MLEPTSLHS-LPT---GRVPLLHDFDA-----STTESPGTYVLDGV-	82
Melanogaster	MLEPTSSHS-LAT---GRVPLLHDFDA-----STTESPGTYVLDGV-	82
Sechellia	MLEPTSPHS-LAT---GRVPLLHDFDA-----STTESPGTYVLDGV-	82
Simulans	-----PLLHDFDA-----STTESPGTYVLDGV-	22
Mauritania	MLEPTSSHS-LAT---GRVPLLHDFDA-----TTTESPGTHVLDGV-	82
Bipectinate	MVEPTASQM-LNEITDGRVPSL---GQDLATT-----TETTQSNVIDRV-	84
Anannassae	ISSMVE-----ATSLRVPSL---GHDLSTT-----T---ETNVIDRV-	73
Mojavensis	IVETDSPA--GS-----H-MDP--STAMTTT--S--ITATATATAATA-S--ELSR	89
Virilism	MPT-AAPS--SN-----RTVSTHHSTMTSTSTT--YGTSTTQAALTS-----FE---	41
Grimshawi	MTQSGRSM--LN-----RTMTSIATATTTSTSTS--ISTHSTTSSTSKLP-SQVISGLA	98

Serrata	--TSVAKMALEATVK-EVLRDPDPEQILANANATAPWNITL--ASAAATNYENCALFAN	147
Kikkawei	--TSVAKMALEATVK--VLRDPDPEQILANANASAPWNITL--AAAAATNYENCALFAN	152
Rhopalao	--VSAQMALEPTLT-DLLPDPDPQVLSNLNASAPWNITL--ASAAATNFENCALFAN	136
Elegans	--ASVAEMALEPTVR-DILSDPDPKVLSNLNASAPWNITL--ASSAATNFENCALFAN	139
Fichsuphila	--ASVAQMPLESTVMDALPDSDDQAFGNLNVTAAPWNITL--ASAAATNFENCALFAN	146
Takahashi	--ASVAKMALEPTVMDTVLPSDDQVLSNLNVSAPWNITL--ASAAATNFENCALFVN	150
Suzuki	--ASVAKMALEPTVMDAVLPDSDDQVLSNLNISAPWNITL--ASAAATNFENCSSLFVN	140
Biarmipes	--AGVATMALEPTAMDAVLPDSDDQVLSNFNISAPWNITL--ASAAATNFENCSSLFVN	140
Eugracilis	--ASVAKMALEPAVMD-VLPDPDTQVLSNLNITAPWNITL--ASAAATNFENCALFVN	140
Erecta	--ARVAQLALEPTVMD-GLPDPDTEQVLSNLNVSAPWNITL--SSAAATNFENCALFVN	137
Melanogaster	--ARVAQLALEPTVMD-ALPDSDEQVGLNLSNVSAPWNITL--ASAAATNFENCALFVN	137
Sechellia	--ARVAQLALEPTVMD-ALPDPDTEQVGLNLSNVSAPWNITL--ASAAATNFENCALFVN	137
Simulans	--ARVAQLALEPTVMD-ALPDPDTEQVGLNLSNVSAPWNITL--ASAAATNFENCALFVN	77
Mauritania	--ARVAQLALEPTVMD-ALPDPDTEQVGLNLSNVSAPWNITL--ASAAATNFENCALFVN	137
Bipectinate	--TNVAKMALEATVMD-----DQVLAGVNASAHWNMT--LSSSTATNYENCALFAN	132
Anannassae	--TNVAKMALEATVMDV-LPDPDPDQVLTGVNASSHWNMTLSASATNYENCALFAN	130
Mojavensis	DVLNASIEATTAVGMDTVKATATESGLPTVSGTTLPSWNSSF--NSALANNYDNCAMFAN	147

