# **Supplementary Information**

**Figure S1.** High performance liquid chromatography of STX in ACHK-T and ACHK-NT. (**A**) C1/C2 toxins; (**B**) GTX1/4 toxins. Y-axis: Fluorescence intensity (LU); X-axis: Retention time (min). Differences of chromatograms peak between ACHK-T and ACHK-NT were consistent with previous result [26].



**Figure S2.** Cell cycle phase distribution of ACHK-T and ACHK-NT during the light period. Y-axis: Number of cells; X-axis: the relative amount of DNA. The results presented a similar phase distributions between the two strains.



Mar. Drugs 2014, 12



**Figure S3.** Uniform distribution of all reads from libraries of ACHK-NT and ACHK-T. Homogeneous distribution of reads which covered multiple locations in UTRs and coding regions of transcripts showed an evenly distributed coverage of reads to genes.



Figure S4. KOG classification of A. catenella unigenes. Letters represent the 26 classifications in KOG databases.

**KOG Classification** 





GO Classification

**Figure S6.** KEGG pathway annotation and KO annotation. (A) Top 10 represented KEGG pathway. Number of unigenes and EC numbers involved in each pathway is shown; (B) Top 10 KO terms with number of unigenes assigned to each term.



#### Mar. Drugs 2014, 12

**Figure S7.** KEGG classifications of unigenes based on the secondary pathway hierarchy. Letters A to D represent the four primary hierarchies in KEGG database: **A**: Cellular Processes; **B**: Environmental Information Processing; **C**: Genetic Information Processing; **D**: Metabolism.



## KEGG Classification

Figure S8. Protein families in *A. catenella* transcriptome. (A) Distribution of Pfam families versus unigenes; (B) Top 10 represented Pfam families.



**Figure S9.** Alignment and GC content comparison of both isoforms of *sxtA* obtained in this study with reported complete cds sequences of *sxtA* from *A. fundyense*. (**A**) Alignment of comp66169 with *sxtA* long transcript (accession number: JF343239); (**B**) Alignment of comp20666 with *sxtA* short transcript (accession number: JF343238). The color labeled nucleotides were DinoSL and polyA regions which were not obtained in this study; (**C**) GC content comparison. GC content was calculated using the reported method [21].

