

YUC1

Percent Identity Matrix - created by Clustal2.1

1: Cluster-17835.140770 96.31
2: Cluster-17835.140771 100.00

Cluster-17835.140770	MEMPEPAV IIVGAGPSGLATAACLNRLSIPNIVLEREDCFASLWKKKSYDCLHLHLAKQY	60
Cluster-17835.140771	MEMPEPAV IIVGAGPSGLATAACLNRLSIQNIVLEREDCFASLWKKKSYDCLHLHLAKQY	60

Cluster-17835.140770	CELP HMSYPKNSPT YVSKKQFIQYLDDYVAHFNISPMYNRPVVSADYDEV SQKWVKVRN	120
Cluster-17835.140771	CELP HMSYPKNSPT YVSKKQFIQYLDDYVAHFNISPMYNRPVVSADYDEV SQKWVKVRN	120

Cluster-17835.140770	MVSD EEEYSGKFMV VATGETSDEFIPEVEGLRNFTGEVIHSTLYKCGDKYRDKRVLVVG	180
Cluster-17835.140771	MVSD EEEYSGKFMV VATGETSDEFIPEVEGLRNFTGEVIHSTLYKCGDKYRDKRVLVVG	180

Cluster-17835.140770	SGNSGMEIAFDLSNYGAKTSIVVRSPLHIISRE MAYLGLVLLKYIQVSIVDYLLVLLSKL	240
Cluster-17835.140771	SGNSGMEIAFDLSNYGAKTSIVVRSPLHIISRE MAYLGLVLLKYIQVSIVDYLLVLLSKL	240

Cluster-17835.140770	RYGDLTKYGI RRPEEGPFTLVKYGKYPVIDVGTYSKIKSREIQVLP AITSIKGDEVVFQ	300
Cluster-17835.140771	RYGDLTKYGI RRPEEGPFTLVKYGKYPVIDVGT CNKIKSREIQVLP AITSIKGDEVVFQ	300

Cluster-17835.140770	NGKSHPFDAIVFATG FTRSTHKWLKGDNYLLNKDGLPKPSFPNHWKQNGLYCAGLARRG	360
Cluster-17835.140771	NGKSHPFDAIVFATG FTRSTHKWLKGDNYLLNKDGLAKPSVPNHWKQNGLYCCGLARRG	360

Cluster-17835.140770	LYGAAMDAQNIANDIKSAQ	379
Cluster-17835.140771	FYGAAMEAQNIANDVKSAL	379
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AAO1

Cluster-17835.65252	MPTILHPCSSILGILLERESLAVPWLMMEEERETAIRRRNLLFAVNGERFELSTVDPST	60
Cluster-17835.65253	-----MMEERETAIRRRNLLFAVNGERFELSTVDPST	33

Cluster-17835.65252	TLLQFLRSQTRFKSVKLSCEGGCGACVLLSKYNPVDEEVENFTVSSCLTLLCSVDKCS	120
Cluster-17835.65253	TLLQFLRSQTRFKSVKLSCEGGCGACVLLSKYNPVDEEVENFTVSSCLTLLCSVDKCS	93

Cluster-17835.65252	ITTTGLGNSKDGFPHIHQRFAGFHASQCGFCTPGMCISLFSALINAEKAPRAEPPPGFS	180
Cluster-17835.65253	ITTTGLGNSKDGFPHIHQRFAGFHASQCGFCTPGMCISLFSALINAEKAPRAEPPPGFS	153

Cluster-17835.65252	KLTVSEAEKAIAGNLCRCTGYRPIVDACKSFAADVDMEDLGINSFWKKGESNEVKASKLP	240
Cluster-17835.65253	KLTVSEAEKAIAGNLCRCTGYRPIVDACKSFAADVDMEDLGINSFWKKGESNEVKASKLP	213

Cluster-17835.65252	FYNPSDQICTFPEFLKNEIRSSMLLSKNSWYQPVNVKELMSMLLAENDTRVKLVVANT	300
Cluster-17835.65253	FYNPSDQICTFPEFLKNEIRSSMLLSKNSWYQPVNVKELMSMLLAENDTRVKLVVANT	273