Serrata	AT ITNSK-AKAKAKAIKNNAK-----PKA	760
Kikkawei	ATKTKSK-AKAKAKAITKNHAK-----PKA	757
Rhopaloo	AT ITKS----KAKAKAIKSHQM-----PKS	723
Elegans	AT ITKS----KAKAKAIKSHQM-----PKS	736
Fichsuphila	AT ITKS----KTKAKAISKNYQI-----PKA	732
Takahashi	AT ITKS----KAKAKAIKSHQM-----PKA	741
Suzuki	AT ITKS----KAKAKAIKSHQM-----PKA	731
Biarmipes	AT ITKS----KAKAKAIASSHQI-----PKA	731
Eugracilis	AT ITKS----KAKAKAITK-----MPKA	727
Erecta	AT ITKS----KAKAKAISKSH-----	722
Melanogaster	AT MTKS----KAKAKAISKSHQI----QMPKA	724
Sechellia	AT ITKS----KAKAKAISKSHQI----QMPKA	723
Simulans	AT ITKS----KAKAKAISKSHQI----QMPKA	666
Mauritania	AT ITKS----KAKAKAISKSHQI----QMPKA	726
Bipectinate	ST ITKS----KAKAKAITKNHRT-----PKA	740
Anannassae	ST ITKS----KAKAKAITKNPRT-----PKA	737
Mojavensis	S -----	703
Virilism	AA AT TSRIS SAAAAAAAAAAILQKQTPKA	682
Grimshawi	TALAAAAAAAAAVAAAANTTKAIA-----	742

Length of PDFR-PD CT

Serrata	=760-512
Kikkawei	=757-517
Rhopaloo	=723-500
Elegans	=736-503
Fichsuphila	=732-510
Takahashi	=741-514
Suzuki	=731-504
Biarmipes	=731-504
Eugracilis	=727-504
Erecta	=722-501
Melanogaster	=724-501
Sechellia	=723-501
Simulans	=666-441
Mauritania	=726-501
Bipectinate	=740-496
Anannassae	=737-494
Mojavensis	=703-506
Virilism	=682-552
Grimshawi	=742-514

Serrata	248
Kikkawei	240
Rhopaloo	223
Elegans	233
Fichsuphila	222
Takahashi	227
Suzuki	227
Biarmipes	227
Eugracilis	223
Erecta	221
Melanogaster	223
Sechellia	222
Simulans	225
Mauritania	225
Bipectinate	244
Anannassae	243
Mojavensis	200
Virilism	220
Grimshawi	228

Melanogaster [NP_001284826.1](#)

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1 mtllsnildc ggcisaqrft rllrqsgssg ppsaptagt fesksmlept sshslatgrv
   61 pllhdftast tespgtyvld gvarvaqlal eptvmdalpd sdteqvlgnl nssapwnl1l
  121 asaaatnfen csalfvnytl pqtglycnwt wdtllcwppt pagvlarmnc pggfhgvdtr
  181 kfairkceld grwgsrpnat evnppgwt dy gpcykpeir lmqqmgs kdf dayidiarrt

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241 rtleivglcl slfaliysl ifctfrslrn nrtkihknlf vamvlqviir ltlyldqfrr
301 gnkeaatnts lsvientpyl ceasyvllay artamfmwmf ieglylhnmv tvavfqqsfp
361 lkffsrlgwc vpilmttvwa rctvmymdts lgeclwnynl tpyywilegp rlavillnfc
421 flvniirvlv mklrqsqasd ieqtrkavra aivllplllgi tnlhqlapl ktatnfavws
481 ygthfltsfq gffialiyfc lngevravll kslatqlsvr ghpewapkra smysgaynta
541 pdtdavqpag dpsatgkris ppnkrlngrk pssasivmih epqqrqlmp rlnkarekg
601 kdrvektdae aepdptishi hskeagsars rtrgskwimg icfrgqkdkc vmpgsqktqq
661 ifmstqmppt stlaavatti tttsttttaa kttiasiasi atmtkskaka kaikshqiq
721 mpka

Simulans [XP_016037874.1](#)

61 pllhdfdast tespgtyvld gvarvaqlal eptvmdalpd pdteqvlgnl nssapwnltl
121 asaaatnfen csalfvnytl pqtglycnwt wdtllcwppt pagvlarmnc pggfhgvdr
181 kfairkceld grwgsrpnat evsppgwdy gpcykpeiir lmqqmgsxdf dayidiarrt
241 rtleivglcl slfaliysl ifctfrslrn nrtkihknlf vamvlqviir ltlyldqfrr
301 gnkeaatnts lsvientpyl ceasyvllay artamfmwmf ieglylhnmv tvavfqqsfp
361 lkffsrlgwc vpilmttvwa rctvmymdts lgeclwnynl tpyywilegp rlavillnfc
421 flvniirvlv mklrqsqasd ieqtrkavra aivllplllgi tnlhqlapl ktatnfavws
481 ygthfltsfq gffialiyfc lngevravll kslatqlsvr ghpewapkra smysgaynta
541 pdtdavqpag dpsatgkris ppnkrlngrk pssasivmih epqqrqlmp rmqnkarekg
601 kdrvektdae aepdpaiari hskeagsars rtrgskwimg icfrgqkdkc vmpgsqktqq
661 ifmstqmppt stlaavatti tttsttttaa aaktiasia tiatitkska kakaiskshq
721 iqmpka

