

S15. Text Multi-species analysis of NPF-R
Supporting Figure 18

CLUSTAL Line-ups; Genbank Reference IDs below

7th Predicted TM domain in **YELLOW**

BBS sequences in **RED**

mojavensis	-----MNRTTELGSQIL---SSAELYKALSSDATFDTIGESRHLVNPGLDAGGAYTRNHN	52
grimshawi	-MIIAMNRTEFGSQLPNFDSSVEIFKAIARNNSNFDLIGERRHLVNYSQLNALSDVNANNT	59
virilis	-----	0
elegans	-MIISMNQT-----AEHLS--GY--VSSS-NSGRYI LDDRHPLDYLDLGPALARLN---	43
rhopaloa	-MIISMNQTETGPLAAGEHLS--GY--ASSS-NSGRYI LDDRHPLDYLDLGTVHALN---	50
ficusphila	-MIISMNQTETGQLSAGEHLS--GY--ASSG-NSVRYI LDDRHPLDYLDLGTVHALN---	50
biarmipes	-MIISMNQTPEGQLAAAEHLG--GY--ASSS-NSGRYI LDDRHPLDYLDLGTIHALN---	50
suzuki	-MIISMNQTPEGLLATGEHLG--GY--ASSS-NSGRYI LDDRHPLDYLDLGTIHALN---	50
simulans	-MIISMNQTETPQLAAGEHLS--GY--ASSS-NSVRYI LDDRHPLDYLDLGTVHALN---	50
erecta	-MIISMNQTEAAQLAAGEHLG--GY--ASSS-NSVRYI LDDRHPLDYLDLGTVHALN---	50
melanogaster	-MIISMNQTEPAQLADGEHLS--GY--ASSS-NSVRYI LDDRHPLDYLDLGTVHALN---	50
sechelia	-MIISMNQTEPTQLAAGEHLS--GY--ASSS-NSVRYI LDDRHPLDYLDLGTVHALN---	50
mauritania	-MIISMNQTETTQLAAGEHLS--GY--ASSS-NSVRYI LDDRHPLDYLDLGTVHALN---	50
takahashi	-MIISMNQTEPGQLAAEQLG--GY--ASSS-NSGRYI LDDRHPLDYLDLGTVHALN---	50
eugracilis	-MIISMNQTEPGPLAAGEHLS--GY--ASSS-NSVRYI LDDRHPLDYLDLGMVHALN---	50
bipectinata	-MIIGMNOTEESGPLATGDRLS--GY--ASSG-NSVRYI LDDRHPLDYLDLGSVVSNA---	50
anannassae	MMIIGMNOTEESGPLATGDRLS--GY--ASSG-NSGRYI LDDRHPLDYLDLGSVVSNA---	51
serrata	-MIISMNQTESVPLAAGDRLS--GF--AAGGDNNSVRYI LDDRHPLDYLDLGSVVGTA---	51
kikkawai	-MIISLNQTESVPLAAGDRLS--GF--AGGGDNNSVRYI LDDRHPLDYLDLGSVVGTV---	51
mojavensis	YDKLNSNYEDSSSSSNNDNSMTLLLNST--SNGSYVPAGMDPVLMQYLHNRSIGSP	109
grimshawi	--NKSNYN----ISHSSNNMTIQLLNSTHINVSNIVSSDLPVLMQYQHNRRAIESP	111
virilis	-----MTILLINSTN--NESNFMPADMDPVLMQYLHNRRAIESP	37
elegans	-----AT-----AVNTSENETGSRPLDPVLI DRFLSNRAVDSP	77
rhopaloa	-----TT-----AINTSELNETGSRPLDQVLIGRFLSNRAVDSP	84
ficusphila	-----TS-----AMNTSDAETGSRPLDPVLI DRFLSNRAVDSP	84
biarmipes	-----TT-----AINTSIDLNETGSRPLDPVLI DRFLSNRAVDSP	84
suzuki	-----TT-----AINTSIDLNETASRPLDPVLI DRFLSNRAVDSP	84
simulans	-----TT-----AINTSIDLNETGSRPLDPVLI DRFLSNRAVDSP	84
erecta	-----TT-----AINTSELNETGSRPLDPVLI DRFLSNRAVDSP	84
