

>DUF177 Chlamydia_trachomatis (Chlamydiae)
-QGTTARVHAECSTRCLMPLHRDWSVDVCAFFAQV---ESKGGARSNNKFNRSNGDNDL-----ED-----A
DIWDEGDDSGNVYPLVGGGDF-ADIEALIRDTMVSELPLKPLCEPDKCKGLCSQCGENLN-EHP-NHHHDIT-----
-----DIRFAALEGLK

>DUF177 Porphyridium cruentum (Rhodophyta)
LRGRVSTVLNACDRCLDEFPPQSRGEFELWLATR---EDLV-----PMIDGPDDTR-----AD-----
-----EAVEKFTDDILA-VDLTPHVYDAIMLSVPIKCLCREDCPGL-----

>DUF177 Galdieria sulphuraria (Rhodophyta)
-KSRVNTCLTCECDRCLNPFRLAVEGYFQLLLSSN---PNVQ-----EVDHSVVGGEKET-----QQLTSTT
VGFEDLEMEVWEPFTSDVDQ-VSLYSHVYDSVMLSLPSKILCDESCPGIP-----

>DUF177 Thermus scotoductus (Deinococcus Thermus)
LSGEVEGVVLMCECRCLKPTPTPIHAHFQHLRLRYQ---QGLE-----EVVFHEEKKE-----
-----EYYAFGEPPD-LDLLPFLTEAFVTEMPYTVLCEECKGLCPVCGADRNLVD-CGHEPEV-----
-----HHPLLGLKDL-

>DUF177 Atopobium sp.(Actinobacteria)
-TGMLNAHVVGCDRCLCKAEFDVAGEVDEYFLFH---EPD-----PASLGDEDE-----ID-----
-----FALVSADQT-IDLSEALSSALLMETPFVVLCKPDCRGLCPVCGANLN-EED-CGHAAQIEQDRLS---
-----SSPFAKLKELK

>DUF177 Dictyoglomus turgidum (Dictyoglomus_turgidum)
-KGS�TKIKLVCSCLREFPYELEAKIQEIYLWD---IPIQ-----RNISPGEIIEL-----KD-----
-----EDFKFVLEKES-LFLDPLVEDIIRLNIPVKPLCRPDKCKGLCPGCGQDLN-LGE-CECSKIQV-----
-----DPRWEPLMKF-

>DUF177 Synechococcus_sp.(Cyanobacteria)
-SAEARTIVTLTCHRCLOQFNHRLHLEVEEIIILIR---DPE-----PLPLELELQDEEDL-----
-----LESIPPNGE-LDVEDWMYQHLHLEMPRQLPCRPDPCGIAVEATAPTA-----
-----DPRWAALASL-

>DUF177 Thermotoga sp.(Thermotogae)
--GYVHTAVEHPARCLEPARVEIRGVIEALYLPE---SMRK-----NVKEEKLESL-----KN-----
-----IIYYHETE--FDLSERIIIEAIVVAIPEKVLCKPDKCKGLCPYCGANLN-EEDHKCDKIPVV-----
-----DSRFELLAELK

>DUF177 Clostridium sp.(Clostridia)
VQGTIVANVKLVCDRCLKDFVKKMKVDVDETYLLG---HLIA-----NEDAHSGQELEL-----KD-----
-----GDFVTELTGTDE-VDIDDLIYQSVTLNIPNCPVCDINCNG-----DAEMEKYMKKEIS-----
-----DPRLEVFKNLK

>DUF177 Geobacter uraniireducens (Deltaproteobacteria)
-AGKVETAVMMNCSLCLGEYDTEIASSFTVFYTKA---SGMA-----LDEEVELAEEDLI-----
-----SKSYEGDE-IDFAPEVAEQVIMEIPFKPLCKEDCAGLCSKCGVNLN-ETA-CNCDRSEG-----
-----GFKFGALKGIK

>DUF177 Ktedonobacter racemifer (Chloroflexi)
VDGWVDTLVELECTRCLKHFEPQHVDFEERFYPT---VDVV-----TGIPVEPVDAEDA-----
-----FPIDHHLVDLTEAIRQVLLAIPVTLCREDCAGLCAQCGKDLN-EGP-CECQPEP-----
-----DARFSVLKTL-

>DUF177 Clostridium leptum (Firmicutes)
-KADVAFDRCPCDRCAAETQRAYRFSFHVLVNA-----LNDEENDT-----
-----FLLVENES-IELDDLREDILLELPTKFLCKPDKCKGLCPQCGKLN-EGK-CGCSARQV-----
-----DPRLEILKKL-