comp	66169 - sxtA long
sxtAlong comp66169_c0	1 TCCRTARCCATTITIBECTCAAR AGTTEGATCCCAAGCGECTCTCCCGCAGCCAGGCGGCGGCGCCGCCGCCCGCCGCGCCCCCC
sxMlang	125 GEAGETTETBAGEACECTTOTAGEACEOGACADEGETBOATETTGTGABAGEGTEGEBOGGACADGGGCCTEEGGAGEGEACEGAGETTEEGGEAAGGTEGAACATECAAC
comp66169_c0	107 GEAGETTETBAGEAAETTTETAGETEEGGACGGEGETTGGATETTGTGAGAGEGEGEGTGGGGGGTEGGGGGGCCTEEGGACGAAEGAGETTEEGGEGAGEGEACGAACGAGETTEEGGEGACEGAACGACETTEEGGEGACEGAACGACETTEEGGEGACEGAACGACETTEEGGEG
sdAlang	249 BBCCTCBACCTCBBCACCBATGCCTTCATBCT00TGCACBBGT0BACTTGCBC0CCCTTBCTCCTBBABTTTGTTGCBABCTTCCTCCABCCGTTBCABCCBCCATGACCBCCAAGCCCATGACCBCCBAGCAGC
comp56169_c0	231 BBCCTCBACCTCBGCCCGATGCCTTCATGCTGGTGGACGGGTGGACCTGCBCCBCCCCTGCTGGABTTCGTCGCGGAGCTGCTGCAGCCCCTGCABGCGAGCCATGACCGCGAGCAGC
s:dAlang comp68169_c0	373 TEGECGEBBABAEAAACBEBBBBAABBBECEBTBBEEBATCAETETGEBBAEAATBBEEATEETEBBAEETBBAEETBBAEEETBABAEEBABAEBATAETEBEEETBABAEEBABAEBABBBEEBTBBEECEBBBEEBBBE
sidAlang	497 TGA86C8CTCBCC6C6CTCCTCC66CCA6C66C6CCCACCA6C6C6GC6TTBC6AA6CATCTACCA6CAC6CCA6CC6CCGTTCA666T6CCCTCATCC6A66C66C66C6CCTCCA76C76CT66C76CT6C76C66A7T
comp66169_c0	479 CC688C8CTCBCC6C6CCTCCC686C68C68C66CCAC58C68C66CCT666068C5CCTCC686C66C68CC66CC5CCTCC686T8CC5CCC68A88C68C68CC
axtAlang comp66169_c0	621 TEGGCGGAGCACCGGCCCACCTGGAGAAGGGCGGCTTGCAAGGGCGCCTCCTCGCCGACGGGGCCGTCCTCGTCGGTCG
sxMlang comp66169_c0	745 GCCTDGATTCCGGCAAGGAGGGCGCCTTGGACCGCCTCGACTTCAGCAAGGCCAATBCCGCGGCAAGGGCGGCCTCGGGGGGCATCTCGGCGAGTTGGGCACAGTGGACGGCGGCGAGGGGCACGTCGGGGGGCATCCTCGGCGAGTGGGCACGGCGGCGGCGGGGGGGG
sdAlang	859 GACCOTQACCTTDACCOCD0AD00CTCOTTCOCCCTOCA0COTCACTCCTACTACTCCCACOTCCTAC0CCCCACTGCT0BACA00TACCACABCATCCTCTC0AQAATCCC00CT0B
comp56169_c0	851 GGCCDT0GCCCT0ACC0C00AD00CTCCTTCGCCCTGCAQC0CTGCTACTCCTACTCCC0AC0TCCTACGCCCCACTGCT0BACA0DTACCACABCATCCTCTC0AQAATCCC00CT0B
s:dAlang	913 086TTC8CC80T8CC80Cc680ACTC8CA80A0CA80A8ATCCAC6TCCACC68AC6CT8AAC6T66T668CA8C6868C6CA8CACC48AC6CTCTTCAC66ACCTC6T6666CTCATT8ACT
comp68169_c0	975 086TTC8CC805T8CC80C680ACTC8CA80A8CA80A9CC6AC67CCACC68AC6CT6AAC6T66T668C68066C6CA8CA8C4CCTCTTCAC66ACCTC6T668