melanogaster	-----TT-----AINTSIDLNETGSRPLDPVLI DRFLSNRAVDSP	84
sechelia	-----TT-----AINTSIDLNETGSRPLDPVLI DRFLSNRAVDSP	84
mauritania	-----TT-----AINTSIDLNETGSRPLDPVLI DRFLSNRAVDSP	84
takahashi	-----TT-----AINTSIDLNETGSRPLDPVLI DRFLSNRAVDSP	84
eugracilis	-----TT-----AINTSENETGSRPLDPVLI DRFLSNRAVDSP	84
bipectinata	-----HAA--LNSTATSNLSANDTGARPLDPVLI DRFLSNRAVDSP	90
anannassae	-----HAA--LNSSANNNFSEANDTGARPLDPVLI DRFLSNRAVDSP	91
serrata	-----HAV--LNATA-ANMSELNETGSRPLDPVLI DRFLSNRAVDSP	90
kikkawai	-----HAV--INATA-TNMSELNETGSRPLDPVLI DRFLSNRAVDSP	90
	. :* *:::..: *::: **	
mojavensis	WYHLLIAIYGVLIVFGAMGNIMVVIAVLRKPI MRTARNL FILNL AISDL LCLVTMPLTL	169
grimshawi	WYHLLIAMYSILIVFGAMGNIMVVIAVLRKPLMRTARNL FILNL AISDL LCLVTMPLTL	171
virilis	WYHLLIAMYSVLIVFGAMGNIMVVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	97
elegans	WYHMLISMGYVLIVFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	137
rhopaloa	WYHMLISMGYVLIVFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
ficusphila	WYHMLISMGYVLIVFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
biarmipes	WYHMLISMGYVLIVFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
suzuki	WYHMLISMGYVLILFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
simulans	WYHMLISMGYVLIVFGALGNLT VVIAVIRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
erecta	WYHMLISMGYVLIVFGALGNLT VVIAVIRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
melanogaster	WYHMLISMGYVLIVFGALGNLT VVIAVIRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
sechelia	WYHMLISMGYVLIVFGALGNLT VVIAVIRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
mauritania	WYHMLISMGYVLIVFGALGNLT VVIAVIRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
takahashi	WYHMLITMYGVLIVFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
eugracilis	WYHMLISMGYVLIVFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	144
bipectinata	WYHMLISMGYVLIVFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	150
anannassae	WYHMLISMGYVLIVFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	151
serrata	WYHMLITMYGVLILFGALGNLT VVIAVVRKPI MRTARNL FILNL AISDL LCLVTMPLTL	150

