**Neuropeptide Ligand Sequences**

**Novelty:**

Same as … > Sequence already published (>xxxx = published sequence)

New Xenoturbella sequence > other family member(s) already identified in Xenoturbella

New to Xenoturbella > other family member(s) already identified in Acoels and/or Nemertodermatida

New to Xenacoelomorpha > No other members identified in Xenacoelomorpha

**Sequence features:**

Signal peptide predicted with SignalP-5.0 (Almagro Armenteros et al. 2019)

Basic cleavage sequences and sites (known motif) and potential post translational modification sites (G, amidation ; E/Q, pyroglutamination) predicted with NeuroPred (Southey et al. 2006)

For sequences already published, *italicised amino acids* correspond to divergences between the already published sequence and the one reported here

**7B2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g13221.t1\_Xenoturbella\_bocki\_7B2 (This study – New to Xenacoelomorpha)

MEPMAMVTRLLLILAGAVICQSYPYQQQQDTGTSLFKKMIDELINTRVEYPETNELPFDETPMKVEGGTHEGGQHLGPYGTFANEHEVLTDPYDLGYYSYYPPGEDSYESAIATNDEPPTEEDAAEKPYPAPVNPCPIGYSETDGCLEEVPDAAWFSKSYQESQVGKSDPEHNYDENPYRGGEKRLELVAKKAPIIRRRKRSAGPNPYLNGVKTRTVAKKSPTIR

**Bursicon alpha \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g4833.t1\_Xenoturbella\_bocki\_Bursicon alpha (This study – New to Xenoturbella)

MLTVLLVSALLIPTPCTTCNLRRAALRFSHPLCLTKVISTQMCAGYCQSYARVSPLGHASLDRTCRCCQPMMERKMSVELRCPLLKHRRMSIDIPVAIECMCRITSCGGDDYYGPSYDDASLYDASSSTHRHSPMLLWYR

**Bursicon beta \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>39242.1\_Xenoturbella\_bocki\_Bursicon beta (Thiel et al. 2018)

MLTLLLLTLAVGWGAATEGTAETCHVVFSDTTIRQQVDYGAEGQAVCTGTVTLHRCEGNCYSQARPSVLHGFAS*SCNCCRETVLVETEVVLLDCFDGAGDGDHLPDVRYTLRIQEPVECACSRCYN*

>g10294.t1\_Xenoturbella\_bocki\_Bursicon beta (This study – same as 39242.1 – Thiel et al. 2018)

MLTLLLLTLAVGWGAATEGTAETCHVVFSDTTIRQQVDYGAEGQAVCTGTVTLHRCEGNCYSQARPSVLHGFAS*VCIDQAWVTGGPRANLAPGLLKSGP*

**Glycoproteine Hormone alpha \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>26735.1\_Xenoturbella\_bocki\_Glycoproteine Hormone alpha (Thiel et al. 2018)

MHHRRTLVIVVTLVVVVHCICPILTFPTLTNGLSPPMDDHTRLGGPLYFRGFHNGSRAVGEEVDSRILNVKIRENKARSKRSGIVGCHLVGYIQRVEIDGCTPVNVAMNACRGYCVSYAYPTNPGGPYLFTASTQCCRITERHRVPFIVECDNGGKYQGFFLSARACACGICDYES

>g13431.t1\_Xenoturbella\_bocki\_Glycoproteine Hormone alpha (This study – same as 26735.1 – Thiel et al. 2018)

MHHRRTLVIVVTLVVVVHCICPILTFPTLTNGLSPPMDDHTRLGGPLYFRGFHNGSRAVGEEVDSRILNVKIRENKARSKRSGIVGCHLVGYIQRVEIDGCTPVNVAMNACRGYCVSYAYPTNPGGPYLFTASTQCCRITERHRVPFIVECDNGGKYQGFFLSARACACGICDYES

**Glycoproteine Hormone beta \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>4807.1\_Xenoturbella\_bocki\_Glycoproteine Hormone beta (Thiel et al. 2018)

MKSTFAFLILIVCSFAAEGLATTTELDDLVMCVKREYRQHIASMSGCRDERILTVACWGRCETQMVPKLEPPYKESFHSVCIPYNYTIGQIQMQDCDEGVDPTYSFPQPGICMCQSCADQGYVVACH

