

# PARP9

## Sequences :

>NP\_001139574.1 protein mono-ADP-ribosyltransferase PARP9 isoform a [Homo sapiens]  
MDFSMVAGAAAYNEKSGRITSLSLLPQKVFAQIFPQWRKQNTCECLPYKCSETGALGENYSWQIPINHND  
FKILKNNERQLCEVLQNKFGCISTLVSVPQEGNSKSLQVFRKMLTPRIELSVWKDDLTHAVDAVNAAAN  
EDLLHGGGLALALVKAAGFEIQEESKQFVARYGKVSAGEIAVTGAGRLPCKQIIHAVGPRMWMDDKQCGT  
GKIQRAIVSILNVIYKNTHTKVAIPALSSGIFQFPLNLCTKTIVETIRVSLQGKPMMSNLKEIHLVSN  
EDPTVAFAKASEFILGKSELGQETTPSFNAMVNNLTQLQIVQGHIEWQTADVIVNSVNFHDITVGPVAK  
SILQQAQGVEMKSEFLATKAKQFQRSQSLVLTGFGNLFCKYIYHVLMHSEFFPKPQILKHAMKECLEKCEIQ  
NITSISFPALGTGNMEIKKETAAEILFDEVLTFAKDHVKHQLTVKFVIFPTDLEIYKAFSSEMAKRSKML  
SLNNYSVPQSTREEKRENGLEARSAINLMGFNVSEMYEAHAWIQRIILSLQNHIIENNHHILYLRKKEHD  
ILSQLQKTSVSIITEIISPGRTELEIEGARADLIEVVMNIEDMLCKVQEEEMARKKERGLWRSILGQWTIQQ  
KTKQDEMKENIIFLKCPVPPTQELLDDQKKQFEKCGQLVKVEKIDNEVLMAAFQRRKKMMEELHRQPV  
HRLFQQVPYQFCNVVCRVGFQRMYSTPCDPKYGAGIYFTKNLKNLAEKAKKISAADKLIYVFEAEVLTGPF  
FCQGHPLNIVPPPLSPGAIDGHDSVVDNVSSPETFVIFSGMQAIPQYLWCTCTQEVVQSQDYSSGPMRPPFA  
QHPWRGFASGSPVD

>XP\_002813263.1 poly [ADP-ribose] polymerase 9 isoform X1 [Pongo abelii]  
MDFSMVAGATAYNEKSETGALGENYSWQIPINHNDFNILKNNERQLCEVLQNKFGCISTLVSVPREGNSK  
SLQVFRKMLTPRIELSVWKDDLTHAVDAVNAAANEDLLHGGGLALALVKAAGFEIQEESKQFVARYGKV  
SAGEIAVTGAGRLPCKIIHAVGPRMWMDDTQCGIKLQRAIVSILNVIYENHITKVAIPALSSGIFQ  
FPLNLCTTTIVETIRVNLQGRPMMSNLKEIHLVSNEDPTVAFAKASEFILGKSELGQETTPSFNAMVNV  
NLTLQIVQGHIERQTADVIVNSVNFHDITVGPVAKSILQQAQGVEMKSEFLATKAKQFQRSRLVLTGFGN  
LSCRYIYHVLMHSEFFPKPQVLKHAMKECLEKCEIQNITSISFPALGTGNMEIKKETAAEILFDEVLTFAK  
DHVKHQLTVKFVIFPTDLEIYKAFSAEMAKRSKMLSLNNYSVPQSTREEKRENGLEARSAINLMGFNME  
EVYEAHAWIQRIILSLQNHIIENNHHILYLRKKEHDILSQLQKTSVSIITEIISPGRTELEIEGAQADLIE  
VVMNIEDMLCKVQEEVARKKERGLWRLLGRRTNQKQTKQDEMKENIIFLKYPAPPTQELLDDQKKQFEKCG  
LQVMKEKIDNEVLMAAFQRRKKMMEELHRQPVSHRLFQQVPYQFCNVVCRVGFQRMYSVPCDPKYGAG  
IYFTKNLKNLAEKAKKISAADKLIYVFEAEVLTGSCFQGHLLNIVPPPLSPGAIDGHDSVVDNVSSPETF  
VIFSGMQAIPQYLWCTCTQEVVQSQDYSSGPMRPPFAQHPWNGFTSGSPVD