sidAlang	1117 C66TCTTC6C096C6866ACTTC6C0TC6CA6CC69C6TTC0TC6T66ACAC6666GT6C66C6AC66CC6CTT6CTCA66C6CATCTAC6A6CAC6T6AA6A6CAACAC6CC6C6C6666A666C
comp66169_c0	1059 C66TCTTC6C0606C6866ACTTC6CATC6CA6CC60C6TTCATC6T06ACA6666GT6C66C56CTT6CTCA66C6CATCTAC6A6CAC65C6ACCAC6ACAC6C
sidAlang	1241 GCTCGCCGAGGAGCACCGCCTCACGATGGTCGGCGTCGACCTCAAGAAGGACTCTCGGGTGGCGACGGAGGCTCAACCTGAGGAGGCACGCAGTCCCGGCACCTGGTGCTGTTCGGGGACGTCGGCAAG
comp66169_c0	1223 GCTCGCCGAGCACCCGCTCACGATGGTCGGCGTCGACGTCGAAGAACTCTCGGGTGGCGACGGAGGCACGGAGGCACGCGGGTCCCGCACCTGGTGCTGTTCGGGGACGTCGGCAAG
sxdAlang	1365 CECGECGACATCATGBAGATECTEGGBEGBAACGBGGTGGACCEGABCADGTECETECAEGTECGTECTTCCTGGACCACGGECGTAEGTECCECCGGGECGGAGATGGACECGGACA
comp66169_c0	1347 CECGECGBACATCATGGAGACECTEGGGEGGGAATGGGCGGAGTGGACECGAGGGCGETECETECAEGTECCTCCTGGACEACGGECGTAEGTECCECCGGGCCGGCGGAGATGGACECGGACA
s:dAlang comp56169_c0	1429 BCCCDBCCDBDAB6TTCBCAABCTBCCBAACTBCCBAACTBCCBCCCACCTCBACBCBABGCBABCCBABC
s:dAlang	1613 CBCCCTGCAB00CTCCTTC0BCCTCTBCAT0CT08A0BTCAT0AT0CT08AC0T0CCBAC0AC0A000CGTCCCT0AAC0ATT0C0BTCCCCACTTC0ACCTCBT0CA0T0CCTCTCCC0B
comp66169_c0	1515 CBCCCTGCAD00CTCCTTC0DCCTCT0CAT0CT00A00TCAT0AT0CT00AC0T0CCDAC0A000CGTCCCT0AAC0ACTGC0TCTC0CACTTC0AC0TC0T0CA0A0CCTCTCCC0B
sidAlang comp66169_c0	1737 CASTACATOSTO TCOCCOSCOSCCTTCOCCTTOOCCTTOOCCATOSCCOSCCTCCTOCCCOSCAGCCCTCCAGACCCACCCOSCCOSCGCOSCGCACCCCCCCCCCCCC
sidAlang comp66169_c0	1981 ACCTCGTGCGCCGGCCGTACCAGATCCGCCCGAGGTCGGCGAGGTCGCCAGGCTCGCCGCGCGCG
sxtAlang	1915 GBAGACGTCTCCCGACCTGCCTGGCCGTCGAGATGGACCAGCTGGTCGTGGCCGTGCTCTACACGCGGGTGGACAGCGCCCATGTGGTGGACCAGCAGAAGTTCATGCAGGTCTCCGAC
comp66169_c0	1917 GBAGACGTCTCCGACCACGTGCCTGGCCGTCGAGATGGACCAGGAGGTCGTGGCCGTGCTCTACATGCAGGGGGGGG
sdAlang comp56169_c0	219/ TBOCACABODCOCACCOCATCATBCABOTCATCOCCATCACCOCCCCCCCCCC
s:dAlang	2233 AC6T8GACA8C6TCATC8868T6AC6C6CT6CCAAAACTTC6A6ACATTC6C2866TC6AT6C696ACTAC6T86AC6A6CAAC6CC866CACC6C66BTA6ATCCCATCATC66C6CCCC6CACAC
comp66169_c0	2215 AC6T8GACA8C6TCATC6868T6AC60C0CT6CCAAAACTTC6A6A6C0TTC66A686TC6AT66068ACTAC6T06AC6A6CATC6CC68CACC6CC6CBTA6ATCCCATCATC68C6CCCC6CCC7CACAC

