

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Rattus_norvegicus  MEDTPERTPSS-ESTQPPGL-----AREPEVTSP-GDSEGCARPLDPA--- 41
Mus_musculus      MEDAPERTPSSSESTQPPGL-----AREPEVVSPP-GDSEGCARPLDTV--- 42
Homo_sapiens       MEGAGENAPESSSSAPGSEE-----SARDPOVPPPEEESGDCARSLEAV--- 44
Pan_troglodytes    MEGAGENAPESSSSAPGSEE-----SARDPOVPPPEEESGDCARSLEAV--- 44
Macaca_mulatta     MEGAGENAPESSSSVPGSDE-----SARDPOALPLEEESGDCARSLEA--- 43
Callithrix_jacchus MEGAGENASESSSFAPGSEE-----SARDPOVLPLEEELGGCARSLEAV--- 44
Canis_lupus_familiaris MEGAQEDPAESSSSVPRFAEP-----AGSAGGAELVLP-EES-----GAA--- 39
Equus_caballus     MEGAQGSPPVSRSPVPGSDEP-----AGAARGPGGLPP-GESEGCARPLETA--- 46
Bos_taurus         MEGAQESPAESGSSVPWSEEP-----AGSAKVPEVSL-EESEGCSTRPLEAT--- 46
Pavo_muticus       MKKGPSSGGCPGAGVPDKITEPNSDGSRRSSGAPAEKDVLPSPGELENIQLKPSSE--A 58
Pavo_cristatus     MKKGPSSGGCPGAGVPDKITEPNSDGSRRSSGAPAEKDVLPSPGELENIQLKPSSE--A 58
Gallus_gallus      MKKGPSSGACPGVGVDPKITEPNSGGSG-SNGASAKEKDVLPSPGELENIQLKPSSE--T 57
Anas_platyrhynchos MKKGPESGTWPLAGVPGKLAESNPDNSR-SGGASAKEKAVLSSPGEAENVQLKPSRE--T 57
Chelonia_mydas     MERRPESGECLLAGIPGKPLESNSDDDN-GNAGSAKERAVSPHRLDIGNAQLNPSRE--E 57
Rhinatrema_bivittatum -MEASGAENCTAAEIPS-----DADLAQPADLGELPPDPAHDGKA 39
1.....10.....20.....30.....40.....50.....60

      :*****:* :***: ** *** :*:*:* * ***:* **.**** .* *: :
Rattus_norvegicus  -PKKLCGYLSKFGGKGPIKGWKCWFFYDERKCHLYSRTAQDANPLDSIDLSSATFDCK 100
Mus_musculus      -PKKLCGYLSKFGGKGPIKGWKCWFFYDERKCHLYSRTAQDANPLDSIDLSSAVFDCK 101
Homo_sapiens       -PKKLCGYLSKFGGKGPIRGWKSRRFFYDERKCQLYSRTAQDANPLDSIDLSSAVFDCK 103
Pan_troglodytes    -PKKLCGYLSKFGGKGPIRGWKSRRFFYDERKCQLYSRTAQDANPLDSIDLSSAVFDCK 103
Macaca_mulatta     --KKLCGYLSKFGGKGPIRGWKSRRFFYDERKCQLYSRTAQDANPLDSIDLSSAVFDCK 101
Callithrix_jacchus -PKKLCGYLSKFGGKGPIRGWKSRRFFYDERKCQLYSRTAQDANPLDSIDLSSAVFNCK 103
Canis_lupus_familiaris -AKKLCGYLSKFGGKGPIRGWKSRRFFYDEKKCHLYSRTAQDANPLDSIDLSTAVFDCK 98
Equus_caballus     -PKKLCGYLSKFGGKGPIRGWKSRRFFYDERKCHLYSRTAQDANPLDSIDLSSAVFDCK 105
Bos_taurus         -PKKLCGYLSKFGGKGPIRGWKSRRFFFDERKCHLYSRTAQDANPLDSIDLSSAVFDCK 105
Pavo_muticus       HRKKLCGYLNKLGIRGPIKTWKSRRFIYDENKCHLLYRTAQDINPLGSIDLSSASFDCR 118
Pavo_cristatus     HRKKLCGYLNKLGIRGPIKTWKSRRFIYDENKCHLLYRTAQDINPLGSIDLSSASFDCR 118
Gallus_gallus      HRKKLCGYLNKLGIRGPIKTWKSRRFIYDENKCHLLYRTAQDINPLGSIDLSTACFDCK 117
Anas_platyrhynchos PRKKLCGYLNKLGIRGPIKTWKSRRFIYDENKCHLLYRTAQDVNPLGSIDLSSASFDCQ 117
Chelonia_mydas     PRKKLCGYLNKLGKVGKPIKAWKSRRFFYDENKCHLLYCRTAQDVNPLGSIDLSSASFDCQ 117
Rhinatrema_bivittatum SRKHLCGYLSKFGVGKPIKAWKYRWFSYDDRKCQLHYRTARDVVPVPLGSIDLFNVAVFDYK 99
.....70.....80.....90.....100.....110.....120

