

Halobacterium	DTEEDEQERGITIDAANVSMTHE	-----	YEGDDHLINLIDTPGHVDF	
Methanospirillum	DSDEEEQARGITIDASNVSMVHE	-----	YNGKEYLINMIDTPGHVDF	
Thermoplasma	DYDEQEQARGITINAAVASMVHA	-----	FQGKEYLINLIDTPGHVDF	
Methanopyrus	DFDEMEQERGITIDAANVSMVHE	-----	YEGEEYLINLIDTPGHVDF	
Thermococcus	DFDEQEQARGITINAANVSMVHT	-----	YEGQDYLINLIDTPGHVDF	
Nanoarchaeota	WWHEQEREREMTIYGAAVSMVHE	-----	YEGDDYLINLIDTPGHVEF	
Staphylothermus	DYLDVEQKRGITVKSANISLYHE	-----	YKGKPYVINLIDTPGHVDF	
Ignisphaera	DFLDVEQRRQMTVKAANISLYHE	-----	YEGKPYVINLVDTPGHVDF	
Korarchaeota	DYHEIEQQRGITIKAANISLYYQ	-----	RDGKEFAINLVDTPGHIDF	
Caldiarchaeum	DYLEEEQQRQMTIKAANVSLYYE	-----	MDGKPYIINLIDTPGHVDF	
Nitrosoarchaeum	DFDKEEQERGITIYQANVTLFFT	-----	QKEKEYVINMIDTPGHVDF	
Bathyarchaeum	DYMEEEQKRQMTIKAANISLYYE	-----	YENKPYVINLIDTPGHIDF	
Thorarchaeota	DSDEEEQERGITIFTSVLLNFE	-----	VEGEEYLVQLSDTPGHLSF	
Lokiarchaeon 1	DSDEEEQARGITIFTSVLLAFNDL	----	REQQEKEPYILOINDTPGHISF	
Galdiera	DSREDEQLRGITMKSSAISLCHPYR	---	REDSKVEYYLINLVDSPGHVDF	
Reticulomyxa	DSRDDEQARGITIKSTSVSLYERD	---	EEKEKNVYILINLIDSPGHVDF	
Naegleria	DTRDDEQDRGITIKSTISLYYKPK	---	AEDGTETEYILINLIDCPGHVDF	
Drosophila	DNRSDQERGITMKSSISLYYQEA	---	EEMAGNPDYILINLIDSPGHVDF	
Lokiarchaeon 3	DTREDEQERGITIKTTGISLHHIYK	--	GGNKIPEGNYLINLQDTPGHVDF	
Schizophyllum	DSREDEQERGITMESSAVSLKFHVK	---	GGEGQPNRTYIVNMIDTPGHVDF	
Fibulorhizoctonia	DSREDEQERGITMESSAVSLRFQVK	---	GGEGRPPISYFINMIDTPGHVDF	
Scleroderma	DSREDEIERGITMESSAVSLKFVVL	---	GRDGESPRTYIINMIDTPGHVDF	
Bactrocera	DTRODEQERGITMKSSISLYYSGN	---	AKNDGNEQNYLVNLIDSPGHVDF	
Lokiarchaeon 2	DSDEEEQERGITIFTTVVILSYEYET	TD	DAEGNTRREDTYLFOINDTPGHLSF	
Laccaria	DSREDEQERGITMESSAVSLKFQVI	ERD	ANGERLPKTYIVNIIDTPGHVDF	
Phanerochaete	DSREDEQERGITMESSAVSLRFKVM	EKTA	EGGSSPKTYVVNMIDTPGHVDF	
Rhizopus	DSREDEQERGITMESSAISLYFKLL	KTNE	EKGKATESEYLINLIDSPGHVDF	
Trametes	DSREDEQERGITMESSAVSLRFNV	MERN	PEGDPRPKTYVVNMIDTPGHVDF	
Sistotremastrum	DSREDEQERGITMESSAVSLNFKV	MSKD	SDGEPRSRDYVVNLIDTPGHVDF	
Ceriporiopsis	DSREDEQERGITMESSAVSLRFKVM	ERD	TGGSSPKTYVVNMIDTPGHVDF	
Rhizoctonia	DSREDEQERGITMESSAVSLRFKMM	KRSA	AGTPEAENFVINLIDTPGHVDF	
Dichomitus	DSREDEQQRGITMESSAVSLRFKVM	QK	PEGDPVPKTYVVNMIDTPGHVDF	
Dacryopinax	DSREDEQERGITMESSAVSLRFQV	LRRN	ATGNDFLESFVINLIDTPGHVDF	
Gelatoporia	DSREDEQERGITMESSAVSLRFKVM	ERD	TGGSSPKTYVVNMIDTPGHVDF	
Bathyarchaeum	DYMEEEQKRQMTIKAANISLYYE	-----	YENKPYVINLIDTPGHIDF	
Thorarchaeota	DSDEEEQERGITIFTSVLLNFE	-----	VEGEEYLVQLSDTPGHLSF	
Lokiarchaeon 1	DSDEEEQARGITIFTSVLLAFNDL	REQQE-KEP	----	YILOINDTPGHISF
Rhinoctadiella	DSRPDEQIRGITMESSAISLYFSMM	RRQQ	ENAE	PKKEEYLINLIDSPGHIDF
Capronia	DSRPDEQTRGITMESSAISLYFSMM	RRQQ	ENAE	PKKEEYLINLIDSPGHIDF
Exophilia	DSRPDEQIRGITMESSAISLYFSMM	RRQQ	EGAE	PTKQEEYLINLIDSPGHIDF
Cladophialophora	DSRPDEQIRGITMESSAISLYFSMI	RRQ	KEDQ	EPKQEEYLINLIDSPGHIDF

S13 Fig – Alignment of the N-terminal lokiarchaeal EF2 insertion (A1, A2, A3).

Alignment of the region corresponding to the insertion A1, A2 and A3 in lokiarchaeal EF2 sequences, with archaeal EF2 sequences and eukaryotic Ria sequences (EF2 paralog), and with Ria sequences from a subgroup of fungi (bottom alignment). Organisms' names corresponding to Lokiarchaea/Thorarchaea, Archaea, and Eukarya are respectively indicated in brown, green, and blue.