>XP\_006522818.1 protein mono-ADP-ribosyltransferase PARP9 isoform X1 [Mus musculus]  
MAYYMDTMAAAPAERPGMIASLSLSPFKKFAELFPQRRRGHSEGDPPLRGSSANNSEEHYRWQIPIKHN  
VFIEILKSNESQLCEVLQNKFGCISTLSCPTLAGSSSPAQRVFRRTLIPGIELSVWKDDLTRHVVDAVNAA  
ANENLLHGSGLAGSLVTKGGFEIQEESKRIIANVGKISVGGIAITGAGRLPCHLIIHAVGPRMTVNSQT  
AIELLKFARNILDYVTKYDLRIKTVAIIPALSSGIFQFPLDLCTSIILETIRLYFDQKQMFGNLRIEHLV  
SNEDPTVASFSKASESILGRDLSSWGGPETDPASTMTLRIGRGLTLQIVQGCIEMQTTDVIIVNSGYMDP  
KSGRVAGSILRQAQGVEMKEKLDKVNLSIDIQEVWVTKGFKLSQCIYVHVAVHWSQINKYQILKDAMKSCLE  
KCLKLPNINSISFALGTCMLMDLKKSTAAQIMFEVPAFAKEHKEKTLTVKIVIFPVDVETKYIYAEEMTK  
RSNELNLSGNSGALALQWSSGEQRRGGLAEGSPAINLMGVKVGEMCEAQEWIERLLVSLDHHIIENNHHIL  
YLKKEHDVLSLQTSRVSISETVSPRTATLEIKGPQADLIDAVMRIECMLCDVQEEVAGKREKNLWSL  
SGQGTNQOEKLDKMEESYTFQRYPASLTQELDRKKQFEKCGLWVVQVEQIDNKKVLAAPQEKKKMMEER  
TPKSGSGQRLLFQQVPHQCNTVCRVGFHRMYSYSNVPYAGIYFTKSLKNLADKKKTSSTDKLIYVFE  
AEVLTGSCFQGNSSNIIVPPPLSPGALDVNDNVSSPETIVVFNMGQAMPLYLWCTCTQDRFTSQHPWM  
SQGYSSGPGMWSSLQSMEWVLNGSSV

>XP\_040531610.1 protein mono-ADP-ribosyltransferase PARP9 isoform X1 [Gallus gallus]  
MGTYSQSQSETPKDESGETGPRMDEGSVMIPVNKDTYEALKKRENDRLNLVYKKFACTLTCTKRAAEVYRK  
VLGEGIHLLVYKDDLTHSKADAVNNAANESLEHSGALALALLNAGGPEIAEESRNFIRKHGKVPYTGKIAV  
TGGGKLPCKKIIHAIGPMWYSESEKCCCVLEEAVNVNLYASDPKNNIKSVAIPAVSSGVFGFPVNLCA  
QVTVMSIKLFVETQPSCLKEIHLVNICEQTVAEIKRACEMILGEGSSLQETVPASLSLPPVPVFIKHGNIRL  
RIIKYLEKIRTTAIVSSVSDGFCQSQISTAMLQKAGPTLQAEILSQLKHLHSSKELIVTSGYNLPSDF  
VLHVLWPCFNHVLLCEQLKEIVNRCLYFVRNYPLPSIAFPEKNWSLKLPAIVAEIMIEEVLDFARKPY  
ETKIDVQFVLHPDDDTTYQVFEKMMNLAASKLENNNRSDYLSTESSSQGRKETTNNKMAIELQRTHFAL  
KAAELWQSLVQTQKSHSAVIENNYIFSLGKKEYTELSRVKYSNVMSSEKVKDGKASLEFHGFPDAVIDA  
VLTTKEKLLFMQEQTTAKQELLRLIGQADTQLSEGHLDKTNTTKQFQMLQVDSHLQAFAKDRQKQFERT  
GLHLHLEKIHNPLLSAAQYQTKKNLEQKGVYSKGTGHLYQRVPAQFCTLVCQTFGPHRYSPFPDQRYGA  
GIYFKRNPNSLIEDDGKKETESKIYVFEADVLTGLYTKGKPSYIMPPAVEGDASMLYDSLVDIDNNPDTF  
VICNSLQALPCYLLTCSQVKESPMDL

