

Supplementary Fig. S1. Multiple alignment of the deduced and concatenated amino acid sequences of the 12 mitochondrial genes of the indicated trematode species.

Morphology and mitochondrial genome of *Fischoederius* sp. 1 (Thailand)
Pichance Watthanasiri, Amornrat Geadkaew-Krenc, Rudi Grams*

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[Name: Fasciola_hepatica                  Len: 3312]
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[Name: Ogmocotyle_sp_JM_2015             Len: 3312]
[Name: Orthocoelium_streptocoelium        Len: 3312]
[Name: Paramphistomum_cervi               Len: 3312]

MATRIX
Calicophoron_microbothrioides  MSWLPLYNAW  IVCLAIVSFL  LWKLLGVVLF  LVALFLSVSY  LLKESLNNVL
Explanatum_explanatum         MSWLPLYNAW  IVCLALVSFL  LWKLLGVVVL  FVALFLSLSY  LLKESLNNAL
Fischoederius_cobboldi        MSWLPLYNAW  MICLAIVSFF  LWKLLGVLLL  IFALFMSFSF  LLKESLGNVT
Fischoederius_sp_1_TH         MSWLPLYNAW  MICLAIISFF  LWKLLGVLLL  IFALFMSFSF  LLKESLGNVT
Fischoederius_elongatus       MSWLPLYNAW  IICLAIVSFF  LWKLLGVLLL  IFALFMSFSF  LLKESLVNVT
Fasciola_hepatica             MSWLPLYNAW  VLMIGIVSIF  LWKLLGLWVF  LGVVISISLIW  LIKESLCTVK
Gastrothylax_crumenifer       MSWLPLYNAW  MICLAIVSFF  LWKLLGVLLL  IFALFMSFSY  LVKESLGNMT
Homalogaster_paloniae         MSWLPLYNAW  VICLAIISFF  LWKLLGVLLL  VFVLSLSIFY  LKELLQNET
Ogmocotyle_sikae              MSLLPVLNSW  VVFLMLVNLF  FWNLSVVVVL  LGVVGFVVVF  LLKELLNNEF
Ogmocotyle_sp_JM_2015        MSWLPLYNAW  IVCLALVSFL  LWKLLGVVVL  LVALFLSLSY  LLKESLGNAL
Orthocoelium_streptocoelium  MSWLPLYNAW  IVCLGIVSVF  LWKLLGIIFF  VVFLFLSLLY  LLKESLNNAL
Paramphistomum_cervi          MSWLPLYNAW  IVCLALVSFL  LWKLLGVVVL  LVALFLSLSY  LLKESLGNAL

Calicophoron_microbothrioides  HYVYAFWLF  LTEVLIFSSL  FVAVFWSESC  SSESISFFLE  LPFLGCFLLI
Explanatum_explanatum         HYVYAFWLF  MTEVLIPGSL  FVAVFWSESC  SSESISFFLE  LPFLGCFLLI
Fischoederius_cobboldi        HYVYAFWLF  MTEVLIPGSL  FLAVLWNETC  YSESISFFLE  LPFLGCFLLI
Fischoederius_sp_1_TH         HYVYAFWLF  MTEVLIPGCL  FLAVLWNETC  YSESISFFLE  LPFLGCFLLI
Fischoederius_elongatus       HYVYAFWLF  MTEVLIPGSL  FLAVLWNETC  FSESISFFLE  LPFLGCFLLI
Fasciola_hepatica             HYATAFWVFI  LSEVIVFGTL  FCLCVITVED  DLAPLSSPLE  LPLGCFILT
Gastrothylax_crumenifer       HYVYAFWLF  MTEGLIPGSL  FLAVLWNETC  FSESISFFLE  LPFLGCFLLI
Homalogaster_paloniae         HYIYAFWLF  GTEVLIPGSL  FLTVPWNESC  SSESISFFLE  LPFLGCFLLI
Ogmocotyle_sikae              HYVDGFLLE  MTEVLAFFSL  FVCLWSESF  VSGLSHFLE  LPFLGCFLLI
Ogmocotyle_sp_JM_2015        HYVYAFWLF  MTEVLIPGSL  FVAVFWNESC  SSEAISFFLE  LPFLGCFLLI
Orthocoelium_streptocoelium  HYVYAFWLF  MTEVLIPGSL  FVAIFWSESC  SSEPISGFLE  LPFLGCFLLI
Paramphistomum_cervi          HYVYAFWLF  MTEVLIPGSL  FVAVFWNESC  SSEAISFFLE  LPFLGCFLLI

Calicophoron_microbothrioides  GSSLTVTAYH  HSVGGLGSSSL  FLLCTLVLGF  SFVILQIFEM  YDCECDWVYS
Explanatum_explanatum         GSSLTVTAYH  HSVGGLGSSSF  FLLLTIVLGF  GFVVLQIFEM  YDCECDWVYS
Fischoederius_cobboldi        GSSLTVTAYH  HSVGTKYGFL  FLLATLLLGF  SFVILQIYEM  YDCECDWVYS
Fischoederius_sp_1_TH         GSSLTVTAYH  HSVGTKYGSL  FLLATLLLGL  SFVILQIYEM  YDCECDWIYS
Fischoederius_elongatus       GSSLTVTAYH  HSVGTKYGSL  FLLATLLLGF  SFVILQIYEM  YDCECDWIYS
Fasciola_hepatica             GSSITVTYH  HYLGSYSYR  FLLLTIVLGC  SFLVLQAFEF  YDCECDLTPC
Gastrothylax_crumenifer       GSSLTVTAYH  HSVGTKYGSL  FLLSTLLLGA  SFVVLQIFEM  YDCECDWVYS
Homalogaster_paloniae         GSSLTVTAYH  HSVGGLGSSSF  FLLSTIVLGF  SFVILQIFEM  YDCECDWVYS
Ogmocotyle_sikae              GSSITVTYH  HSMGLSGAYM  HLIPTLILGG  GFVVLQLYEL  YECRCCLISS
Ogmocotyle_sp_JM_2015        GSSLTVTAYH  HSVGGLASSL  FLLLTFLFLG  SFVVLQVFEM  YDCECDWVYS
Orthocoelium_streptocoelium  GSSLSVTAYH  YGIGLGNNSL  FLLLTILLGL  CFVVLQIFEM  YDCECDWVYS
Paramphistomum_cervi          GSSLTVTAYH  HSVGGLASSL  FLLLTFLFLG  SFVVLQVFEM  YDCECDWVYS

Calicophoron_microbothrioides  VVYACFSTV  GLHFLHVVLG  LIGLVVIFVF  GDVNLNVYND  VVIWYWHFVD
Explanatum_explanatum         VVYACFSTV  GLHFLHVVLG  LLGLVIFAF  GDVNLNVYND  VVIWYWHFVD
Fischoederius_cobboldi        VVYACFSTV  GLHFLHVVLG  LIGLSVIFPM  GDVNLNVYND  VVIWYWHFVD
Fischoederius_sp_1_TH         VVYACFSTV  GLHFLHVVLG  LVGLSVIFFI  GDVNLNVYND  VVIWYWHFVD
Fischoederius_elongatus       VVYACFSTV  GLHFLHVVIG  LVGLSVIFFI  GDVNLNVYND  VVIWYWHFVD
Fasciola_hepatica             VYGAVCFSTV  GLHFLHVFVG  LVALCFLYFS  GDAVPNSNVD  FVVYWHFVD
Gastrothylax_crumenifer       VVYACFSTV  GLHFLHVIG  LIGLSVIFIF  GDVNLNVYND  VVIWYWHFVD
Homalogaster_paloniae         VVYACFSTV  GLHFIVHVIG  LIGLVVVF  GDVNLNTYND  VVIWYWHFVD
Ogmocotyle_sikae              VYFACFCTV  GLHFLHVLLG  MGGLGLILGF  GDLKLDYNN  MIVWYWHFVD
Ogmocotyle_sp_JM_2015        VVYACFSTV  GLHFLHVIG  LVGLAVIFVF  GDVNLNVYND  VVIWYWHFVD
Orthocoelium_streptocoelium  VVYACFSTV  GLHFLHVVLG  LLGLVIFIF  GDVNLNTYND  VVIWYWHFVD
Paramphistomum_cervi          VVYACFSTV  GLHFLHVIG  LVGLAVIFVF  GDVNLNVYND  VVIWYWHFVD

Calicophoron_microbothrioides  YIWLVLVYLV  YLSMLSLVRS  NVVDLPTNLS  LSYFWCGGFM  ISAFVLVQIV
Explanatum_explanatum         YIWLVLVYLV  YLSMLSLVRS  NVVDLPTNLS  LSYFWCGGFM  ISAFVLVQIV
Fischoederius_cobboldi        YIWLVLVYLV  YLSMVSLMRS  NVVDLPTNLS  LSYFWCGGFM  ISAFVLVQIA
Fischoederius_sp_1_TH         YIWLVLVYLV  YLSMVSLVRS  NVVDLPTNLS  LSYFWCGGFM  ISAFVLVQIA
Fischoederius_elongatus       YIWLVLVYLV  YLSMVSLVRS  NVVDLPTNLS  LSYFWCGGFM  ISAFVLVQIA
Fasciola_hepatica             YIWLVLVYLI  YLAMLAVMRG  NVVDLPTNLS  LSYFWCGGFM  ISSFLITQVL
Gastrothylax_crumenifer       YIWLVLVYLV  YLSMLSLVRS  NVVDLPTNLS  LSYFWCGGFM  ISAFVLVQIA
Homalogaster_paloniae         YIWLVLVYLV  YLSMLSLVRS  NVVDLPTNLS  LSYFWCGGFM  LSFAFLVQVA
Ogmocotyle_sikae              YIWLVLVYTV  YLSMLSLVRN  NVVDLPTNLS  LSYFWCGGFM  ISAFVLVQVV