>g13430.t1\_Xenoturbella\_bocki\_Glycoproteine Hormone beta (This study – same as 4807.1 – Thiel et al. 2018)

MKSTFAFLILIVCSFAAEGLATTTELDDLVMCVKREYRQHIASMSGCRDERILTVACWGRCETQMVPKLEPPYKESFHSVCIPYNYTIGQIQMQDCDEGVDPTYSFPQPGICMCQSCADQGYVVACH

**Calcitonin \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>4670.1\_Xenoturbella\_bocki\_Calcitonin (Thiel et al. 2018)

*MNNKTLYIVLS*MVLSTMLVLASSAPTDANSRKKRDLESDLAAVKFIEALLNLEDNVERISYEKELYEQPMPINMESNPVRRTDCSMSVCLQSQIAHALLSRPKGPDTGANSPGK

>g8753.t1\_Xenoturbella\_bocki\_Calcitonin (This study – same as 4670.1 – Thiel et al. 2018)

MVLSTMLVLASSAPTDANSRKKRDLESDLAAVKFIEALLNLEDNVERISYEKELYEQPMPINMESNPVRRTDCSMSVCLQSQIAHALLSRPKGPDTGANSPGK

**GnRH-AKH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>6444.1\_Xenoturbella\_bocki\_GnRH-AKH (Thiel et al. 2018)

*MFTIYSQA*MPRMDRRAMMAIGLVLMLVVQSCLAANGFTGSSNWLPAGKRSFMDQETPAPDDVEENGGEKTIGPCVCAVLDNGRRYFKTVINYMLWDEKQAHNDRMQANRRDLLDDKLWL

>g6494.t1\_Xenoturbella\_bocki\_GnRH-AKH (This study – same as 6444.1 – Thiel et al. 2018)

MPRMDRRAMMAIGLVLMLVVQSCLAANGFTGSSNWLPAGKRSFMDQETPAPDDVEENGGEKTIGPCVCAVLDNGRRYFKTVINYMLWDEKQAHNDRMQANRRDLLDDKLWL

**Insulin-like peptide a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>20871.1\_Xenoturbella\_bocki\_Insuline-like peptide a (Thiel et al. 2018)

*MGIVTMVCMSLLVLLAVIGGSDAVNRHLCGAELANTLRMLCGDRGYNAPQYEGAHGVMSHSHYTIPVFRTKRAAHNYLGAVVPNR*MKRGTGRIVQECCRQTCSLSNLALYCAPERLPIDISSENSEESFEFLETSVDTTSAESATDGVEEGEYSSGDSELNEVEVIDNDGTNMIAYR

>g7805.t1\_Xenoturbella\_bocki\_Insuline-like peptide a (This study – same as 20871.1 – Thiel et al. 2018)

MKRGTGRIVQECCRQTCSLSNLALYCAPERLPIDISSENSEESFEFLETSVDTTSAESATDGVEEGEYSSGDSELNEVEVIDNDGTNMIAYR*RRRRDIEQLSAEYGFGDNLDNADTSRRELWRKWQGLPVRRQTSLDFTDDDEDTVGNSPGWIRFGLPR*

**Insulin-like peptide b \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g7804.t1\_Xenoturbella\_bocki\_Insuline-like peptide b (This study – New Xenoturbella sequence)

MMLKSYATIRYNVCVLFLVLALVSQQQYRADAAFLCGSQFPRALRNACSTLTKRSLENALFRDQADNAIQNDKRFDYMADYCCYHGCQMSQLVFFCRK

**Insulin-like peptide c \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g7806.t1\_Xenoturbella\_bocki\_Insuline-like peptide c (This study – New Xenoturbella sequence)

MVNTTCLCVYIALFLTPVVLSMNDLVEDAEISKRREWHCNNGVAETLHMLCSGCYAGTIGKRYSDIDEFMLSEKVARSFLGRTIVPAVGKRGVIDECCLRRCAVPEMMGYCC

**Insulin-like peptide d \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g7807.t1\_Xenoturbella\_bocki\_Insuline-like peptide d (This study – New Xenoturbella sequence)

MALPGFNVSACKTGGVYAWLVVAVLVISAVHGQSQWHCRDSVPALMQAICGGCYRIHNSQSSAHTAEDYIIQADDYNSPRVEIEEQYNAQDSAFLDKKRALNYLTPDVFKRQVTIGIIDECCRRQCSFSELSAYCGVPGIDC