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Rattus_norvegicus  ADAEEEGTFEIKTPSRVITLKAATQVMLYWLQQLQMKRWEFHNSPPALPATPAAALTEN 160
Mus_musculus      ADAEEEGTFEIKTPSRVITLKAATQVMLYWLQQLQMKRWEFHNSPPALPATPAAALAEN 161
Homo_sapiens       ADAEE-GIFEIKTPSRVITLKAATQVMLYWLQQLQMKRWEFHNSPPAPPATPDAALAGN 162
Pan_troglodytes    ADAEE-GIFEIKTPSRVITLKAATQVMLYWLQQLQMKRWEFHNSPPAPPATPDAALAGN 162
Macaca_mulatta     ADGEE-GIFEIKTPSRVITLKAATQVMLYWLQQLQMKRWEFHNSPPAPPAAPDAALAGN 160
Callithrix_jacchus ADTEE-GIFEIETPSRVITLKAATQVMLYWLQQLQMKRWEFHNSLPPPPAAPDAALAGN 162
Canis_lupus_familiaris ADAEE-GTFEIKTANRIITLKAATQVMLYWLQQLQMKRWEFYNSPPAPPAAPDAALAGN 157
Equus_caballus     ADADE-GTFEIKTPSRVITLKAATQVMLYWLQQLQMKRWEFHN---GLPAAPDAALAGN 161
Bos_taurus         ADAEE-GTFEIKTPNRIITLKAATQVMLYWLQQLQMKRWEFHNSLPAALPAHDAALAGN 164
Pavo_muticus       VENDE-GVFEIRTRNRVFTLKAISKQAMMYWLQQLQVRRWEFCIAQSRFPVG-----SSQ 172
Pavo_cristatus     VENDE-GVFEIRTRNRVFTLKAISKQAMMYWLQQLQVRRWEFCIAQSRFPVG-----SSQ 172
Gallus_gallus      VENDE-GVFEIRTPNRVFTLKAISKQAMMYWLQQLQVRRWEFCIAQSRFPVG-----SSQ 171
Anas_platyrhynchos VENGE-GVFEIRTPSRVFTLKAISKQAMMYWLQQLQVRRWEFCNAPSFRFPVG-----SSQ 171
Chelonia_mydas     VEADE-GVFEIRTPSKVFILKAVSRQAMMYWLQQLQMKRWAFNCNTLTGLPVDS-ITVAAL 175
Rhinatrema_bivittatum VEAEK-GTFEIQTPSRVFTLKAIVHNHAMMYWLQQLQMKRWEFCNSQTEVPVG----- 150
.....130.....140.....150.....160.....170.....180

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      *: **:*. :** ** *      *
Rattus_norvegicus  GPTLHLKLEQEEAELEEFLLCPVKTPPGVLVGTAAALQVPFAMPSSALQNISLKHGLGTEIQT 220
Mus_musculus      GPTLHLKLEQEEAELEEFLLCPVKTPGLVGAAAALQVPVAVPSALQNISLKHGLGTEIQT 221
Homo_sapiens      GPVLHLELGQEEAELEEFLLCPVKTPPGVLGVAAALQPPF----ALQNISLKHGLGTEIQT 218
Pan_troglodytes   GPVLHLELGQEEAELEEFLLCPVKTPPGVLGVAAALQPPF----ALQNISLKHGLGTEIQT 218
Macaca_mulatta    GPALHLELGQEEAELEEFLLCPVKTPPGVLGVAAALQPPF----ALQNISLKHGLGTEIQT 216
Callithrix_jacchus GPTLHLELGQEEAEVEEFLLCPVKTPGLVGEAAALQPPF----ALQNISLKHGLGTEIQT 218
Canis_lupus_familiaris GPALRLELEQEEAEEDDFLLGPVRTPPGLVGVAAALQVPTMPLALQNISLKHGLGTEIQT 217
Equus_caballus    GPALRLELEQEEAELEEFLLCPVQTPPGVLGVAAALQVPAQSSALQNISLKHGLGTEIQT 221
Bos_taurus        GPALRLELEQEEAELEEFLLCPVKTPDVLGVAAAWQPVHARPLALQNISLKHGLGTEIQT 224
Pavo_muticus      LVNEPLVGRNTAAADEGFLPPVKTPTEVVGLQAASLPAPQTATALQNISLKHLPWTEIQT 232
Pavo_cristatus    LVNEPLVGRNTAAADEGFLPPVKTPTEVVGLQAASLPAPQTATALQNISLKHLPWTEIQT 232
Gallus_gallus     LVNEPLVDRNTVADDEGFLPPVKTPTEVVGLQAASLPAPQTATALQNISLKHLPWTEIQT 231
Anas_platyrhynchos LVNEPLADRTNVVDSAEAFMPPVKTPTEVVGLKAASLPAPQTSALQNISLKHLPWTEIQT 231
Chelonia_mydas    PANDSLLNEIIHTEGEGFFPPVKTPDVLVGLKAASLPAPQLPAALQNISLKHLPWTEIQT 235
Rhinatrema_bivittatum -SRISSAMPSVHIPQVDFLPPVKTPTEVVGTSAASLPAPQSSALQNISLKHLPWTEIQT 209
.....190.....200.....210.....220.....230.....240