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Ogmocotyle_sp_JM_2015	YIWLLVYLTV	YLSMLSLVRS	NVVDWPTNLS	LSYFWCGGFM	ISAFVLVQLV
Orthocoelium_streptocoelium	YIWLLVYLTV	YLSMLSLVRS	NVVDLPTNLS	LSYFWCGGFM	ISAFVLVQLV
Paramphistomum_cervi	YIWLLVYLTV	YLSMLSLVRS	NVVDLPTNLS	LSYFWCGGFM	ISAFVLVQLV
Calicophoron_microbothrioides	SGVLSLLYV	ADSGMSFGCV	LALNDESIFV	WLVRYMHIWG	VTFIFVLFIV
Explanatum_explanatum	SGIILSLLYV	ADSGMSFGCV	LALNDESIFV	WLVRYMHIWG	VTFIFVLFIV
Fischoederius_cobboldi	SGVLSLLYV	ADSSMSFGCV	LALNDESIFM	WLVRYMHIWG	VTFIFVLFII
Fischoederius_sp_1_TH	SGVLSLLYV	ADSNMSFGCV	LALNDESIFM	WLVRYMHIWG	VTFIFVLFII
Fischoederius_elongatus	SGVLSLLYV	ADSSMSFGCV	LALNDESIFM	WLVRYMHIWG	VTFIFVLFIV
Fasciola_hepatica	SGVLSLLYV	ADSLLSFGCV	LDFTSSEGLFL	WLVRYAHIWG	VTFIFLLFFA
Gastrothylax_crumenifer	SGVLSLLYI	ADSNMSFGCV	LAFNDESIFM	WLVRYMHIWG	VTFIFVLFIV
Homalogaster_paloniae	SGVLSLLYV	ADSSMSFGCV	LSPNDESIFI	WMVRYLHIWG	VTFIFVLFIV
Ogmocotyle_sikae	SGVLSLLYV	ADYNLSFGCV	VDF'TNEGLFV	WLVRYMHIWG	VSFIFVLLFV
Ogmocotyle_sp_JM_2015	SGVLSLLYV	ADSGLSFGCV	LALNDESIFV	WLVRYMHIWG	VTFIFVLFII
Orthocoelium_streptocoelium	SGVLSLLYV	ADSDMSFGCV	LALNDESIYV	WLVRYMHIWG	VTFIFVLFIV
Paramphistomum_cervi	SGVLSLLYV	ADSGLSFGCV	LALNDESIFV	WLVRYMHIWG	VTFIFVLFII
Calicophoron_microbothrioides	HMGRALYYTS	YSKIGVWNVG	FILYLMMVE	AFLGYILPWH	QMSYWAATVL
Explanatum_explanatum	HMGRALYYTS	YSKLGWVNVG	FVLYLMMVE	AFLGYILPWH	QMSYWAATVL
Fischoederius_cobboldi	HMGRALYYTS	YSKVGWVNVG	FILYLMMVE	AFLGYILPWH	QMSYWAATVL
Fischoederius_sp_1_TH	HMGRALYYTS	YSKVGWVNVG	FILYLMMVE	AFLGYILPWH	QMSYWAATVL
Fischoederius_elongatus	HMGRALYYTS	YSKVGWVNVG	FILYLMMVE	AFLGYILPWH	QMSYWAATVL
Fasciola_hepatica	HMGRALYYSS	YSKLGWVNVG	FVLYLMMVE	AFLGYILPWH	QMSYWAATVL
Gastrothylax_crumenifer	HMGRALYYTS	YSKVGWVNVG	FVLYLMMVE	AFLGYILPWH	QMSYWAATVL
Homalogaster_paloniae	HMGRALYYTS	YSKLGWVNVG	FILYLMMVE	AFLGYILPWH	QMSYWAATVL
Ogmocotyle_sikae	HMGRALYYSS	YSKLGWVNVG	FVLYLMMVE	AFLGYILPWH	QMSYWAATVL
Ogmocotyle_sp_JM_2015	HMGRALYYTS	YSKLGWVNVG	FVLYLMMVE	AFLGYILPWH	QMSYWAATVL
Orthocoelium_streptocoelium	HMGRALYYTS	YSKLGWVNVG	FILYLMMVE	AFLGYILPWH	QMSYWAATVL
Paramphistomum_cervi	HMGRALYYTS	YSKLGWVNVG	FVLDLMMVE	AFLGYILPWH	QMSYWAATVL
Calicophoron_microbothrioides	TSILNSVPLI	GGILYKFFVVG	GFSVTNVTLV	RVFSAHVCLA	FIIIGLSVVH
Explanatum_explanatum	TSILNSIPLI	GGTLYKFFVVG	GFSVTNVTLV	RVFSAHVCLA	FIIIGLSVVH
Fischoederius_cobboldi	TSILNSVPLV	GGVLYKFFVVG	GFSVTNVTLV	RVFPAHVCLA	FVILGLSVIH
Fischoederius_sp_1_TH	TSILNSVPLV	GGVLYKFFVVG	GFSVTNVTLV	RVFPAHVCLA	FVILGLSVVH
Fischoederius_elongatus	TSILNSVPLV	GGVLYKFFVVG	GFSVTNVTLV	RVFPAHVCLA	FIIIGLSVVH
Fasciola_hepatica	TSILQSVPFV	GGVLYEYVVG	GFSVTNIMLV	RVFSAHVCLA	FVILGFSVIH
Gastrothylax_crumenifer	TSILNSVPLI	GGVLYKFFVVG	GFSVTNVTLV	RVFPAHVCLA	FVILGLSVVH
Homalogaster_paloniae	TSILNSVPLF	GGILYKFFVVG	GFSVTNVTLV	RVFSAHVCMA	FVILGLSVVH
Ogmocotyle_sikae	TSIVNSVPPF	GTSLSYSPFV	GFSVTNVTLV	RVFSAHVCLA	FIIIGLSVVH
Ogmocotyle_sp_JM_2015	TSIVNSVPPF	GASLYSPFV	GFSVTNVTLV	RVFSAHVCLA	FVILGLSVVH
Orthocoelium_streptocoelium	TSILNSVPPF	GGVLYKFFVVG	GFSVTNVTLV	RVFSAHVCLA	FVILGFSVVH
Paramphistomum_cervi	TSILNSVPLI	GGVLYKFFVVG	GFSVTNVTLV	RVFSAHVCLA	FVILGLSVVH
Calicophoron_microbothrioides	LFYLHLGGSN	NPLFVSGGYS	DVVLFHSLFT	NKDGFLVCL	MWCCCFLLIY
Explanatum_explanatum	LFYLHLGGSN	NPLFVSGGYS	DVVLFHSLFT	NKDGFLMCL	MWCCCFLLIY
Fischoederius_cobboldi	LFYLHLSGSN	NPLFVSGGYS	DVVLFHSLFT	NKDGFLMCL	LVCCCFLLIY
Fischoederius_sp_1_TH	LFYLHLSGSN	NPLFVSGGYS	DVVLFHSLFT	NKDGFLMCL	LVCCCFLLIY
Fischoederius_elongatus	LFYLHLSGSN	NPLFVSGGYS	DVVLFHSLFT	NKDGFLMCL	LVCCCFLLIY
Fasciola_hepatica	LFYLHLKGSN	NPLFVSGGYG	DVVFHSHFFT	SKDGFVLLCL	LFPPGVCLMLV
Gastrothylax_crumenifer	LFYLHLSGSN	NPLFVSGGYS	DVVLFHSLFT	NKDGFLMCL	MWCCCFLLIY
Homalogaster_paloniae	LFYLHLGGSN	NPLFVAGGYS	DVVLFHSLFT	NKDGFLVCL	LWACCFSLLY
Ogmocotyle_sikae	LFYLHKSGSN	NPLFVKGYS	DVVLFHSHFFT	AKDGFVLMFL	LSVCCFPLMF
Ogmocotyle_sp_JM_2015	LFYLHKSGSN	NPLFVSGGYS	DVVLFHSHFFT	AKDGFVLLV	LMVVCFLMLF
Orthocoelium_streptocoelium	LFYLHLGGSN	NPLFVSNYS	DVVLFHSLFT	NKDGFLMCL	MWCCCFLLIY
Paramphistomum_cervi	LFYLHLGGSN	NPLFVSGGYS	DVVLFHSLFT	NKDGFLVCL	LVCCCFLLML
Calicophoron_microbothrioides	SPDFVLDVES	YIQADPLVTP	VSIKPEWYFL	AFYAMLRISIE	SKVGGVLVVL
Explanatum_explanatum	SPDFVLDVES	YIQADPLVTP	VSIKPEWYFL	AFYAMLRISVE	SKVGGVLVVL
Fischoederius_cobboldi	FPDFVLDVES	YIQADPLVTP	VSIKPEWYFL	AFYAMLRISIE	SKIGGLVLVI
Fischoederius_sp_1_TH	FPDFVLDVES	YIQADPLVTP	VSIKPEWYFL	AFYAMLRISIE	SKIGGLVLVI
Fischoederius_elongatus	FPDFVLDVES	YIQADPLVTP	VSIKPEWYFL	AFYAMLRISIE	SKIGGLVLVI
Fasciola_hepatica	FPDLVLDVES	YIQADPLVTP	VSIKPEWYFL	AFYAMLRISIE	SKIGGLVLVI
Gastrothylax_crumenifer	FPDFVLDVES	YIQADPLVTP	VSIKPEWYFL	AFYAMLRISIE	SKIGGLVLVI
Homalogaster_paloniae	FPDFVLDVES	YIQADPLVTP	VSIKPEWYFL	AFYAMLRISVE	SKVGGVLVVL
Ogmocotyle_sikae	LPDSVLDVES	FIEADSLVTP	ESIKPEWYFL	AFYAMLRISIE	SKIGGLVLVI
Ogmocotyle_sp_JM_2015	LPDSVLDVES	FIEADSLVTP	ESIKPEWYFL	AFYAMLRISIS	SKIGGLVLVI
Orthocoelium_streptocoelium	SPDFVLDVES	YVQADPLVTP	VSIKPEWYFL	AFYAMLRISVE	SKVGGVLVVL
Paramphistomum_cervi	SPDFVLDVES	YIQADPLVTP	VSIKPEWYFL	AFYAMLRISIE	SKVGGVLVVL
Calicophoron_microbothrioides	LFLFVLWVPS	FNKSCSYSVS	RQYVFWIFS	IFLLLSYLGA	CHPEYPYVVL
Explanatum_explanatum	LFLFVLWVPS	LNKSCSYSVS	RQYVFWIFS	IFLLLSYLGA	CHPEYPYVVV
Fischoederius_cobboldi	LFLFVLWLPS	FNKSCSYSVV	RQYIFWVSFS	IFLLLSYLGA	CHPEYPYVMV
Fischoederius_sp_1_TH	LFLFVLWLPS	FNKSCSYSVV	RQYVFWIFS	IFLLLSYLGA	CHPEYPYVMV
Fischoederius_elongatus	LFLFVLWLPS	FNKSCSYSVV	RQYIFWVSFS	IFLLLSYLGA	CHPEYPYVVV
Fasciola_hepatica	VFLFLLWLPT	LNKACTYSIG	RQYIFWCGVS	CFLLLTYLGA	CHPEPPFVLI
Gastrothylax_crumenifer	LFLFVLWLPS	FNKSCSYSVV	RQYIFWVSFS	IFLLLSYLGA	CHPEYPYVMV
Homalogaster_paloniae	LFLFVLWLPS	LNKSCSYSVL	RQYVFWIFS	MFLLSYLGA	CHPEYPYVVI
Ogmocotyle_sikae	VFLFLLWLPT	HNQSCSYSL	RQYVFWISVS	VFLLSYLGA	CHPEYPYVDI
Ogmocotyle_sp_JM_2015	VFLFLLWLPT	HNQSCSYSIA	RQYVFWISVS	VFLLSYLGA	CHPEYPYVGV

Orthocoelium streptocoelium	LFLFVLWLP	FNMSCSYSVG	RQYVFWISFS	IFILLSYLGA	CHPEYPYVVV
Paramphistomum cervi	LFLFVLWVPA	FNKSCSYSVG	RQYVFWISFS	IFLLLSYLGA	CHPEYPYVLV
Calicophoron microbothrioides	SKLASVAIVF	LLALFKCFW	VGGVDGLWCK	SLALLLLGVF	IILASVFLSL
Explanatum explanatum	SKVASVIVL	LLVLFKCFWS	VGGVDGLWVK	SLALLLLGIF	IILVSFVLSL
Fischoederius cobboldi	SKVASVIVL	LLALFKCFW	VGGVDGLWFK	NLALLLLGVF	IILVSFVLSL
Fischoederius_sp_1_TH	SKVASVMIVL	LLTLFKCFW	VGGMDGLWFK	NLALLLLGVF	IILVSFVLSL
Fischoederius_elongatus	SKVASVMIVL	LLTLFKCFW	VGGAEGLWFK	NLALLLLGVF	IILVSFVLSL
Fasciola hepatica	SKFASLLVVL	LLVMFKGLWL	VPYSGGLGF	LVSFLYVGVL	VIVFPPFLSL
Gastrothylax crumenifer	SKIASVIVL	LLTLFKCFW	VGGADGLWFK	NLALLLLGIF	IILVSFVLSL
Homologaster paloniae	SKLASLVLVF	LLMLFKCFW	VGGWDGVWSG	SLTLLLMGVF	IILVSFVLSL
Ogmocotyle sikae	SKIFSLGLV	LLVMFKALWA	EPYSVNDYSK	FGVILLGVF	IILVSFVLSL
Ogmocotyle_sp_JM_2015	SKVFSGLVI	LLIMFKVLWA	EPYSINDYSK	FGVILLGVF	IIMLSFVLSL
Orthocoelium streptocoelium	SKLASVIVL	LLAMFKCFW	IGGIDGLWCK	NLVLLLLGIF	IILVGFVLSL
Paramphistomum cervi	SKLASVIVF	LLALFKCFW	VGGVDGLWCK	NLALLLLGIF	IILVSFVLSL
Calicophoron microbothrioides	ARLMNCLIV	ENLNVLLFS	ALVSQSAEVR	ILFIALMVIF	AIEVTLGLVA
Explanatum explanatum	ARLMNCLIV	ENLNVLLFS	ALISQSAEVR	ILFIALMVIF	AIEVTLGLVA
Fischoederius cobboldi	ARLMNCLIV	ENLNVLLFS	ALVSQSAEVR	ILFIALMVIF	AIEVTLGLVA
Fischoederius_sp_1_TH	ARLMNCLIV	ENLNVLLFS	ALVSQSV EVR	ILFIALMVIF	AIEVTLGLVA
Fischoederius_elongatus	ARLMNCLIV	ENLNVLLFS	SLVSQSAEVR	ILFIALMVIF	AIEVTLGLVA
Fasciola hepatica	GRLLNCLIV	ENLNVLLFV	CLLQWEEFR	IIFIALMVIF	TIEVTLGLV
Gastrothylax crumenifer	ARLMNCLIV	ENLNVLLFS	ALISQSAEVR	ILFIALMVIF	AIEVTLGLVA
Homologaster paloniae	ARLMNCLIV	ENLNVLLFS	ALMSQSSEAR	VLFIALMVIF	AIEVTLGLVA
Ogmocotyle sikae	SRLNCLIV	ENLNVLLFV	CLLKNWDESR	IFFIALMVIF	TIEVTLGLV
Ogmocotyle_sp_JM_2015	SRLNCLIV	ENLNVLLFV	CLLKNWDESR	IFFIALMVIF	TIEVTLGLV
Orthocoelium streptocoelium	TRLMSCLIIV	ENLNVLLFS	ALISQGEVR	ILFIALMVIF	AIEVTLGLVA
Paramphistomum cervi	ARLMNCLIV	ENLNVLLFS	ALISQSAEVR	ILFIALMVIF	AVEVTLGLVA
Calicophoron microbothrioides	LVRLWDLGSL	IDILGVMGFS	KFDWYTGIV	YVFSLLVILV	WSVMSSLVGG
Explanatum explanatum	LVRLWDLGSL	IDILGVMGFS	KFDWYSGGIV	YVFSLFVLLV	WSVSSLVGG
Fischoederius cobboldi	LVRLWDLGSL	IDILGVMGFS	KFDWYTGIV	YVFSLFVLLV	WAVVSSLVGG
Fischoederius_sp_1_TH	LVRLWDLGSL	IDILGAMSFS	KFDWYTGIV	YVFSLFVLLV	WAVVSSLVGG
Fischoederius_elongatus	LVRLWDLGSL	IDILGVMGFS	KFDWYTSGVV	YVFSLFVLLI	WAVVSSLVGG
Fasciola hepatica	LTRLWDFSSL	IGTVGVMGFQ	KFDWYCWCLG	VGGLVLIILL	LSGIGMWWLLG
Gastrothylax crumenifer	LVRLWDLGSL	IDILGVMGFS	KFDWYTGIV	YVFSLFVLLI	WGVVSSLVGG
Homologaster paloniae	LVRLWDLGSL	TDILGVMGFS	KFDWYLSGIV	FVFWFLLLV	WNVLCSLVGG
Ogmocotyle sikae	LTRLWDYSSL	IDIVGVMGLQ	KFDWYSGCVG	FVFFSFCMWL	WFGVGSYVVG
Ogmocotyle_sp_JM_2015	LTRLWDYSSL	IDIVGVMGLQ	KFDWYSGCVG	FVFFSFCMWL	WFLGGSYVVG
Orthocoelium streptocoelium	LVRLWDLGSL	IDILGVMGFS	KFDWYTGIV	YVFSLFVLLI	WVLSLVLAGG
Paramphistomum cervi	LVRLWDLGSL	IDILGVMGFS	KFDWYSGGLV	YVFSLFVFLV	WSVSSLVGG
Calicophoron microbothrioides	LVGSSYFCFD	SVSLYLVL	VFLWMSLFL	FNIVSLSSKV	LITLSVMCSL
Explanatum explanatum	LVTSSYFCFD	SVSPYLVL	VFLWMSLFL	FNIVTLSSKI	LITLSVMCSL
Fischoederius cobboldi	LVTSSYFCFD	SVSLYLVL	VFLWMSLFL	FNIVSLSSKI	LVTLSVMCSL
Fischoederius_sp_1_TH	LVTSSYFCFD	SVSLYLVL	VFLWMSLFL	FGVVSLSKI	LITLSVMCSL
Fischoederius_elongatus	LVTSSYFCFD	SVSLYLVL	VFLWMSLFL	FSIVSLSSKI	LITLSVMCSL
Fasciola hepatica	YVEFGVVFV	SVSPYFCLL	LFLGISLVFV	LSELGLGSKI	MLVFSLVSSL
Gastrothylax crumenifer	LVSSSYFCFD	SISLYLVL	VFLWMSLFL	FNIVSLSSKL	LITLSVMCSL
Homologaster paloniae	LVSSSYFCFD	SVSLYLVL	VFLWMSLFL	FSVSVTSKI	LITLSVACSL
Ogmocotyle sikae	GTFSSPFCFD	SVSPYLCLL	VFLWISLVFV	FTKISVWSTA	VITLSVMCSL
Ogmocotyle_sp_JM_2015	SICGSPFCFD	SVSPYLCLL	VFLWISLVFV	FGKVGGVSTG	LITLSVMCSL
Orthocoelium streptocoelium	LVVSSYFCFD	SISLYLVL	VFLWMSLFL	FNIVTLSSKI	LITLSVMCSL
Paramphistomum cervi	LVTSSYFCFD	SVSLYLVL	VFLWMSLFL	FNIVTLSSKI	LITLSVMCSL
Calicophoron microbothrioides	VSYCCVHSLV	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Explanatum explanatum	VSYCCVHSLV	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Fischoederius cobboldi	VSYCCVHSLV	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Fischoederius_sp_1_TH	VSYCCVHSLV	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Fischoederius_elongatus	ISYCCVHSLV	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Fasciola hepatica	LCYCCVNGVW	FWCFEYSIL	PLLFLLISES	PYSERFIASW	YLLGYVVFSS
Gastrothylax crumenifer	VSYCCVHSLV	FWAFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Homologaster paloniae	VSYCCVHSLV	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Ogmocotyle sikae	ISYCCVHALM	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Ogmocotyle_sp_JM_2015	ISYCCVHALM	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Orthocoelium streptocoelium	ISYCCVHSLA	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Paramphistomum cervi	VSYCCVHSLV	FWVFEYSIL	LLLLLLVLES	PYSERYIASW	YLLGYVVLTS
Calicophoron microbothrioides	LPMLLCIFYL	SFNWGSFNLR	FWFDGCVSSG	VFAVLAVMFI	TKVPLPPPHV
Explanatum explanatum	LPMLLCIFYL	SLNWGSFNLR	FWFDGCVSSG	VFAVLAVMFI	TKVPLPPPHV
Fischoederius cobboldi	LPMLLCIFYL	SFNWGSFNLR	FWFDGCVSPG	VFAVLAVMFI	TKVPLPPPHV
Fischoederius_sp_1_TH	LPMLLCIFYL	SFNWGSFNLR	FWFDGCVSSG	VFAVLAVMFI	TKVPLPPPHV
Fischoederius_elongatus	LPMLLCIFYL	SFNWGSFNLR	FWFDGCVSSG	VFAVLAVMFI	TKVPLPPPHV
Fasciola hepatica	LPMLLCILYL	GGIMGSYSVQ	SWSIDCVGFG	VFVVLAVMFI	TKIPLPPPHV
Gastrothylax crumenifer	LPMLLCIFYL	SLNWGSFNLR	FWFDGCVSSG	VFAVLAVMFI	TKVPLPPPHV
Homologaster paloniae	LPMLLCIFYL	SFNWGSFNLR	FWFDGCVSSG	VFVVLAVMFI	TKIPLPPPHV
Ogmocotyle sikae	LPMLLCIFYL	SFFWGSYNIS	FWFSQGVSEV	VAVLGMVFI	TKIPLPPPHV
Ogmocotyle_sp_JM_2015	LPMLLCIFYL	SFFWGSYNIS	FWFSQGVSEV	VAVLGMVFI	TKIPLPPPHV
Orthocoelium streptocoelium	LPMLLCIFYL	SLNWGSFNLR	FWFDGCVSSG	VFVILAVLFI	TKVPLPPPHV