>XP\_041434303.1 protein mono-ADP-ribosyltransferase PARP9 isoform X2 [Xenopus laevis]  
MEHSITFPISSEELYRPMQGIKETLTKLFAKKFSCQIEVKGPKYLALPGAQGSKLIVYEKKMPGGFRVSTWK  
GDLTMQDVEDAVNNAANDQLEHIGGLALALANAGGPVVEESRRHIEKNGKVKVTGSIATVSAGNLPCSWII  
HAVGPKWVDYKHSQCESELKEVITSILRHVNKDSRITSVAIPAVSSGIFGFPFLTCANILVQAIENFSQ  
VKCDHLQEIRLVNNDKDTVEAMRAACEKILGRSQNWSQIAQAANNQAAAPPYLSPLSINGLNLFLKKG  
NIEEQSNTIIVNSTSSSLDLHGQISNAILNKAGPELQHEIRKYLPPYPTGSMLPTLYRLLPCQFVYHTI  
LPFYSEWFGDPKQILNMLILQCLTQAANIPSQGQRSISFPTLGTGALGFPPIKTVAEIMIHFTFLQFAYNY  
PTMLDVYFVIHPKDEAYYKVFQDTVQTIQKSNINIRVAEEPRETSSQDEKICIIIRGNSSDVQEAETFLT  
QNILVPESIHNHIFLLGKKEHRSLSLSLHFSQAEISEVLNKGKASLEIKGSQKDLASAAVQVEMMLD  
AQEEHAEKLEDELFEASAVQMWYEGRKQMDCFPGDRNRIIEAYMSKSNTELSISGKQMSDFDINLTVKAA  
GTTYRLRYRECHLARDYIPRAHKGKTVAPLFLDLVNPSTKEFKDRAKEMKANLELVKVMVKIQNKVLSA  
VYQSIKSDNKGQVYKRVPSDFCKLIARVGFNRLYMGSGDAEYEGCICFNKQLEDVLEDPTGTGKLGVICF  
QAEVAPGLSETWNMLTPLASDVFSLYDSYMSIDKDPKKVIFDGHRRANPQYWFICWKWGSKV

>XP\_014034922.2 protein mono-ADP-ribosyltransferase PARP9 isoform X2 [Salmo salar]  
MAKSDNIPVEEEMVSIIGQCGPALTALQSKFGCTAVLHGVAASAGAGQSMKEPITFTSQLSKGLRVSV  
WRDDLTHTCGDAVNAAANEHLSHVGLAKALS DAGGPDIQRESDRYINAHGRLLTGVAIVASPGYLPCK  
KIITHVVGSPKPYKQKDDVINIATPKLEKAVRNIL EEMKKHNLKSVAIPAISSGLFPFLPLCADVIVKTL  
KQYHDHNSGAPLEVRVLVNHDDL SVGEMKRACCEILGSTVSHSQPAAAWGLPPKASYSKVVSHNGSTSM  
KNNVNSLNLKGYIETQKTSGIIVNTISSDLDSYGAIKAILQKAGKQIEEISKYNNYNGVDVIETTG  
HKLSRCRVYHTICPNRKQAFEKILGDVISKCLSMQKKTLSISFPAIGTGM LGFNKQEVQAIMVDTAVK  
FAKKNNGTIMDIYVYIPADTETYRAFEDKLSLQGAQTYSSSFNSASAQGFQFTTG YFDSRDPRESAQF  
YIELSSAFDETLEARHWYFSVLPPFKKDTIRNNFIHQFGQHEFEKLLTFQTKFKVSIEVFFKDGACG  
MNIHGASRDVIAAVFEVAMCCKVQEDFAKEEERDIGLRTSTSSPRNPVSESSSDYRHSRLDFSGLEIVR  
VEKVENSALKQVFLKKKQLAVSTSQRMVQRLPAQYCGLLNRVGFQREFAFPDQNYGEGIYFSGSVDA  
KKQWKRLADEVYLYFVEAQVLTGKSTHSGPLVPPVIPSIGNPITLYDSVKGGVDTVCVIFNGHQALPEYL  
IICKNNHAMSSDRN