>DUF177 Persephonella marina (Aquificae)
-SLTINSIDIKLECGRCLESFVMDLKGTSIFLSK-----KLDGDSSELHEEDLI-----
-----VEYLEDEEH-FNVSELLREEIIVKTPMKPLCDEDCKGICPVCNSNRN-ENP-CNCEQEMVRE-----
-----ESPFAKLKTL-

>DUF177 Guillardia theta (Cryptophyta)
LKVHMQSHLLCTCNRCLLEEFHLPISDFSLVLASR---RKLCQIAKRADDVSEISENKDL-----VD-----
-----DSIIDFSAGINY-IDLDPEVGESLGAIPLRKVCSPCKGRCATCGQNLNLPNTCRRVPQ-----
-----EER-----

>DUF177 Bathycoccus prasinos (Chlorophyta)
LQAEITGHIRCHCDACDGKFNLPVKSFGKFLFDEH-----ATAFGDVSGDLEIV-----
-----PFPRSTEH-VDLTTSVARSWIEMNLKEEFLCDE-----CGEND-----

>DUF177A2 *Oryza sativa*
-----CAEPAPQGIFANFSLLLTEGRV-EEPD-----VVDLGTIFEEEQTK-APVLTGSQED-GD-----
---DEDIDWDDRLHFHPAGEKE-VDISKHIRDIIHLEITLDALCSPTCKGLCVGCGENLN-TSS-CSCNTEKQQA-----

>DUF177A1 *Oryza sativa*
LDGIVRTVITLGCYCAEPAPQGIFANFSLLLTEDRV-EEPD-----VVDLGTIFEEEQTK-APSLTGSQED-GD-----
---DEDIDWDDRLHFHPAGEKE-IDISKHIRDIIHLEITLDALCSPTCKGLCLGCGENLN-TSS-CSCNAEKQ-QAKN---
-----VQRRGPKDL-
>DUF177A *Medicago truncatula*
LDGIIKTVTLVLCNRCCMPAESIFSEFSLLLTEPPVNEPE-----TMDFGVIFGEDKIP---TLGKSGDDDED-----
----ALIDLDDQLYFPPEEKQ-IDISKNIRDRVHLEITMNSVCDGCKGKGVCLKCGQNFN-TGN-CSCSKEEVK-----
-----EESFGPLRNL-
>DUF177A *Sorghum bicolor*
LDGIVRTVITLGCFRCAEPAPQGIFANFSLLLTEDPV-EEPD-----VVDLGTIFEDIAK-GASLAGTMDNQDD-----
---DQDIDWDDRLHFPAADRE-IDISKHIRDIIHLEITLDAVCPNCKGLCLSCGANLN-TSS-CTCNKGKPKPEPN---
-----VKGRGPLKEL-
>DUF177A *Arabidopsis thaliana*
LDGIVRTVITLGCNRCGESTGESIFSNFSLLLTEEPV-EEPD-----VIDLGFTEFGNDKEE-----GEDDDND-----
---DSWIDWEDKLFHPPEVKE-IDISKHIRDLVHLEITITAICDSACKGMCLKCGANLN--KRKDCGREEK-----
-----DKGYGPLGNL-
>DUF177A *Physcomitrella patens*
VDGIIRTALALVCNRCCLAPCAERIFASFNLLLTDPV-EEPT-----QPNLGVVLGDNPHI---WSAEADDDAEA-----
---ELDIDLDDKLFHPREEKE-LDISKYLRTIHLIIPAKSLCDNDCPGFCFGCGVNLN-TDTCRCGKQKSKNNVNE-
DLLGLNKNKDIWGPLEQLK
>DUF177A *Amborella trichopoda*
LDGILKTVITLACNRCAEPAAECVFSDFTLTLLTDEPINEEND-----EMNFGVLYGDDKRSYKNVGVGEEARE-----
---EVIDLDDRLYFPLEERE-IDISKHIRDAVHVEITIDAICDANCRGLCLECGVNLN--KSRCGCGRKKNEKR-----
-----ERESSPLSGLK
>DUF177A *Vitis vinifera*
LDGLLRTVITLGCNRCGEPAEACIFSNFSLLLTEEPI-EEQE-----VINMGVIFGEDDKL--KTSTESSEE-DD-----
---EASIDLDDWLYFPPEETE-IDISKHIRDMVHLEITINAVCDSRCKGICLKCGINLN-TAS-CNCSKEEVK-----
-----EKGYGPLGV--
>DUF177A *Zea mays*
LDGIVRTVITLGCFRCAEPAPQGIFANFSLLLTEDPVVEEEDP-----LGTIFQEDDDKGGASLACAMDGDQD-----
-----IDWDDRLHFPAADKE-IDISKHIRDMIHLEITLDAVCPNCKGLCLTCGANLN-TTSSCTCK-----
-----PRNVQGLSPLK
>DUF177B *Oryza sativa*
-KGRVVTFSKICDSCSSPYCAKIDEQFNLTVLSS---TRKE-----QSEMPDIGSDPSV-----
-----IYVRPGVE-VLDLSVIQETIRLTASAKSSCSEACEKSTV-----VWQYGGNQKKRY-----
-----SQRWSKLLDLK
>DUF177B *Arabidopsis thaliana*
VDGRIMTSIARKCSICSSLYPRLIDTSFTVWILPS---SREN---RASTLPEIGDDPSV-----
-----IYVRPGYE-ANLDSLVDQITIRLTYYAKDICSDSCEKSEP-----TLHYVQNTASV-----
-----DKRWSRLELLEK
>DUF177B *Zea mays*
-KGRVLTFRKICDSCSLPYCTNIDEHFNLTVLSS---TRRD-----QSGPLDLGDTDPSV-----
-----IYVRPGDE-VLDLSVIQETVRLTASTKSSCSETCEKSTV-----VWQYGGSQKKKTS-----
-----SQRWSKLLDLK
>DUF177B *Vitis vinifera*
VDGRIITSFTRKCSNCSSPYCKEVDNFTVWVLP---SREN-----CGLAEIGDDPSL-----
-----SDLY-----TIRLTTSVKDTCSETCEKSEP-----TLQYIGAKNAASI-----
-----DMRWSRLELLEK
>DUF177B *Sorghum bicolor*
-KGRVLTFRKICDSCSLPYCTNIDERFNLTVLSS---TRRD-----QSGPLDLGDTDPSV-----
-----IYVRPGDE-VLDLSVIQETVRLTASAKSSCSETCEKSTV-----VWQYGGSQKKKIS-----
-----SQRWSKLLDLK
>DUF177B *Medicago truncatula*
VDARITTSFPSKCSNCSSPYCRQIDAKFNWVLR---TNRD---KRKTPLEI-GDDPYV-----
-----IYTRPGYE-VLDLSIVKDAIRLNSAVNDTCSELCKKSEGT-----IQNTSGSQASAF-----
-----DKRWSRLELLEK