Paramphistomum_cervi	LPMLLCIFYL	SFSWGSFNLR	FWFDGCVSSG	VFVVLAVMFI	TKVPLPPHFV
Calicophoron_microbothrioides	WLPIVHAEAS	SIVSVCLSGY	IMKLGVLGIC	RFCSYLLSNL	ILSNTYMIVA
Explanatum_explanatum	WLPIVHAEAS	SIVSVCLSGY	IMKLGILGIC	RFCSHLLSGL	ILSNAYMIIV
Fischoederius_cobboldi	WLPIVHAEAS	SIVSVCLSGY	IMKLGILGIC	RFCSHLLPGL	ILSNFYMVVA
Fischoederius_sp_1_TH	WLPIVHAEAS	SIVSVCLSGY	IMKLGILGVC	RFCSHLLSGL	ILSNLYMVIA
Fischoederius_elongatus	WLPIVHAEAS	SIVSVCLSGY	IMKLGILGIC	RFCSHLLSGL	ILSNLYMVIA
Fasciola_hepatica	WLPIVHAEAS	SPVSMFLSGY	VMKLGLLGV	RFICYFLLSGF	IFSYWYVGLS
Gastrothylax_crumenifer	WLPIVHAEAS	SIVSVCLSGY	IMKLGILGIC	RFCSHFLSGL	ILSNFYMVVA
Homalogaster_paloniae	WLPIVHAEAS	SIVSVCLSGY	IMKLGILGVC	RFSSHLLSGV	VFSEEMYIVA
Ogmocotyle_sikae	WLPIVHAEAS	SAVSVCLSGY	IMKLGVLGVC	RFCCFILPYS	LFPEGYVIVS
Ogmocotyle_sp_JM_2015	WLPIVHAEAS	SAVSVCLSGY	IMKLGVLGVC	RFCCFILPYS	LFFDGYVIVC
Orthocoelium_streptocoelium	WLPIVHAEAS	SIVSVCLSGY	IMKLGILGIC	RFCSHLLSGL	ILSNLYMVIS
Paramphistomum_cervi	WLPIVHAEAS	SIVSVCLSGY	IMKLGILGVC	RFCSHLLSGL	ILSNVMYIVA
Calicophoron_microbothrioides	LLLAVLFFFS	ATRELDGKRW	LAFLSLSHII	IAAVCLCVVG	FEGSSLAFVF
Explanatum_explanatum	LLLAVLFFFS	ATRELDGKRW	LAFLSLSHII	IAAVCLCAVG	FEGSSLAFVF
Fischoederius_cobboldi	LLLAVLFFFS	ATRELDGKRW	LAFLSLSHII	MAAVCLCVVG	FEGSSLAFVF
Fischoederius_sp_1_TH	LLLAVLFFFS	ATRELDGKRW	LAFLSLSHII	IAAVCLCAVG	FEGSSLAFVF
Fischoederius_elongatus	LLLAVLFFFS	ATRELDGKRW	LAFLSLSHII	IAAVCLCVVG	FEGSSLAFVF
Fasciola_hepatica	LVFALLFFFS	ASRELDGKRW	LAFLSLAHIV	VVSVCFSPCW	FDEASLSLVY
Gastrothylax_crumenifer	LLLAVLFFFS	ATRELDGKRW	LAFLSLSHII	IAAVCLCVVG	FEGSSLAFVF
Homalogaster_paloniae	LLLAILFFFS	ATRELDGKRW	LAFLSLSHII	IASVCLCVVN	YEGSSLAFVF
Ogmocotyle_sikae	MLMSVLFFFS	ATRELDGKRW	LAFMSLSHMI	IVSVCLCVVS	FEGSAIAPLF
Ogmocotyle_sp_JM_2015	MLMSILFFFS	ATRELDGKRW	LAFMSLSHII	IVSVCLCVVG	FEGSAIAPLF
Orthocoelium_streptocoelium	LLLAVLFFFS	ATRELDGKRW	LAFLSLSHII	IAAVCLCSVG	FEGSSLAFVF
Paramphistomum_cervi	LLLAVLFFFS	ATRELDGKRW	LAFLSLSHII	IAAVCLSVVG	FEGSSLAFVF
Calicophoron_microbothrioides	SLGHLSAGV	TFIFLWLAYE	VSGSRNWNVL	KYCLSSSLFM	RCLVASCLCT
Explanatum_explanatum	SLGHLSAGV	TFIFLWLAYE	VSGSRNWNVL	KYCLSGSLFM	RCLAASCLCT
Fischoederius_cobboldi	SLGHLSAGV	TFIFLWLAYE	VSGSRNWNIL	KYCLSSSLFM	RCLVASCLCT
Fischoederius_sp_1_TH	SLGHLSAGV	TFIFLWLAYE	VSGSRNWNIL	KYCLSSGLFM	RCLAASCLCT
Fischoederius_elongatus	SLGHLSAGV	TFIFLWLAYE	VSGSRNWNIL	KYCLSSGLFM	RCLVASCLCT
Fasciola_hepatica	SLGHLSAGV	TFMLLWLLYE	VSGSRNWLVL	KS AVSGSLAV	RCILVMCVCS
Gastrothylax_crumenifer	SLGHLSAGV	TFIFLWLAYE	VSGSRNWNIL	KYCLSSSLFM	RCLAASCLCT
Homalogaster_paloniae	SLGHLSAGV	TFIFLWLAYE	VSGSRNWSIL	KYCLSGSLFM	RCLVASCLCT
Ogmocotyle_sikae	SLGHLSAGV	TFVLLWMAYD	VSGSRNWNIL	KFCLSSSLLF	RCLTVGCLCT
Ogmocotyle_sp_JM_2015	SLGHLSAGV	TFILLWMAYD	ISGSRNWNIL	KFCLSSSLMF	RCLAVGCLCT
Orthocoelium_streptocoelium	SLGHLSAGV	TFIFLWLAYE	VSGSRNWNIL	KYCLSSGLFM	RCLAASCLCT
Paramphistomum_cervi	SLGHLSAGV	TFIFLWLAYE	VSGSRNWNIL	KYCLSGSLFM	RCLVASCLCT
Calicophoron_microbothrioides	VASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Explanatum_explanatum	TASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Fischoederius_cobboldi	AASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLVGSLL
Fischoederius_sp_1_TH	AASLPPTVQF	FSEVFLSEA	GVLSTFFICA	FYFYLFCSGL	VPLFLIGSLL
Fischoederius_elongatus	AASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Fasciola_hepatica	VASVPPTVNF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Gastrothylax_crumenifer	AASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Homalogaster_paloniae	VASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Ogmocotyle_sikae	VASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Ogmocotyle_sp_JM_2015	VASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Orthocoelium_streptocoelium	VASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Paramphistomum_cervi	VASLPPTVQF	FSEVFLSEA	GVLSSFFICA	FYFYLFCSGL	VPLFLIGSLL
Calicophoron_microbothrioides	SRHYSISFAG	GGVWCYFSSM	LFLVWVSWFV	FVVMVSRNLV	ISSTVWGIIIE
Explanatum_explanatum	SRHYSISFAG	GGVWCYFSSV	LFLVWVSWFI	FVVMVSRLSI	VFSTIILDIVE
Fischoederius_cobboldi	SRHYSISFAG	GGVWCYFSSI	LFLVWVSWFV	FVVMVSRLSV	VFSTIWIIE
Fischoederius_sp_1_TH	SRHYSISFAG	GGVWCYFSSV	LFLVWVSWFV	FVVMVSRLSV	VFSTIWIIE
Fischoederius_elongatus	SRHYSISFAG	GGVWCYFSSI	LFLVWVSWFI	FVVMVSRLSV	VFSTIWIIE
Fasciola_hepatica	SRHCTIGYDR	GVVSVYGGI	LFLVWVSWFI	FVVMVSRLSV	VFSTIWIIE
Gastrothylax_crumenifer	SRHYSISFAG	GGVWCYFSSI	LFLVWVSWFI	FVVMVSRLSV	VFSTIWIIE
Homalogaster_paloniae	SRHYSISFAG	GGVWCYFSSI	LFLVWVSWFI	FVVMVSRLSV	VFSTIWIIE
Ogmocotyle_sikae	TRHYNISLVG	SEVVYKSSI	LFLVWVSWFI	FVVMVSRLSV	VFSTIWIIE
Ogmocotyle_sp_JM_2015	TRHYNISLVG	SEVVYKSSI	LFLVWVSWFI	FVVMVSRLSV	VFSTIWIIE
Orthocoelium_streptocoelium	SRHYSISFAG	GGVWCYFSSM	LFLVWVSWFI	FVVMVSRLSV	VFSTIWIIE
Paramphistomum_cervi	SRHYSISFAG	GGVWCYFSSV	LFLVWVSWFV	FVVMVSRLSV	VFSTIWIIE
Calicophoron_microbothrioides	GGWNDYFYRF	VLFGLMFCFL	LLRVPNIYGV	NGFAVFLFV	IFPLFFALFL
Explanatum_explanatum	GGWNDYFYRF	VLFGLMFCFL	LLRVPNIYGV	NGFAVFLFV	IFPLFFALFL
Fischoederius_cobboldi	GGWNDYFYRF	VLFGLMFCFL	LLRVPNIYGV	NGFAVFLFV	IFPLFFALFL
Fischoederius_sp_1_TH	GGWNDYFYRF	VLFGLMFCFL	LLRVPNIYGV	NGFAVFLFV	IFPLFFALFL
Fischoederius_elongatus	GGWNDYFYRF	VLFGLMFCFL	LLRVPNIYGV	NGFAVFLFV	IFPLFFALFL
Fasciola_hepatica	GGWSDYLYRM	CLFLLCCFL	YLRMPYLYGL	LGFGFLFIPS	VIPLFLALFL
Gastrothylax_crumenifer	GGWNDYFYRF	VLFGLMFCFL	LLRVPNIYGV	NGFAVFLFV	IFPLFFALFL
Homalogaster_paloniae	GGWNDYFYRF	VLFGLMFCFL	LLRVPNIYGV	NGFAVFLFV	IFPLFFALFL
Ogmocotyle_sikae	GGWDFDYFYRF	VLGVMFLCFL	SLRMPYIFGI	WGFGVYLFV	IFPLFFSLFL
Ogmocotyle_sp_JM_2015	GGWDFDYFYRF	VLGVMFLCFL	SLRMPYIFGI	WGFGVYLFV	IFPLFFSLFL
Orthocoelium_streptocoelium	GGWNDYFYRF	VLFGLMFCFL	LLRVPNIYGV	NGFAVFLFV	IFPLFFALFL
Paramphistomum_cervi	GGWNDYFYRF	VLFGLMFCFL	LLRVPNIYGV	NGFAVFLFV	IFPLFFALFL