# Figure S9. Cont.

sxt4long comp66169_c0	2357 CSGCAACSGASCTC956TAGTCC5CCTC9T6CAC56CTTCA69CC56A56ACGT666CAACC5C9566AC56C5TCCTCATACA6TAC6ACAC6A6CAC6A6CTC95C56C5C4CC56CC5A5C56 2339 C56CAAC56A8CTC956TA6TCC5CCTT0T6C5C566CTTCA69CC56A56AC65666CAACC56C6666AC56C5TCCTCATACA6TAC6ACAC5A6CAC5A6C5
sx6Alang comp56159_c0	2481 GEOGECCEOSGECTGEGGECTGETGEGGEGEGEGEGEGEGEGEGEGEGEG
axdAlong comp66168_c0	2015 ACOGCOGCACCCOADGCOGCCGCCGCCGCCGCCGCCGCCGCCGCCGCGCCG
sidAlong comp66169_c0	2729 CTCCBTCB09CT8CTCTTC6A86CBTCCAC0CCCA86AA9CT9BCCBC9CACCTCCACC9C6A8AT6CA9C69CC89CC89CC86AC69B69CC66C9CCTC98CCC68CACC98CC86C 2708 CTCCBTC89GCT6CTCTTC6A86CBTCCAC0CCCA86AA9CT9BCC8CGCCACC5CG6A8AT6CA9C69CC69CC686A86AC69B69CC68CACC69BCC6C6CC
sxtAlong comp66169_c0	2953 GCC9CC8C
sxtAlong comp66169_c0	2956 TCGACGGCTGCTGGTGCATCGACGTGGCGAACTGCAGCTACCTCGGCTTCCAGTGGCGGGACGAGATCGCCGATGGCGTGGACCGGGACGTGCGCACCTGGGGCGTCCACCCCCGTGGACCAG 2956 TCGACGGCTGCTGGTGCATCGACGTGGCGAACTGCAGCTACCTCGGCTTCCAGTGGCGGGACGAAGATCGCCGAAGGGCGTGGGCCGGGACGTGCGCACCTGGGGCGTCCACCCCCGTGGACCAG
sx64.long comp56159_c0	2080 GCTCGTCTCGTCTCCGAAGCTGTACGACGACGTCGAGGCGCGCTGTTGCGAGCTGACCGGCATCTGGAAGTGCGTTCTGTACCCGAGCGTTACCATGCTCAACATGGGAGTCATCCCGAGCCTC 2080 GCTTGTCTCGTCTCCGAAGCTGTACGACGACGTCGAGGCGCCGTGTTGCGAGCTGACCGGCATCTGGAAGTGTGTCCTGTACCCGAGCGTTACCATGCTCAACATGGGAGTCATCCCCAGCCTT
sxdAlong comp56169_c0	3234 OT BOBCOADABCOBOTTCCTCCTCCTCBACATAAACOCCCACGACTBCGTGCAGACOBCCBCCAGGCTCTGCAABAABOBCGCCACCGTGBTGCGCCTGAOBCACAACGACOCCGGAGAGCAGCACCGCCGGGCGGCCAGGCCGCCAGGGCGGC
sidAlong comp66169_c0	3328 ABCACATBCTCTC8TC8ATCCC6CA988688CCBACATCACCTAC6TBT9C6AC98C8T6TACTCCAC98AC86A8A8CTC6CC6ACTT6CCC9CCATAT6T8CTT6TTT9A68CC8C98686C 3328 ABC9CAT8CTCTCCTC6ATCCC6CA986686CCBACATCACCTAC6TBT9C6AC98C6T6TACTCCAC48AC866A8A8CTC6CC6ACTT6CCC9CCATAT6T8CTT6TTT9A68CC8C986866