**Prokineticin 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>rna\_35664.1\_Xenoturbella\_bocki\_Prokineticin 1 (Thiel et al. 2018)

FGGVFTREDRFPKTIQRCSEDVDCPVSHCCAYSLFAQLKECKPLGSEGDTCNVFSFPYAYDGDRQGRLCPCRRHLLCN

>g2577.t1\_Xenoturbella\_bocki\_Prokineticin 1 (This study – same as rna\_35664.1 – Thiel et al. 2018)

*MMDRTGSLVFLIILSVFVHCARGNGL*FGGVFTREDRFPKTIQRCSEDVDCPVSHCCAYSLFAQLKECKPLGSEGDTCNVFSFPYAYDGDRQGRLCPCRRHLLCN*RPIHEGLGVCQTDLSSSKKLRPSSYW*

**Prokineticin 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**(Not found in the genome presented here)**

>rna\_22210.1\_Xenoturbella\_bocki\_Prokineticin 2 (Thiel et al. 2018)

MLGERCVGFRGIVLTTCVVYTVVVLVTVTSAYHGLSLNTADEPPFSEDSLYTNQGIVLDQVRKRSKTSSRTRHEVYNVFRRAPPVEVCYKDADCRPHGCCVRSHYIPTINQCRPLAGAGQKCAPPDLFIRGLRDTDYCPCTASVTCVKVNRKDSFGYCLA

**Vasotocin \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>7489.1\_Xenoturbella\_bocki\_Vasotocin (Thiel et al. 2018)

MYRTVFIYTLVTVLSLYADVASSCLVQGCPIGGKRSMNDAERQCSACGPGYRGVCVGLQTCCGDFGCHMGTDDAKMCLTEQINPEPCHVEGRKCGLNAYAKCVADGICCDFETCTLDEKCQQIGEGHDSWPANNNDAGVGRITAFLRSLRADQ

>g6592.t1\_Xenoturbella\_bocki\_Vasotocin (This study – same as 7489.1 – Thiel et al. 2018)

MYRTVFIYTLVTVLSLYADVASSCLVQGCPIGGKRSMNDAERQCSACGPGYRGVCVGLQTCCGDFGCHMGTDDAKMCLTEQINPEPCHVEGRKCGLNAYAKCVADGICCDFETCTLDEKCQQIGEGHDSWPANNNDAGVGRITAFLRSLRADQ

**NucB2/Nesfatin \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g3978.t1\_Xenoturbella\_bocki\_ NucB2 (This study – New to Xenacoelomorpha)

MGVMLVINAVLLMVMVTDMSAAPLSPTFNETQPQNDTDGKGLDALEYERYLRQVIEVLETDKNFKEKINNADIDDIRTGKIANELKFVKHNVRTKLDELKRREIDRMRTVLKEKYALERGLSPIEAEEFKEMISHMDHENPDKFETSDLEKLIKKATYDLEQMDSQRRDDFKKYEMDKEVKRRQKMNDLSDEERVAEKQAYDSMQAKHKDHEKVKHPGSKAQLEEVWEETDGLDKEDFDPKTFFKLHDTSDDGYLDLSEVMALFQKELEKVYEDSNEEDDMMEFDEEMNRMREHVMTEVDLDKDGLISLEEFLQYAQNSDFDKDDGWETLDEQQLYTEDELKSFEDELRKEEEALRQKKAELEKLRQQQEALRQRTASRPDPQRTEPPPPLEVEVPIDGGEGQSETDELIYKP

**LRFDIamide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>836.1\_Xenoturbella\_bocki\_LRFDIamide (Thiel et al. 2018)

MKLFDLFCVTLVAGIASVYCDAEEGFMPASSDVDKRLKFDIGKKRHFDDKRLRFDIGRKRAWEEGQENDYAQELVLGMADGVHDYLANNADDSVSKRLYDMSKRLRFDIGKRLKFDIGKRLGADESNDLVVIGGVEIPVCAQEDEPGLSLCGFAPMGGRWWPICSDNCEELKADSYD

>g4607.t1\_Xenoturbella\_bocki\_LRFDIamide (This study – same as 836.1 – Thiel et al. 2018)