Suzuki [XP_016939141.1](#)

1 mtllsnildc gggisaqrft rllrqsssg spsssssgtt fesksmlept sshilptgrv
61 pilhdffdfs lttestgthv ldgvasvakm aleptvmdav lpdstdtdqvl snlnisapwn
121 itlasaaatn fencsslfnv ytlpqsglyc nwtwdtllcw pptpagvlar mncpggfhgv
181 dtrkfairkc eldgrwgsrpnat natevsppgw tdygpcykpe iirlmqmgs kdfdyidia
241 rkttrtleivg lclslfaliv slifctfrs lrnrnrkikh nlfvamvlqv iirltlyldq
301 frrgnkeaat ntslsvient pylceasyvl leyartamfm wmfieglylh nmvtvavfqq
361 sfplkffsrl gwgfplmtt vwarctvmym dtslgeclwn ynltppywil egprlavill
421 nfcflvniir vlvmlkrsq asdieqtrka vraaivllpl lgitnllhql aplktatnfa
481 wvsygtthflt sfqgffiali ycfllngevra vllkslatql svrghpewap krasmysgay
541 ntapdtdavq pagdpsatgk rispphkrln grkpsasiv mihepqqrrh liprlqnker
601 ekskdrveka daaetdanpd paisrihske sgiagstgsr trgskwimgi cfrgqkdkcv
661 mpsgsqktqqi fmsqlppts tlaavattit ttttttaaak ttatiatia titkskakak
721 aiakshqmpk a

Mauritania [XP_033169658.1](#)

1 mtllsnildc ggcisaqrft rllrqsgssg ppsapapgt fesksmlept sshlatgrv
61 pllhdfdatt tespgthvld gvarvaqlal eptvmdalpd pdteqvlgnl nsnapwnltl
121 asaaatnfen csalfvnytl pqtglycnwt wdtllcwppt pagvlarmnc pggfhgvdr
181 kfairkceld grwgsrpnat evsppgwdy gpcykpeiir lmqqmgsxdf dayidiarrt
241 rtleivglcl slfaliysl ifctfrslrn nrtkihknlf vamvlqviir ltlyldqfrr
301 gnkeaatnts lsvientpyl ceasyvllay artamfmwmf ieglylhnmv tvavfqqsfp
361 lkffsrlgwc vpilmttvwa rctvmymdts lgeclwnynl tpyywilegp rlavillnfc
421 flvniirvlv mklrqsqasd ieqtrkavra aivllplllgi tnlhqlapl ktatnfavws
481 ygthfltsfq gffialiyfc lngevravll kslatqlsvr ghpewapkra smysgaynta
541 pdtdavqpag dpsatgkris ppnkrlngrk pssasivmih epqqrqlmp rmqnkarekg
601 kdrvektdae aepdpaisri hskeagsars rtrgskwimg icfrgqkdkc vmpgsqktqq
661 ifmstqmppt stlaavatti tttsttttaa aaktiasia tiatitkska kakaiskshq
721 iqmpka

Sechellia [XP_032581353.1](#)

1 mtllsnildc ggcisdqrft hllrqsgssg ppsapapgt fesksmlept sphlatgrv
61 pllhdfdatt tespgtyvld gvarvaqlal eptvmdalpd pdteqvlgnl nssapwnltl
121 asaaatnfen csalfvnytl pqtglycnwt wdtllcwppt pagvlarmnc pggfhgvdr
181 kfairkceld grwgsrpnat evsppgwdy gpcykpeiir lmqqmgsxdf dayidiarrt
241 rtleivglcl slfaliysl ifctfrslrn nrtkihknlf vamvlqviir ltlyldqfrr
301 gnkeaatnts lsvientpyl ceasyvllay artamfmwmf ieglylhnmv tvavfqqsfp
361 lkffsrlgwc vpilmttvwa rctvmymdts lgeclwnynl tpyywilegp rlavillnfc
421 flvniirvlv mklrqsqasd ieqtrkavra aivllplllgi tnlhqlapl ktatnfavws
481 ygthfltsfq gffialiyfc lngevravll kslatqlsvr ghpewapkra smysgaynta
541 pdtdavqpvg dpsatgkris ppnkrlngrk pssasivmih epqqrqlmp rmqnkarekg

