



PIROGI 718 SESIIFTIYKSWASASELLDPSFLFALDN..GEKFSIQP..VRFTALFKMTKVKILGRINIRSLIAQRMNRI  
HSPIR121 706 ADQIPEAYKAMAGSVVLLDKRFRRAECKNYGV..IIYPPPSNRMETLLKQRHVQOLLGRSIDDLNRLITORTSAA  
DMSRA1 727 SEQIIPAHYKQLAGSIFLDKRFRAECKNYGV..IIYPPPSNRMETLLKQRHVQOLLGRSIDDLNKLITQRIANAN  
CEGEX-2 721 SEMVFTHYKQLASCLLDKRFKAELRSCTMIRS..PSAARFESLLOQRHVQOLLGRSVDLNRVVSQRVNMA  
DDPIR121 696 SGKVYTHFKTOASILLDKYKTKOLELAHFNGKLHTPKSREFVLLRQHITLTLGRSIDICGLLAQRONNT

PIROGI 785 FRENLEFLFDRFESQDLCAVVELEKLIDILKHSHELLSQDL..SIDPFSLMLNEOENISLVSFSSRLATQ  
HSPIR121 775 MYKSLSBQAISRFESEDLTSIVELEWLLEINRLTHRLLCKH..TLDSDFDAMFREANHNVS..AFYGRITLH  
DMSRA1 797 MHKSIELAISRFEGNDITIGIVELEGGLLEANRICHKLLSKYI..ALDNNFDGMVKKEANHNVL..AFYGRITLH  
CEGEX-2 790 ILKALDAAIWKFSEPEPLSSIVELDMLIDTNRLCHTILLSDVHHSIAFPFDDIFQEAHNAVN..SFHGRITLH  
DDPIR121 766 IIRQNLDYAIISRFEECDLTSIVELETQIANIKLTHKLLEYF..IDPFESIFNETNESTSLVSYHGRIVLH

*pir-1(Δ910-1282)↓*

PIROGI 854 IWSMEMCSDFLPNITLCLNTTDFVRS...SKVPPTQKPSVSAKPSFYCYCTQDLNAAHQSFARLHSGFG  
HSPIR121 842 VFVWELNEDFLPNWCYNGSTNRFVRTAIF..T.QEPORDKPANVQPYLYVGSKPLNIAYSHIYSSYRNFWVG  
DMSRA1 884 VFVWELNVYDFLVNYCYNAATNRFIRIKVNLSSQAIQREKPPQMSHYYLWGSKQLNAAYSTQYGQYTGFVG  
CEGEX-2 858 VFVWELNDFVPMVYNGSTERFVRARHVFRTK..PAREKPPQVGVYYWGSKSMAAFMNICNAYSOCIG  
DDPIR121 835 IIEFELVADFAPNYTFENSITORFIKAPYF..T.EELKRDALKTNPVFELFGNKYLNAAYANSIELYKNFIG

PIROGI 920 IPHLFSIVKLLGCSRSLPWLIALLDHISNKIT..TLEPMISGLQEALPKSIGLLSFDTGGVTCCMKLIREQ  
HSPIR121 910 PPHFKTITCRLLGYQGIAVVMEFLLK..IVKSLLOGTILQYVKKLLEVMPKICRLPRHEYGSPGITLEFFFHQ  
DMSRA1 934 SPFHACMRLLGYOGIAVVMDIILKDIIVKPLIQSLLQFTKILMIAAMPKSCKLPRCEYGSPGVLSYYQAH  
CEGEX-2 926 TQHLKAITRLLHYQGIAVILEELLK..MTNRLNDKTRRHVNIVFNMPVCKLPRSDYGSNALLQYYVHH  
DDPIR121 903 VPHIQTISLRIVGKKNLPLIVAEVLRNTEIKITN..VLSPYVSELILQGMBASTKLPYIODYGTECGYGYFQIK