MKLFDLFCVTLVAGIASVYCDAEEGFMPASSDVDKRLKFDIGKKRHFDDKRLRFDIGRKRAWEEGQENDYAQELVLGMADGVHDYLANNADDSVSKRLYDMSKRLRFDIGKRLKFDIGKRLGADESNDLVVIGGVEIPVCAQEDEPGLSLCGFAPMGGRWWPICSDNCEELKADSYD

**SFxNamide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>12867.1\_Xenoturbella\_bocki\_SFWNamide (Thiel et al. 2018)

MNYYIYPLFLAILLWYQLPLTASEETLADYMKEDGTTDSGIGIRSFWNGKRAWADQGLDEMINEEARAFWNGKRSFWNGKRSFWNGKRAPVETDFDEDKRSFWNGKREPDVGENYDDALLKKSFWNGKRSFWNGKRSFWNGKRADDSQREDIPPVEYMELFDRLFGHQSDGKLAP

>g6941.t1\_Xenoturbella\_bocki\_SFWNamide (This study – same as 12867.1 – Thiel et al. 2018)

MNYYIYPLFLAILLWYQLPLTASEETLADYMKEDGTTDSGIGIRSFWNGKRAWADQGLDEMINEEARAFWNGKRSFWNGKRSFWNGKRAPVETDFDEDKRSFWNGKREPDVGENYDDALLKKSFWNGKRSFWNGKRSFWNGKRADDSQREDIPPVEYMELFDRLFGHQSDGKLAP

**PxFVamide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**(Not found in the genome presented here)**

>21216.1\_Xenoturbella\_bocki\_PxLFVamide (Thiel et al. 2018)

MTNMAIISVCVLLVLAVNIVNGSADFCEQFPDLCDDAEMSKRQLNVFPWYEVWNSGKRQDVEIRREPPLFVGKRREPPLFVGKREEASYFVGEKK

**LxFamide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**(Not found in the genome presented here)**

>1521.1\_Xenoturbella\_bocki\_SLQFamide (Thiel et al. 2018)

GRRSLQFGRRSLQFGRRSLQFGRRSLQFGRRSLQFGRRSLQFRHLSMSHARRFPNTQQGRR

**Achatin \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>2558.1\_Xenoturbella\_bocki\_GFGN peptide (Thiel et al. 2018)

MSCTSVTVCYWLLMCVLMCATVLSTPVGELGVYDDADLKDNLGDISDTSAQETARLVSSCLSYVSELMRSDVDNALMLDID*DRGFGNKRIAGFGNKRIPGFGNKREPGFGNKRGFGN*

>g14892.t1\_Xenoturbella\_bocki\_GFGN peptide (This study – same as 2558.1 – Thiel et al. 2018)

MSCTSVTVCYWLLMCVLMCATVLSTPVGELGVYDDADLKDNLGDISDTSAQETARLVSSCLSYVSELMRSDVDNALMLDID*RLLSVT*

**LRIGamide\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g2539.t2\_Xenoturbella\_bocki\_LRIGamide isoform a (This study – New to Xenoturbella)

MTCKLSCVLLVAFLFFVCTLAAPYFDEAEIEELYNEAKALEAEEEGDFDEAKRLRIGSKRGAMAVRLGGKRFEFEDEDMQDEDKRYALRIGSRDPDPLRIGSRDPEALRIGSRDPLRIGSRDPNPLRIGSRDPNPLRIGSRDPEPLRIGSRDPKPLRIGSRDPEPLRIGSRDAEPEALRIGSKRSAIAVRVGGKRDPLRIGSRDPLRIGS

>g2539.t1\_Xenoturbella\_bocki\_LRIGamide isoform b (This study – New to Xenoturbella)

MTCKLSCVLLVAFLFFVCTLAAPYFDEAEIEELYNEAKALEAEEEGDFDEAKRLRIGSKRGAMAVRLGGKRFEFEDEDMQDEDKRYALRIGSRDPDPLRIGSRDPEALRIGSRDPLRIGSKRSAIAVRVGGKRDPLRIGSRDPLRIGS

**AVW peptide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g1644.t1\_Xenoturbella\_bocki\_AVW peptide partial (This study – New to Xenacoelomorpha)

HQGQHRGAGRCLEEGAAVWKRGQLSGRGDSCLEEGTAVWKRGQLSGRGDSCLEEGAAVWKRGQLSGRGAAVWKRGQLSGRGDSCLEEGTAVWKRGQLSGRGDSCLEEGAAVWKRGQLSGRGDSCLEEGTAVWNSMC