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      : * :. . :
Rattus_norvegicus  MYNIRGNKQAQATAHGPP-VEESSQSAEPORGEQPLISDPSIPEKEPEDPPKSAPRSCVP 279
Mus_musculus      MHNIRGNKQAQAAAHGPP-VEDSPQGGEPQSGEQPSISDPSLPEKEPEDPAKSAPRSSVP 280
Homo_sapiens      MHNIRGNKQAQGTGHEPP-GEDSPQSGEPQREEQPLASDASTPGREPEDSPKPAPKPSLT 277
Pan_troglodytes   MHNIRGNKQAQGTGHEPP-GEDSPQSGEPQREEQPSASDASTPGREPEDSPKPAPKPSLT 277
Macaca_mulatta    MHNIRGNKQAQATGHEPP-GEDSPQSGEPQREEQPLASDPTTPGREPEDSPKPGPKSSLT 275
Callithrix_jacchus MHNIRGNKQQTGTGHEPP-EEDSPQSGEPQREEPSSAHPSTPGREPADSPKLAPKSSVT 277
Canis_lupus_familiaris MSNIRGNRQAQGTGHGPP-GEDPPLSLEPQRAEQPLPSDPSTPGKDPADSPKPTPKSSLT 276
Equus_caballus    MYNIRGNRQAQAGHGPP-GEDSPPSGEPVREEQPLPPNPAPGDDPADSAKPAPKSSLT 280
Bos_taurus        MCNIRGNKQTOGANHRPP-GEDSPLIETQREEQSPPPGPGAPGKDPANS----LKSSLT 279
Pavo_muticus      VYNICGSKQLWGNDGNVFNFNKFQEHPE-----QAEVEAQCTVRETT-EDGRMESRL-- 284
Pavo_cristatus    VYNICGSKQLWGNDGNVFNFNKFQEHPE-----QAEVEAQCTVRETT-EDGRMESRL-- 284
Gallus_gallus     VYNICGSKQLWGNDGNVFNFNKFQEHPE-----QAEVEAQCTVKETP-EDGRMESRL-- 283
Anas_platyrhynchos VYNICVSKQLRGNGNINFNSEFQENPESLDEEQAEVEAGCAVKEIPEEDGRLESRL-- 289
Chelonia_mydas    IYNICGSRQLPGNDRSISGVEGFPEHPGTLAAEQEVEGEAECPVREKAREDTQAGPR-- 293
Rhinatrema_bivittatum VHIICSSRSQGANMKSIHFVDFHDSLEKQMEEGNAQAEGESTADEIRQEAVMKPAVQK 269
.....250.....260.....270.....280.....290.....300

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      : : .. : : .* :*: *:***: *:***:*** :**
Rattus_norvegicus  ----SGPMQPKPKQSNITFPFFSDGLARSRTAQEKVVALEQQVLMMLTKELKSQKELVITLH 335
Mus_musculus      ----SGPTQPKPKQSNITFPFFSDGLARSRTAQEKVVALEQQVLMMLTKELKSQKELVITLH 336
Homo_sapiens      ----ISFAQAKAKRQNNITFPFFSEGITRNRRTAQEKVVALEQQVLMMLTKELKSQKELVKILH 333
Pan_troglodytes   ----ISFAQAKAKRQNNITFPFFSEGITRNRRTAQEKVVALEQQVLMMLTKELKSQKELVKILH 333
Macaca_mulatta    ----ISFVQAKAKRQNNITFPFFSEGITWNRTAQEKVVALEQQVLMMLTKELKSQKELVKILH 331
Callithrix_jacchus ----INFVQAKAKRPSNITFPFFSEGITRNRRAQEKVVALEQQVLMMLTKELKSQKELVKILH 333
Canis_lupus_familiaris ----ANLIQAKAKRQNNITFPFFADGLTRSRTAQEKVLALQVLMMLTKELKSQKELVRIILH 332
Equus_caballus    ----ANLIQAKAKRQNNITFPFLFSEGLTRNRRTAQEKVLALQVLMMLTKELKSQKELVRIILH 336
Bos_taurus        ----TSLIRKAKKSQSNITFPFLFSEGLMRNRRTAQEKVLALQVLMMLTKELKAKKELVKILH 335
Pavo_muticus      ----NLFRKAKWMNS---NLAEQPRERNSLDKVNVLQQQMLTLTEEVKSQKELVKLLH 336
Pavo_cristatus    ----NLFRKAKWMNS---NLAEQPRERNSLDKVNVLQQQMLTLTEEVKSQKELVKLLH 336
Gallus_gallus     ----NLFRKAKWMNS---SLTEQPRERNSMKDVNVLQQQMLTLTEEVKSQKELVKLLH 335
Anas_platyrhynchos ----NWVRKAKWMNSGFLGLAEELSRERSMDKVSVLQQQILTLTEEVKSQKELVKLLH 344
Chelonia_mydas    ----HWPRKGKWLNSGFPAFAEGLARERSSPDKVAVLQQQVLALTEEIKSQKELVTLH 348
Rhinatrema_bivittatum SSPSANFARLARRLNGNIPPLLEMTMPERNFODKITSLQQQVFTLSEELKSQRELVRLLH 329
.....310.....320.....330.....340.....350.....360