kikkawai	WYHMLITMYGVILF GALGNTLVVIA VVRK PIMRTARNL FILN LAISDL LCLV T M P L TL ***: ***: : * . : * : * : : * : * : * : * : * : * : * : ****: ****: ****: ****: ****	150
mojavensis	ME LLSKF WPF YGSCATLC KTIATL QALSIF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 229	
grimshawi	ME ILSKF WPF YGSCASLC KMIATL QALSIF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 231	
virilis	ME ILSKF WPF YGSCAVL C KTIATL QALSIF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 157	
elegans	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 197	
rhopaloa	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
ficusphla	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRN SLQF VGAV 204	
biarmipes	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
suzuki	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
simulans	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
erecta	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
melanogaster	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
sechelia	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
mauritania	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
takahashi	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
eugracilis	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 204	
bipectinata	ME ILSKY WP FGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 210	
anannassae	ME ILSKY WP FGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 211	
serrata	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 210	
kikkawai	ME ILSKY WP YGSCSILC KTIAML QALC IF VSTISIT AIA FDR YQVIVY PTRD SLQF VGAV 210	
	: ***: ***: * * * *, *: ****: ****: ****: ****	
mojavensis	TILAGIWT ALILA SPLFIY KQLIN MDMPLM LQKFGV PHRIS YCIEDWP M S DGRFYYS IF 289	
grimshawi	TILA FIWI ALILA SPLFIY KQLIN MDMPAV LQD IGV PNRIS YCIEDWP LS DGRFYYS IF 291	
virilis	AI LAGIWI AL ALTLASPLFIY KQLISM DMPV PLQRLG VPHRIS YCIEDWP LS DGRFYYS IF 217	
elegans	TILAGIWA LALL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 257	
rhopaloa	TILAGIWA LALL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 264	
ficusphla	GILVG IWI AL ALL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 264	
biarmipes	TILAGIWA LSLL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPT RNR GFRYYS IF 264	
suzuki	MILAGIWA LSLL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPT RNR GFRYYS IF 264	
simulans	TILAGIWA LALL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 264	
erecta	TILAGIWA LALL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 264	
melanogaster	TILAGIWA LALL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 264	
sechelia	TILAGIWA LALL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 264	
mauritania	TILAGIWA LALL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 264	
takahashi	TILAGIWA LALL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 264	
eugracilis	TILAGIWA LSLL LASPLFV YKELINT DTP ALL QQIGL QL DTIPCY CIEDWPS RNR GFRYYS IF 264	
bipectinata	TTLACIWI AL ALL LASPLFIY KELINT DTP TLL QQIGF QDTI PFCIEDWP SSNGR FRYYS IF 270	
anannassae	TTLACIWI AL ALL LASPLFIY KELINT DTP TLL QQIGF QDTI PFCIEDWP SSNGR FRYYS IF 271	
serrata	TILACIWI VL ALL LASPLFIY KEMINTETP QLL QQIGL QL DRIP CYCIEDWP SSNGR FRYYS IF 270	
kikkawai	TILACIWI AL ALL LASPLFIY KEMINTETP QLL QQIGL QL DRIP CYCIEDWP SSNGR FRYYS IF 270	
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mojavensis	SL CV QY LV PIVIV VSIAY FG IY NKL KS RITVV AVQC - SSQR KT ERG RR M QR TN RL LIS IA 348	
grimshawi	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV TGQS - SSQR KV ERG RR M KR TN RL LIS IA 350	
virilis	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV TVQS - SSQR KV ERG RR M KR TN RL LIS IA 276	
elegans	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 317	
rhopaloa	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
ficusphla	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
biarmipes	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
suzuki	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
simulans	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
erecta	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
melanogaster	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
sechelia	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
mauritania	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
takahashi	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
eugracilis	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 324	
bipectinata	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 330	
anannassae	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 331	
serrata	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 330	
kikkawai	SL CV QY LV PIVI LIV SV AV FG IY NKL KS RITVV AV QA AS A QR K VERG RR M KR TN CL LIS IA 330	
	*****: *: * ****: *: * : *: * : *: * : ****: *: *: *: *	
mojavensis	I F GV SW L P L N F IN LYADM Q RPSA VT PRM I V A ICH M I GMSS A CS NP LLY G W L N D F R S N 408	
grimshawi	I F GV SW L P L N F IN LYADL Q HPSA VT QR M I V A ICH M I GMSS A CS NP LLY G W L N D F R S N 410	
virilis	I F GV SW L P L N F IN LYADL Q HPSA VT QR M I V A ICH M I GMSS A CS NP LLY G W L N D F R S N 336	
elegans	I F GV SW L P L N F IN LYADMERS - PVTQN M L V R Y A ICH M I GMSS A CS NP LLY G W L N D F R C N 376	
rhopaloa	I F GV SW L P L N F IN LYADMERS - PVTQN M L V R Y A ICH M I GMSS A CS NP LLY G W L N D F R K E 383	