PIROGI 988 LNWGTKSELKSEVLRGIKEITGSVIYTMGLLDIVIREVDTKRFMQTAPWLGGLIPGAEGQIVNAQDGESPL  
HSPIR121 979 LKDIIBYAEALKITDVFQSLREVGNAILFQLLIEQUALSQEEVCDLLHAAPFQNILPRVY..IIEGERLEVRM  
DMSRA1 1004 LTDIVQYPDAKTELQFOSFREGNSIIIFQLLIEQUALSQEEVCDLLHAAPFQNIFPRP..CKENEKPEAKO  
CEGEX-2 995 LEAVGKYPELKSFCQDLRELGNMIVFCQOOLVALGQEEADLFLAAYITGTVPQP..ARNAQEQMQL  
DDPIR121 972 LKDIYIYPDLRPEVLTQFRELGNSLVEMNLLQDVITQTDSYNFAKAAPFLGITPETWKDLEPSTEDEPTLQ

PIROGI 1057 VNLLKSATSA..VVSSPGCINPAAFYTMMSKQAE..ADLLYKANVNGG..SVLEYDIAFTSASIDDKYCSKW  
HSPIR121 1047 KRLEAKYMAPL.HVPLPLIERLGT..QQIAIAREGDLLTTERLCCGLSMFEVILTRIRSVL..QDPFW  
DMSRA1 1072 KRLEAQFANL.QIVSNVEKIGTA..KQAMIAREGDLLTTERLCCGLSIFEVILNRVKSXL..DDPVW  
CEGEX-2 1063 AKLEDKYSRI.HUTEIIDKISPD..DGQAAIAKDAELMTKERLCCGINAFENPLVRIKOMI..AADDW  
DDPIR121 1042 SPLYSQLQKLAQLESRPEVAKSSQSLNDMVANWRADKFYRPS..QNFSLFKSMLQRFSSILNIVRHWD

PIROGI 1122 SAPPKTGFVDTTSKDFYRIYGLQIGYLEEI..TAPQSAQHEVLGDSIAWGGCTIIFYLLGQQLHFELEFD  
HSPIR121 1109 RGPPPPIQVMHVDECVEFHRLWSAMQFVYCIPVG..TNEFTAQCFGDGLNWAGCSIIVLLGQQRFDLFD  
DMSRA1 1134 CGPPPPANGIIHVDECSEFERLWSALQFVYCIPVR..GTEYIIEELFGEGLNWAGCVMIVLVLGQQRFEALD  
CEGEX-2 1127 TGGYPPIQGVWIDECVWYRVYISALQFFLCOPTRDDNEVYAEELFGDSLQWGGLTLITLLGQHRRFEALD  
DDPIR121 1111 SGAPPDNGVICVDSSTEFYRLWSALQFVICP..SNEENDKSFHFLFGDGLMWAGCSIHFLGQQYRFELFD

PIROGI 1190 FSYQVILNVESETVSASHTHNPQIHCWEGGLLEGMKKARLNNHVFSMLKARCPLEDKTACAIIKQSGAP  
HSPIR121 1178 FCYHILLKVRQD..GKDEIITKVNPLKK..MADRIRKYQILNNNEVFAILNKYIKSVETDSSIVEHVRQCF  
DMSRA1 1203 FCYHILLFVQRVD..GKDEDVKGSQLKRM..MVDRIRRQVILNSQIFSILNKYIKGGDGEGSNVEHVRQCF  
CEGEX-2 1197 FCYHILFVNVKAD..GKDEVISGIRLAK..MVERIRRQVILNNQIFILENQNEENNDPN..ERVRPF  
DDPIR121 1181 FCYHILNVEEAA..AVRSDKPA..LKN..FFKNAQIICKDINNQIFSILNTYCP..PPPPSNMILSPPA

PIROGI 1260 LPRVR..FENTVSAFETLPQKGTVG--  
HSPIR121 1243 QPPPIHQSLATTI--  
DMSRA1 1266 PPPQHPSPVISSSSHYQDPQKLRQSINN--  
CEGEX-2 1247 APPVHPNYANHAARO--  
DDPIR121 1241 TEQAEQFTVTTTVEEQSIQQQQQQQQQQLQQSTSNSGSSLSAAGAPPFFFFSTNGLPPPPMAEYE

PIROGI 1282 -----  
HSPIR121 1254 -----  
DMSRA1 1292 -----  
CEGEX-2 1263 -----  
DDPIR121 1313 MSSSIDDFAPPPPPFGMPPPPM