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Rattus_norvegicus KALEAAQQEKRASSAYLAATEDRDLRLVVRHKVRIAEINQVRVEALEQDRERLVHEAGLR 395
Mus_musculus KALEAAQQEKRASSAYLAATEDRDLRLVVRHKVRIAEINQVRVEALEQGRERLAHEAGLR 396
Homo_sapiens KALEAAQQEKRASSAYLAAAEKDRDLRLVVRHKVRIAEIGRRVEALEQERESLAHTASLR 393
Pan_troglodytes KALEAAQQEKRASSAYLAAAEKDRDLRLVVRHKVRIAEIGRRVEALEQERESLAHTASLR 393
Macaca_mulatta KALEAAQQEKRASSAYLAAAEKDRDLRLVVRHKVRIAEIGRRVEALEQERESLAHTASLR 391
Callithrix_jacchus KALEAAQQEKRASSAYLAAAEKDRDLRLVVRHKVRIAEIGWRVEALEQERESLAHTVSLR 393
Canis_lupus_familiaris KALEAAQQEKRASSAYLASAGEKDRDLRLVVRHKVRIAEIGRLEALEQERDSLIVOTASLR 392
Equus_caballus KALEAAQQEKRASSAYLAAAEKDRDLRLVVRHKVRIAEIGRRVEALEQEREGLVOTASLR 396
Bos_taurus KALEAAQQEKRVSSAYLAAAEKDRDLRLVVRHKVRIAEIGRRVEALERERESLAQTASLR 395
Pavo_muticus KALEAAQQEKRVSSMYLTAAEKDRDLRLVVRHKVRIADLTSRLEALEQEKKELEQILALR 396
Pavo_cristatus KALEAAQQEKRVSSMYLTAAEKDRDLRLVVRHKVRIADLTSRLEALEQEKKELEQILALR 396
Gallus_gallus KALEAAQQEKRVSSMYLTAAEKDRDLRLVVRHKVRIADLTSRLEALEQEKKELEQILTLR 395
Anas_platyrhynchos KALEAAQQEKRVSSMYLTAAEKDRDLRLVVRHKVRIADLTSRLEALEQEKKELEQMLALR 404
Chelonia_mydas KALEAAQQEKRASSRYLAAAEKDRDLRLVVRHKVRIEIVLSNRVEALETDDKELEQSLALR 408
Rhinatrema_bivittatum KALEAAQQEKRASSAYLAAAEKDRDLRLVVRHKVRIEIVLGRVEALERDRRELSESLALK 389
.....370.....380.....390.....400.....410.....420

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Rattus_norvegicus EQQVQALQOHVQLLMDKNQAKQOVICKLSQKLTEDLAQFPQ-----PADATNGDFLSQOER 450
Mus_musculus EQQVQALQOHVQLLMDKNHAKQOVICKLTQKLTEDLAQP-----ADATNGDFLSQOER 449
Homo_sapiens EQQVQELQOHVQLLMDKNHAKQOVICKLSEKVTQDFTHPPDQSPLRPDAANRDFLSQOQK 453
Pan_troglodytes EQQVQELQOHVQLLMDKNHAKQOVICKLSEKVTQDFTHPPDQSPLRPDAANRDFLSQOQK 453
Macaca_mulatta EQEVQELQOHVQLLMDKNHAKQOVICKLSEKVTQDFTHPPDQSPLRPDAADRDFLSQOQK 451
Callithrix_jacchus EQQVQELQOHVQLLMDKNHAKQOVICKLSEKVTQDFTHPSDQSPLRPPNAADRDFLSQOQK 453
Canis_lupus_familiaris EQQVQELQOHVQLLMDKNQAKQOVICKLSEKVTQDFTHPPTQPPVPPGAADRDLDSQOQK 452
Equus_caballus EQQVQELQOHVQLLMDKNQAKQOVICKLSEKVTQDFMQPHNRPPAPPDAADRDFLSQOQK 456
Bos_taurus EQEIRELQOHVQLLLDKNQAKQOVICKLSEKVTQDFMK-----APEEADRDFLSQOQK 448
Pavo_muticus DSHIQELKEHVQLLMEKNHAKQOVIMALTEQKARELSDPLQE---ANTITAETLYKQOQE 453
Pavo_cristatus DSHIQELKEHVQLLMEKNHAKQOVIMALTEQKARELSDPLQE---ANTITAETLYKQOQE 453
Gallus_gallus DSHIQELKEHVQLLMEKNHAKQOVIMALTEQAREHSDPLQE---ANTITAETLYKQOQE 452
Anas_platyrhynchos DSHIQELKEHVQLLMEKNHAKQEVIMALTEQARELSDPLQE---ANTITAETLYKQOQE 461
Chelonia_mydas DNRVEELQKHVQLLMDKNYAKQOVILKLTQVVLDSLSEPAQE---ADAVAADTLHKQOQE 465
Rhinatrema_bivittatum DEHITELTEHVQLLMEKNSIKQOYIVKLTDHIRSTDLAGRD---TEAVTTETMHQHLAK 446
.....430.....440.....450.....460.....470.....480