Calicophoron_microbothrioides	SRVVDGGVSE	FCASLIPDGT	PMWIAPFVCL	SETLSYIVRP	IVLMIRPFVN
Explanatum_explanatum	SRVIDGGVSE	FCASLIPDGT	PMWIAPFVCL	SETLSYVGRP	IVLMIRPFVN
Fischoederius_cobboldi	SRVIDGGVSE	FCASLIPDGT	PMWIAPFVCL	SETLSYIVRP	IVLMIRPFVN
Fischoederius_sp_1_TH	SRVIDGGVSE	FCASLIPDGT	PMWIAPFVCL	SETLSYIVRP	IVLMIRPFVN
Fischoederius_elongatus	SRVIDGGVSE	FCASLIPDGT	PMWIAPFVCL	SETLSYIVRP	IVLMIRPFVN
Fasciola_hepatica	GRLLDVGLFS	FFSGFVPSGT	PLWIAPFVCL	AETLSYVVRP	IVLIIRPFVN
Gastrothylax_crumenifer	SRVIDGGVSE	FCASLIPDGT	PLWIAPFVCL	SETLSYIVRP	IVLMIRPFVN
Homalogaster_paloniae	SRVLDGGVAQ	FCASLIPDGT	PMWIAPFVCL	SETLSYIVRP	VVLMIRPFVN
Ogmocotyle_sikae	CRIVDGGVSS	FFSSLVPNGT	PIWIAPFVCL	AETLSYIVRP	IVLMIRPFVN
Ogmocotyle_sp_JM_2015	CRIIDGGVSS	FFSSLVPNGT	PIWIAPFVCL	AETLSYIVRP	VVLMIRPFVN
Orthocoelium_streptocoelium	SRVIDGGLSN	FCASLIPDGT	PMWIAPFVCL	SETLSYIVRP	VVLMIRPFVN
Paramphistomum_cervi	SRVIDGGLSE	FCASLIPDGT	PMWIAPFVCL	SETLSYIVRP	IVLMIRPFVN
Calicophoron_microbothrioides	LTIGSMGGYV	LGLLSLSTWW	VFIFLFLVFF	YEVFVACVHW	FIVCSILSFS
Explanatum_explanatum	LTIGSMGGYV	LGLLSLGSWW	VFMFLFMLFF	YEVFVACVHW	FIVCSILSFS
Fischoederius_cobboldi	LTIGSMGGYV	LGLLTLGTWW	VFAFLFLFF	YEVFVACVHW	FIVCSILSFS
Fischoederius_sp_1_TH	LTIGSMGGYV	LGLLTLGTWW	VFVFLFLFF	YEVFVACVHW	FIVCSILSFS
Fischoederius_elongatus	LTIGSMGGYV	LGLLTLGTWW	VFMFLFLFF	YEVFVACVHW	FIVCSILSFS
Fasciola_hepatica	LTIGSFGGVA	IGALGFGGFG	VFVFLVVLFF	YEVFVALVHW	FIVCNILSFS
Gastrothylax_crumenifer	LTIGSMGGYV	LGLLSLGTWW	VFVFLFLFF	YEVFVACVHW	FIVCSILSFS
Homalogaster_paloniae	LTIGSMGGYV	LGLLSLGTWW	VFGFLFLFF	YEVFVACVHW	FIVCSILSFS
Ogmocotyle_sikae	LTIGSVGGYV	LGALCLSSWW	VVAFVFLVFF	YEVFVALVHW	FIVCSILSFS
Ogmocotyle_sp_JM_2015	LTIGSIGGYV	LGALCLSSWW	VVVFLFILFF	YEVFVALVHW	FIVCSILSFS
Orthocoelium_streptocoelium	LTIGSMGGYV	LGLLSLGSWW	VFIFLFLVFF	YEVFVACVHW	FIVCSILSFS
Paramphistomum_cervi	LTIGSMGGYV	LGLLSLGTWW	VFVFLFLVFF	YEVFVACVHW	FIVCSILSFS
Calicophoron_microbothrioides	ENHSWLSLVL	IIFFTWCFLS	CENVSFWLWF	IELASLSLIP	SFFMYGSDG
Explanatum_explanatum	ENHSWLSLFL	IVFFTWCFLS	CENISFLWLF	IELASLSLIP	SFFMYGSDG
Fischoederius_cobboldi	EDHSWLSLVL	ILFFTWCFFS	CENISFLWLF	IELASLSLIP	SFFMYGSDG
Fischoederius_sp_1_TH	EDHSWLSLIL	ILFFTWCFFS	CENISFLWLF	IELASLSLIP	SFFMYGSDG
Fischoederius_elongatus	EDHSWLSLIL	ILFFTWCFFS	CENAFWLWLF	IELASLSLIP	SFFMYGSDG
Fasciola_hepatica	ENHGSFGVLG	LLVPSLLVFS	VGNLSLWLF	LELSTLSVVP	LFLLGNPWC
Gastrothylax_crumenifer	ENHSWLSLFL	VVFTWCFFS	CENISFLWLF	IELASLSLIP	SFFMYGSDG
Homalogaster_paloniae	EGHSWLSLFL	IIFFTWCFLS	CENISFLWLF	IELASLSLIP	SFFMYGSDG
Ogmocotyle_sikae	EDHSFLSVCG	VVFTVLMFL	SGNLCPFVLY	LELSSCLVLP	SFFLSMETEK
Ogmocotyle_sp_JM_2015	EDHSFLSVCG	VVFSVVMFF	SSNLCLFVLY	LELSSCLVLP	AFPLSSESDK
Orthocoelium_streptocoelium	ENHSWLSLVL	IIFFTWCFFS	CENILFLWLF	IELASLSLIP	SFFLYGSDS
Paramphistomum_cervi	ENHSWLSLVL	IVFFTWCFFS	CENLSFLWLF	IELASLGLIP	SFFMYGSDG
Calicophoron_microbothrioides	LSGLFSYIVV	SSIASSFMVC	ALVSKDLLVF	FYLGLLVKFG	VFPFFGWVYK
Explanatum_explanatum	LSGLFSYIVV	SSIASSFMVC	ALVSSDLLVF	FYLGLLIKFG	VFPFFGWVYK
Fischoederius_cobboldi	LSGLFSYIVV	SSIASSFMVC	ALVSSDLLVL	FYLGLLVKFG	VFPFFGWVYK
Fischoederius_sp_1_TH	LGGLFSYIVV	SSIASSFMVC	ALVSSDLLVL	FYLGLLVKFG	VFPFFGWVYK
Fischoederius_elongatus	LSGLFSYIVV	SSIASSFMVC	ALVSSGLLVL	FYLGLLIKFG	VFPFFGWVYK
Fasciola_hepatica	LSGLFNIIIA	SSVSSLLILC	GIMSNLLFM	LLIGLFLKFG	LFPFWGVVYG
Gastrothylax_crumenifer	LNGLFSYIVV	SSIASSFMVC	ALVSSDLLIL	FYLGLLIKFG	VFPFFGWVYK
Homalogaster_paloniae	LGGLFSYIVV	SSVASSFMVC	ALLSDALLIF	FYLGLLVKFG	VFPFFGWVYK
Ogmocotyle_sikae	LNSLFSYIVA	SSIASSLLILC	GVMPVDLMLP	MILGFLIKFG	LFPFWGVVYN
Ogmocotyle_sp_JM_2015	LNSLFSYIVA	SSIASSLLILC	GVLPDMLP	MILGFLIKFG	LFPFWGVVYN
Orthocoelium_streptocoelium	LSGLFSYIVV	SSIASSFMVC	ALVSKSLVL	FYLGLLIKFG	VFPFFGWVYS
Paramphistomum_cervi	LGGLFSYIVV	SSIASSFMVC	ALVSGDLLIF	FYLSLLVNI	IFFPFGVYK
Calicophoron_microbothrioides	VVGSNWFVV	WCFSTFLKSP	FLFFAFFSLL	GGSSVIECMC	CLTFILCAFL
Explanatum_explanatum	VVGSNWFVV	WCFSTFLKSP	FLPFTFFSLL	GGDVVECLC	CFTFILCAFL
Fischoederius_cobboldi	VVGSNWFVV	WCFSTFLKSP	FLPFTLFFLL	GECDIVECMC	CLTFILCTFL
Fischoederius_sp_1_TH	VVGSNWFVV	WCFSTFLKSP	FLPFTFFFL	GGCSVVEYMC	CLTFILCTFL
Fischoederius_elongatus	VVGSNWFVV	WCFSTFLKSP	FIFPFFFL	DGCGVVEYMC	CLTFLLCTFL
Fasciola_hepatica	VSLNSNLWLV	WLSSTFLKAP	IFFLPFFLAG	GSYFLVNLIC	CLSPVLVSL
Gastrothylax_crumenifer	VMVSSNWFVV	WCFSTLLKSP	FLPFTFFFL	DSCGVVECMC	CLTFVLCAL
Homalogaster_paloniae	VVGSNWFVV	WCFSTFLKSP	FLPFSFFFL	GSVSVIEILC	CLTFLLCTFL
Ogmocotyle_sikae	VIIIGSNLWLV	WGLSTALKAS	FFFFSFFLSC	SYIGIVNWSL	AVTFLFCGSV
Ogmocotyle_sp_JM_2015	VIVGSNLWLV	WGLSTALKAS	FFFFSFFLSC	NYISVVSWSL	AVTFLFCGSV
Orthocoelium_streptocoelium	VVGSNWFVV	WCFSTFLKSP	FLPFTLFFLL	GSGDIVSYMC	CLTFILCTFL
Paramphistomum_cervi	VVGSNWFVI	WCFSTFLKSP	FLPFTFFFL	GGVGVVEGMC	CLTFVLCAL
Calicophoron_microbothrioides	FWLFSFNWY	CWCHMMLVSS	ASLVVMSLVL	SVDSLFLYFI	VYVWASMVV
Explanatum_explanatum	FWFFSFNWY	CWCHMMLVSS	ASLVAMSLLVL	SVGYLFLYFL	IYVLWSSLVI
Fischoederius_cobboldi	FWLYSFNWY	CWCHMMLVSS	ASLVVMSLVL	SVSFLYFLFF	YVMIWASLVI
Fischoederius_sp_1_TH	FWLYSFNWY	CWCHMMLVSS	ASLVAMSLLVL	SVNSLFLYFL	VYVWASLVI
Fischoederius_elongatus	FWLYSFNWY	CWCHMMLVSS	ASLVAMSLLVL	SVDSLFLYFL	VYVWASLVI
Fasciola_hepatica	FWFYTYGWLY	CWCHMMLVSS	AALVAMSVL	SSDVLLVFF	VYVWASLVI
Gastrothylax_crumenifer	FWLFSFNWY	CWCHMMLVSS	ASLVAMSLLVL	SVSSLLYFLI	VYVWASLVI
Homalogaster_paloniae	FWLFSFNWY	CWCHMMLVSS	ASLVVMSLVL	SVDALLYLL	VYVWATMVI
Ogmocotyle_sikae	FWVISYNWY	CWCHMMLVSS	ASLVVMSLVL	SLDYLAYLYV	VYVWATMVI
Ogmocotyle_sp_JM_2015	FWIISYNWY	CWCHMMLVSS	ASLVVMSLVI	SLDYLAYLYV	VYVWATMVI
Orthocoelium_streptocoelium	FWLFSFNWY	CWCHMMLVSS	ASLVAMSLLVL	SVNSLFLYFI	VYVWASLVI
Paramphistomum_cervi	FWLFSFNWY	CWCHMMLVSS	ASLVAMGLVL	SVDSLFLYFL	VYVWASLVI

Calicophoron_microbothrioides	GFFSVCSDEM	VLGSLFCFLF	CFLLVSPFLS	VSVFYKLLMG	SCIFSCSFIV
Explanatum_explanatum	GFFSMCGDEM	MLEGLLCFLF	CFLLVSPFLS	VSVFYKLLMG	SCIFSCSFIV
Fischoederius_cobboldi	GYFSLCGDEM	MLGDLSCFLF	CFLLVSPFLS	LSVIFYKLLMG	SCIFSCSFIV
Fischoederius_sp_1_TH	GYFSLCGDEM	VLSGLLCFLF	CFLLVSPFLS	LSVIFYKLLMG	SCIFSCSFIV
Fischoederius_elongatus	GYFSLCGDEM	VLSLFCFLF	CFLLVSPFLS	LSVIFYKLLMG	SCIFSCSFIV
Fasciola_hepatica	SFLGCCSGW	FGSVWGYFFF	CFLLLSIPVS	LSIFYKLVMA	SGIFSCWFVV
Gastrothylax_crumenifer	GYFSVSGDEM	VLSLFCFLF	CFLLVSPFLS	VSVFYKLLMG	SCIFSCSFIV
Homologaster_paloniae	GFFNWTGGEM	SLNGLVCFLF	CFLLVSPFLS	VSVFYKLLMG	SCIFSCSFIV
Ogmocotyle_sikae	CFEKKGGDM	SLDGVLCFMF	CSSLVSPFCS	ISVIFYKLVIG	GCIFSCYFPV
Ogmocotyle_sp_JM_2015	CFEKKGGDM	SLDGVLCFMF	CSSLVSPFCS	ISVIFYKLVIG	GCIFSCYFPV
Orthocoelium_streptocoelium	GFFSMCGDEL	VLSLLCFLF	CFLLVSPFLS	VSVFYKLFMG	SCIFSCSFAV
Paramphistomum_cervi	GFFSVCGDEV	ALGGLLCFLF	CFLLVSPFLS	VSVFYKLLMG	SCIFSCSFMV
Calicophoron_microbothrioides	FLCWVYLSL	EQFYLIKQVI	GEEVPKSLG	VVMLNGMYAF	LSGLLAFLLI
Explanatum_explanatum	FLCWVYLSL	EQFYLVKQVI	GEEVPKSLG	VVMPFGLYVF	LSGLLAFLLI
Fischoederius_cobboldi	FLCWVYLSL	EQFYLVKQVI	GSEVPKLLG	VVMLTGVYIF	LNGLLAFLLI
Fischoederius_sp_1_TH	FLCWVYLSL	EQFYLVKQVI	GSEVPKSLG	VVMLTGVYIF	LNGLLAFLLI
Fischoederius_elongatus	FLCWVYLSL	EQFYLVKQVI	GNEVPKSLG	VVMLTGVYIF	LNGLLAFLLI
Fasciola_hepatica	LVSWSYLSL	EQCYLLKQVI	SFDLPKSVFG	GVLLNVFYLG	KLVIKFKVLI
Gastrothylax_crumenifer	FLCWVYLSL	EQFYLVKQVI	GNEVPKSLG	VVMLSGVYVF	LNGLLAFVLI
Homologaster_paloniae	FFLVVYLSL	EQFYLIKQVI	GEEVPKSLG	LVLLGGIYVF	LSCLLAFVLI
Ogmocotyle_sikae	FVCWVFNIS	EQFYLVKLI	SQEVPKEMGG	LFLMSGLYMF	FSGLFAFVLI
Ogmocotyle_sp_JM_2015	FVCWVFNIS	EQFYLVKLI	SQEVPKEMGG	LFLMSGLYMF	FSGLFAFVLI
Orthocoelium_streptocoelium	FLCWVYCLS	EQFYLIKQVI	GSEVPKSLG	VVMVGGVYVF	LSGLLAFLLI
Paramphistomum_cervi	FLCWVYLSL	EQFYLVKQVI	GSEVPKSLG	IVMLSGVYIF	LSGLLAFLLI
Calicophoron_microbothrioides	MLFVAFFILA	ERKVLGYQI	RKGNPKVGIW	GLLQSFADLL	KLVIKFKVVS
Explanatum_explanatum	MLFVAFFILA	ERKVLGYQI	RKGNPKVGIW	GLLQSFADLL	KLVIKFKVVS
Fischoederius_cobboldi	MLFVAFFILA	ERKILGYQI	RKGNPKVGIW	GLLQSFADLL	KLVIKFKVVS
Fischoederius_sp_1_TH	MLFVAFFILA	ERKILGYQI	RKGNPKVGIW	GLLQSFADLL	KLVIKFKVVS
Fischoederius_elongatus	MLFVAFFILA	ERKILGYQI	RKGNPKVGIW	GLLQSFADLL	KLVIKFKVVS
Fasciola_hepatica	MVFVAFFILG	ERKVLGYQI	RKGNPKVGLW	GLLQSFADLM	KLVIKFKVVF
Gastrothylax_crumenifer	MLFVAFFILA	ERKVLGYQI	RKGNPKVGIW	GLLQSFADLL	KLVIKFKVVS
Homologaster_paloniae	MLFVAFFILA	ERKILGYQI	RKGNPKVGIW	GLLQSFADLL	KLVIKFKVVS
Ogmocotyle_sikae	MLFVAFFVLS	ERKVLGYQI	RKGNPKVGIW	GLLQSFADLM	KLVIKFKVVF
Ogmocotyle_sp_JM_2015	MLFVAFFVLS	ERKILGYQI	RKGNPKVGM	GLLQSFADLM	KLVIKFKVVS
Orthocoelium_streptocoelium	MLFVAFFILA	ERKILGYQI	RKGNPKVGIW	GLLQSFADLL	KLVIKFKVVS
Paramphistomum_cervi	MLFVAFFILA	ERKVLGYQI	RKGNPKVGIW	GLLQSFADLL	KLVIKFKVVS
Calicophoron_microbothrioides	FEVRSWLSWC	GVFLLVFLSC	CYCVFYAFGS	GGVSCVNFML	WFLVVTSMTG
Explanatum_explanatum	FEVRSWLSWC	GVFLLVFLSC	CYCVFYAFGS	GGVSCVNFML	WFLVVTSMTG
Fischoederius_cobboldi	FEVRSWLSWC	GVFLLVFLSC	CYCVFYAFGS	GGVSCVNFML	WFLVVTSMTG
Fischoederius_sp_1_TH	FEVRSWLSWC	GVFLLVFLSC	CYCVFYAFGS	GGVSCVNFML	WFLVVTSMTG
Fischoederius_elongatus	FEVRSWLSWC	GVFLLVFLSC	CYCVFYAFGS	GGVSCVNFML	WFLVVTSMTG
Fasciola_hepatica	FQNRSWLSWW	GVYLLVLLAC	GCVLFFPFSF	GGVSSVNFML	WFLVVTSMTG
Gastrothylax_crumenifer	FEVRSWLSWC	GVFLLVFLSC	CYCVFYAFGS	GGVSCVNFML	WFLVVTSMTG
Homologaster_paloniae	FEVRSWLSWC	GVFLLVFLSC	CYCVFYAFGS	GGVSCVNFML	WFLVVTSMTG
Ogmocotyle_sikae	FEVRSWLSWC	GVYLLVLLAC	GCVLFFPFSF	GGVSSVNFML	WFLVVTSMTG
Ogmocotyle_sp_JM_2015	FEVRSWLSWC	GVYLLVLLAC	GCVLFFPFSF	GGVSSVNFML	WFLVVTSMTG
Orthocoelium_streptocoelium	FEVRSWLSWC	GVYLLVLLAC	GCVLFFPFSF	GGVSSVNFML	WFLVVTSMTG
Paramphistomum_cervi	FEVRSWLSWC	GVYLLVLLAC	GCVLFFPFSF	GGVSSVNFML	WFLVVTSMTG
Calicophoron_microbothrioides	YSLISVGWGS	FNKYALLSSI	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Explanatum_explanatum	YSLISVGWGS	FNKYALLSSI	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Fischoederius_cobboldi	YSLISVGWGS	FNKYALFSSI	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Fischoederius_sp_1_TH	YSLISVGWGS	FNKYALLSSI	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Fischoederius_elongatus	YSLISVGWGS	FNKYALLSSI	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Fasciola_hepatica	YSLISVGWGC	YNKVALVSCV	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Gastrothylax_crumenifer	YSLISVGWGS	FNKYALLSSI	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Homologaster_paloniae	YSLISVGWGS	FNKYALLSSI	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Ogmocotyle_sikae	YSLISVGWGC	YNKYGLISCV	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Ogmocotyle_sp_JM_2015	YSLISVGWGC	YNKYGLISCV	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Orthocoelium_streptocoelium	YSLISVGWGS	FNKYALLSSI	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Paramphistomum_cervi	YSLISVGWGS	FNKYALLSSI	RSALGSVTFE	ACFMCVIVL	ALVCGTYDLS
Calicophoron_microbothrioides	GFVSKSWLLV	TVLPVCYFLW	LLGILCECNR	TPLDYSEAES	ELVSGLSVEY
Explanatum_explanatum	GFVNSWLLI	FVVPVCYFLW	LLGILCECNR	TPLDYSEAES	ELVSGLSVEY
Fischoederius_cobboldi	GFVNSWLLI	AVIPACYFLW	LLGILCECNR	TPLDYSEAES	ELVSGLSVEY
Fischoederius_sp_1_TH	SFVNSWLLV	AVIPACYFLW	LLGILCECNR	TPLDYSEAES	ELVSGLSVEY
Fischoederius_elongatus	GFVNSWLLV	AVIPACYFLW	LLGILCECNR	TPLDYSEAES	ELVSGLSVEY
Fasciola_hepatica	CLFGEFGMM	MVVPVYGLW	LVGILCECNR	TPLDYSEAES	ELVSGLSVEY
Gastrothylax_crumenifer	GFVNSWLLV	VVVPVCYFLW	LLGILCECNR	TPLDYSEAES	ELVSGLSVEY
Homologaster_paloniae	SFVNSWLLV	AVIPACYFLW	LLGILCECNR	TPLDYSEAES	ELVSGLSVEY
Ogmocotyle_sikae	SVLHNSWLLV	MVVPVYGLW	LVGILCECNR	TPLDYSEAES	ELVSGLSVEY
Ogmocotyle_sp_JM_2015	SALCNSWLLV	MVVPVYGLW	LVGILCECNR	TPLDYSEAES	ELVSGLSVEY
Orthocoelium_streptocoelium	SFVNSWLLI	SVIPVCYFLW	LLGILCECNR	TPLDYSEAES	ELVSGLSVEY
Paramphistomum_cervi	SFVNSWLLV	LVVPVCYFLW	LLGILCECNR	TPLDYSEAES	ELVSGLSVEY
Calicophoron_microbothrioides	SGVPFTCLFA	CEYLIMFIFS	WLSAVIFFGG	SIVMLLTMHL	AVFYIWARAT