Cluster-17835.65252	GTGYKVEDHYDKYIDLRHIPDLSMIRRDQMGIIIGATVTISKAILTLKEVNNGEFHSQG	360
Cluster-17835.65253	GTGYKVEDHYDKYIDLRHIPDLSMIRRDQMGIIIGATVTISKAILTLKEVNNGEFHSQG	333

Cluster-17835.65252	ELVFQKIANHMEKIASGFIRNSGSI GGNLVMAQRNYFPSDIATILLAVDSAVNIMTDLKH	420
Cluster-17835.65253	ELVFQKIANHMEKIASGFIRNSGSI GGNLVMAQRNYFPSDIATILLAVDSAVNIMTDLKH	393

Cluster-17835.65252	EKLTLEEFGRPPLDPRSVLLSIQPCWETARNGSTKTDTKLLFETYRAAPRSLGNALAY	480
Cluster-17835.65253	EKLTLEEFGRPPLDPRSVLLSIQPCWETARNGSTKTDTKLLFETYRAAPRSLGNALAY	453

Cluster-17835.65252	LNAFLAEVTSCKTSGVVIIDNIQLAFGAYGTHAIRARKVEECLAGKLLNIDVLF EAIK	540
Cluster-17835.65253	LNAFLAEVTSCKTSGVVIIDNIQLAFGAYGTHAIRARKVEECLAGKLLNIDVLF EAIK	513

Cluster-17835.65252	LLEATIVPEIGTSRAAYRSSLAVGFLFEFLRPFDVCGELTNGLVDGFNENQALS SAKQ	600
Cluster-17835.65253	LLEATIVPEIGTSRAAYRSSLAVGFLFEFLRPFDVCGELTNGLVDGFNENQALS SAKQ	573

Cluster-17835.65252	VVESNQKYPVGEPITKSGAAIQASGEAVYVDDIPSPNTCLHGAFIYSTKPLARVKS VKI	660
Cluster-17835.65253	VVESNQKYPVGEPITKSGAAIQASGEAVYVDDIPSPNTCLHGAFIYSTKPLARVKS VKI	633

Cluster-17835.65252	KSESQQDGIAGVISYRDIPNGGSNIGAQMFGPEPLFADDLTRCTGQALAFVVANTQKVA	720
Cluster-17835.65253	KSESQQDGIAGVISYRDIPNGGSNIGAQMFGPEPLFADDLTRCTGQALAFVVANTQKVA	693

Continued

AAO1

Percent Identity Matrix - created by Clustal2.1

1: Cluster-17835.65252 99.85
 2: Cluster-17835.65253 100.00

Cluster-17835.65252	DMAADTALVDYDTENLEPPILTLEEAVERSFFVPPFLNPAPVGDFSKGMAEADHKILS	780
Cluster-17835.65253	DMAADTALVDYDTENLEPPILTLEEAVERSFFVPPFLNPAPVGDFSKGMAEADHKILS	753

Cluster-17835.65252	AKIKLGSQYFYMETQTALAIPDEDNCMLVYSSSQCEFAHASIASCLGIPEHNVRVITR	840
Cluster-17835.65253	AKIKLGSQYFYMETQTALAIPDEDNCMLVYSSSQCEFAHASIASCLGIPEHNVRVITR	813

Cluster-17835.65252	RVGGGFGGKAIRAMPVATACALAAHKLQCPVRIYLNKRTDMVMSGGRHPMKITYSVGFKS	900
Cluster-17835.65253	RVGGGFGGKAIRAMPVATACALAAHKLQCPVRIYLNKRTDMVMSGGRHPMKITYSVGFKS	873

Cluster-17835.65252	SGKITALHLDILINGGLSVDISPILPLNMLGALKKYDWGALSFDKVKCTNHSTKSAMRA	960
Cluster-17835.65253	SGKITALHLDILINGGLSVDISPILPLNMLGALKKYDWGALSFDKVKCTNHSTKSAMRA	933