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Rattus_norvegicus LEHLKDDMEAYRTQNRFLNSEIHQVTKIWRKVAAEKEKALLTKCAYLQARNCOVESKYLALG 510
Mus_musculus MEHLKDDMEAYRTQNRFLNSEIHQVTKIWRKVAAEKEKALLTKCAYLQARNCOVESKYLALG 509
Homo_sapiens IEHLKDDMEAYRTQNCFLNSEIHQVTKIWRKVAAEKEKALLTKCAYLQARNCOVESKYLALG 513
Pan_troglodytes IEHLKDDMEAYRTQNCFLNSEIHQVTKIWRKVAAEKEKALLTKCAYLQARNCOVESKYLALG 513
Macaca_mulatta IEHLKDDMEAYRTQNRFLNSEIHQVTKIWRKVAAEKEKALLTKCAYLQARNCOVESKYLALG 511
Callithrix_jacchus IEHLKDDMEAYRTQNRFLNSEIHQVTKIWRKAAEKEKALLTKCAYLQARNCOVESKYLALG 513
Canis_lupus_familiaris MEQLKDDMEAYRTQNRFLNSEIHQVTKIWRVVAEKERALLMKCAYLQAKNCQVESKYLALG 512
Equus_caballus MEHLKDDMEAYRTQNRFLNSEIHQVTKLWRRVAERQKALLMKCAYLQAKNCQVESKYLALG 516
Bos_taurus MEHLKDDMEAYRTQNRFLNSEIHQVTKIWRKVAAEKEKALLMKCAYLQAKNCQVESKYLALG 508
Pavo_muticus IEHLKDDIDAYKTQNFNLNSEIHQVTRLWTRVAENEKALLMKCAYLQAKNCQMESKYLTIV 513
Pavo_cristatus IEHLKDDIDAYKTQNFNLNSEIHQVTRLWTRVAENEKALLMKCAYLQAKNCQMESKYLTIV 513
Gallus_gallus IEHLKDDIDAYKTQNFNLNSEIHQVTRLWTRVAENEKALLMKCAYLQAKNCQMESKYLTIV 512
Anas_platyrhynchos IEHLKDDIDAYKTQNFNLNSEIHQVTRLWTSAAENEKALLMKCACLQARNCOVESKYLTIV 521
Chelonia_mydas IEHLKDDLDAYRTQNFNLNSEIHQVTKLWRSVAEKEKALLMKCARLQARSQVESKYLMML 525
Rhinatrema_bivittatum IEHLQDDIEAYKTQNFNLNSEIHQVTNIWRNVAEKEKALLMKSAYLEAKNCQIESKYLTIV 506
.....490.....500.....510.....520.....530.....540

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Rattus_norvegicus LRRLEAAGAEFGDFPELLQQLVQEALOWEAGEAS--DSVGLSPVS--EYDDYGFLTVPD 566
Mus_musculus LRRLEAAGAEAGDFPELLQQLVQEALOWEAGEA---DSVGLSPVS--EYDDYGFLTVPD 564
Homo_sapiens LRRLEAALGDEASECSELLRQLVQEALOWEAGEASS--DSIELSPIS--KYDEYGFLTVPD 570
Pan_troglodytes LRRLEAALGDEASECSELLRQLVQEALOWEAGEASS--DSIELSPIS--KYDEYGFLTVPD 570
Macaca_mulatta LRRLEAALGDETSECSELLRQLVQEALOWEAGEASS--DSIELSPIS--KYDEYGFLTVPD 568
Callithrix_jacchus LQRLQEAALGDEPSKCSSELLRLIQEALOWEAGEASA--DSIELSPIS--EYDEYGFLTVPD 570
Canis_lupus_familiaris LRRLEAVGGEATECSELLRLIQEALOWEAGEASA--DGVELSPIS--EYDEYGFLTVPD 569
Equus_caballus LRRLEAVGDEASECSELLRQLVQEALOWEAGEASA--DSGVLSPIS--EYDEYGFLTVPD 574
Bos_taurus LRRLEAALGVEAGECSELLRQLIQEALOWEAGEASA--DSVVLSPSTISEYDEYGFLTVPD 567
Pavo_muticus LRKLQETVCGLPSSHAELVRNLIQEA LRWDVKEGAD---LNLNPVS--EYDEYGFMTVPD 568
Pavo_cristatus LRKLQETVCGLPSSHAELVRNLIQEA LRWDVKEGAD---LNLNPVS--EYDEYGFMTVPD 568
Gallus_gallus LRKLQETVCGLPSSHAELVRNLIQEA LRWDVKEGAD---LNLDPVS--EYDEYGFMTVPD 567
Anas_platyrhynchos LRKLQETVGPLSSDAELVRNLIQEA LRWDVKEGAEF---GLNLNPVS--EYDEYGFMTVPD 578
Chelonia_mydas LRRLEAASPGLASSDAELVKS LIQEA LRWDAKEEAAE--ALQLNPVR--EYDDYGFM TIPK 582
Rhinatrema_bivittatum LRKLQEAALPELDTEYRDMVKS LIEDALOGAGKEGAGESITRLNLVS--EYDEYGFMTIIPD 564
.....550.....560.....570.....580.....590.....600