ficusphla	IFGVSWLPLNFFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFRKE	383
biarmipes	IFGVSWLPLNFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFRCS	383
suzuki	IFGVSWLPLNFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFRCN	383
simulans	IFGVSWLPLNFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFRKE	383
erecta	IFGVSWLPLNFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFR--	381
melanogaster	IFGVSWLPLNFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFR--	381
sechelia	IFGVSWLPLNFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFR--	381
mauritania	IFGVSWLPLNFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFR--	381
takahashi	IFGVSWLPLNFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFRKE	383
eugracilis	IFGVSWLPLNFNLYADMERS-PVTQSMLVRYAICHMIGMSSACSNPLLYGWLNDNFRKE	383
bipectinata	IFGVSWLPLNFNLYADMQS-PVTQNMILVKYAICHMIGMSSACSNPLLYGWLNDNFR--	387
anannassae	IFGVSWLPLNFNLYADMQS-PVTQNMILVKYAICHMIGMSSACSNPLLYGWLNDNFR--	388
serrata	IFGVSWLPLNFNLYADMQRP-VMTQKMLVAYAVCHMIGMSSACSNPLLYGWLNDNFRKE	389
kikkawai	IFGVSWLPLNFNLYADMQRP-VMTQKMLVAYAVCHMIGMSSACSNPLLYGWLNDNFR--	387
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mojavensis	-----VQAAATR-RRRKHEADLSKGELQLLGKSATRGLA--	441
grimshawi	-----VQAAASRHRQRKHDALSKGELQLLGNP--SC---	440
virilis	-----MQAAAARRRK-----HELQLLLGNVSQRG----	360
elegans	VHS-----AARRRKLGAGADLSRGELKLLGPAGGAQSGTAG	412
rhopaloa	FHELLCLCSEPTNVALNHTGCNVQA-ARRRK--LGANLSRGELKLLGPAGGAQSGTAG	440
ficusphla	FHELLCRCSEPTNVALNHTGCNVQAAAARRRK--LGADLSKGELKLLGPAGGAQSGTAG	441
biarmipes	V-----QAARRRK--LGGDLSKGELKLLGPAGGAQSGTAG	416
suzuki	V-----QAARRRK--LGGDDSKGELKLLGPAGGAQSGTAG	416
simulans	FQELLRCRSD-TNVALNHTGCNVQAAAARRRK--LGAELESKGELKLLGPAGGAQSGTAG	440
erecta	-----CNVQAAAARRRK--LGAELESKGELKLLGPAGGAQSGTAG	417
melanogaster	-----CNVQAAAARRRK--LGAELESKGELKLLGPAGGAQSGTAG	417
sechelia	-----CNVQAAAARRRK--LGAELESKGELKLLGPAGGAQSGTAG	417
mauritania	-----CNVQAAAARRRK--LGAELESKGELKLLGPAGGAQSGTAG	417
takahashi	FQELLRCRSD-TNVALNHTGCNVQAAAARRRK--LGADLSKGELKLLGPAGGAQSGTAG	440
eugracilis	FQELLRCRSD-TNVALNHTGCNVQAAAARRRK--LGADLSKGELKLLGPAGGAQSGTAG	440
bipectinata	-----CNVQAAAARRR-RKLGGLDLTKGEQKL LGKGGASQCQGG-	424
anannassae	FQELLRCRSEPTNVALNHTGCNVQAAAARRR-RKLGTDLSKGELKLLQSGAQSGAP-	447
serrata	-----CNVQAAAARRR-RKLGTDLSKGELKLLQSGAQSGAP-	423
kikkawai	* * * : : * * :	
mojavensis	-----TSDGDCLGGV рIAATDFNR--NG TRSAVTE SALTE-NPMPSELIILAPP--	489
grimshawi	-----ATDGDCIGGV рIAATEFNTR-HTVNG TRSCITE SALTE-NPMPTEMTTLVPRLO	493
virilis	-----ASDGDCLGGMSIAATEFNTR-HTVNG TRSAVTE SALTE-SPPMSEMTTLVPR--	411
elegans	-----GEGVTGLAATDFMTGGHHAGGLRSAITESVALTE--NMPSEVTQLMPRL	460
rhopaloa	-----GEGGLGMAATDFMTG-HHEGGLRSAITESVALTE--NMPSEVTQLMPRL	487
ficusphla	-----GE-GGLAATDFMTG-HQEGLRSAITESVALTEH-QVPSEVTQLMPRL	487
biarmipes	-----GGE-GGLAATDFMTG-HQEGLRSAITESVALTDHNPVPSEVTQLMPRL	464
suzuki	-----GGE-GGLAATDFMTG-HQEGLRSAITESVALTDHNPVPSEVTQLMPRL	464
simulans	-----GE-GGLAATDFMTG-HHEGGLRSAITESVALTDHNPVPSEVTQLMPRL--	485
erecta	-----GE-GGLAATDFMTG-HHEGGLRSAITESVALTDHNPVPSEVTQLMPRL--	462
melanogaster	-----GE-GGLAATDFMTG-HHEGGLRSAITESVALTDHNPVPSEVTQLMPRL--	462
sechelia	-----GE-GGLAATDFMTG-HHEGGLRSAITESVALTDHNPVPSEVTQLMPRL--	464
mauritania	-----GE-GGLAATDFMTG-HHEGGLRSAITESVALTDHNPVPSEVTQLMPRL--	462
takahashi	-----GE-GGLAATDFMTG-HQEGLRSAITESVALTDHNPVPSEVTQLMPRL	487
eugracilis	-----GD-GGLAATDFMTG-HQEGLRSAITESVALTDHNPVPSEVTQLMPRL	487
bipectinata	ASTFGDGGGPDGCGSMAATDFMTG-NPEYGLRSAITESVALTE-NPMPSEVTQLMPRL	482
anannassae	-----GGCGSMAATDFMTG-NPECGLRSAITESVALTE-NPMPSEITQLMPRL	469
serrata	-----GG--GAGGGSMAATDFMTG-HQECLRSAITESVALTE-NPMPSEVTQLMPRL	497
kikkawai	-----GG--AGGGSMAATDFMTG-HQECLRSAITESMALTE-NPMPSEVTQLMPRL	472
.:***: * : * * .:***: * : * : * * :		
mojavensis	-- 489	
grimshawi	QY 495	
virilis	-- 411	
elegans	QY 462	
rhopaloa	QY 489	
ficusphla	QY 489	
biarmipes	QY 466	
suzuki	QY 466	
simulans	-- 485	
erecta	-- 462	
melanogaster	-- 462	
sechelia	QY 466	
mauritania	-- 462	

