```
                                                                A
Ss_Dps            MQEKPQEPKVVGVEILEKSGLDIKKLVDKLVKATAAEFTTYYYYTILRMHLTG-MEGE---GLKEIAE
Uncult.crenarch   --MVTKNPKVVGVEILKKNGLNVDKLVKQLITNASVEFTAYYYFTNLRMHCTG-MEGE---GIKGIIE
Mb_Hp             ----MITVAKVAREVVEKAGVDIEKLLELLIKNASAELTTYYYYTILRFNLIG-LEGE---GIKEIAE
Ma_Hp             ----MITVAKVAREVVEKAGVDIEKLLELLIKNASAELTTYYYYTILRFNLIG-LEGE---GIKEIAE
Tm_Hp             -------MARVAREMVEKAGVDVDKLLELLIKNAAAELTTYYYYTILRANLIG-LEGE---TIKEIAE
Mm_Hp             -------MAKVSREMVENSGINVDELVELLVKNAAAELTTFYYYTILRVNLIG-LEGE---GLKEIAE
Mt_Hp             ------------------------------------THNLLFYTLLGANLIG-LEGE---GLKEIAE
Gv_HP             -------MAKVAREMVEKSGVNVDELVAKLVRAASAEFTTYYYYTLLRAHAIG-FEGE---GLKEIIE
Pf_HP             -------MPEHNRRLVERTGIDVEKLLELLIKAAAAEFTTYYYYTILRNHATG-LEGE---AIKEIIE
Ec_Dps            -MSTAKLVKSKATNLLYTRNDVSDSEKKATVELLNRQVIQFIDLSLITKQAHWNMRGANFIAVHEMLD
                                                                  : :  :    :.*     :: : :

                  B                                E                          C
Ss_Dps            DARLEDRLHFELMTQRIYELGGGLPRDIRQLADISACSDAYLPENWKDPKEILKVLLEAEQCAIRTWK
Uncult.crenarch   DARLEDLSHFESCIERIFQLGGSLPNDAQAFTKMSGCEFLQLPKNPTDIKAILEKCLKAEQGAIVNWD
Mb_Hp             TARVEDRNHFEALVPRIYELGGKLPRNMNDFHNISACSPAYLPEDPTDIRAMLQVLVNAERCAVRGYT
Ma_Hp             TARVEDRNHFEALVPRIYELGGKLPRNMNDFHDISACSPAYLPEDPTDIRAMLQVLVDAERCAVRGYT
Tm_Hp             VARIEDRNHFEALVPRIYELGGKLPDCMKEFHDLSACPPARLPDKPT-VQEILRVLVAAERCAVKGYT
Mm_Hp             TARIEDRNHFEALVPRIYELGGSLPKDMKDFHDISGCPPAYLPDDVTDINKLMKVLLQAEQCAVKQYT
Mt_Hp             AARIEDRNHFEALVPRIYELGGELPGDMKEFHDISGCPPAYLPAKTNDTMEILEVLVAAERCAVRQCT
Gv_HP             DARLEDRNHFEALFPRIYELGGDLPRDIRDFSDMAACADAYLPDNPNDARQLLGVLVEAERCAIRVYT
Pf_HP             DARLEDRNHFEALVPRIYELGGELPRDIREFADLASCRDAYLPEEP-TIENILKVLLEAERCAVGVYT
Ec_Dps            GFRTALIDHLDTMAERAVQLGGVALGTTQVIN--SKTPLKSYPLDIHNVQDHLKEL--ADRYAIVAND
                    *     *::    *  :***      . :   :       *  .      :     *:: *:

                                                D
Ss_Dps            EVCDMTYGKDPRTYDLAQRILQEEIEHEAWFLELLYGRPSGHFRRSSPGNAPYSKK---------
Uncult.crenarch   IVCKMTYNKDPATYDIAKDILMEEIEHESWFLELLYGRPSGHMRRKFSGERPHTQKHSRALG---
Mb_Hp             EICNLTAGKDHRTYDLSQAILNEEIEHESWFSEFLGEGPSGHFLR-RGDTSPFVSKFLR------
Ma_Hp             EICNLTAGKDHRTYDLSQAILNEEIEHESWFSEFLGEGPSGHFLR-RGDTSPFVSKFLR------
Tm_Hp             EICNMTAGKDHRTYELSLAILNEEIEHESWFSEFLGEGPSGHFMR-RGETSPFVSKFLK------
Mm_Hp             KICNITAGKDHRTYDLALAILNEEIQHESWFSEFLGDGPSGHFLR-QGKTSPFVSKFLE------
Mt_Hp             HICNITAGKDHRTYDLALSILHEEIAARIMVLRVPG-----------------------------
Gv_HP             EICDMTFGKDHRTYELALAILNEEIEHEAWFSEFLGEGPSGHFRRGTPGESPYTSRFLVVPNGHN
Pf_HP             EICNYTFGKDPRTYDLALAILHEEIEHEAWFEELLTGKPSGHFRRGKPGESPYVSKFLKTR----
Ec_Dps            VRKAIGEAKDDDTADILTAAS-RDLDKFLWFIESNIE----------------------------
                           **  * ::      .::     . .
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