Explanatum_explanatum	SGVPFTCLFA	CEYLIMFIFS	WLSAVIFFGG	SFVMLLTMVH	AVFYIWARAT
Fischoederius_cobboldi	SGVPFTCLFA	CEYLIMFIFS	WLSAVIFFGG	VFVMFFTMVH	AVFYIWARAT
Fischoederius_sp_1_TH	SGVPFTCLFA	CEYLIMFIFS	WLSAVIFFGG	VFVMFFTMVH	AVFYIWARAT
Fischoederius_elongatus	SGVPFTCLFA	CEYLIMFIFS	WLSAVIFFGG	IFVMFFTMVH	AVFYIWARAT
Fasciola_hepatica	CNVPFTCLFA	CEYLIMVIFS	WFSSLLFWGG	SFVLGLALFH	VMFFVWARAT
Gastrothylax_crumenifer	SGVPFTCLFA	CEYLIMFIFS	WLTAVIFFGG	AFVMLFTMVH	AVFYIWARAT
Homalogaster_paloniae	SGVPFTCLFA	CEYLIMFIFS	WLSAVIFFGG	VYVMLFTMLH	AIFYIWARAT
Ogmocotyle_sikae	CGVPFTCLFA	CEYLIIYIFS	WLTSLFFFGG	VFVVFLTIFH	SVFFIWARAT
Ogmocotyle_sp_JM_2015	CGVPFTCLFA	CEYLIIYVFS	WLTSLFFFGG	GLVVILTIFH	SVFFIWARAT
Orthocoelium_streptocoelium	SGVPFTCLFA	CEYLIMFVFS	WLSAVIFFGG	SLVMLFTMVH	AIFYIWARAT
Paramphistomum_cervi	SGVPFTCLFA	CEYLIMFIFS	WLSAVIFFGG	AFVMLLTMVH	AVFYIWARAT
Calicophoron_microbothrioides	LPRFRYDYFI	GFMWEWLLL	FILSVFFVLM	LVLLSSFLFL	VFVLVSIFHA
Explanatum_explanatum	LPRFRYDYFI	GFMWEWLLL	FILSVFFVLM	FIMLSGLFLL	VFMLVSVFHA
Fischoederius_cobboldi	LPRFRYDYFV	GFMWEWLLL	FILSVFFVLM	LVVLSGLFLL	VFVLVSVFHA
Fischoederius_sp_1_TH	LPRFRYDYFV	GFMWEWLLL	FIFSVFFVLM	LVVLSGLFLL	VFVLVGFHA
Fischoederius_elongatus	LPRFRYDYFV	GFMWEWLLL	FIFSVFFVLM	LVVLSGLFLL	VFVLVGFHA
Fasciola_hepatica	LPRVRYDYFV	SFMWRYALLL	LVFSFFFVIM	LFFAVLLFPL	IFFVLVLHA
Gastrothylax_crumenifer	LPRFRYDYFV	GFMWEWLLL	FIFSVFFVLM	CVN2SGFILV	GSCISWNISC
Homalogaster_paloniae	LPRFRYDYFI	GFMWEWLLL	FIFSVFFVLM	YIMLCGLFLL	VFALIVVPHM
Ogmocotyle_sikae	LPRLRDYDYFI	GFMWKWAILL	FVFFLFFVVM	YIILSGIFFL	VFLMLVPHM
Ogmocotyle_sp_JM_2015	LPRLRDYDYFI	GFMWKWAILL	FVSPLLFVVM	YIVLSGIFFL	VLLMLGFHL
Orthocoelium_streptocoelium	LPRFRYDYFI	GFMWEWLLI	FIFSVFFVLM	SVVLSGIFLL	IFVLVGFHA
Paramphistomum_cervi	LPRFRYDYFI	GFMWEWLLL	FIFSVFFVLM	FVMLSGLFLL	VFVLVSVFHA
Calicophoron_microbothrioides	FLWNVEWSSV	GGLRCWVSSY	ECGFMSQQLV	VNYFSYTCFV	LLVFFVVPDL
Explanatum_explanatum	FLWNVEWSSA	CGLRCWVSSY	ECGFMSQQLV	VNYFSYTCFV	LLVFFVVPDL
Fischoederius_cobboldi	FLWNVDWSSA	EGLRCWVSSY	ECGFMSQQLV	VNYFSYTCFV	LLVFFVVPDL
Fischoederius_sp_1_TH	FLWNVEWSSA	GGLRCWVSSY	ECGFMSQQLV	VNYFSYTCFV	LLVFFVVPDL
Fischoederius_elongatus	FLWNVEWSSV	EGLRCWVSSY	ECGFMSQQLV	VNYFSYTCFV	LLVFFVVPDL
Fasciola_hepatica	FLWNLDLGFIF	SGERSWVSSF	ECGFLSQRVT	ENYFSYTYFI	LLVFFVVPDL
Gastrothylax_crumenifer	FLWNVEWSSV	EGLRCWVMSY	ECGFMSQQLV	VNYFSYTCFI	LLVFFVVPDL
Homalogaster_paloniae	FVWNVEWSSL	GSMRCWVSPY	ECGFMSQQLV	ENYFSYTCFV	LLVFFVVPDL
Ogmocotyle_sikae	FIWNMDWYSV	DGARVWVSSY	ECGFLSQRVV	ENYFSYTYFV	LLVFFVVPDL
Ogmocotyle_sp_JM_2015	FIWNMDWYSV	NGVRVWVSSY	ECGFLSQRVV	ENYFSYTYFV	LLVFFVVPDL
Orthocoelium_streptocoelium	FLWNVWSSM	SVLRWCWASSY	ECGFMSQQLV	VNYFSYTCFI	LLVFFVVPDL
Paramphistomum_cervi	FLWNVEWSSA	VGLRCWVSPY	ECGFMSQQLV	VNYFSYTCFV	LLVFFVVPDL
Calicophoron_microbothrioides	EISLLLLNPL	QGLLYKNLMI	YLFPLVLLCF	GYSVEVYKGY	ALWVYMWACT
Explanatum_explanatum	EISLLLLNPL	QGLLYKNLMI	YFPFLVLLCF	GYSVEVYKGY	ALWAYMWACT
Fischoederius_cobboldi	EISLLLLNPL	QGLLYKNLMI	YLFPLVLLCV	GYTMEVYKGY	ALWVYMWACT
Fischoederius_sp_1_TH	EISLLLLNPL	QGLLYKNMMC	YLFPLVLLCF	GYAMEVYKGY	ALWIYMWACT
Fischoederius_elongatus	EISLLLLNPL	QGLLYKNLMI	YLFPLVLLCV	GYAMEVYKGY	ALWVYMWACT
Fasciola_hepatica	EVSLLLLNPL	QGVLYKNLMI	YLFPLVLLGI	GFLVEVRRGY	VRWYTMWLFCT
Gastrothylax_crumenifer	EISLLLLNPL	QGSLYKNLMI	YLFPLVLLCF	GYAMDVYKGY	ALWAYMWACT
Homalogaster_paloniae	EISLLLLNPL	QGLLSKNLMI	YLFPLVLLCF	GYSVEVYKGY	ALWVYMWACT
Ogmocotyle_sikae	EISLLLLNPL	QGMFLKNSY	YIFPLVLCV	GFGVEINKGY	VSWGVMWLFCT
Ogmocotyle_sp_JM_2015	EISLLLLNPL	QGMFLKNSY	YIFPLVLCV	GFGVEINKGY	VSWGVMWLFCT
Orthocoelium_streptocoelium	EISLLLLNPL	QGLLYKNLMI	YLFPLVLLCF	GYSVEVYKGY	ALWAYMWACT
Paramphistomum_cervi	EVSLLLLNPL	QGMFLKNSY	YLFPLVLLCF	GYAVEVYKGY	ALWVYMWACT
Calicophoron_microbothrioides	MDHKRVGFYI	LVVGWVGGFL	GLALSTIIRL	NYMEPYYNV	SPEVYNYVVS
Explanatum_explanatum	MDHKRVGFYI	LVVGWVGGFL	GLALSTIIRL	NYMEPYYNV	SPEVYNYVVS
Fischoederius_cobboldi	MDHKRVGFYI	LIVGIWAGFL	GLALSTIIRL	NFMEPYYNV	SPEVYNYVVS
Fischoederius_sp_1_TH	VDHKRVGFYI	LIVGIWAGFL	GLALSTIIRL	NFMEPYYNV	SPEVYNYVVS
Fischoederius_elongatus	VDHKRVGFYI	LIVGIWAGFL	GLALSTIIRL	NFMEPYYNV	SPEVYNYVVS
Fasciola_hepatica	LDHKRVGLYI	MVIGLWGGFL	GLSLSVLRL	NYLDPYFNLV	SPEVYNYVVS
Gastrothylax_crumenifer	MDHKRVGFYI	LIVGIWAGFL	GLALSTIIRL	NYMEPYYNV	SPEVYNYVVS
Homalogaster_paloniae	MDHKRVGFYI	LIVGIWAGFL	GLALSSLIRL	NYMEPYYNV	SPEVYNYVVS
Ogmocotyle_sikae	MDHKRVGFYI	FVLGVWGGFL	GLSLSMLIRL	NFVEPYYNV	APEVYNYVIT
Ogmocotyle_sp_JM_2015	MDHKRVGFYI	FVLGVWGGFL	GLSLSMLIRL	NFVEPYYNV	APEVYNYVIT
Orthocoelium_streptocoelium	MDHKRVGFYI	LIVGIWAGFL	GLALSTIIRL	NYMEPYYNV	SPEVYNYVVS
Paramphistomum_cervi	MDHKRVGFYI	LVVGWVGGFL	GLALSTIIRL	NYMEPYYNV	SPEVYNYVVS
Calicophoron_microbothrioides	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPSV
Explanatum_explanatum	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPSV
Fischoederius_cobboldi	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPSM
Fischoederius_sp_1_TH	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LGAWLLPST
Fischoederius_elongatus	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPST
Fasciola_hepatica	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPST
Gastrothylax_crumenifer	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPSV
Homalogaster_paloniae	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPSV
Ogmocotyle_sikae	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPSV
Ogmocotyle_sp_JM_2015	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPSV
Orthocoelium_streptocoelium	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPSV
Paramphistomum_cervi	IHGIVMLLFF	LMPVLIGGFG	NYLLPLLGL	PDLILPRINA	LSAWLLPSV
Calicophoron_microbothrioides	ICLCLSLVKG	AGVGWTFYPP	LSSGEFSSHG	VDFLMFSLHL	TGISSLLSSL
Explanatum_explanatum	VCLCLSLIKG	AGVGWTFYPP	LSGSEFSSHG	VDFLMFSLHL	TGISSLLSSL