Cluster-17835.65252	PGEVQASFIAESVIEHVASVLSMEVDSVRNKNLHTFDSLNIIFYEGSAGESVEYTLPSIWD	1020
Cluster-17835.65253	PGEVQASFIAESVIEHVASVLSMEVDSVRNKNLHTFDSLNIIFYEGSAGESVEYTLPSIWD	993

Cluster-17835.65252	KLARSSCLHQRIEMIQHFNMCNKWRKRGISRVPIIHEVIVRPTPGKVSILRDGSIVVEVG	1080
Cluster-17835.65253	KLARSSCLHQRIEMIQHFNMCNKWRKRGISRVPIIHEVIVRPTPGKVSILRDGSIVVEVG	1053

Cluster-17835.65252	GIELGQGLWTKVKQMTAFALSMIQC DGTEELLKKVRVIQSDTLSLIQGGFTAGSTTSESS	1140
Cluster-17835.65253	GIELGQGLWTKVKQMTAFALSMIQC DGTEELLKKVRVIQSDTLSLIQGGFTAGSTTSESS	1113

Cluster-17835.65252	CEAVRLCCNILVERLIPLKEKLEEQTGSIKWEALILQAHLQAVNLSTSSFYVPDFTSMQY	1200
Cluster-17835.65253	CEAVRLCCNILVERLIPLKEKLEEQTGSIKWEALILQAHLQAVNLSTSSFYVPDFTSMQY	1173

Cluster-17835.65252	LNYGVAVSEVEVNLLTGETSILQADIYDCGQSMNPAVDLGQVEGAFVQGVGFFMFEYL	1260
Cluster-17835.65253	LNYGVAVSEVEVNLLTGETSILQADIYDCGQSMNPAVDLGQVEGAFVQGVGFFMFEYL	1233

Cluster-17835.65252	TNSDGLVSDGTWYKIPTVDNIPKQFNVELLSNGHHQNRVLSKASGEPLLLAVSVHC	1320
Cluster-17835.65253	TNSDGLVSDGTWYKIPTVDNIPKQFNVELLSNGHHQNRVLSKASGEPLLLAVSVHC	1293

Cluster-17835.65252	ATRAAIKEARKQLSSWKGLDGSNSTFQLEVPATMPVVKEFCGLDSVEWYKSLH--	1374
Cluster-17835.65253	ATRAAIKEARKQLSSWKGLDGSNSTFQLEVPATMPVVKEFCGLDIVEWYKSLLS	1349

IAA26

Percent Identity Matrix - created by Clustal2.1

1: Cluster-17835.41237 100.00 59.85 -nan
 2: Cluster-17835.89098 59.85 100.00 85.00
 3: Cluster-17835.41233 -nan 85.00 100.00

Cluster-17835.41237	---MENKDEDCPQLLDLIPKNREWIVQRGDRHRSHGSSEKKLELRLGPPGEREEQDWT	56
Cluster-17835.89098	MEGCSNKDEVACPQLLDLIPKDREWLLQRDE-QGSHGYSEKKLELRLGPPGEG---DWT	56
Cluster-17835.41233	-----	0
Cluster-17835.41237	KN-----NNSRERGGSLSSVGYSNMASTHNNGGNRVENGIN-----NQKVSFAD	103
Cluster-17835.89098	IKNGTDQNNSTEREREDSILSLGYFSNMKTV-----ENSWIMNNGNQNHKFSFSE	107
Cluster-17835.41233	-----	0
Cluster-17835.41237	NPVGKTL--KTPWSSSPFIHQIQTNNP-----QSSQTCGTKG	138
Cluster-17835.89098	NPIGITALSSPSWSSTFH-AIQTQQQRQQQQQLQLQSNPHGLPVMAKESSQPCHS-K	165
Cluster-17835.41233	-----	0
Cluster-17835.41237	GVDLQKSAEKKAFS-----	152
Cluster-17835.89098	PVDLQNAAEKKAFSPASANTAVPNSSQKRTAPASVVGWPPIRSFRRKNLASSCSSKPTSES	225
Cluster-17835.41233	-----	0
Cluster-17835.41237	-----	152
Cluster-17835.89098	QNLVPIEVPNHKLVESECRKDFVVKINMDGVPIGRKVDLKAYDSYEKLSSAVDDLFRGLLA	285
Cluster-17835.41233	-----MDGVPIGRKVDLKAYDSYEKLSSSVDELFRGLLA	34
Cluster-17835.41237	-----	152
Cluster-17835.89098	AQRDSSPGGIENKQEAEKAITGLLDGSGEYTLVYEDNEGDRILVGDVPWHMFVSTVKRLR	345
Cluster-17835.41233	AQRNSSAGGIQNKHEGERAITDLLDGSGEYTLVYEDNEGDRMLVGDVPWHMFLSTVKRLR	94
Cluster-17835.41237	-----	152
Cluster-17835.89098	VLKSSSELSTLCLGSKKETIQVDVGSK	371
Cluster-17835.41233	VLKSSSELSTLRFGSKQEKIQLDAASK	120