takahashi	QY	489
eugracilis	QY	489
bipectinata	QY	484
anannassae	--	469
serrata	QY	499
kikkawai	QY	474

> melanogaster AAF51909.3

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1 miismnqtep aqladgehls gyasssnsrv ylddrhpldy ldltvhahn ttaintsdln
   61 etgsrpldpv lidrfhsra vdsawyhmli smygvlivfg algntlvvia virkpimrta
  121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
  181 aiafdryqvi vyptrdslqf vgavtilagi walallasp lfvykelint dtpallqqig
  241 lqdtipycie dwpsrngrfy ysifslcvqy lvpilivsva yfgiynklks ritvvavqas
  301 saqrkvergr rmkrtnclli siaiifgvsw lplnffnlya dmerspvtqs mlvryaichm
  361 igmssacsnp llygwlnndnf rcnvqaaarr rrklgaelsk gelkllgpqgg aqsgtaggeg
  421 glaatdfmtg hhegglrsai tesvaltdhn pvpsevtklm pr

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> erecta XP 015009571.1

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1 miismnqtea aqlaagehlg gyasssnsrv ylddrhpldy ldltvhahn ttaintseln
   61 etgsrpldpv lidrfhsra vdsawyhmli smygvlivfg algntlvvia virkpimrta
  121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
  181 aiafdryqvi vyptrdslqf vgavtilagi walallasp lfvykelint dtpallqqig
  241 lqdtipycie dwpsrngrfy ysifslcvqy lvpilivsva yfgiynklks ritvvavqas
  301 saqrkvergr rmkrtnclli siaiifgvsw lplnffnlya dmerspvtqs mlvryaichm
  361 igmssacsnp llygwlnndnf rcnvqaaarr rrklgaelsk gelkllgpqgg aqsgtaggeg
  421 glaatdfmtg hhegglrsai tesvaltdhn pvpsevtklm pr

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> biarmipes XP 043951464.1

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1 miismnqtep gllatgehlg gyasssnsgr ylddrhpldy ldltihahn ttaintsdln
   61 etgsrpldpv lidrfhsra vdsawyhmli smygvlivfg algntlvvia vvrkpimrta
  121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
  181 aiafdryqvi vyptrdslqf vgavmilagi walsllasp lfvykelint dtpallqqig
  241 lqdtipycie dwptrnegrfy ysifslcvqy lvpilivsva yfgiynklks ritvvavqaa
  301 saqrkvergr rmkrtnclli siaiifgvsw lplnffnlya dmerspvtqs mlvryaichm
  361 igmssacsnp llygwlnndnf rcsvqaarr rklggdlskg elkllgpqga qsgtvgggeg
  421 glaatdfmtg hqegglrsai tesvaltdhn pvpsevtklm prleqy

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> suzuki XP 036675105.1

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1 miismnqtep gllatgehlg gyasssnsgr ylddrhpldy ldltihahn ttaintsdln
   61 etasrpldpv lidrfhsra vdsawyhmli smygvlilfg algntlvvia vvrkpimrta
  121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
  181 aiafdryqvi vyptrdslqf vgavmilagi walsllasp lfvykelint dtpallqqig
  241 lqdtipycie dwptrnegrfy ysifslcvqy lvpilivsva yfgiynklks ritvvavqaa
  301 saqrkvergr rmkrtnclli siaiifgvsw lplnffnlya dmerspvtqs mlvryaichm
  361 igmssacsnp llygwlnndnf rcsvqaarr rklggdlskg elkllgpqga qsgtvgggeg
  421 glaatdfmtg hqegglrsai tesvaltdhn pvpsevtklm prleqy

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> sechelia XP 032578233.1

1 miismnqtep tqlaagehls gyasssnsrv ylddrhpldy ldltgvhaln ttaintsdlm
61 etgsrpldpv lidrflsnra vdsawyhmli smygvivfg algntlvvia virkpimrta
121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
181 aiafdryqvi vyptrdslqf vgavtilagi walallasp lfvykelint dtpallqqig
241 lqdtipycie dwpsrngrfy ysifslcvqy lvpilivsya yfgiynklks ritvvavqas
301 saqrkvergr rmkrtnclli siaiifgvsw lplnffnlyya dmerspvtqs mlvryaichm
361 igmssacsnp llygwlnndnf rcnvqaaarr rrklgaelsk gelkllgpcg aqsgtaggeg
421 glaatdfmtg hhegglrsai tesvaltdhn pvpsevtklm prleqy