s/tAlong comp66169_c0	3452 CAASATACTCGTABACGACTCGCATGGCTGCGGCGCGCCGCCGCGCGCGCGCGGCGGCGGCGGC
sxtAlong comp66169_c0	2576 AACATCATCTACGCCGGGCAGCTGAGCAAGGCGTTCAATTCGCCCGGCGGGATTCGTCGGCTGTGCGCGCGAGAGCCGACGAGAAGTTCGGCATTCTGAACTTGGCCAAGAACTCGAACACACAC
sx6Along comp56169_c0	3700 TOTTCACAGGGCCGATCTGTAGTGCCGGCCTGTCGAGTGCGATGACGACGCCCGACGCCGACGCGGCGGGGGGGG
axdAlong comp56168_c0	3824 OCTGAA0BCOCTC000BT0CCCCCACACCTACCAC00B0TTCCCCATCDTCAACATCTACT00ACCCCC00TC0A00T0T0C0CA0A00T0TACA00B0A0CT0AT0A0C0C0A000C0C0C0TC 2824 OCTCAC00C0CCCCCCCCACACCTACCAC00CTTCCCCCATCDTCAACATCTACT00ACCCCC0TC0A00T0T0C0CA0A00T0TACA00B0A0CT0AT0A0C0C0A000C0C0C0TC 2824 OCTCAC00C0CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
sidAlang comp66169_c0	3948 CABCABBBCBTCBTCACBACCCCCATBT0BCACCCCCATCBCCCCBAABBBCCACBABATBCTBC9CTTCCABTTCACBTC9CTCCACBACBABBCCBCCBTBC9CCACATCCTC9TBATCCTC8 3948 CABCGB6BCGTCBTCACGACCCCCTATGT0BCCACCCCATC9CCCCGBAABBBCCACBAGATGCT6CGCTTCCABTTCACGTC9CTCCACBACBAGBCCBCCBTBC9CCACATCCTCGT6ATCCTC9
sxtAlong comp66169_c0	4072 ABGACCTBATCAABCBCTACCCGCCCTCCBCCBTGCCGCCBCGCATCTBATCCGCCBCCGCABGACCABCGCCBCCBCCBCCCCCTCATCCCAGGGTTBTTTAAGGGATTBTTGAGTCTTTTCAATC 4072 ABGACCTBATCAABCBCTACCCGCCCTCCBCCBTGCCACCBCGCATCTBATAABCCGCCGAABCCGCCBGAGCCACCGCCGCCCCATCCCAGGGTTBATTAAGGGATTBTTGAGTCTTTTCAATC
sxtAlong comp66169_c0	4196 TAGTCAGCGTGTTTTTAATGTGCAAGCAGCAGGAAGGGTCAGGCCGGATTCTGGGCTTGTACACCAAGGGCCAGGCAGG
sx64/ong comp66169_c0	4320 AGCAADGDTCAGGCGDAGTCCTGGGCTTGTACACCAAGGGCCAGGCCA
axbAlong comp56169_c0	4443 TTOCTOATCCTOATCCAADOTATGACCAGGCATGGCGCATCATCGCBTCTAAGGTAGCGCCTGTCCATGTCGCCATCTTAGCT00TCACTATTG0CATCAACACTCGCGAAGGTACCCCBTCTGC 4335 TTGATGACCAGCCTTGGCGCAGGCATCGTGTCTGGGGTAGCGCCTGTACTTGTCTGCCATCTCAGATGACATTCTTGGCAAGATTTGCAAGACTTGC
sx8Along comp66169_c0	4557 TACOCACAOOTOACAATTOACATTOTOGATCOAOCCACOGAAOOGAG <mark>AAAAAAAAAAAAAAAAAAAAAA</mark>