**FWxVW peptide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g6256.t1\_Xenoturbella\_bocki\_FWxVW peptide (This study – New to Xenacoelomorpha)

MKLSTNSVIALVLCLSVFVQTSHALWRVWKQDPLIGKRSFWQVWKQNEQADAGKRAFWRVWQDSGENSKRFAKSWQDDTRYDGEEGMNTADSLGENMGGAYDLPLEDYITEFKEMDTNDDGIVEMNEYLVSRGATGDIELEE

**APVAPQExTGQ/LTRSG peptide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g11181.t1\_Xenoturbella\_bocki\_APVAPQExTGQ/LTRSG peptide partial (This study – New to Xenacoelomorpha)

TRASVTANQSSKRASNAPVAPQEETGQAVSSSSRENESDGDDRRLTRSGTNQRSTRASVAANRPSKRASPAGTAPAPVAPQEDTGQAVSSSSRENESDDRRLTRSGTNQRSTRASVAANRPSKRASPAGTAPVAPQEDTGQDSDADDRRLTRSGATARSSTASTRAGAKRPATHKRI

**pyroWVP peptide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g8585.t1\_Xenoturbella\_bocki\_pyroWVP peptide partial (This study – New to Xenacoelomorpha)

QRVGTPSSGYSSEWVPRRQGTPASGYPVVRVLQRVGTPSSGYSSEWVPRRQGTPASGYPVVRVLQRVGTPSSGYSSEWVPRRQGTPASEYPVVRVLQRVGTPSSGYSSEWVPRRQGTPASGYPVVRVL

**TTE peptide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g3343.t1\_Xenoturbella\_bocki\_TTE peptide partial (This study – New to Xenacoelomorpha)

HGGIDVGRDVAAGVMAGGNIGAATVNNFYYGTGTDSGRTERKRRSENDGVKTTERKRRSENDGVKTTERKRRSENDGVKTTE

**Other potential candidates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

>g617.t1\_Xenoturbella\_bocki\_candidate1 (This study)

IRRHEDRRGEEKRKREVEKRSEEKRRSEEKKERREEKRRSEEKKKEEKRREEAKVN

>g14917.t1\_Xenoturbella\_bocki\_candidate2-a (This study)

VLDINPRKVLDINPRKVLDINPRKVLDINPRKVLDINPRKVLDINPRKVLDINPRKVLDINPRKVLDFNH

>g440.t1\_Xenoturbella\_bocki\_candidate2-b (This study)

VFLEDYSVLSSQAIRGEVAAGLSKEMLGVELKADETYAITAKLGKISIKEVDKKKLAGQLNNGYCYGQRRSQGASLRKVLDINPRKVLDINPRKVLDINPRKVLDINPRKVLDINPRK

>g3274.t1\_Xenoturbella\_bocki\_candidate3 (This study)

MSDVTDAITLEDSDDDDVVLDEWTLVDRQGDECLLPTANRRAPPDSHIPAEIKGSTFDDDDAGHRRSETSGSESPDIAADDIIVLDCQGCDGNFVREEERSDPLLCEGERSDPLLSEEERSDPLLSEGERSDPLLSEEGRSDPLLSEGEREAECSVTELVQEGCSVLHTCILSCDEQELRAEVAHSFHVDAEQAQKAQLLSTY

>g6769.t1\_Xenoturbella\_bocki\_candidate4 (This study)

MARTPGRVRPMACTPGRVRPMACTLGRVRPMVCTPGRVRPMACTPGRVRPMACTLGRVRPMTGKPGRVRPMTGKPGCVRPMACTLGRVRPMTGKPGSLRSMTGKPGRVRPMACTLGRVLPMACTLGRVWPMACTLGRVRPMACTLGRVRPMACTLGRVRPMTGKPGRVRPMTGKPGSVQPMACTLGRVRPMTGKPGRVRPMTGKPGSVRPMTGKPGRVRPMACTLGRVRPMACKLGRVRPMTGKPGRVRPMTGKPGRVRPMTGKPGSLRSMTGKPGSLRSMTGKPGRVRPMACTLGRVRPMACTLGRVRPMACTPGRVRPVIGKPGRMGSMAPGSYNVCDFLVSSQADPTPESHSGPLLRRNILAKPLWIARDSPEFRDCQIELTRPFRVSSICPGSSLKRAAH

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