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Rattus_norvegicus YEVEDLKLLAKIQALEVRSHHLLALEAVERPLRDRWATLTLMPSAELKQLLRAGVPREH 626
Mus_musculus YEMEDLKLLAKIQALEVRSHHLLAHEAVERPLRDRWATLTLMPSAELKQLLRAGVPREH 624
Homo_sapiens YEVEDLKLLAKIQALESRSHHLLGLEAVDRPLRERWAALGDLVPSAELKQLLRAGVPREH 630
Pan_troglodytes YEVEDLKLLAKIQALESRSHHLLGLEAVDRPLRERWAALGDLVPSAELKQLLRAGVPREH 630
Macaca_mulatta YEVEDLKLLAKIQALEVRSHHLLGLEAVDRPLRERWAALGELVPSAELKQLLRAGVPREH 628
Callithrix_jacchus YEVEDLKLLAKIQALEVRSHHLLGLEAVDRPLRERWAALDELVPSAELKQLLRAGVPREH 630
Canis_lupus_familiaris YEMEDLKLLAKIQALEVSHHLLAHEAVERPLRERWAALSDLAPSVELKQLLRAGVPREH 629
Equus_caballus YEVEDLKLLAKIQALEVCSHHLLAHEAVERPRERWAALGELAPSVELKQLLRAGVPREH 634
Bos_taurus YEVEDLRLAKIQALEVSHHLLAHEAVERPLRERWATLGELAPSVELKQLLRAGVPHEH 627
Pavo_muticus YEVEDWKLAKIQALEMKSNNLRSQEVVEKPLRDRWNSIGELSPSAELKSLIRSGIPVEH 628
Pavo_cristatus YEVEDWKLAKIQALEMKSNNLRSQEVVEKPLRDRWNSIGELSPSAELKSLIRSGIPVEH 628
Gallus_gallus YEVEDWKLAKIQALEMKSNNLRSQEVVEKPLRDRWNSIGELSPSAELKSLIRSGIPVEH 627
Anas_platyrhynchos YEVEDWKLAKIQALEIKSNNLRSQEVVEKPLRDRWNGVSELSPSAELKSLIRSGIPVEH 638
Chelonia_mydas YEVEDWKLAKIQALEIKSNNLLSHMVVEKPLRERWAGMAELSPSAELKSLIRCGVPMEH 642
Rhinatrema_bivittatum YEVEHLKLLAKIQALEIRSHNLLSHEAVEKPLCARWNSLAELTPSVELKNLIRCGIPGEH 624
.....610.....620.....630.....640.....650.....660

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Rattus_norvegicus RPRVWRWLVRVQHLLHSSGQCYQELLARGRACEHPAARQIELDLNRTFFPNKHFTCP TSS 686
Mus_musculus RPRVWRWLVRVRRHLQAPGQCYQELLARGRACEHPAARQIELDLNRTFFPNKHFTCP TSS 684
Homo_sapiens RPRVWRWLVRVHLRQHLLHTPGCYQELLSRGQAREHPAARQIELDLNRTFFPNKHFTCP TSS 690
Pan_troglodytes RPRVWRWLVRVHLRQHLLHTPGCYQELLSRGQAREHPAARQIELDLNRTFFPNKHFTCP TSS 690
Macaca_mulatta RPRVWRWLVRVHLRQHLLHTPGCYQELLSRGQAREHPAARQIELDLNRTFFPNKHFTCP TSS 688
Callithrix_jacchus RPRVWRWLVRVHLRQHLLHTPGCYQELLSRGQAREHPAARQIELDLNRTFFPNKHFTCP TSS 690
Canis_lupus_familiaris RPRVWRWLVRVHLRQHLLQSPGRYQELLSRGQVCEHPAARQIELDLHRTFFSNKHFTCP TSN 689
Equus_caballus RPRVWRWLVRVRRVQHLLQAPGRYQELLSRGQACSQPATRQIELDLNRTFFPNKHFTCP SSS 694
Bos_taurus RPRVWRWLIRLRVQHLLQAPGQCYQALLSRGQACKHSAARQIELDLNRTFFPNKHFTCP TSS 687
Pavo_muticus RQRVWKWIVSQHCS--YLPDHYQRLLRQSKSTEHPACRQIELDLPRTLTNNKHFS SPTSQ 686
Pavo_cristatus RQRVWKWIVSQHCS--YLPDHYQRLLRQSKSTEHPACRQIELDLPRTLTNNKHFS SPTSQ 686
Gallus_gallus RQRVWKWIVSQHCS--YLPDHYQRLLRQSKSTEHPACRQIELDLPRTLTNNKHFS SPTSQ 685
Anas_platyrhynchos RQRVWRWIVSRHCS--RLPDHYQRLLRQSKSTEHPACRQIELDLPRTLTNNKYFS SPTSQ 696
Chelonia_mydas RQRVWKWIVSQHLSHHYPANHYESLLQGKRTEHPAFRQIELDLPRTLTNNRHFTSPTSQ 702
Rhinatrema_bivittatum RHRVWKWMSGRRVRHIRSTSRYESLLQKCENTEHPASRQIELDLHRTLTNNKYFS SPTS E 684
.....670.....680.....690.....700.....710.....720