В

Figure S9. Cont.

comp20666 - sxtA short			
sx04shorf comp20666_c0			
sx64short	125 CC6AAC860ATC6ACCT86C9ACAAAT6CCTTCAT6CTC9TCCAC86CT69AC86C96C8CCCCT9CTCCT66AGCTC8T69CCAACTTCA6C6C8CCCCT66A686866C696CCCA6ACC866C		
comp20666_c0	112 CC6AAC860ATC8ACC86CCAC0AAC6CCTTCAT6CTC8TCCAC86CT69AC86C566CCCTC6TCCT66AACTC0T68CCAACTTC76C6C8CCCCT66A868866C696CCAT6ACC868		
ax64ahort	249 G66A6CT66CC6C66A6AC66CC6C6A66A66666CCCCT66C6ATCCTCCCC6C6CCCCC666CCTCG66CTAC6T6C6CCCC6A6A6CA6666CCACCC66T6CC66666CC		
comp20666_c0	236 C86A6CT66CC6C66A6AC66C6A66A666666CCCCT66C6ATCCTCCCC6C6CCCC666ACCCC666ACC6C66AC66C6C66AC66C6C66AC66C6C66AC6		
ax64ahort comp20666_c0	373 GGAGCTGGACGAGGCTCAGGACCGTGCTCCACCCTGCGTGCG		
axMahorf	497 GCCCTCT000A00A0CA0C00CCCTCCT00A0CCA0T0CA00A0CA00DCCCT000CCTCCTCCT0AC00C0CCTGT0CT00C0CCCCTCCTDAC0TACCTCCTC0A00T00DAC0		
comp20666_c0	494 GCCCTCT00GA0GA9CA6C0GCCCTCCT0GA6CCAGT6CA6GA6TA6G6CCCT06G6C6TCCT6CT6GAC9GC6CCCTGCT6G6C6CCGCCGCCGCTCCTCCGA6GTACTTCTC6A6GT6G6AC6		
sx84shorf	621 ABBABBBBCCABBABCACBBCABBBATAACBTCATBBABCBCTTCBACTTCBBCTAABATGTTBCCBBCBCABCBCTCCBCBCCCCBBBBACATCTTCBABCABTTBBBCBTCBBCCBCCBCBACABTABAACBC		
comp20666_c0	600 ABBABBBCCCABBABCACBCCABBAACBTCATBBACCBCTTCGACTTCBACABCATGTGCCBCCBCBCCABCGATCTGCBCCGCCACCAGTTGBBCCATCTCCBACCAGTTGBBCCATCGTCGCCACCATGAACBC		
ax64short comp20666_c0	745 GAAGGGGGTGATCATGATGTCGTCAAAGGGGGCCATGGCGTTGCAGCGATGCTACTCCTACTACGTCCCCACTGTCGTACGCCCCGCTGATGGCCCAGATCTCGCCGATCCTGTTTGATGATGCG 732 CAAGGGCGTGATCTTGATGTCTTCAAAGGGGGCCATGGCGCTGCCGCGCTGCTACTCCTACTACGTCCCCAGTGCGCCCCGCTGATGGCCCAGATCTCACCGATCCTC		
ax64ahoxt	8/9 GGCTGGGGGTTCACTGACGCGGGGACAGACTCCTTCGACGACGAGGAGGAGGATGTTGACAGAATCTTGAATGTTGTTGGCAGTGGTGCGCAACACCGGACCCTCTTTAAGGATATGATGGGAC		
comp20666_c0	856 GGCTGGGGGTTCACTGACGCGGGGACAGACTCCTTCGACGATGGAGGAGCATGTTGACAGAATCTTGAATGTCGTTGGCAGTGGTGCGCAACACCCGGACCCTCTTTAAGGATCTGATGCGAC		
axb4ahort	983 ACATCAGTACCGTGTTCAAGGGCGAGGCATTTGCCTTGCGCGAGCTTTCGTTGTGGGCACCTGGCGGCGGCGGGGGGGCGCCGCTGTACATATCTATGAACATATCAAACAGCACAGCGCCCGG		
comp20666_c0	977 ACATCAGTGCCGTGTTCAAGGGCGAGGCATTTGCCTCGCGGCGAAATTTTGTTGTGGGGCACCGGGGGGGG		
axMahorf	1117 GEOGRAADTECTTEATCADTTECCTETEACGATEBTEGEOCETTEACCTEAATBABGATECEOCEAGTGACAACABETETEAATETBAGCAAGCABGEOTECCECCACETBETCATETEBECEAT		
comp20666_c0	1101 GEOGRAAGTGETEGACGAGTTECCTETGACGATGGTEGEOCETGGACETCAACGAGGGECEGEGAGTGACGAGGGCEGEGGAATETGAGCAAGGAGGGEGTECEGECACETGGTCATETCEGEGGAC		
sx84shorf	1241 BTOBBTAAGCETBCBBAGATACTTGCCGCBCTGAAGAAGAAGAAGAAGAAGBAGGCGTGBAGBACGCTTCATGTCCGCTCCTTCCTABACCACGBACCGTACTTGCCACCGGTCATGAGAATAG		
comp20666_c0	1225 BTOBGCAAGCCCGCGGGGGGGTCATGGCCGCGCGCGGAGAAGAAGAAGAAGAAGAAGAAGAAGAA		
sx64short	1365 ABGAAGABGABCABCACGABGCTAGGCTGBCCCGGACTCABATBGCABACTTGTGCATCTGBACAABCGTBGAAABCCCATCACGGCTGTGBAGCTGTTTBCATCCCTGBTBGAACATTTTGAAAB		
comp20666_c0	1349 ABAGAGABGABCABCACGABCTTGBCCCGCCTCABATBGCAGACTTGTGCATCTGBACAABCACBGAAABCCCCATCACGGCTGTGBAGCTGTTTBCTTCCCTABTBGAACACTTCGAGAB		
ax64ahort comp20666_c0	14E9 ATGGGCTGATGCGCTGGAGGTCTCCTTCGGACTGTGTGTG		