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>DUF177B Amborella trichopoda
-DGRITTCFTRKCSNCLSPYCKEIDTHFNWVWVLPV---SKEN---HSLQLPEIGGDDPSV-----
-----IYINPRSPD-ADLDSLVKDTIRLSTSGV--CSESCERSPQ-----RWE-CGDPKEGYT-----
-----DRRWSKLLQIK
>DUF177B Physcomitrella patens
VQAQVRSTVRQQCSRCKTYFSPINGSFQAWLTPT---QDMF---VHPNGKSEENGDPV-----
-----VYFPLGEEE-ADLTRMVRDTIKLNYSAKAICSEECDKLGPR-----TWEVGGSQGRP-----
-----DSRWLPL-----
>DUF177 Escherichia coli (Gammaproteobacteria)
LNGDAKVTVTLECRQCGKPFTHQVYTTYCFSPVRS---DEQA-----EALPEAYEPI-----
-----EVNEFGE-IDLLAMVEDEIILALPVVPVHDSE---HCEVSEADMV-FGELPEEAQK-----
-----PNPFAVLASLK
>DUF177 Pseudomonas aeruginosa (Gammaproteobacteria)
-HMQLDTEVSMVCQRCLDAAAIIPVHGEYTYAILRE---GQSA-----DGLPKGYDAL-----
-----EVGEEP-LDLLALVEDELLALPIVPAHDPE---VCQ-HPAGFVVEDEPESESSEVEDKR-----
-----PNPFSVLAQLK
>DUF177 Comamonas testosteroni (Betaproteobacteria)
-HLSAEVALPLTCQRCLTEADIPLYVDRSFRFVVD---EATA-----ELEDDDSDE-----
-----DVLALSSE-FNLLLELIEDELLMEVPVPRH-EVCP-VPVKLEVSDDAFEQA-NEQK-----
-----ENPFAVLQSL-
>DUF177 Burkholderia xenovorans (Betaproteobacteria)
-RLAIHGAAWLECRQCMPTPYLQAFNV DATYRVVNT---EAEA-----EEFPLDEDEV-----
-----EVIVGSNH-FDLIDLIEEELLSLPLVPKHE-VCPEVHESLVSGVAGAEGEDEDESAPDEAGKGD
EPER---PSPFAALQSLK
>DUF177 Magnetococcus marinus (Alphaproteobacteria)
VTGTVTATVSMNCSRCLVDFERLLEGDVERWYATG---VDPN-----NGSMGELAVTDETV-----
-----YLEDDL-FTLAPLADEELLHLPMVPLCGEGCKGICACGANLN-EGP-CGCDGDPQ-----
-----DSPFAALKLLK

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