> simulans **XP 039150862.1**

1 miismnqtep tqlaagehls gyasssnsrv ylddrhpldy ldltgvhaln ttaintsdlm
61 etgsrpldpv lidrflsnra vdsawyhmli smygvivfg algntlvvia virkpimrta
121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
181 aiafdryqvi vyptrdslqf vgavtilagi walallasp lfvykelint dtpallqqig
241 lqdtipycie dwpsrngrfy ysifslcvqy lvpilivsya yfgiynklks ritvvavqas
301 saqrkvergr rmkrtnclli siaiifgvsw lplnffnlyya dmerspvtqs mlvryaichm
361 igmssacsnp llygwlnndnf rkefqellcr csdtnvalng htgcnvqaa arrrrklgae
421 lskgelkllg pggaqsgtag geglaatdf mtghhegglr saitesvalt dhnpvpsevt
481 klmpr

> takahashi **XP 016993445.2**

1 miismnqtep gqlaageqlg gyasssnsgr ylddrhpldy ldltgvhaln ttaintsdlm
61 etgsrpldpv lidrflsnra vdsawyhmli tmygvivfg algntlvvia vvrkpimrta
121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
181 aiafdryqvi vyptrdslqf vgavtilagi walallasp lfvykelint dtpallqqig
241 lqdtipycie dwpsrngrfy ysifslcvqy lvpilivsya yfgiynklks ritvvavqaa
301 saqrkvergr rmkrtnclli siaiifgvsw lplnffnlyya dmerspvtqs mlvryaichm
361 igmssacsnp llygwlnndnf rkefqellcr csdtnvalng htgcnvqaa arrrrklgad
421 lskgelkllg pggaqsgtvq geglaatdf mtghqegglr saitesvalt dhnpvpsevt
481 klmprleqy

> bipectinata **XP 043068022.1**

1 miigmntes gplatgdrls gyassgnsvr ylddrhpldy ldltgvhaln haalnstats
61 nlsdandtga rpldpvlidr flsnravdsp wyhmlismy vlivfgalgn tlvviaavr
121 pimrtarnlf ilnlaisdl1 lclvtmplt1 meilskywpf gscsilcti amlqalcifv
181 stisitaiaf dryqvivypt rds1qfvvgav ttlaciwala lllasplfiy kelintdtpt
241 llqqigfqdt ipfcidewps sngrffysif slcvqylvpi livsvayfgi ynklnksritv
301 vavqaasaqr kvergrrmrk tncllisiai ifgvswlpln ffnlyadmqq spvtqnmlvk
361 yaichmigms sacsnpllyg wlndnfrcnv qaaaarrrrk lggdltkgel kllgkggasq
421 cgggastfgd gggpdggcgs maatdfmtgn peyglrsait esvaltenpm psevtklm
481 leqy

> rhopaloa **XP 016970622.1**

1 miismnqteq gplaagehls gyasssnsgr ylddrhpldy ldltgvhaln ttaintseln
61 etgsrpldqy ligrfhsnra vdsawyhmli smygvivfg algntlvvia vvrkpimrta
121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
181 aiafdryqvi vyptrdslqf vgavtilagi walallasp lfvykelint dtpallqqig
241 lqdtipycie dwpsrngrfy ysifslcvqy lvpilivsya yfgiynklks ritvvavqaa
301 saqrksergr rmkrtnclli siaiifgvsw lplnffnlyya dmerspvtqn mlvryaichm

361 igmssacsnp llygwlnndnf rkefhellcl cseptnvaln ghttgcnvqa arrrrklgan
421 lsrgelkllg pggasqsgtag gegglgmaat dfmtghhegg lrsaitesva ltenmpsevt
481 klmpkleqy

> eugracilis **XP 017082328.2**

1 miismnqtep gplaagehls gyasssnsrv ylddrhpldy ldlgmvhaln ttaintsemn
61 etgsrpldpv lidrflsnra vdsawyhmli smygvlivfg algnltvvia vvrkpimrta
121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
181 aiafdryqvi vyptrdqlf vgavtilagi walsllasp lfvykelint dtpallqqig
241 lqdtipycie dwpsrngrfy ysifslcvqy lvpilivsva yfgiynklks ritvvavqaa
301 saqrkvergr rmkrtnclli siaiifgvsw lplnffnlya dmerspvtqs mlvryaichm
361 igmssacsnp llygwlnndnf rkefqellcr csdttnvalng httgcnvqaa arrrrklgad
421 lskgelkllg pggasqsgtvg gdgllaatdf mtghqegglr saitesval dhnpvpsevt
481 klmpkleqy