# Figure S9. Cont.

selabort 1613 CTTTCGCGGCAGTACATGGTATCGCCGGCGGCATTTACAATGGGAGCTGCCATGGCGGGCCTCCTGCCGCGCGCG
xelater 1737 TBASCCABCACCTOST CAAGAGGCCG TTCAGGCT6CGCCTTGCAGAGGTT6CCGACGCCTCGAGAGCCTCGTTCATGTCGAAGAGCTGGCATGGCCCAAGCAGATGCAGGGAAGCCTGGAGGAGCTGGCCCAGGCCGCGAGGCGGAGCTGGCCGAGGCGGAGCTGGCCGAGGCGGAGCCGGGAGCCGGGAGCCGGGAGCCGGGGGG
xx4xbot 1861 CC6CA6AC6AC786A606C6TCCCCCACCACCACCT0BTCT0CCA8CC786A606CC65C6C7C6TC6CC8AC606ATC6A6A61CTT6CC6TCCTC6AC6666TCCAC6 comp2066_c0 1845 CC66C666C6AC766A6A6CCCCCCACCACCACCTC6TC5C6A6666CC6566CC65C6C65C6
addator 1985 BACGTATCØTCTBCBCCCCCA0866TC9TCT0CT6CT6CA6CTCATCT0ATA8C86TCCATCC86ACTTT9CA86CATGAATCT086CC0C8A8CT8AA66A6TTT98CCTTCACTT08CCT comp20886_c0 1989 BACCTCTC00C0BT9CACTC6CC0C0B09CCATATCCT0CA9CT07CTC0C0B5CCATCC86A6CTTC8C0B6CATGAACCT086CC0CBA8CT8AA66A6TTC88CCTC6A6CT08CCCCCA6CT08CCCCCA6CT08CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
ard4short 2109 06TT6GACA0CACCATC0AGAG60TCATC00TGTCAGAA0GT0CAGCAA66A8TTCC0GCAGTAC6AT00CCCCAT6AGT6AGTAAC6TCAAT6C0CACTCTCT6C6060CCC08ACC6AC6A6C6   comp20666_c0 2003 06CT6GACA6CACCATC0AC6A86TCATC00CBTCAC6A86GT0CA6C666A8TTCCT6CA6TAC6AC66CCCCAT6ATC6ACTAC6TCAAC6666A6CTCCT6C66666CCCA6A6C66C6
ad4abot 2233 GCT66ACTTCCACTCCTCCGCC66A5C9CAGTTCGTCCGCTTGGT66A66GCTTCC5CCCCGAGGACACC6ACAAC6GC66CACA6GAGT6GTCATC6CCTAC6ACATCA66A666GCTTccCCCC6A66ACAC66C66CAC666A6766GCAC666A6766CCTCC6CCC6A66A6666CTTCCCCCC6A66AcA66666CTCC66CC6666A6666CTTCC6CCC6A66AcA666666CAC6666A67666666A676666666CTTCC6CCC666666666CTTCC6CCC666666
adlabor 2351 CTGCCCAGGGAGGCGGCTGCGGGGCGCCCCCGAGCAGGCCGCCGAGGAGGACGAGGCCGCC
adiabat 2468 TCAATBACCTCACCAA6686CTTCTTCBACTAC66CAT86ACTCCCT66A6CTC6TCC6CCAC6A66CTC6TC6CCCT6CA6AC6A66CT66CCCC6CCA66A66CCCCC6C666Ac6AC6CT6CCC666Ac6AC6CT6CCC666Ac6AC6CT6CCC666Ac6AC6CT6CCC666Ac6AC6CT6CCC666Ac6AC6CT6CCC666Ac6AC6CT6CCC666Ac6AC6CT6CCC666Ac6AC6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6AC6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6Ac6CT6CCC666Ac6CT6CCC666Ac6Ac6CT6CCC666Ac6Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6CT6CCC666Ac6Ac6CT66CCT66C
solstor 2510 CACCOTOCACOACCTCOTOGACCAOBACCOGOCCCCCOAGTCCGAOTOCAOBACCAOBACCAOBACCCCCCCCCAABGCCCCAABGCCCAABGCCCAABGCCCAABGCCCAABGCCCAABGCCCAABGCCCAABGCCCAABGCCCAABGCCCAABGCCCAABGCCCAABBCCCCAABBCCCCCAABBCCCCCC
ard4abort 2714 AAG86C86C8A96C9AC6CA6C9CTTC998CCCTC998CCCTC968ABATCATCA6C6T9CA6AA8C9CT9CCAAC9TCTAC86CCA9CCCATCTACCA8AA6C86TTCAC66ACAT69CCAA6AA6T9CT comp20666_c0 2918 98C86C60CTC9AC6CAA6ACTTC998OcCTCAA6AATCATC16C8T9CA9C9CC3CC9CGCTCCA0C9TCTAC86CCA9CC0C3CC3C
ad4abot 2938 TCCC6GACATGCTCAAGTACATCCTC6CCATAGAGTCCATCCT6GTCGAGGTCGAGGGCC6GTCCT6CA6GAGTTCCAGCTGATCCAAGATCTCGAGTACAAGTC6GTCCA6GAGAGGCC6CGA comp20666_c0 2919 TCCC6GACAT6CTCAAGTACATCCTT6CCATAGAGTCCATCCT6ATTGAAGGTCGAG6GCC6ATCCA6GAGCTCCA6GAGTCCAAGTC6AAGTC6ATCC6AGTC6AAGTC6ACGC6CGAA
adlabot 2962 GAATTTGATGTACTACATGTCAAGCTATTGGCTGGCCCACCCA
sxAshor 3056 GCTCCGCGGGGCACCTCGAATCTGCGGAGCCACATACGACAGTCTCAGTGCG <mark>AAAAAAAAAA</mark>