601 kdrvektdae aepdpaisri hskeagsars rtrgskwimg icfrgqkdkc vmpgsqktqq
661 ifmstsqmpt stlaavatti tttttaapak ttiasiatia titkskakak aikshqigm
721 pka

Serrata [XP_020802784.1](#)

1 mtlssilds gggisaqrft rllrqsstss sssssssasa sgsmleptss qlpindvlgg
61 gripflhdng tgeslplpda daldpnfvld gvtsvakmal eatvkevlrd pdpeqilana
121 natapwnitl asaaatnyen csalfanytl pqtglycnwt wdttllcwppt pagvlarmnc
181 pgyghvdrtr kfanrkcelld grwgsrpnat etnatgwtdy gpcykpevir lmqqmgsred
241 ldlyieiarrr trtleivglc lslfalivsl lifctfrslr nnrtkihknk fvamvlqvii
301 rltlyldqfr rgskeaatnt slsvientpy lceasyvllle yartamfwm fieglylhm
361 vtavfqqsf plkffsrlgw cvpilmttvw arctviymdt slgdcwlnyn ltpyywileg
421 prlavillnf cflvniirvl vmklrqsqas dieqtrkavr aaivllpllg itnilhqvap
481 lktatnfavw systyfltsf qgffialiyc flngevavrll lkslatqlsv rghpewapkr
541 asmysgaynt apdtdavqqh qqtgenpatg krisppnkrl ngrkassasi vlihepqqrg
601 rliprlqgska rekdkslkdk rgkriqlqqs qaeamvadpt tittanrirs kdddggnggg
661 gggggsgskw mmgicfrgqk dkcvmagggk pqqifmstsq pptstlaaia tttittttgs
721 atsataaaa katttiatit nskakakaka iaknnakpka

Erecta [XP_026838096.1](#)

1 mtlssnildc ggcisaqrft rllrqsqssv ppsapapgt fesismlept slhslptgrv
61 pllhdfast tespgtyvld gvarvaqlal eptvmdglpd pdteqvlsl nssapwnitl
121 ssaatnfen csalfvnytl pqtglycnwt wdttllcwppt pagvlarmnc pggfhgvdtr
181 kfairkcelld grwgsrpnat evsppgwtdy gpcykpeiir lmqqmgskdf dayidiarrr
241 rtleivglci slfalivsl1 ifctfrslrn nrtkihknlf vamvlqviiir ltyldqfrr
301 gnkeaatnts lsaiientpyl ceasyvllley artamfwmf iegylylhm mv tvavfqqsfp
361 lkffsrlgwc vpilmttvwa rctvmymdts lgeclwnynl tpyywilegp rlavillnfc
421 flvniirvlv mklrqsqas ieqtrkavra aivllpllgi tnilhqlapl ktatnfavws
481 ygthfltsfq gffialiycf lngevavrll kslatqlsvr ghpewapkra smysgaynta
541 pdtdavqpag dpsatgkris ppnkrlngrk pssasivmih epqqrqlmp rlnkarekg
601 kervektcke aepepdpais rihskeadra rsrtrgskwi mgicfrgqkd kcvmpgsqkt
661 qqifmstsqmpt ptstlavvat tmattatit saaaaktia siatiatitk skakakaik
721 sh

Takahashi [XP_016994844.2](#)

1 mtlssnildc gggisaqrfa rllrqsstss spsasassa ssssgtsfes ksmleptssq
61 nlptgrvpil hfdfdfdpt ttespgnyv ldgvasvakm aleptvmdtv lpdspdqvll
121 snlnvsapwn ltlasaaatn fencsalfvn ytlpqtglyc nwtwdtllcw pptpagvlar
181 mncpagfhgv dtrkfairkc eldgrwgsrp natevsppgw tdygpcykpe iirlmeqmg
241 knfdlyidia wktrtleivg lclslfaliv sllifctfrs lrnrtrkihknk nlfvamvlqv
301 iirltlyldq yrngkeaat ntslsvient pylceasyvl leyartamfm wmfieglylh
361 nmvtvavfqq sfplkffsrl gwgfplmtt vwarctvmym dtslgeclwn ynltpyywil
421 egprlavill nfcflvniir vlvmlrqsq asdieqtrka vraaivllpl lgitnilhqm
481 aplktatnfa vwsyvthflt sfqgffiali ycflngevra vllkslatql svrghpewap
541 krasmysgay ntapdtdavq pagdpsatgk rispphkrln grkpssasiv mihepqqrr
601 liprlqnkar eksrdrvdka daetdpqadp aisrihskes sggggtgsr nrgskwimgi
661 cfrgqkdkcv mpsqktqqi fmtsqlipts tlaavattit tttttaaak ttiatiatia
721 titkskakak aiakshqmpk a