> ficusphla **XP 017046702.1**

1 miismnqtet gqlsagehls gyassgnsvr ylddrhpldy ldltgvhaln tsamntsad
61 etgsrpldpv lidrflsnra vdsawyhmli smygvlivfg algnltvvia vvrkpimrta
121 rnlfilnlai sdlllcvtm pltlmeilsk ywpygscsil cktiamlqal cifvstisit
181 aiafdryqvi vyptrnslqf vgavgilvgi walallasp lfvykelint dtpallqqig
241 lqdtipycie dwpsrngrfy ysifslcvqy lvpilivsva yfgiynklks ritvvavqaa
301 saqrkvergr rmkrtnclli siaiifgvsw lplnffnlya dmerspvtqs mlvryaichm
361 igmssacsnp llygwlnndnf rkefhellcr cseptnvaln ghttgcnvqa aarrrrkliga
421 dlskgelkll gpggaqsgtvg ggegglaatd fmtghqeggl rsaiteval tehqvps
481 klmpkleqy

> anannassae **EDV43731.2**

1 mmiigmnqte sgplatgdrl sgyassgnsg rylddrhpld yldlgsvvn ahaalnssan
61 nnfseandtg arpldpvlid rflsnravds pwyhmlismy gvlivfgalg ntlvviaavr
121 kpimrtarnl filnlaisdl llcvtmplt lmeilskywp fgscsilckt iamqlalcif
181 vstisitaia fdryqvivyp trdqlqfvga vttlaciwal alllasplfi ykelintdtp
241 tllqqmgfqd tipfciedwp ssngrfyysi fslcvqylvp ilivsvayfg iynklksrit
301 vvavqasaq rkvergrrmk rtnclisia vifgvswlpl nffnlyadmq qspvtqnmlv
361 kyaichmigm ssacsnpplly gwlndfrcn vqaaaarrrr klggdltkge qkllgkggas
421 qcggggcgsm aatdfmtgnp ecglrsaite svaltenpmp seitklmpr

> serrata **XP 020798669.1**

1 miismnqtes vplaagdrls gfaaggdnsv rylddrhpld yldlgsvvgt ahavlnataa
61 nmselnetgs rpldpvlidr ylsnrvadsp wyhmlitmyg vilfgalgn tlvviaavr
121 pimrtarnlf ilnlaisdl lclvtmplt meilskywp gscsilcti amlqlalcifv
181 stisitaiaf dryqvivyp rdslqfvga tilaciwvla llasplfiy kemintetpq
241 llqqiglqdr ipyciedwps sngrfyysif slcvqylvp ilivsvayfgi ynklrsritv
301 vavqassaqr kvergrrmk tnclisiai ifgvswlpln ffnlyadmqr pvmtqkmlva
361 yavchmigm sacsnplly wlndnfrkef qellcrcsep tnvalnghett gcnvqaaaar
421 rrrklgtdls kgdkllgqs gaqsgapggg agggsmataa fmtghqecgl rsaiteval
481 tenpmpsevt klmpkleqy

> kikkawai **XP 017016715.1**

1 miislnqtes vplaagdrls gfaggdgnv rylddrhpld yldlgsvvgt vhavinatat
61 nmselnetgs rpldpvlidr ylsnravdsp wyhmlitmyg vlilfgalgn tlvviaavr
121 pimrtarnlf ilnlaisndl lclvtmplt meilskywpy gscsilcti amlqalcifv
181 stisitaiaf dryqvivyp rdsdqvgav tilaciwala llasplifi kemintetpq
241 llqqiglqdr ipyciedwps sngrfyysif slcvqylvpi livsvayfgi ynklksritv
301 vavqassaqr kvergrrmkr tnclisiai ifgvswlpln ffnlyadmqr pvmtqkmlva
361 yavchmigm sacsnpllyg wlndnfrcnv qaaaarrrrk lgtdlskgel kllggsgaqs
421 gapggagggs maatdfmtgh qecglrsait esmaltenpm psevtqlmpr leqy

> mauritania [XP 033166991.1](#)