Fischoederius_cobboldi	VCLCLSLIKG	AGVGWTFYPP	LAGGEFSTHG	VDFLMFSLHL	TGVSSILSSL
Fischoederius_sp_1_TH	VCLCLSLVKG	AGVGWTFYPP	LAGGEFSTHG	VDFLMFSLHL	SGVSSILSSL
Fischoederius_elongatus	VCLCLSLVKG	AGVGWTFYPP	LAGGEFSTHG	VDFLMFSLHL	AGVSSILSSL
Fasciola_hepatica	VCLPFGLIGG	VGVGWTFYPP	LSSLDYSSWG	VDFLMFSLHL	AGVSSLLGSI
Gastrothylax_crumenifer	VCLSLSLIKG	AGVGWTFYPP	LAGGEFSSHG	VDFLMFSLHL	TGVSSILSSL
Homalogaster_paloniae	TCLCLSLVKG	AGVGWTFYPP	LSSGDFSSHG	VDFLMFSLHL	TGVSSILSSL
Ogmocotyle_sikae	NCLALSMFLG	SGVGWTFYPP	LSGGDYSVHG	ADFMMFSLHL	AGVSSILSSL
Ogmocotyle_sp_JM_2015	VCLALSMFLG	SGVGWTFYPP	LSGGDYSAHG	ADFMMFSLHL	AGVSSILSSL
Orthocoelium_streptocoelium	ICLCLSLVGG	AGVGWTFYPP	LSSGEFSSHG	VDFLMFSLHL	TGISILSSL
Paramphistomum_cervi	VCLCLSLVKG	AGVGWTFYPP	LSGGEFSSHG	VDFLMFSLHL	TGISILSSL
Calicophoron_microbothrioides	NFIATIYSAV	NVYTSSRQSV	LVWAYLFTSI	LLVLSLPVLA	AGITMLLFDR
Explanatum_explanatum	NFIATIYSAV	SVYTSSRQSV	LVWAYLFTSI	LLVLSLPVLA	AGITMLLFDR
Fischoederius_cobboldi	NFIATIYSAV	NIYTSSRQSV	LVWAYLFTSI	LLVLSLPVLA	AGITMLLFDR
Fischoederius_sp_1_TH	NFIATIYSAV	NIYTSSRQSV	LVWAYLFTSI	LLVLSLPVLA	AGITMLLFDR
Fischoederius_elongatus	NFIATIYSAV	NIYTSSRQSV	LVWAYLFTSI	LLVLSLPVLA	AGITMLLFDR
Fasciola_hepatica	NFICTILEVM	LDEGTGRHSI	LVWAYLFTSV	LLLISLPVLA	AAITMLLFDR
Gastrothylax_crumenifer	NFIATIYSAV	NVYTSSRQSA	LVWAYLFTSI	LLVLSLPVLA	AAITMLLFDR
Homalogaster_paloniae	NFIATIYSAV	SIYTSSRQSV	LVWAYLFTSI	LLVLSLPVLA	AGITMLLFDR
Ogmocotyle_sikae	NFICTIYGGV	EDWNASRQSI	IVWAYLFTSV	LLIISLPVLA	AGITMLLFDR
Ogmocotyle_sp_JM_2015	NFICTIYGGV	EDWNASRQSI	IIWAYLFTSV	LLIISLPVLA	AGITMLLFDR
Orthocoelium_streptocoelium	NFVATIYSAV	SVYVSSRQSV	LIWAYLFTSI	LLVLSLPVLA	AGITMLLFDR
Paramphistomum_cervi	NFIATIYSAV	NVYTSSRQSV	LVWAYLFTSI	LLVLSLPVLA	AGITMLLFDR
Calicophoron_microbothrioides	NFGTSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPGFGA	VSHICMSLSN
Explanatum_explanatum	NFGTSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPGFGA	VSHICMSMSN
Fischoederius_cobboldi	NFGTSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPGFGA	VSHICMCLSN
Fischoederius_sp_1_TH	NFGTSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPGFGA	VSHICMCLSN
Fischoederius_elongatus	NFGTSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPGFGA	VSHICMCLSN
Fasciola_hepatica	NFGSAFFDPM	GGGDPVLFQH	LFWFFGHPEV	YVLILPGPGV	ISHICVTLTN
Gastrothylax_crumenifer	NFGTSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPGFGA	VSHICMCLSN
Homalogaster_paloniae	NFGTSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPGFGA	ISHICMCLSN
Ogmocotyle_sikae	NFESSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPAPGI	VSHICLSLSN
Ogmocotyle_sp_JM_2015	NFESSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPAPGI	VSHICLSLSN
Orthocoelium_streptocoelium	NFGTSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPGPGV	VSHICMVSNS
Paramphistomum_cervi	NFGTSFFDPL	GGGDPVLFQH	LFWFFGHPEV	YVLILPGPGV	VSHICMCLSN
Calicophoron_microbothrioides	QDSLFGYYGL	VFAMASIVCL	GSVVWAHHMF	MVGLDVKTSV	FFSSVSMVIG
Explanatum_explanatum	QDSLFGYYGL	VFAMASIVCL	GSVVWAHHMF	MVGLDVKTSV	FFSSVTMVIG
Fischoederius_cobboldi	QDSLFGYYGI	VFAMASIVCL	GSVVWAHHMF	MVGLDVKTSV	FFSSVSMVIG
Fischoederius_sp_1_TH	QDSLFGYYGI	VFAMASIVCL	GSVVWAHHMF	MVGLDVKTSV	FFSSVSMVIG
Fischoederius_elongatus	QDSLFGYYGI	VFAMASIVCL	GSVVWAHHMF	MVGLDVKTSV	FFSSVSMVIG
Fasciola_hepatica	NDSLFGYYGL	ILAMAAIVCL	GSVVWAHHMF	MVGLDVHTAV	FFSSVTMVIG
Gastrothylax_crumenifer	QDSLFGYYGI	VFAMASIVCL	GSVVWAHHMF	MVGLDVKTSV	FFSSVSMVIG
Homalogaster_paloniae	QDSLFGYYGL	VFAMASIVCL	GSVVWAHHMF	MVGLDVKTSV	FFSSVSMVIG
Ogmocotyle_sikae	SDSLFGYFGL	VFAMASILCL	GSVVWAHHMF	MVGLDVKTAV	FFSSVTMVIG
Ogmocotyle_sp_JM_2015	SDSLFGYFGL	VFAMASIVCL	GSVVWAHHMF	MVGLDVKTAV	FFSSVTMVIG
Orthocoelium_streptocoelium	QDSLFGYYGL	VFAMASIVCL	GSVVWAHHMF	MIGLDVKTAV	FFSSVTMVIG
Paramphistomum_cervi	QDSLFGYYGL	VFAMASIVCL	GSVVWAHHMF	MVGLDVKTSV	FFSSVTMVIG
Calicophoron_microbothrioides	IPTGIKVFWS	LYMLSGTGVR	VWDPVWWWIM	GFIVLFTIGG	VTGIVLSSCV
Explanatum_explanatum	IPTGIKVFWS	LYMLSGTSVR	VWDPVWWWIM	GFIVLFTIGG	VTGIVLSSCV
Fischoederius_cobboldi	IPTGIKVFWS	LYMLSGVGR	AWDPVWWWIM	GFIIILFTMGG	VTGIVLSSCV
Fischoederius_sp_1_TH	IPTGIKVFWS	LYMLSGVGR	AWDPVWWWIM	GFIIILFTMGG	VTGIVLSSCV
Fischoederius_elongatus	IPTGIKVFWS	LYMLSGVGR	AWDPVWWWIM	GFIIILFTMGG	VTGIVLSSCV
Fasciola_hepatica	IPTGIKVFWS	LIMLGGSSVR	IWDPVWWWII	GFIVLFTIGG	VTGIMLSASL
Gastrothylax_crumenifer	IPTGIKVFWS	LYMLSGVGR	AWDPVWWWIM	GFIIILFTMGG	VTGIVLSSCV
Homalogaster_paloniae	IPTGIKVFWS	LYMLSGSIV	SGDPVLWWII	GFIIILFTIGG	VTGIVLSASV
Ogmocotyle_sikae	IPTGIKIFSW	LYMLSGSSIR	SGDPVLWWII	GFIIILFTIGG	VTGIVLSASV
Ogmocotyle_sp_JM_2015	IPTGIKIFSW	LYMLSGSSIR	SGDPVLWWII	GFIIILFTIGG	VTGIVLSASV
Orthocoelium_streptocoelium	IPTGIKVFWS	LYMLSGVGR	IWDPVVLWIM	GFIVLFTMGG	VTGVVLLSSCV
Paramphistomum_cervi	IPTGIKVFWS	LYMLSGTSVR	IWDPVWWWIM	GFIVLFTIGG	VTGIVLSSCV
Calicophoron_microbothrioides	LDSMVHDTWF	VVAHFHYVLS	LGSYSAVVIS	LIWWWPLIVG	VSLNKYLLQG
Explanatum_explanatum	LDSMVHDTWF	VVAHFHYVLS	LGSYSAVVIS	LIWWWPLIVG	VSLNKYLLQG
Fischoederius_cobboldi	LDSMVHDTWF	VVAHFHYVLS	LGSYSAVVIS	LIWWWPIIVG	YSLNKYMLQG
Fischoederius_sp_1_TH	LDSMVHDTWF	VVAHFHYVLS	LGSYSALVIS	LIWWWPLIVG	YSLNKYMLQG
Fischoederius_elongatus	LDSMVHDTWF	VVAHFHYVLS	LGSYSALVIS	LIWWWPLIVG	YSLNKYMLQG
Fasciola_hepatica	LDTLLHDTWF	VVAHFHYVLS	LGSYSVVVIS	FIWWWPVVTG	YSLNLFMLQG
Gastrothylax_crumenifer	LDSMVHDTWF	VVAHFHYVLS	LGSYSAVVIS	VIWWWPLIVG	YSLNKYMLQG
Homalogaster_paloniae	LDSMVHDTWF	VVAHFHYVLS	LGSYSAVVIS	LIWWWPLVVG	YSLNKYMLQG
Ogmocotyle_sikae	LDTIVHDTWF	VVAHFHYVLS	LGSYSVVVIS	LIWWWPVITG	LSLNKYLLQG
Ogmocotyle_sp_JM_2015	LDTIVHDTWF	VVAHFHYVLS	LGSYSVVVIS	LIWWWPIITG	LSLNKYLLQG
Orthocoelium_streptocoelium	LDSIVHDTWF	VVAHFHYVLS	LGSYSAVVIS	LIWWWPLIVG	LSLNKYMLQG
Paramphistomum_cervi	LDSMVHDTWF	VVAHFHYVLS	LGSYSAVVIS	LIWWWPLVVG	VSLNKYLLQG
Calicophoron_microbothrioides	HWLCSMLGFN	LCFFPMHYFG	LCGLPRRCVC	YNPDDFWLES	LASFAGFLSV
Explanatum_explanatum	HWLCSMLGFN	LCFFPMHYFG	LCGLPRRCVC	YNPDDFWLES	LASFAGFLSV
Fischoederius_cobboldi	HWLCSMLGVN	LCFFPMHYFG	LCGLPRRCVC	YNPDDFWLES	LSSFGAFLAT