Biarmipes [XP_016948714.1](#)

1 mtlssnildc gggisaqrft rllrqsstsp flssslgtt fesksmlept sshvlptgrv
61 pvlhdffdfs sttelprilv ldgvagvatm aleptamdav lpdspdqvll snfnisapwn
121 itlasaaatn fencsalfvn ytlpqtglyc nwtwdtllcw pptpagvlar mncpggfhgv
181 dtrkfairkc eldgrwgsrp natevsppgw tdygpcykpe iirlmqqmgs kfdlyidia
241 rkttrtleivg lclslfaliv sllifctfrs lrnrtrkihknk nlfvamvlqv iirltlyldq
301 frrngkeaat ntslsvient pylceasyvl leyartamfm wmfieglylh nmvtvavfqq
361 sfplkffsrl gwgfplmtt vwarctvmym dtslgeclwn ynltpyywil egprlavill
421 nfcflvniir vlvmlrqsq asdieqtrka vraaivllpl lgitnllhql aplktatnfa
481 vwsyvthflt sfqgffiali ycflngevra vllkslatql svrghpewap krasmysgay
541 ntapdtdavq pagdplatgk rispphkrln grkpssasiv mihepqqrr liprlqnkar
601 eksrdrvdka daetdpnqd paisrihske tgiaggtgsr trgskwimgi cfrgqkdkcv
661 mpsqktqqi fmtsqlipts tlaavattit tttttaaak ttiatiatia titkskarak
721 aiasshqipk a

Eugracilis [XP_017067614.1](#)

```
1 mtllsnilds gggisaqrft rllrqssssg sssasasass ygtlesksml eptsshtlpq
  61 grvpilhdhd ssttespgay lldgvasvak malepavmdv lpdpdtddqvl snlnitapwn
 121 ltlassaatn fencsalfvn ytlpqtglyc nwtwdtllcw pptpagvlar mncpggfhgv
 181 dtrkfairkc eldgrwgsrp nateasppgw tdygpcykpe iirlmqmgn kdfdlyidia
 241 rkrtrtleivg lclslfaliv sllifctfrs lrnrtrtkihk nlfvamvlqv iirltlyldq
 301 frrgnkeaat ntslsvient pylceasyvl leyartamfm wmfieglylh nmvtvavfqq
 361 sfplkffsrl gwcvpilmtt vwarctvmym dtllgeclwn ynltppywil egprlavill
 421 nfcflvniir vlvmklrqsq asdieqtrka vraaivllpl lgitnllhql aplktatnfa
 481 vwsygtthflt sfqgffiali ycflngevra vllkslatql svrghpewap krasmysgay
 541 ntapdtdavq pagdpsatgk risppnkrln grkpssasiv miheppqqrqr liprlqnkar
 601 ekskdrveka epetepdpai srihsketgv gggtsrtrg skwimgicfr gqdkcvmppg
 661 sqktqifmt sqmaptstla avattitttt ttttaaaakt tiatiatiat itkskakaka
 721 itkmpka
```

Rhopaloo [XP_016982481.1](#)

```
1 mtllsnildc gggisaqclt rslressspg spgspesgaf esksmlepts shilptgrvp
  61 vlhdfnasst dspgtfllldg vvsvaqmale ptltdllpdp dpdqvlsnl n asapwnltla
 121 saaatnfenc salfanytlp qtglycnwtw dtllcwpptp agvlarmncp agfhgvdtrk
 181 fairkceldg rwgsrpnate vsppgwtldyg pcykpeiirl mqmgsrdrfd tfidiakkr
 241 tleivglcls lfalivslili fctfrslrnn rtkihknlfv amvlqviirl tlyldqyrrg
 301 nkeaatntsl svientpylc easyvllaya rtamfmwmi eglylhnmtv vavfqqsfpl
 361 kffsrlgwcv pilmttvwar ctvmymdtsl gdclwnynlt pyywilegpr lavillnfcf
 421 lvniirvlvm klrqsqasdi eqtrkavraa ivllpplgit nilhqmaplk tatnfavwsy
 481 gthfltsfqq ffialiyfcfl ngevraavlkk slatqlsvrg hpewapkras mysgayntap
 541 dtdavqpagd platgkrisp pnkrlngrkp ssasivmihe pqrqrliplr lqnkarekgr
 601 drvekadaet epepdpairt ihskeagsta srnsrgskwi mgicfrgqkd kcvmpgsqkt
 661 qqifmstsla ptstlaavat tittttttaa akttiatiat iatitkskak akaiakshqm
 721 pks
```