С





#### S1. Sequences of *sxtA1* and *sxtA4* motifs in *A. catenella*

### >ACHK-NT-sxtA1

>ACHK-T-sxtA1

### >ACHK-NT-sxtA4

CACCAGAGTCATCCCGAGCCTCGTGGGCGAGAGCGGGGTTCCTCCTCTGTACATAAACGCCCACGACTGCGTGCAGACGGCCGCCAGGCT CTGCAAGAAGGGCGCCACCGTGGTGCGCCTGAAGCACAACGACAGGGAACAGCCCGAGCACATGCTCTCGTCGATCCCGCAGGGGGCCG ACATCACCTACGTGTGCGACGGCGTGTACTCCACGGACGAAGAGCTCGCCGACTTGCCCGCCATATGTGCTTGTTTGAGGCCGCGGGGG CCAAGATACTCGTAGACGACTCGCATGGCTGCGGCGTTCTTGGCCGCAACCCCAACTCGGAGCAACCCCTCGGGTATGGTGGCGGCGGCG TCATCGAGTACTTCGGGCTGGACTACGCGGAGAACAACATCATCTACGCCGGGCAGCTGAGCAAGCCCTCGGGTTCAATTCGCCCGGCGGATTCG TCAGCTGTGCGCGCGAGAACCAACAACATCATCTGGCCGAGGCGACCTGAGCAAGGCGTTCAATTCGCCCGGCGGATTCG CTGCCGGCCTGTCGAGTGCGAAGACGACCTTCGACCTCAACGCCGCCGAGGGGGACCTTCAGCGCAAGCGGCTTCTGGCGGCTACCCTCG AATTCTGCGAGGGGCTCAAGGCGCTCGGGTGCCCCCACACCTACCACGAGTTCCCCATCGTCAACTCAGCGGGGGACCCCA

## >ACHK-T-sxtA4