[illegible]

XP_040531610.1[G.gallus]	SPPPDQRYGAGIYFKRNPNSLIEDDGKK-ETESKIYVFEADVLTGLYTKGKPSYIMPP-A	748
XP_006522818.1[M.musculus]	STSYNPVYGAGIYFTKSLKNLADKVKKTSSTDKLIYVFEAEVLTGSPCQGNSSNIIIP-P	790
NP_001139574.1[H.sapiens]	STPCDPKYGAGIYFTKNLKNLAEKAKKISAADKLIYVFEAEVLTGFFCQGHPLNIVPP-P	783
XP_002813263.1[P.abelii]	SVPCDPKYGAGIYFTKNLKNLAEKAKKISAADKLCVFEAEVLTGSPCQGHLLNIVPP-P	748
XP_041434303.1[X.laavis]	MGSQDAEYEGCICFNKQLDEVLEDPGT-KGLVCIF--QAEVAPGTLSET---WNMLPTP	789
XP_014034922.2[S.salar]	APPDVQNYGEGIYFSGVDGAKKQWKRL-ADEVYLYFVEAQVLTGKSTHGSPGLIVPPVI	738
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XP_040531610.1[G.gallus]	VEGDASMLYDSLVDINNPDFTFVICNSLQALPCYLLTCSQVKESPMDL-----	796
XP_006522818.1[M.musculus]	LSPGALDVNDVVDNVSSPETIVFNGMQAMPLYLWTCQDRTFSQHPMWSQGYSSGPGM	850
NP_001139574.1[H.sapiens]	LSPGALDGHDSVVDNVSSPETFVIFSGMQAIPQYLWTCQDEYVQ-----SQDYSSGPMR	837
XP_002813263.1[P.abelii]	LSPGALDGHDSVVDNVSSPETFVIFSGMQAIPQYLWTCQDEYVQ-----SQDYSSGPMR	802
XP_041434303.1[X.laavis]	LASDVFSLYDSYMDSIKDPKKVIFDGHRAFPQYWFICKWKGSKV-----	834
XP_014034922.2[S.salar]	PSGNPITLYDSVKG---GVDTCVIFNGHQALPEYLIICKNNHAMSSDKN-----	784
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XP_040531610.1[G.gallus]	-----	796
XP_006522818.1[M.musculus]	VSSLQSWEWVLNGSSV-	866
NP_001139574.1[H.sapiens]	PFAQHFWRGFASGSPVD	854
XP_002813263.1[P.abelii]	PFAQHFWMGFTSGSPVD	819
XP_041434303.1[X.laavis]	-----	834
XP_014034922.2[S.salar]	-----	784

### Percent identity matrix:

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# Percent Identity Matrix - created by Clustal2.1
#
#
1: XP_040531610.1[G.gallus] 100.00 37.60 39.84 39.92 36.29 34.29
2: XP_006522818.1[M.musculus] 37.60 100.00 61.76 62.45 34.83 35.22
3: NP_001139574.1[H.sapiens] 39.84 61.76 100.00 95.97 36.36 34.93
4: XP_002813263.1[P.abelii] 39.92 62.45 95.97 100.00 35.95 34.52
5: XP_041434303.1[X.laevis] 36.29 34.83 36.36 35.95 100.00 34.14
6: XP_014034922.2[S.salar] 34.29 35.22 34.93 34.52 34.14 100.00
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