Fichsuphila [XP_017048315.1](#)

```
1 mtllasildc gggisaqrft rllaqsslla sssasasasa sasasgtfas esmleptssh
  61 ilptgrvpvl hgfdstttes ttstyvldgv asvaqmplle stvmdalps dpdqafgnln
 121 vtapwnltla saaatnfenc salfanytlp qsglycnwtw dtllcwpptp agvlarmncp
 181 ggfhgvdtrk fairkceldg rwgsrpnate vsppgwtldyg pcykpeiirl mqmgnkdfd
 241 lyidiarktr tleivglcls lfalivslili fctfrslrnn rtkihknlfv amvlqviirl
 301 tlyldqfrrg nkeaatntsl svientpylc easyvllaya rtamfmwmi eglylhnmtv
 361 vavfqqsfpl kffsrlgwcv pilmttvwar ctvmymdtsl geclwnynlt pyywilegpr
 421 lavillnfcf lvniirvlvm klrqsqasdi eqtrkavraa ivllpplgit nllhqlapl
 481 tatnfavwsy gthfltsfqq ffialiyfcfl ngevraavlkk slatqlsvrg hpewapkras
 541 msgayntap dtdavhpagd psappkrisp pnkrlngrkp ssasivmihe pqrhrliplr
 601 lqnknqekgk drvekaidt eldpatriq skestgstgs rsrsgkwimg icfrgqkdkc
 661 vmpgsqktqq ifmstqlppt stltpvatti ttttttaaaa kttiatsati atitkskka
 721 kaisknyqip ka
```

Elegans [XP_017114250.1](#)

```
1 mtllsnildc gggipaqrlla rllrqssssg stpsgsasgp fesksmlept tshilptgrv
  61 pilhdfgss tespltgtyl ldgvasvaem aleptvrtil sdpdpdkvls nlnasapwnl
 121 tlassaatnf encsalfany tlpqtglycn wtwtdtllcw pptpagvlarm ncpggfhgvd
 181 trkfairkce ldgrwgsrpn atevsppgwt dygpcykpei iirlmqmgnsk dfdlyidiar
 241 ktrtleivgl clslfalivs llifctfrsl rnrtrtkihk nlfvamvlqv iirltlyldqy
 301 rrgnkeaatn tsvientp ylceasyvll eyartamfmw mfieglylhn mvtvavfqq
 361 fplkffsrlg wcapilmttv warctvmymd tslgeclwny nltppywile gprlavilln
 421 fcflvniirv lvmklrqsqa sdieqtrkav raaivllpll gitnllhqla plktatnfav
 481 wsygtthflt fggffialiy cflngevra vllkslatqls vrgpewap rasmysgayn
 541 tapdtdavq agdpsatgk ispphkrng rkpssasiv iheppqqrqr iprlqskare
 601 kgrdraerad adadaentk tepepdait rihskestag stgrsrnrgs kwimgicfrg
 661 qdkcvmppgs qktqqifmst qlaptstlaa vattittttt taaakttiat iatiatiats
 721 kakakaiakg hgmpps
```

Kikkawei [XP_017037981.1](#)

```
1 mtlssilds ggsisaqrft rllrqsstss sssvsasasm leptssqlpn ndvlgggrip
  61 flpgnatges sssssppls psllpdadald pnfvlldgvtv vakmaleatv kvlrpdpdeq
 121 ilananasap wnitlaaaaa tnyencsalf anytlpqtgl ycnwtwdtll cwpptpagvl
 181 arnncpggyh gydtrkfanr kceldgrwgs rpnatetnat gwtgygpcyk pevirlmqm
 241 gsredldlyi eiakrtrtle ivglclslfa livsllifct frslrnrtrk ihknlfiamv
```