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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: *****: *: *****: *****: *: ***** **.: *: **
Rattus_norvegicus  FPDKLRRVLLAFSWQNPTIGYCOGLNRLAAIALLVLEDEESAFWCLVAIVETILPAEYYS 746
Mus_musculus      FPDKLRRVLLAFSWQNPTIGYCOGLNRLAAIALLVLEDEESAFWCLVAIVETILPAEYYS 744
Homo_sapiens       FPDKLRRVLLAFSWQNPTIGYCOGLNRLAAIALLVLEEEESAFWCLVAIVETIMPADYYC 750
Pan_troglodytes    FPDKLRRVLLAFSWQNPTIGYCOGLNRLAAIALLVLEEEESAFWCLVAIVETIMPADYYC 750
Macaca_mulatta     FPDKLRRVLLAFSWQNPTIGYCOGLNRLAAIALLVLEEEESAFWCLVAIVETIMPTDYYC 748
Callithrix_jacchus FPDKLRRVLLAFSWQNPTIGYCOGLNRLAAIALLVLEEEESAFWCLVAIVETIMPADYYC 750
Canis_lupus_familiaris FPDKLRRVLLAFSWQNPTIGYCOGLNRLAAIALLVLEEEESAFWCLVAIVETIMPADYYC 749
Equus_caballus     FPEKLRRVLLAFSWQNPSIGYCOGLNRLAAIALLVLEDEESAFWCLVAIVESIMPADYYC 754
Bos_taurus         FPDKLRRVLLAFSWQNPTIGYCOGLNRLAAIALLVLEDEESAFWCLVAIVETIMPADYYC 747
Pavo_muticus       LVPKLRRVLLAFSWHNPAIGYCOGLNRLAAVALLVLEDEENAFWCLVHIVENLMPADYYC 746
Pavo_cristatus     LVPKLRRVLLAFSWHNPAIGYCOGLNRLAAVALLVLEDEENAFWCLVHIVENLMPADYYC 746
Gallus_gallus      LIPKLRRVLLAFSWHNPAIGYCOGLNRLAAVALLVLEDEENAFWCLVHIVENLMPADYYC 745
Anas_platyrhynchos LIPKLRRVLLAFSWHNPAIGYCOGLNRLAAVALLVLEDEESAFWCLVHIVENLMPADYYC 756
Chelonia_mydas     LVPKLRRVLLAFSWQNPAIGYCOGLNRLAAIALLVLEEEESAFWCLVHIVENLMPADYYC 762
Rhinatrema_bivittatum LVQKLRRVLLAFSWQNPTIGYCOGLNRLAALALLVLEEEESAFWCLVDIVENIMPVEYYS 744
.....730.....740.....750.....760.....770.....780

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Rattus_norvegicus  KTLTASQVDQRVLDLLSEKLPRLTAHLGQHRVDLSLITFNWFLVVFADSLISDILLRVW 806
Mus_musculus      KTLTASQVDQRVLDLLSEKLPRLTAHLGQHRVDLSLITFNWFLVVFADSLISDILLRVW 804
Homo_sapiens       NTLTASQVDQRVLDLLSEKLPRLMAHLGQHHVDLSLVTFNWFLVVFADSLISNILLRVW 810
Pan_troglodytes    NTLTASQVDQRVLDLLSEKLPRLMAHLGQHHVDLSLVTFNWFLVVFADSLISNILLRVW 810
Macaca_mulatta     NTLTASQVDQRVLDLLSEKLPRLMAHLGQHHVDLSLITFNWFLVVFADSLISNILLRVW 808
Callithrix_jacchus NTLTASQVDQRVLDLLSEKLPRLMAHLGQHHVDLSLITFNWFLVVFADSLISNILLQVW 810
Canis_lupus_familiaris KTLTSSQVDQRVLDLLLEKLPRLMAHLGQHRVDLSFITFNWFLVVFADSLISNILLRVW 809
Equus_caballus     KTLTSSQVDQRVLDLLSEKLPRLMAHLGQHRVDLSFITFNWFLVVFADSLISSILLQVW 814
Bos_taurus         KTLTASQVDQRVLDLLLEKLPRLMAHLGQHRVDLSFITFNWFLVVFADSLISNILLQVW 807
Pavo_muticus       DTLITSQVDQRVFKDFLAEKLPRLMAHFEQHQIDVSLITFNWFLVAFVDSLVS DILLRVW 806
Pavo_cristatus     DTLITSQVDQRVFKDFLAEKLPRLMAHFEQHQIDVSLITFNWFLVAFVDSLVS DILLRVW 806
Gallus_gallus      DTLITSQVDQRVFKDFLAEKLPRLMAHFEQHQIDVSLITFNWFLVAFVDSLVS DILLRVW 805
Anas_platyrhynchos DTLITSQVDQRVFKDFLAEKLPRLTAHFEQHQIDVSLITFNWFLVAFVDSLVS DILLRVW 816
Chelonia_mydas     DTLIASQVDQRVFKDFLSEKLPRLTAHFEQHRIDVSLITFNWFLVAFVDSLVS DILFRVW 822
Rhinatrema_bivittatum KTLAASQVDQRVFKDFLAEKLPRLTAHFEQHRIDLSLITFNWFLVVFVDSLVS DILLRVW 804
.....790.....800.....810.....820.....830.....840

