

S1 MMENEDSELGSQSISSSG.SSEKMIVPKEPSHSHISSLKMSACGASATSDSAYGGSNTTQSQRRSGSDKRSHSSK..
S2 .MENEDSELGSQSISSSTGSSEKMIVPKEPSHSHISSLKMSACGASATSDSAYGGSNTTQSQRRSGSGKCSHSSSKESK

S1 SQNSSNSS...TNAGLEQPKARKEKEPKKRKSRRAIVPPVPAVPISTCSSTAASPD...NASASTSSWSPRPPAAV
S2 SQISSNSSSNFDPNGIEEPKPRKEKDPKKRKSRAIVPPIPSDNTLTSSTANTSVLTTSVSSSFISSAETKTSSSFV

S1 FGVTLPSPIDVTSSCITGTVSAVN..IRKKVPRTGGVRGAADSRVQAALNRTLDCLNKDTVLSAKGKEKLQN
S2 FGKTLPSPINVSSSGTS.AIASVNLGARKKIPRAGGIRGIADSRVLQAVALNRALDCLKED..VASSKEKEPLQS

S1 MRYNKEDSSSLKSSQLMTSSDNYFNDDLFAHLLEAETVKNKEAFIAVISLHDGVVVYVTSSMKDQLGYLPEMWLG
S2 SRFNMEGTSLFSDF..SKTSDSD..VNKFAHFESEFDSVKNKDAFIAVISLHDGVIVYVTSSLTDKLGYPPELWKG

S1 RSLDFLHPKDRLTFTNQITSKLMASLDKDDASGYFSNDDSWFNRGTFGSSSSPSNMVCSRLRLFRLRTSGF
S2 RSLDFLHPKDRLAFTNQITSKLLTSLDKDDSSGYFSGSSDDYSFSGGTVGSSSSPSNMVCSRLRLFVRLRTSGF

S1 DITEKKSSYLPFRIFLNLEKFAPD.....SKANE.TEAVTQEDTSEYFLIAYAAPISTAYKLGDEKNLTGHFGL
S2 GIFDNKTSYLPFKISLNLEKIDNNLSNTDDKKPTDTNKPGNQEDTSEYFLIVHACPILPAYKTSSEKNLPGHFGL

S1 RHSANCLFSEVDMSSVPYLGHL PQDLLGTSALEYYHPSDLQELKNVYN SVISRQGKSVRSKPYNFRAFNGCYVLL
S2 RHSANCLFSEMDMNTVPYLGHL PQDLLGTSALEYYHPSDLQELKNVYSSVVSRQGKSVRSKPYNFRAFNGCYVLL

S1 ETDHTCFINPWTKKLEFVAGHHRVLKGPSNPVDFANPTEGATAPTSTSTSDSLSAESIKELQAEICTILTGTPKR
S2 ETDWTCFINPWTKKLEFVAGHHRVLKGPSNPVDFASPPEGSTSPINAN.DNTLTDSDSIKQLHAEISTILTGTPKR

S1 TSVLPHRNRLDKTDHALLETKTRRRKD LATLMGSLIDEVVKVQGSNSYDSSCGSPYSKPHSPVEGSL LGDASVVM
S2 P..IPIRSRVDKTDTVLLETKTRRRKN LATLMGSLIDEVDKVREGNSCDSCCSNSYTKSHSPVEGSL LGDASVVM

S1 GAISTHGGSAADSSSGDTPISYSLNLYNQNLERYFTSQPKMTPSDDSGEKNQTPNMSSEEDGSLGVSGNSGDSG
S2 GDISTHGESAADTSSSGDTPISYSLNLYNQNLERYFQSQPKMIPSDGSGESGMSLSSSNP.....

S1 NSGNSGNSGNSGDSGNSGNSQQMSSSDTNTNSNC.....HTNSSSSQNDGQP SQGFKGLPL
S2EKNQASSQNTKDSPHLSSSESNTNTNTNSNSNSNSNTNNGASNTNSSGSGSGSQNDGQYSQDFKGLPL

S1 TKEILDRHNEEMEKEFMQQHRELNRNSTPGKSGHERNSREPHGVKRGHATSWDARSGGRYKLQHTDSNKHSQLS
S2 TKEILGRHNEEMEKEFMQHHRDMNRNSTPGKSGHGRSSKEPQGVKRSQALSWEEQSRMRHKLPHTEKYKD..TTA

S1 SNPLNTLTHNSGSFNEPYVIPNTNLLPPFSVNSSLPYHQPPAYSFAGQH.....MNSGGGG
S2 GNP.....SRTQPYLIPPNTNLLPPFSVNSSSPYHQSPVYSIPGLHRNNEGLLSSAAPTNSHTGYLLNPCTAG

S1 RLIQGSIPVGPPFMVVSQGSASSSGSLPIQAFPYFGGVYQPMMPMFQSNMSSQQSFNN.HQKQFPVQHPNEHHF
S2 RFIPGTLPGVPSFLVPPSSTSNSSGSLPMQAFPYFGGVYQPMMPMLFQPDMLSTQRHTNQQADQYPIQHPWRQQ.

S1 RQHFAPRRVSETVYQEQQ.....DAQANRRPDNYQQQQQCCASGGSTANRQAANRQAANKKTAPWMNSTIQNSS
S2 SQHYSQQKS...TSYQQNSQSSRASNQCSRRQKVNERQEQQTSDD.....SRIKNSVNNKKSAPWMSVFDSS

S1 EFKYQYQVPCRG LNDVLEADRLKLALLQQPVMLNNQLDQFYSELEMEERADVELDEDTSSSS.SCN.GHFN GKKE
S2 EFKFYQVDPDRDINDVLLADRNNKLVLLQQPTMLNTQLNQLYQELEKEDRTNVELNEDTSSSSSCAIENPNQNKKE

S1 LRRRSNEFRRTMLYEENAPFPRPDYNVIGEHS..
S2 LRRRSKEYRRSMLYEVNAPFPRPSTSAQSPHNDS





 non-conserved
 similar
 $\geq 50\%$ conserved
 $\geq 70\%$ conserved

Figure 1: Podon leuckartii PER

S1 - TRINITY DN2559 c0 g1 i2.p1 ORFtype complete len 1164

S2 - TRINITY DN2559 c0 g3 i18.p1 ORFtype complete len 1179