301 lqviirltly ldqfrrgnke aatntslsvi entpylceas yvllleyarta mfmwmfiegl
 361 ylhnmvtvav fggsfplkff srlgwcvpil mttvwarctv iymdtslgdc lwnynltpyy
 421 wilegprlav ilnfcflvn iirvlvmlkr qsgasdieqt rkavraaivl lpllgitnil
 481 hqlaplktat nfavwsysty fltsfqqgffi aliyfcflnge vravllksla tqslsvrghpe
 541 wapkrasmys gayntaptdt avlqqqqqpg enpatgkris ppnkrlngrk assasivmih
 601 epqqrqlip rlrstrtrekd ksldkdrekr tqheavsepi nnvtttkanr irskdedssn
 661 grgggskwm mgicfrgqkd kcvmsggqkp qqifmstqlp ptstlaavat ttitttgsat
 721 sataaaaaaka taiatktksk akakakaitk nhakpka

Bipectinate [XP_017095129.2](#)

1 mtlssilds ggsvsvqrllt rllrqsspsa sasgtalase smveptasqm lneitdgrrv
 61 pslgqdlatt tettgqsnvi idrvtnvakm aleatvmddq vlagvnasah wnmrtlsssta
 121 tnyencsalf anytlpqtgl ycnwtwdtll cwpptpagvl armhpcgggyh gvdrkfanr
 181 kceldgrwgs rpnatepspa gwt dygpcyk pevirlmqsm gskdidiyd iartrtlei
 241 vglwvslfal visllifctf rslrnrtrki hknlfiamvl qvivrltlyl dqyrrgnkea
 301 atntslsaie ntpylceasy vlleyartam fmwmfiegly lhnmtvavf qgsfplkffs
 361 rlgwcvpilm tfvwarctvm ymdtsmgecl wnyntpyyw ilegprlavi llnfcflvni
 421 irvlvklrq sqasdieqtr kavraaivll pllgitnllh qlaplktatn favwsyghf
 481 ltsfqqgffia liycflngev ravllkslat qmsvrghpew vpkrasmysg ayntaptda
 541 viqqpgdnpa tgkrisppnk rlngrkassa sivmihepqq rhrlprlrs qrkdrdkikd
 601 rdkendrdrq rddrqlleete adpattrihs ketartgrnr gskwmmidiic frgqkdkcvm
 661 pgsqksqqif mtsqlpptsks laaitttstls tttattttti atvaaaaaasv ktttattist
 721 itkskakaka itknhrtpka

Ananassae [XP_014759839.1](#)

1 mtlssilds ggsvsvqrllt rllrqsstss sasgpslasd sissmveats lrvpslghdl
 61 stttetnvii drvtnvakma leatvmdvlp dpepdqvlgt vnasshwnmn mtlssasatn
 121 ttpswnsff ytlpqtglyc nwtwdtllcw pptpagvlar mncpggyhgv dtrkfanrkc
 181 eldgrwgsrp natepspagw tdygpcyke virlmqsmgs kdidiyidia rtrtleivg
 241 lwvslfalvi sillifctfrs lrnrnrkihk nlfvamvlqv ivrltlyldq yrrgnkeaat
 301 ntslsaient pylceasyvl leyartamfm wmfieglylh nmvtvavfqq sfplkffsrl
 361 gwcvpilmtf vwarctvmym dtsmgeclwn ynltpyywil egprlavill nfcflvniir
 421 vlvklrqsq asdieqtrka vraaivllpl lgitnllhql aplktatnfa vwsyghfllt
 481 sfqgffiali ycflngevra vllkslatqm svrghpewvp krasmysgay ntaptdavi
 541 qpggenpatg krisppnkrl ngrkasgasi vmihepqqrn rllprlrsqr kgrdkakdrd
 601 mendkdrks ddrqlleetea dpgtirihsk dterasnrg skwmmidiic rgqkdkcvm
 661 gpqkqqqifm tsqlpptsks laaitttstls ttiaattttti atiaaaaasv ttttistitk
 721 skakakaitk nprtpka

Mojavensis [XP_015016735.1](#)