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***** **: *****: *****: :*: *: ** *: ** *: ** *: ** *: **
Rattus_norvegicus  DAFLYEGTKVVFRYALAIKFYNEEAILRLQDSLEIYQYLRFFTKTICDSRKLTSTIAFNNDM 866
Mus_musculus      DAFLYEGTKVVFRYALAIKFYNEEAILRLQDSLEIYQYLRFFTKTICDSRKLMSTIAFNNDM 864
Homo_sapiens       DAFLYEGTKVVFRYALAIKFYNEKEILRLQNGLEIYQYLRFFTKTISNSRKLMNIAFNNDM 870
Pan_troglodytes    DAFLYEGTKVVFRYALAIKFYNEKEILRLQNGLEIYQYLRFFTKTISNSRKLMNIAFNNDM 870
Macaca_mulatta     DAFLYEGTKVVFRYALAVFKYNEKEILRLHNGLEIYQYLRFFTKTISNSRKLMNIAFNNDM 868
Callithrix_jacchus DAFLYEGTKVLFYALAIKFYNEKEILRLQNGLEIYQYLRFFTKTISNSRKLMNIAFNNDM 870
Canis_lupus_familiaris DAFLYEGTKVVFRYALAIKFYNEEEILRLQDGLEIYQYLRFFTKTICNSQKLMNIAFNNDM 869
Equus_caballus     DAFLYEGTKVVFRYALAIKFYNEEEILRLQDGLEICQYLRFFTKTICDSRKLMSTIAFNNDM 874
Bos_taurus         DAFLYEGIKVVFRYALAIKFYNEEALLRLQDSLEIYQYLRHFFTKTICDSRKLMHIAFNNDM 867
Pavo_muticus       DAFLYEGTKVIFRYALAIKFYNEEEILRIHDSVEIYQYLRFFTRMIVDGRKLMNIAFNNDL 866
Pavo_cristatus     DAFLYEGTKVIFRYALAIKFYNEEEILRIHDSVEIYQYLRFFTRMIVDGRKLMNIAFNNDL 866
Gallus_gallus      DAFLYEGTKVIFRYALAIKFYNEEEILRIHDSVEIYQYLRFFTRMIVDGRKLMNIAFNNDL 865
Anas_platyrhynchos DAFLYEGTKVIFRYALAIKFYNEEEILRIHDSVEIYQYLRFFTRMIVDGRKLMNIAFNEL 876
Chelonia_mydas     DAFLYEGTKVIFRYALAIKFYNEEEILRIHDSLEVIYQYLRFFTHMTGDGRKLMSIAFSDM 882
Rhinatrema_bivittatum DAFLYEGTKVIFRYALAIKFYNEEQILRINDSAEVIYQYLTFFTKTICDGRKLMNIAFNEM 864
.....850.....860.....870.....880.....890.....900

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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*** ** *:: * * .:::** *** :* * :: : : . . . :
Rattus_norvegicus NPFFPMKQLRQLRAAHRERLEAELRELELLKAEY--LERRASRGRAVPEGCVSEDEGEEDS 924
Mus_musculus NPFFPMKQLRQLRAAHRERLEAELRELELLKVEY--LQRRASLGRAPPEGCVSEDEGEEDS 922
Homo_sapiens NPFRMKQLRQLRMVHRERLEAELRELEQLKAEY--LERRASRRRAVSEGCASEDEVEGEA 928
Pan_troglodytes NPFRMKQLRQLRMVHRERLEAELRELEQLKAEY--LERQASRRRAVSEGCASEDEVEGEA 928
Macaca_mulatta NPFRMKQLQLRMAVHRERLEAELRELEQLKAEY--MERRTSQRRAMSDSCASEDEVEGEA 926
Callithrix_jacchus NPFRMKQLRQLRIIHRERLEAELQELEQLKAEY--LERRTSQGRAVPEGCASEDEGEGEA 928
Canis_lupus_familiaris NPFFPMKQLRQLRTAHRERLEAELHELEQLKAEY--LETNRNRDPAVPEGCTKHFSTDEQE 927
Equus_caballus NPFFPMKQLRQLRTAHRERLEAELQELEQLKAAAY--LETQASRLPAVPEACASEDELDDGEA 932
Bos_taurus NPFFPMKQLRQLRAAHRERLEAELNELEQLKAEY--LETAAQGPAPVPEGSPSEDEGEAEP 925
Pavo_muticus NPFFPMKLLRNRRRIHRGELEAELCELEQIKAAY--VKGRAEQGSRGLEEVVSEEEEEII-- 922
Pavo_cristatus NPFFPMKLLRNRRRIHRGELEAELCELEQIKAAY--VKGRAEQGSRGLEEVVSEEEEEII-- 922
Gallus_gallus NPFFPMKLLRNRRRIHRGELETELCELEQIKAAY--VKGRAEQGSRGLEEVVSEEEEEII-- 921
Anas_platyrhynchos NPFFPMKLLRNRRIMHREELETELCELEQIKAAY--VKERAEQGPQDLQDAVSEEEEEII-- 932
Chelonia_mydas NPFFPMKVLNRNRATHRAELEAELSELERIKAQY--VKEQAEQVTWHLDGAVSEEEEEEM-- 938
Rhinatrema_bivittatum NPFFPMKQLONRRAAHMEKLKAELELERIKEEYKVKEDLGTEDLDEGVSEDEEDT-- 922
.....910.....920.....930.....940.....950.....960

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Rattus_norvegicus ----- 924
Mus_musculus ----- 922
Homo_sapiens ----- 928
Pan_troglodytes ----- 928
Macaca_mulatta ----- 926
Callithrix_jacchus ----- 928
Canis_lupus_familiaris YAVSEGNLNL 938
Equus_caballus ----- 932
Bos_taurus ----- 925
Pavo_muticus ----- 922
Pavo_cristatus ----- 922
Gallus_gallus ----- 921
Anas_platyrhynchos ----- 932
Chelonia_mydas ----- 938
Rhinatrema_bivittatum ----- 922
.....970.

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