1 miismnqtet tqlaagehls gyasssnsrv ylddrhpldy ldltvhahn ttaintsdl
61 etgsrpdpv lidrfasnra vDSPWYHMLI smygvlivfg algntlvia virkpimrta
121 rnlfilnlai sdlllcvtm pltlmeisk ywpygscsil cktiamqal cifvstisit
181 aiafdryqvi vyptrdslqf vgavtilagi walallasp lfvykelint dtpallqiq
241 lqdtipycie dwpsrngrfy ysifslcvqy lvpilivsva yfgiynlkrs ritvvavqas
301 saqrkvergr rmkrtnclli siaiifgvsw lplnnfny dmerspvtqs mlvryaichm
361 igmssacsnp llygwlndnf rcnvqaaarr rrklgaelsk gelkllgpqg aqsgtaggeg
421 glaatdfmtg hhegglrsai tesvaltdhn pvpsevtklm pr

> elegans [XP 017130917.1](#)

1 miismnqtae hlsgyvsss sgrylldrhp ldyldlgpar alnataavnts emnetgsrpl
61 dpvlidrls nravdspwyh mlismygvi vfgalngtvi viaavrpkim rtarnlfilm
121 laisdlllcl vtmpltlmei lskywpygsc silcckiql qalcifvsti sitaiafdry
181 qvivyprtds lqfvavtil agiwalall asplfvkyel intdtpallq qiglqdity
241 ciedwpsrng rfyyysifslc vqylvpiliv svayfgiyk lksritvvav qaasaqrke
301 rgrrmkrtnc llisiaiifg vswlplnnfny lyadmerspv tgnmlvryai chmigmssac
361 snpllygwln dnfrcnvhsa arrrrklgag adlsrgelkl lpggaqsgt vggegvtgla
421 atdfmtgghh agglrsaite svaltenmps evtqlmpre qy

> grimshawi [XP 032597472.1](#)

1 miammrtef gsqlpnfdss veifkaiarn snfdligerr hlvnysqlna lsdvnannntn
61 ksnynishss nnmtiqllns thinvsnii svdldpvlmd qyqhnraies pwyhlliamy
121 silivfgamg nimvviaavl kplmrtnrl filnlaisndl lclvtmplt lmeiskfw
181 ygscaclkm iatlqalsif vstisitaia fdryqvivyp trdsdqvgav vtilafiwil
241 alilasplfi ykqlinmdmp avlqdigvpn risyciedwp lsdgrfyysi slcvqylvp
301 ilivsvayfg iynlkrsit vvtgqssqr kvergrrmkr tnrlisiai ifgvswlpln
361 ffnlyadlqh psavtqrmlv ayaichmigm ssacsnpoly gwlnfrsn vqaaasrhrq
421 rkhdahlskg elqlgnpsc atdgdciggy siaatefntr htvngrsci tesvaltenp
481 mptemttlvp rlqqy

> virilis [XP_002058565](#)

1 mtilllnstn nesnfmpadm dpvlmdqylh nraiespwyh lliamysvli vfgamgnimv
61 viaavrpkim rtarnlfilm laisdlllcl vtmpltlmei lskfwpygsc avlcktiatl
121 qalsifvsti sitaiafdry qvivyprtds lqfvavtil agiwlaltl asplfiykql
181 ismdmpvplq rlgvphrisy ciedwplsdg rfyyysifslc vqylvpiliv svayfgiyk
241 lksritvvtv qssqrkver grrmkrtndl llisiaiifg swlplnnfny yadlqhp
301 tqrmvayai chmigmssac snpllygwln dnfrsnmqa aarrkkhel qlgnsvqrg
361 asdgdciggm siaatefntr htvngrtrsav tesvaltesp mpsemttlvp r

> mojavensis **XP_043863318.1**

1 mnrtelgsqi lssaelykal ssdatfdtig esrhlvnypg ldaggaytrn hnydklnsny
61 edssssssnd ndsmtmllln stsngsyvpa gmdpvlmdqy lhnrsigspw yhlliaiygv
121 livfgamgni mvviaavlrkp imrtarnlfi lnlaisdlll clvtmpltlm ellskfwpyg
181 scatlctia tlqalsifvs tisitaiafd ryqvivypytr dslqfvvgavt ilagiwtlal
241 ilasplfiyk qlinmdmplm lqkfgvphri syciedwpms dgrfyysifs lcvqylvpiv
301 ivsiayfgiy nklksritvv avqcssqrkt ergrrmqrtn rllisiaiif gvswlplnfi
361 nlyadmqrps avtprmivay aichmigmss acsnpllygw lndnfrsnvq aaatrrrrkh
421 eadlskgelq llgksatrgl atsdgdclgg vsiaatdfna rngtrsavte svaltenpmp
481 seliilapp