Fischoederius_sp_1_TH	HWLCSMIGVN	LCFFPMHYFG	LCGLPRRVCV	YNPDDFWLES	LSSFGAFLAT
Fischoederius_elongatus	HWLCSMLGVN	LCFFPMHYFG	LCGLPRRVCV	YNPDDFYWLES	LSSFGAFLAT
Fasciola_hepatica	HWVSMIGFN	MCFFPMHYLG	MAGLPRRVCV	YDPDFYWLSV	VSSLGALVSA
Gastrothylax_crumenifer	HWLCSMVGFN	LCFFPMHYFG	LCGLPRRVCV	YNPDDFWLES	LASFGAFLAT
Homologaster_paloniae	HWLCSMVGFN	LCFFPMHYFG	MCGLPRRVCV	YDPNFFWLES	VASFGAFLST
Ogmocotyle_sikae	HWLCSMVGFN	LCFFPMHYLG	MCGLPRRVCV	YDLSFWSWINS	IMSLGGLLSV
Ogmocotyle_sp_JM_2015	HWVCSMVGFN	LCFFPMHYLG	MCGLPRRVCV	FDFSFSWINA	IMSLGGLLIV
Orthocoelium_streptocoelium	HWLCSMVGFN	LCFFPMHYFG	LCGLPRRVCV	YNPDDFWLES	LASFGAFLSV
Paramphistomum_cervi	HWLCSMVGFN	LCFFPMHYFG	LCGLPRRVCV	YNPDDFWLES	LASFGAFLSV
Calicophoron_microbothrioides	VSAPFLVFI	WESLVVRNV	VAAWGSSNV	LNVVVLVVPQ	HVVYMSGSNR
Explanatum_explanatum	ISAPFLVFI	WESLVVRSV	VGAWGSSNV	LNVVVLVVPQ	HVTYMSGSGC
Fischoederius_cobboldi	ISAPFLVCIL	WESLVVGNV	VAAWGSSNV	LHVVALVVPQ	HVVYMSGSNR
Fischoederius_sp_1_TH	VSAPFLVCIL	WESLVVGNV	VAAWGSSNV	LHVVALVVPQ	HVTYMSGSNR
Fischoederius_elongatus	ISAPFLVLIL	WESLVVGNV	VAAWGSSNV	LHVVALVVPQ	HVTYMSGSNR
Fasciola_hepatica	GSAPFLVFI	WESFVVGNCV	VSSWGSSSLV	LNVTITLPGQ	HNSYMGVGR
Gastrothylax_crumenifer	VSAPFLVLIL	WESLVVGNV	VGAWGSSNV	LSVVVLVVPQ	HVTYMSGSNR
Homologaster_paloniae	VSAPFLVLIL	WESLTVKNV	MAAWGSSNVA	LHVVNLPVPQ	HVVYMSGSFR
Ogmocotyle_sikae	VSGFLLVFL	WESLTVQNKV	FFVWGSNNLI	FNVVSVVPQ	HTSYISGSPR
Ogmocotyle_sp_JM_2015	VSGFLLIVL	WESLTVQNKV	FFVWGSNNLV	FNVVSVVPQ	HASYISGSPR
Orthocoelium_streptocoelium	ISAPFLVFI	WESLVVYNV	MSVWGSSNIS	LNVVVLVVPQ	HVYMSGSNR
Paramphistomum_cervi	ISAPFLVFI	WESLVVSSV	VAAWGSSNV	LNVVVLVVPQ	HVYMSGSSR
Calicophoron_microbothrioides	WFMLYNLLYL	ELVRYMFFIC	SFIPVWVFPV	MLGQFKCRGV	VTLSSDRLI
Explanatum_explanatum	WFMLYNLLYL	ELVRYMFFIC	SFIPVWVFPV	MLGQFSCGV	VALSNEDRLI
Fischoederius_cobboldi	WFMLYNLLYL	ELVRYMFLIG	SFIPVWVFPV	MLGQFMCRGV	IALSNEDRLI
Fischoederius_sp_1_TH	WFMLYNLLYL	ELVRYMFLIG	SFIPAWVFPV	MLGQFMCRGV	IALSNEDRLI
Fischoederius_elongatus	WFMLYNLLYL	ELVRYMFLIG	SFIPAWVFPV	MLGQFACRGV	IALSNEDRLI
Fasciola_hepatica	WVVFNTVLYM	DLIVYIILVC	AFIPVWVFPV	LAWQFGSNTV	ASHNNEVDV
Gastrothylax_crumenifer	WFMLYNLLYL	ELVRYMFLIG	SFIPAWVFPV	MLGQFSCRGV	IALGNEDRLI
Homologaster_paloniae	WYMLYNLLYL	ELVRYMFFIC	SFIPVWVFPV	MIGQFMCSEV	VALSGEDRFI
Ogmocotyle_sikae	WIMLLNLLYL	ELLRYVFFIC	SFIPVWVFPV	LICQVGCNGV	VALDYENRVV
Ogmocotyle_sp_JM_2015	WVMLYNLLYL	ELVRYMFFIC	SFIPVWVFPV	MLGQFKCRGV	VTLSSDRLI
Orthocoelium_streptocoelium	WFMLYNLLYL	ELVRYVFFIC	SFIPVWVFPV	MLGQFSCYGV	VVLSNEDRLI
Paramphistomum_cervi	WFMLYNLLYL	ELVRYMFFIC	SFIPVWVFPV	MLGQFNCRGV	VVLSNEDRLI
Calicophoron_microbothrioides	EFVWTFIPTL	LTAVLCYLN	QYMSYESVLP	DSKVVKIVGH	QWYWSYELPV
Explanatum_explanatum	EFVWTFIPTL	LTAVLCYLN	QYISYESVLP	DSKVVKVVGH	QWYWTYELPL
Fischoederius_cobboldi	EFVWTFIPTV	LTAVLCYLN	QYLYYESVLP	DSKVVKIVGR	QWYWTYELPM
Fischoederius_sp_1_TH	EFVWTFIPTV	LTAVLCYLN	QYLYYESVLP	DSKVVKIVGR	QWYWTYELPM
Fischoederius_elongatus	EFVWTFIPTV	LTAVLCYLN	QYLYYESVLP	DSKVVKIVGR	QWYWTYELPM
Fasciola_hepatica	EFFWTVVPS	CVIVLCYLN	NCISYDMLDI	PSKIIVKVR	QWYWSYDVEV
Gastrothylax_crumenifer	EFVWTFIPTM	LTAVLCYLN	QYLYYESVLP	DSKVVKIVGR	QWYWTYELPG
Homologaster_paloniae	EFVWTFIPTL	LTAVLCYLN	QYISYECVMP	DSKVVKIVGH	QWYWSYELPN
Ogmocotyle_sikae	ELVWTVVPTL	MVSGLCFLNL	QYLSNECVVE	SAGIVKVVGR	QWYWNVEFCV
Ogmocotyle_sp_JM_2015	EFVWTFIPTL	LTAVLCYLN	QYMSYESVLP	DSKVVKIVGH	QWYWSYELPG
Orthocoelium_streptocoelium	EFVWTFVPTL	LTLVLCYLN	QYISYEGVMP	GSKVVKIVGR	QWYVWYELSS
Paramphistomum_cervi	EFVWTFIPTL	LTAVLCYLN	QYISCESVLP	DSKVVKVVGH	QWYWTYELPG
Calicophoron_microbothrioides	EDESYSDCMS	DFVGGVDKPL	RLCVNTPYRL	LVTSDAVIHS	FSPVEYSLKI
Explanatum_explanatum	EGECYDSCMS	DFVGGVDKPL	RLSVNTPYRL	LVTSDAVIHS	FSPVAYSILKI
Fischoederius_cobboldi	DGECYDSCMS	DFVYGVDKPL	RLTVNTPYRL	LVTSDAVIHS	FSPVECGIKI
Fischoederius_sp_1_TH	EGECYDSCMS	DFVYGVDKPL	RLVVNTPYRL	LVTSDAVIHS	FSPVECGIKI
Fischoederius_elongatus	EGECYDSCMS	DFVYGVDKPL	RLTVNTPYRL	LVTSDAVIHC	FSPVECGIKI
Fasciola_hepatica	EDEEFDSVMS	DFVMGVDKPL	RMVRGNFHQL	MVTSDDVIHS	FSPVEFNKTK
Gastrothylax_crumenifer	EGECYDSYMS	DFVNGVDKPL	RLTVNTPYRL	LVTSDAVIHS	FSPVEYGLKI
Homologaster_paloniae	EEVYDSYMS	DFVGGVDKPL	RLGVNVPYRL	LVTSDAVIHS	FSPVEFNKIV
Ogmocotyle_sikae	EGMSYDSFMT	DFVGGVDKPL	RLGVNVPYHL	LVTSDAVIHS	FSLPEYNLKM
Ogmocotyle_sp_JM_2015	EDESYSDCMS	DFVGGVDKPL	RLCVNTPYRL	LVTSDAVIHS	FSPVEYSLKI
Orthocoelium_streptocoelium	ENECYDSCMS	DFVGGVDKPL	RLNVNTPYRL	LVTSDAVIHS	FSPVECGLTK
Paramphistomum_cervi	EGECYDSCMS	DFVGGVDKPL	RLSVNTPYRL	LVTSDAVIHS	FSPVEYSLKI
Calicophoron_microbothrioides	DGIPGRINQI	YFCPERLGVF	VGCTELCGA	GHAYPEIVVE	VSLGLGFLSL
Explanatum_explanatum	DGIPGRINQV	YFCPDRIGVF	VGCTELCGA	GHAYPEIVVE	VSLGLGFLSL
Fischoederius_cobboldi	DGIPGRINQV	YFCPERLGVF	VGCTELCGA	GHAYPEIVIE	VSLGLGFLSL
Fischoederius_sp_1_TH	DGIPGRINQV	YFCPERLGVF	VGCTELCGA	GHAYPEIVIE	VSLGLGFLSL
Fischoederius_elongatus	DGIPGRINQV	YFCPERLGVF	VGCTELCGA	GHAYPEIVIE	VSLGLGFLSL
Fasciola_hepatica	DAIPGRINQV	SYCPGHLGIY	VGCTELCGA	GHAYPEIVVE	VPLSTILAKV
Gastrothylax_crumenifer	DGIPGRINQV	YFCPERLGVF	VGCTELCGA	GHAYPEIVIE	VSLGLGFLSL
Homologaster_paloniae	DGIPGRINQV	YFCPERLGVF	VGCTELCGA	GHAYPEIVVE	VSLGLGFLSL
Ogmocotyle_sikae	DGIPGRINQV	YFCPERLGVF	VGCTELCGA	GHAYPEIVVE	VSLGLGFLSL
Ogmocotyle_sp_JM_2015	DGIPGRINQI	YFCPERLGVF	VGCTELCGA	GHAYPEIVVE	VSLGLGFLSL
Orthocoelium_streptocoelium	DGIPGRINQI	YFCPERLGVF	VGCTELCGA	GHAYPEIVVE	VSLGLGFLSL
Paramphistomum_cervi	DGIPGRINQV	YFCPERLGVF	VGCTELCGA	GHAYPEIVVE	VSLGLGFLSL
Calicophoron_microbothrioides	YFTSLLMFSF	VTQPSVYCM	LITGALSIVAG	YIYSILGFSW	YLVLFCFLVYV
Explanatum_explanatum	YFTSLLMFSF	VTQPSVYCM	LITSALSIVAG	YIYSVILGFSW	YLVLFCFLVYV
Fischoederius_cobboldi	YFTSLLMFSF	VSQPSVYCM	LVTGALSIVAG	YIYSIGFSW	YLALFCFLVYV
Fischoederius_sp_1_TH	YFTSLLMFSF	VSQPSVYCM	LITGALSIVAG	YIYSIVGFSW	YLALFCFLVYV

Fischoederius_elongatus	YFTSLLMFSF	VSQPSVYCVL	LITGALSVTG	YIYSILGFSW	YLALFCLVYV
Fasciola_hepatica	YFSCLLGFSP	VSHPIVYCLL	LIGAALSISG	LGYLVVGFSP	YLVVFCLVYV
Gastrothylax_crumenifer	YFTSLLMFSF	VTQPSVYCVL	LMVGALSVTG	YIYSILGFSW	YLALFCLVYV
Homalogaster_paloniae	YFTSLLMFSF	VSQPSVYCVL	LIISALSMSG	YVYSVLGFSW	YLALFCLVYV
Ogmocotyle_sikae	YFSCLLFFNF	ASHPVTYCVL	LVSSALSMSG	YLYSVVGFSP	YMLVFLVYV
Ogmocotyle_sp_JM_2015	YFTSLLMFSF	VTQPSVYCVL	LITGALSMSG	YIYSILGFSW	YLVLFLVYV
Orthocoelium_streptocoelium	YFTSLLMFSF	VSQPSMYCVL	LVTGALSMSG	YIYCVLGFSP	YLVFLCLVYV
Paramphistomum_cervi	YFTCLLMFSF	VTQLSVYCVL	LVSALSMSG	YIYSVVGFSP	YLALFCLVYV
Calicophoron_microbothrioides	GGVYVLFVVF	SVYGNPFSL	SGSLLVFLG	FFITVWSVFS	YMIKAVPVII
Explanatum_explanatum	GGVYVLFVVF	SVYGNPFSL	SGSLLAFGL	FFVTWVGVS	YIIKVISVVC
Fischoederius_cobboldi	GGVYVLFVVF	SVYGNPFSL	SGSLLIFIG	FFLTVMGIFN	YMMKIVPVIV
Fischoederius_sp_1_TH	GGVYVLFVVF	SVYGNPFSL	SGSLLIFAG	FFLTVMGVS	YIVKVVVVVV
Fischoederius_elongatus	GGVYVLFVVF	SVYGNPFSL	SGSLLIFIG	FFLTVMGVS	YMKVLPVVV
Fasciola_hepatica	GGVYVLFVVF	SIHTPNPLPN	FSGIGIDGLV	LFFGFLCVFS	FVFFSVPSLC
Gastrothylax_crumenifer	GGVYVLFVVF	SVYGNPFSL	SGSLLAFIG	FFVTWVGIFS	YLMKVVVPVV
Homalogaster_paloniae	GGVYVLFVVF	SVYGNPFSL	NGSLLFLG	FFFTMSAVLY	WVVKSLPVVA
Ogmocotyle_sikae	GGVYVLFVVF	SIHNPNSPL	VGGSLIAFV	FFIFIWAMLR	FSMSSLNVFF
Ogmocotyle_sp_JM_2015	GGVYVLFVVF	SVYGNPFSL	SGSLLVFLG	FFITVWSVFS	YMIKAVPVII
Orthocoelium_streptocoelium	GGVYVLFVVF	SVYGNPFSL	SGSLLVFLG	FFVVIWGFIS	YVVKIMPAVA
Paramphistomum_cervi	GGVYVLFVVF	SVYGNPFSL	SGSLLAFGL	FFVTWVGIFG	SIMKVVPAVC
Calicophoron_microbothrioides	ESSEYLCSFY	EGFSYCMFCL	VLVVGFCVS	IMMSERSFF	RMLGLLFLFL
Explanatum_explanatum	ESSEYLCSFY	EGFSYCMFCL	ILVVGFCVS	IMMSERSFF	RMLGFVFLFL
Fischoederius_cobboldi	ESSEYLCSFY	EGFSYCMFCL	VLVVGFCVS	VMMSESNFF	RMLGSVFLFF
Fischoederius_sp_1_TH	ESSEYLCSFY	EGFSYCMFCL	VLVVGFCVS	IMMSERSFF	RMLGSVFLFF
Fischoederius_elongatus	ESSEYLCSFY	EGFSYCMFCL	VLVVGFCVS	IMMSERSFF	RMLGSVFLFF
Fasciola_hepatica	DSSFYLCSSF	EGLSYCLFCL	VLMIGFVCS	VVSSEGGFF	RMLLCLFLFL
Gastrothylax_crumenifer	ESSEYLCSFY	EGFSYCVFCL	VLVVGFCVS	IMMSERSFF	RMLGSIFLFL
Homalogaster_paloniae	ESSEYLCSFY	EGFSYCMFCL	VLVVGFCVS	VMMSESGFF	RMGFLLVFVI
Ogmocotyle_sikae	ESSEYLCSFY	EGFSYCLFCL	ILMVGFVCS	VVTGQKDAFY	RMFVVFLMLM
Ogmocotyle_sp_JM_2015	ESSEYLCSFY	EGFSYCMFCL	VLVVGFCVS	IMMSERSFF	RMLGLLFLFL
Orthocoelium_streptocoelium	EFSEYLCSFY	EGFSYCMFCL	VLVVGFCVS	IVMSEHNSFF	RMLGLVFLFF
Paramphistomum_cervi	ESSEYLCSFY	EGFSYCVFCL	VLVVGFCVS	IMMSERSFF	RMWGLVFLFL
Calicophoron_microbothrioides	GVLCIWCVGL	VGWWSFTFV	GYVLKLMFCF	FVDETSLSVA	FMLFCCGTIA
Explanatum_explanatum	GVLCVWCVGL	VGWWSFTFV	GYVLKLMFCF	FIDETSLICA	FMLLCCGSIA
Fischoederius_cobboldi	GVLCVWCVGL	VGWWSFMFV	SYVLKLMFCF	FIDETSLVCA	FMLFCCGSIA
Fischoederius_sp_1_TH	GVLCIWCVGL	VGWWSFTFV	GYVLKLMFCF	FIDETSLVCV	FMLFCCGSIA
Fischoederius_elongatus	GVLCIWCVGL	VGWWSFTFV	GYVLKLMFCF	FVDETSLSVA	FMLFCCGSIA
Fasciola_hepatica	GVYVWFVSGW	DELLGCFVGL	GYDSYGGFEF	MIDLVGVCFF	FMLFCCGSVA
Gastrothylax_crumenifer	GVLCIWCIGL	VGWWSFVVF	GYVLKLMFCF	FVDETSLSVA	FMLFCCGSIA
Homalogaster_paloniae	GVLCVWGSAG	VGWWSCTFV	SYVLKLMFCF	FLDETSLSVA	FMLFCCGSIA
Ogmocotyle_sikae	GFTVIWMSV	IGWQGSVLLT	NYVLKFFFLF	FFDEISLVS	LMLVCCGSIA
Ogmocotyle_sp_JM_2015	GVLCIWCVGL	VGWWSFTFV	GYVLKLMFCF	FVDETSLSVA	FMLFCCGTIA
Orthocoelium_streptocoelium	GVLCIWCVGL	VGWWSLGLV	NYVLKLMFCF	FIDETSLISV	FMLFCCGSIA
Paramphistomum_cervi	GVLCVWCVGL	VGWWSFTFV	GYVLKLMFCF	FIDETSLICA	FMLLCCGSIA
Calicophoron_microbothrioides	LYYCYHYFSG	SKDGLLFPPL	IVWFLGVMGI	LIFTSSMLFS	LVLWEYLGLV
Explanatum_explanatum	LYYCYHYFSG	SSEGGLFPPL	IVWFLGVMGI	LIFTSSMVFS	LVLWEYLGLV
Fischoederius_cobboldi	LYYCYHYFSG	SKEGGLFPPL	IVWFLGVMGI	LIFTSSMIFS	LVLWEYLGLV
Fischoederius_sp_1_TH	LYYCYHYFSG	SKDGLLFPPL	IVWFLGVMGI	LIFTSSMVFS	LVLWEYLGLV
Fischoederius_elongatus	LYYCYHYFSG	SKEGGLFPPL	IVWFLGVMGI	LIFTSSMIFS	LVLWEYLGLV
Fasciola_hepatica	LYYCYHYFSG	SFSSVLLFPPL	MVWFLGTMGV	LVSFSSLLFS	LIFWEYLGLV
Gastrothylax_crumenifer	LYYCYHYFSG	TQEGGLFPPL	IVWFLGVMGI	LIFTSSMVFS	LVLWEYLGLV
Homalogaster_paloniae	LYYCYHYFAG	GEEGNFLFPPL	IVWFLGVMGI	LIFTSSMIFS	LILWEYLGLV
Ogmocotyle_sikae	LYYCYHYFAG	LVEGGLLYPL	IVWFLVVMGI	LVSFSSLVFS	LVLWEYLGLV
Ogmocotyle_sp_JM_2015	LYYCYHYFSG	SSEGGLFPPL	IVWFLGVMGI	LIFTSSMVFS	LVLWEYLGLV
Orthocoelium_streptocoelium	LYYCYHYFTG	SDEGGLFPPL	IVWFLGVMGI	LIFTSSMVFS	LVLWEYLGLV
Paramphistomum_cervi	LYYCYHYFSG	SSEGGLFPPL	IVWFLGVMGI	LIFTSSMVFS	LVLWEYLGLV
Calicophoron_microbothrioides	SFFLILFYSN	SSSMRASLIT	VFASRFGDAS	LFVLIMWFAN	WLEFSGFLFI
Explanatum_explanatum	SFFLILFYSN	SSSMRASLIT	VFASRFGDVS	LFVLIMWFAN	WLEYSGFLFI
Fischoederius_cobboldi	SFFLILFYSN	MSSVRASLIT	VFASRFGDAA	LFILIMWFAN	WLEFSGFLFI
Fischoederius_sp_1_TH	SFFLILFYSN	SSSMRASLIT	VFASRFGDAA	LFVLIMWFAN	WLEFSGFLFV
Fischoederius_elongatus	SFFLILFYSN	SSSMRASLIT	VFASRFGDAA	LFVLIMWFAN	WLEFSGFLFI
Fasciola_hepatica	SFFLILFYAN	MSSLRASLIT	LFASRFGDVS	VFGMLMWSV	WADVSGFLFV
Gastrothylax_crumenifer	SFFLILFYSN	SSSMRASLIT	VFASRFGDAS	LFILIMWFAN	WLEFSGFLFI
Homalogaster_paloniae	SFFLILFYSN	SSSMRASLIT	VFASRFGDAS	LFVLIMWFAN	WLVNYSGLFL
Ogmocotyle_sikae	SFFLILFYSN	SASLRASLIT	VFASRFGDVS	LFLLIMWLSN	WVDYSSLLFV
Ogmocotyle_sp_JM_2015	SFFLILFYSN	SSSMRASLIT	VFASRFGDAS	LFVLIMWFAN	WLEFSGFLFV
Orthocoelium_streptocoelium	SFFLILFYSN	SSSMRASLIT	VFASRFGDAS	LFVLIMWFAN	WLEYSGFLFI
Paramphistomum_cervi	SFFLILFYSN	SSSMRASLIT	VFASRFGDVS	LFVLIMWFAN	WLEYSGFLFI
Calicophoron_microbothrioides	LLYLLVVLK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY
Explanatum_explanatum	LLYLLVVLK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY
Fischoederius_cobboldi	LLYLLVVLK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY
Fischoederius_sp_1_TH	LLYLLVVLK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY
Fischoederius_elongatus	LLYLLVVLK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY

Fasciola hepatica	LFYLLVVMTK	SACFFPISWL	LEAMRAPTPV	SSLVHSSTLV	AAGVWFFLRY
Gastrothylax crumenifer	LLYLLVLVLSK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY
Homalogaster paloniae	LLYLLVLVLSK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY
Ogmocotyle sikae	VFFMLVVLTK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGVWFVCRY
Ogmocotyle_sp_JM_2015	LLYLLVLVLSK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY
Orthocoelium streptocoelium	ILYLMVVLK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY
Paramphistomum cervi	LLYLLVLVLSK	SAAYPFISWL	LEAMRAPTPV	SSLVHSSTLV	AAGAWFVYRY
Calicophoron microbothrioides	NYFCTPELLE	VLFFFSLVSI	IITGLCAVVF	MDLKKIVALS	TCNNVAWCLI
Explanatum explanatum	NYFCTPELLE	VLFFFSLVSV	VVTGLCAVVF	VDLKKIVALS	TCNNVAWCLI
Fischoederius cobboldi	NYFCTPDLE	VLFFFSLVSV	VITGLCAVVF	MDLKKIVALS	TCNNVAWCLI
Fischoederius_sp_1_TH	NYFCTPSLLE	VLFFFSLVSV	IITGLCAVVF	MDLKKIVALS	TCNNVAWCLI
Fischoederius_elongatus	NYFCTPDLE	ILFFFSLVSV	VITGLCAVVF	MDLNNIVALS	TCNNVAWCLI
Fasciola hepatica	GCLSSVWVDF	FLVFFCFLTI	IVTAVCSIVF	MDLKKIVALS	TCNNVSWCIV
Gastrothylax crumenifer	NYFCAPELLE	ALFFFSLVSV	VITGLCAVVF	MDLKKIVALS	TCNNVAWCLI
Homalogaster paloniae	NFFCSPALLE	ALFFFSLVSV	VITGLCAVVF	MDLKKIVALS	TCNNVAWCLI
Ogmocotyle sikae	GYISSLESLE	GLFFFSLVSV	IISGLCAIVF	TDLKKVVALS	TCNNVSWCIV
Ogmocotyle_sp_JM_2015	NWFCAPELLE	ALFFFSLVSV	IITGLCAVVF	MDLKKIVALS	TCNNVAWCLI
Orthocoelium streptocoelium	NYFCDLLE	VLFFFSLVSV	IITGLCAVVF	MDLKKIVALS	TCNNVAWCLI
Paramphistomum cervi	NYFCTPELLE	VLFFFSLVSV	VVTGLCAVVF	VDLKKIVALS	TCNNVAWCLI
Calicophoron microbothrioides	FFVCGDMLA	LLQLLTHGVC	KCYLFMTVGD	LMSTSGGSQS	GVGVYLSRYM
Explanatum explanatum	FFVCGDMLA	LLQLLTHGVC	KCYLFMAVGD	LMSSSGGSQS	GVGVYLSRYA
Fischoederius cobboldi	FFVCGDMLA	LLQLLTHGVC	KCYLFMAVGD	LMSSSGGSQS	GVGVYLSRYA
Fischoederius_sp_1_TH	FFVCGDMLA	LLQLLTHGVC	KCYLFMAVGD	LMSSSGGSQS	GVGVYLSRYA
Fischoederius_elongatus	FFVCGDMLA	LLQLLTHGVC	KCYLFMAVGD	LMSSSGGNQS	GVGVYLSRYA
Fasciola hepatica	FFVCGDLCLA	LLQLLTHGVC	KCYLFMSVGD	LMSQSGGSQS	SVGVYLSRYA
Gastrothylax crumenifer	FFVCGDMLA	LLQLLTHGVC	KCYLFMAVGD	LMSSSGGSQS	GVGVYLSRYA
Homalogaster paloniae	FFVCGDMLA	LLQLLTHGVC	KCYLFMAVGD	LMSMGGGSQS	GVGVYLSRYA
Ogmocotyle sikae	FFVPGDMLA	LIQLLTHGVA	KCYLFMSVGD	LMSTSGGSQN	SNGVYTSRYL
Ogmocotyle_sp_JM_2015	FFVCGDMLA	LLQLLTHGVC	KCYLFMAVGD	LMSSSGGSQS	GVGVYLSRYA
Orthocoelium streptocoelium	FFVCGDLVLA	LLQLLTHGVC	KCYLFMAVGD	LMSSSGGSQS	GVGVYLSRYA
Paramphistomum cervi	FFVCGDMLA	LLQLLTHGVC	KCYLFMAVGD	LMSSSGGSQS	GVGVYLSRYA
Calicophoron microbothrioides	GIYGVVLQLL	LVFSLCGLPF	LGVFFSKHGL	FCAFLYNYSL	VTLVGLLVGF
Explanatum explanatum	GVYGVVLQLL	LVFSLCGLPF	LGVFFSKHGL	FCVFLYNYSL	VTLVGLLVGF
Fischoederius cobboldi	GVYGVVMQLL	LVFSLCGLPF	LGVFFSKHGL	FCAFLYNYSF	VTLVGLLVGF
Fischoederius_sp_1_TH	GVYGVVLQLL	LVFSLCGLPF	LGVFFSKHGL	FCVFLYNYSL	VTLVGLLVGF
Fischoederius_elongatus	GVYGVVMQLL	LVFSLCGLPF	LGVFFSKHGL	FCAFLYNYSF	VTLVGLLVGF
Fasciola hepatica	GRFLPLVQGF	LVLSLCGLPF	LGVFFSKHGL	FSLLLYGGGF	GLVLGCLSL
Gastrothylax crumenifer	GVYGVVLQLL	LVFSLCGLPF	LGVFFSKHGL	FCAFLYNYSF	VALIGLLVGF
Homalogaster paloniae	GVYGVVLQLL	LIFSLCGLPF	LGVFFSKHGL	FCSFLYNYSL	VSLVGLLVGF
Ogmocotyle sikae	GLYGVVSQAV	LIFSLCGLPF	LGVFFSKHGL	FSVFLYNYSL	ICLGLMLVGF
Ogmocotyle_sp_JM_2015	GIYGVVLQLL	LVFSLCGLPF	LGVFFSKHGL	FCVFLYNYSL	VALVGLLVGF
Orthocoelium streptocoelium	GVYGVVLQLL	LVFSLCGLPF	LGVFFSKHGL	FCAFLYNYSF	IATVGLLVGF
Paramphistomum cervi	GVYGVVLQLL	LVFSLCGLPF	LGVFFSKHGL	FCVFLYNYSL	VTLVGLLVGF
Calicophoron microbothrioides	FISYLYSTRL	ALFLFMSVGG	LNFGYSSSFV	LIGLISFPFGT	LVNYGGSCLF
Explanatum explanatum	FISYLYSTRL	ALFLFMSVGG	LNFGYSSSFV	LIGLISFPFGT	LVNYGGSCLF
Fischoederius cobboldi	FISYLYSTRL	ALFLFMSVGG	LNFGYSSSFV	LIGLISFPFGT	MVNYGGSCLF
Fischoederius_sp_1_TH	FISYLYSTRL	ALFLFMSVGG	LNFGYSSSFV	LIGLISFPFGT	MVNYGGSCLF
Fischoederius_elongatus	FISYLYSTRL	ALFLFMSVGG	LNFGYSSSFV	LIGLISFPFGT	LVNYGGSCLF
Fasciola hepatica	FLSYVYSVRF	ALLLFGSVGG	LSFGVSSFLF	VVCPVFCGG	VLNYLGDVLS
Gastrothylax crumenifer	FISYLYSTRL	ALFLFMSVGG	LNFGYSSSFV	LIGLISFPFGT	MVNYGGSCLF
Homalogaster paloniae	FISYLYSTRF	ALLLFGSVGG	LTPFGYASSFI	LIGLISFPFGT	IINYWGSCLF
Ogmocotyle sikae	LISYVYSVRF	ALLLFGSVGG	LNCGYSSGYV	LISLVCFPSS	LINFCCGVLF
Ogmocotyle_sp_JM_2015	LISYLYSTRL	ALFLFMSVGG	LNFGYSSSFV	LIGLISFPFGT	LVNYGGSCLF
Orthocoelium streptocoelium	LISYLYSTRL	ALFLFMSVGG	LNFGYSSSFV	LIGLISFPFGT	LVNYGGSCLF
Paramphistomum cervi	FISYLYSTRL	ALFLFMSVGG	LNFGYSSSFV	LIGLISFPFGT	LVNYGGSCLF
Calicophoron microbothrioides	MELYELGVVV	GMCFSILQLV	GCLVGALLFV	MSWGSVWES	LLWNGDGVVM
Explanatum explanatum	MELYELSVMM	GVGFSVLQLV	GCLAGALLFV	VSWGSGVWES	LLWNGDGVVM
Fischoederius cobboldi	VELNELSVMM	GVGFSALQLI	GCLVGALLFV	VTWGSVWES	LLWNGDGVVM
Fischoederius_sp_1_TH	MELCELSVMM	GVGFSVLQLV	GCLAGALLFV	VSWGSGVWES	LLWNGDGVVM
Fischoederius_elongatus	MELYELSVMM	GVGFSILQLV	GCLAGALLFV	MSWGSVWES	LLWNGDGVVM
Fasciola hepatica	AEVVGISWVG	SLAVLGVQCF	GCLFVWLLYW	CWMGEGYWS	MLWGGEGVVS
Gastrothylax crumenifer	LELNELSVMM	GVGFSVLQLA	GCLAGALLFI	VSWGSGVWES	LLWNGDGVVM
Homalogaster paloniae	LELNELSVMM	GVGFSVLQLA	GCLAGALLFI	VSWGSGVWES	LLWNGDGVVM
Ogmocotyle sikae	MEYSELGIVW	SLGFFVVLQLL	GCVVGVVVFV	FGVGGDKWNS	LLWNGDGVVM
Ogmocotyle_sp_JM_2015	MELSELGIVW	GVGFSVLQLV	GCLVGALLFV	VSWGSGVWES	LLWNGDGVVM
Orthocoelium streptocoelium	VELYELSMW	GIGFSVLQLV	GCLLGLLFFV	VWGSVWES	LLWNGDGVVM
Paramphistomum cervi	MELYELSVMM	GVGFSVLQLV	GCLAGALLFV	VSWGSGVWES	LLWNGDGVVM
Calicophoron microbothrioides	WLYSIYLRIS	DVCVFSFYRW	EVYILGLWSG	YDRLGVSYS	SLFSLNLVLA
Explanatum explanatum	WLYNIYLRVT	EVCVFSFYRW	EVYLLGLWGG	YDRLSVGYRS	SLFSLNLVLA
Fischoederius cobboldi	WLYAIYLRVT	EVCVFSFYRW	EVYLLGLWGG	YDRLSVNYRS	SLFSLNLVLA
Fischoederius_sp_1_TH	WLYNIYLRVT	EVCVFSFYRW	EVYLLGLWSG	YDRLGVEYS	SLFSLNLVLA
Fischoederius_elongatus	WLYDIYLRVT	EVCVFSFYRW	EVYLLGLWSG	YDRLGVSYS	SLFSLNLVLA
Fasciola hepatica	LVYSWFGFIS	EICLVFSFYRW	EVYLLSFPFG	LGVRWLLFRG	SFFSISFVVL

Gastrothylax_crumenifer	WLYDIYLRVT	EVCVFSFYRW	EVYLLGLWSG	YDRLSVGYRS	SLFSLNVLVA
Homalogaster_paloniae	WIYEVYLWIS	EVCVFSFYRW	EVYLLGLWGG	YDRVCVNYRS	SLFSLNVLVA
Ogmocotyle_sikae	SVYSLYLWLS	EVCFFSFYRW	EVYLFDLCKN	SISGLGLFGV	SFLSLNVLVL
Ogmocotyle_sp_JM_2015	WLYSIYLRVS	DVCVFSFYRW	EIYLLGLWHG	YDQSSVGYRS	SLFSLNVLVA
Orthocoelium_streptocoelium	WLYNIYLRVS	ESCFFSFYRW	EVYLLGLWSG	YDRLGVKYRF	SLFSLNVLVV
Paramphistomum_cervi	WLYNIYLRVT	EVCVFSFYRW	EVYLLGLWGG	YGQLSVGYRS	SLFSLNVLVA

Calicophoron_microbothrioides	GVLFAVALFF	VI
Explanatum_explanatum	GVLLVLMLEF	VL
Fischoederius_cobboldi	GALFVVMLEF	MI
Fischoederius_sp_1_TH	GALFVVMLEF	IV
Fischoederius_elongatus	GALFVVVLEF	MI
Fasciola_hepatica	GLVCVLLVSY	VL
Gastrothylax_crumenifer	GVLFVVLLLF	MI
Homalogaster_paloniae	GALFVVLLFL	LV
Ogmocotyle_sikae	GLLFVVLFYF	VI
Ogmocotyle_sp_JM_2015	GALFIMVLLF	IL
Orthocoelium_streptocoelium	GVAFVVMLEF	ML
Paramphistomum_cervi	GVLLVLMLEF	VL

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END;