SAUR32

Percent Identity Matrix - created by Clustal2.1

1: Cluster-17835.128969 100.00 23.81
2: Cluster-17835.2512 9.80 32.43
3: Cluster-17835.19385 100.00 32.43 100.00

Cluster-17835.128969	-----MMSIYSSLWLQF-----TQVLE-----ANAAIKKLKKQ	28
Cluster-17835.2512	-----MGSGDKSLLSFHQHQH-----HHHHRHQGKKQE	28
Cluster-17835.19385	MDVINPKAKKGLITKTWERCRIIGGGGGGGSGALMMKSRSLPRPGSGGGGGAAVEDEEKQ	60
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Cluster-17835.128969	PQ-----NPIAQAILLGGSTLAYLSS-----	50
Cluster-17835.2512	EEVVRDVPKGCLAIKVGQEEEEQQRFFVVPVMYFNHPRFMQLLKEAEEYGFQDKGTITIP	88
Cluster-17835.19385	PRKHRVAPEGCFVYVGPQ---KQRFVVKTEYANHPLFKMLLEEAELEYGFNSDGPLALP	117
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Cluster-17835.128969	NNLQLFFKFLWQN-----	63
Cluster-17835.2512	CHVEEFRYVQGMIDEEHHHHHLCWLF-----	115
Cluster-17835.19385	CNVDRFYKVLVEMEDSYEN-RGGCTGFGSYRLSPYRLVAMNKL	160
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SAUR50

Percent Identity Matrix - created by Clustal2.1

1: Cluster-17835.108846	100.00	100.00	23.73
2: Cluster-17835.108853	100.00	100.00	23.73
3: Cluster-10437.1	23.73	23.73	100.00

Cluster-17835.108846	MKVAKLT-KLKSA	KLKKWPSFTKLD-----RT-----ISS-STSVTA	34
Cluster-17835.108853	MKVAKLT-KLKSA	KLKKWPSFTKLD-----RT-----ISS-STSVTA	34
Cluster-10437.1	MESAKVQTKKNLFVKTWERC	SIPGGREKKSPSKPSSIFSKSKSCHYTTTKSSSKDDNQR	60
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Cluster-17835.108846	TDDGAATAAGNLHPVYVGKSRRLYL	VSTEVIDHPLFQVLVDKSN	88
Cluster-17835.108853	TDDGAATAAGNLHPVYVGKSRRLYL	VSTEVIDHPLFQVLVDKSN	88
Cluster-10437.1	NTKSRQVAPEGCFSVYVGPEKQRFVIKTFANHPLFRMLLEDAEMEYGYNSEGPLLLPCE		120
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Cluster-17835.108846	VVLF	FDHLLWMLENAGADV-----ASV-----DELVEFY	118
Cluster-17835.108853	VVLF	FDHLLWMLENAGADV-----ASV-----DELVEFY	118
Cluster-10437.1	VDLFYKVLAE	MDSKEIVPSCGFAYGSCSPFNPSRRLGNNNNMRKVYGSYGLLTPSRLLKM	180
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Cluster-17835.108846	---	118	
Cluster-17835.108853	---	118	
Cluster-10437.1	NHF	183	