1 mqlagdseag smptiittst ssnsflqria lkavtaattt kdrlisivet dspagshmdp
 61 stamtttsit atatatpaat ataselsrsd vlnasieatt avgmdtvkta tesglptvsg
 121 ttpswnsff ytlpqtglyc nwtwdtllcw pptpagvlar mncpggyhgv dtrkfanrkc
 181 pagyhgvdtr kfanrkceld ghwggrpnet epnhagwtdy gpcykpevir lmqeikdvn
 241 yidiaqrtrt leiiglclsl laliislviv cafrrlrrnr tkihknlfia mvlqvivrlt
 301 lyldqfrrgi qynsslsaie ntpylceasy vlleyartam fmwmfiegly lhnmtvavf
 361 qgsfpliffs llgwmpvmm tfvwwqctai fmdtalgdcm wnyntpyyw ilegprlavi
 421 llnffflvni irvlvklrq sqasdieqtr kavraaivll pllgitnllh lvpalktawk
 481 faiwsyvthf ltsfqqgffia liycflngev ravllkslav wmsvrghpew vpkrasmysa
 541 ayntapdtep paqqsveals snirispqsr rlnckrassv iivianepqr qraaqrrnn
 601 ntangngngn gngsrngqkd epasgsarsg qriscketpe qgrstgnwmf slcfhgqknk
 661 cvmpgaqqif mtsqlsatts matptttttt ttttaiatit tts

R N H N N N K L N S R S S S S R E N I A F1
 A T I T T T S * T A A A A A V V K I L Q F2
 Q P * Q Q Q A E Q P Q Q Q Q S * K Y C K F3
 1 CGCAACCATAACAACAAGCTGAACAGCCGAGCAGCAGTTCGTGAAAAATATTGCA 60
 ----:----|----:----|----:----|----:----|----:----|----:----|
 K A K I L T V N L K N C * T P K A * R E F1
 K P K Y * L * T L R T V K R L K L N A S F2
 S Q N T N C K P * E L L N A * S L T R A F3
 61 AAAGCCAAAATACTAAGCTGTAACCTTAAGAACTGTTAAACGCCTAAAGCTTAACGCAG 120

Virilism [XP_032288761.1](#)

1 mptaapssnr tvsthhsttm tststtygtt sttqaaltsf epmavtaagm dvtmagtepl
61 sstsiptfwn ssintasans ydnscsalfan ytqpttviyc nwtwdsllcw pptpagatah
121 mhcpagyhgv dtrkfankrc eldghwagrp nstegkptgw tdygpcykpe virlmqeikd
181 vnlymdiaqr trtleiiglc lslfaliisl mifcafrslr nnrtkikhnl fvamvlqviv
241 rltlyldqfr rgksdsannt slsvientpy lceasyvllc yartamfmwm fieglylhn
301 itvavfqgnf plvffsllgw gmpvlmtfvw vqctaifmdt slgdclwnyn ltpyywileg
361 prltvimlnf fflvniirvl vmklrqsqas eieqtrkavr aaivllpllg itnllhlvpa
421 lktawkfaiw syvthfltsf qgffialiyc flngevravm lksiavwlsv rghpewapkr
481 psmysgaynt apdtqpqlkq gdpqqsqgkrl sqstkrnsnr kassvtivis tepqihryvp
541 rrrnnnrast gsarvrgilk ateepasgsa vgqristdd gasttgrnsn wmfqlcfrgq
601 knkcvipnaq vsqqifmts q ptataaattt ttttvaaaaa attttaataav aaatttsris
661 saaaaaaaaa aailqkqgtp ka

Grimshawi [XP_001991602.2](#)

1 mmqlpginkp gcipitistss iipqrfarr aarvaststa tvttlmsmt qsgrsmlnrt
61 mtsiatatatt ststsissths ttssstsklp sqvisgladv ingteldmta aatavgladaa
121 vdpsttss wnstfstasa nsydncaamf anytqpvtgl ycnwtwdsll cwpptpagvm
181 armypagyh gvdtrkfair kceldghwgr rpndtelntg gwt dyapcyk pevirlmqei
241 kdvnvymdia qrtrtleiig lclslallii slvifcafrs lrnnrtkikh nlfvamlqv
301 ivrltlyldq frgrpetat nasvsient pylceasyvl leyartamfm wmfieglylh
361 nmvtvavfqg nfplklfall gwglpvlmtf vvwqctaifm dttvgecmwn ynltpyywil
421 egprlavill nffflvniir vlvklrqsq asdieqtrka vraaivllpl lgitnllhlv
481 palktawkfa vwsyvthflt sfqgffiali ycflngevrt vllkslavwm svrghpewap
541 krasmysgay ntapdtdvvq qpgeaistr rvppikrlk srkannvtiv isnepqqqqq
601 qhqmlqqrnt nnnstngssp rtveddtgsa matrixskes sagrsnwmtn lcfrgkknkc
661 vmpgaqvsqq ifmts qlpts ttalatittt tatataatta aaaattttra avaatttta
721 laaaaaaaaa aaaaantkaa ia