ABCB4

Percent Identity Matrix - created by Clustal2.1

1: Cluster-17835.13084 100.00 87.29
2: Cluster-17835.13079 87.29 100.00

Cluster-17835.13084	MGFLSLLLEVASMPILQVLIISILGAFMATDYLNLLPTASRKSLNKIVFMVFTPSLMFASL	60
Cluster-17835.13079	MGFLSLLLEVASMPILQVLIISILGAFMATDYLNLLPTASRKSLNKIVFMVFTPSLMFASL	60

Cluster-17835.13084	AETVTFQDLIAWWFMPINVGLTFLFGGILGWIAVKILKPKPHLEGLIATCSSGNLGNLM	120
Cluster-17835.13079	AETVTFQDLIAWWFMPINVGLTFLFGGILGWIAVKILKPKPHLEGLIATCSSGNLGNLM	120

Cluster-17835.13084	LIVVPAICSEEGSPFGNHKACSSVALSYASFSMALGGFFIWITYYQLIRSSSMKYKALQA	180
Cluster-17835.13079	LIVVPAICSEEGSPFGNHKACSSVALSYASFMAVRQFCMLYTHNSML-----IFQ---I	172
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Cluster-17835.13084	ADEISKLPNNDLESDEKTHLLEGEVQEHVAILVPSTRPTEEYTEENQAMPQVSASKLEKE	240
Cluster-17835.13079	QNHASKTDN-----	181
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Cluster-17835.13084	NVSFWGNIIVVLHQLEELLAPPTLSAIVGFFFGAIPWLKNLIIGESAPLRVIQDSIKLL	300
Cluster-17835.13079	-----	181
Cluster-17835.13084	GGGTIPCITLILGGNLTQGLRTARLKPIMIIAVICVRYVLLPFIGIGVVRAASSLGFLPS	360
Cluster-17835.13079	-----	181
Cluster-17835.13084	DPLYHYVLMIQFALPPAMNIGTMTQLFDVAQEECSVLFLWTYLVACLSLTVWSTIFMWTL	420
Cluster-17835.13079	-----	181
Cluster-17835.13084	S 421	
Cluster-17835.13079	- 181	

A-ARR

Percent Identity Matrix - created by Clustal2.1

1: Cluster-17835.76446	21.58	Cluster-17835.76446	--MITT--GISLKVDDSFLS-----NSYPVIPAIESDGALLSIQTEILQSSASTL	46
2: Cluster-17835.29790	100.00	Cluster-17835.29790	MGMATESQFHVLAVDDSLIDRKLIERLLKTSSYQVTT-VD-----SGNK--	43
	21.58		* * * * * : : . ** * : : * . .	
Cluster-17835.76446	100.00	Cluster-17835.76446	LFSILYIGIFSAHSAHSHSHAAAPAPAVDCTTLVLKMTDCLSYVTNGSTVKKPEGT-CC	105
Cluster-17835.29790	21.58	Cluster-17835.29790	--ALKFLGLQEDDQTNPNHQPSFSPNNNQVEVNLIITDYCMPGMTGYDLLKKIKESSSL	101
			: : : * : . : : . * : : * : . : : * : : * . . : * : : .	
Cluster-17835.76446	100.00	Cluster-17835.76446	SVLKTVLTTNEAL---RDTSLAGGAA-----	128
Cluster-17835.29790	21.58	Cluster-17835.29790	KNIPVVIMSSENVPARINRCLEEGAEFFLKPVRLADVSKLKTHMLKTKFKNHQKQESQE	161
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Cluster-17835.76446	100.00	Cluster-17835.76446	----AEELRV-----AAFLLQDGVSSDYLDHDESVTIGSRFQLINPHILPWV	170
Cluster-17835.29790	21.58	Cluster-17835.29790	SSETEEDQQEDIQQQQQSSNNNKRKAMEEGLSTDRTRP-----RY-----S	204
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Cluster-17835.76446	100.00	Cluster-17835.76446	GTISKPTILLPWVG	184
Cluster-17835.29790	21.58	Cluster-17835.29790	GLT----VV-----	209
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Supplementary figure S4. Multi-sequence alignment of amino acid sequences of similar genes.