

Holothurians have a reduced GPCR and odorant receptor-like repertoire compared to other echinoderms

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Supplementary Table S3. Results of the HMM analysis in *H. arguinensis*.

Hidden Markov Model (HMM)																			
Protein ID	Sea urchin (Surreal)						Starfish												Sea anemone
	Group A	Group B	Group C	Group D	Group E	Group F	Group A	Group B	Group C	Group D	Group E	Group F	Group G	Group H	Group I	Group J	Group K		
TRINITY_DN101677_c0_g1_i1			1.8e-109												3.3e-59	7.4e-25	3.5e-13		
TRINITY_DN108528_c0_g1_i1			4.5e-61												1.2e-30	8,00E-57			
TRINITY_DN108712_c1_g1_i1				1.5e-169															
TRINITY_DN109505_c1_g1_i1			2.8e-86												1.3e-51	6.8e-31	1.3e-12		
TRINITY_DN113016_c0_g1_i1												2.1e-78							
TRINITY_DN114406_c0_g1_i1		1.2e-51								2.5e-91									
TRINITY_DN136692_c1_g1_i1			5.9e-25																
TRINITY_DN136881_c0_g3_i1												1.5e-56							
TRINITY_DN148436_c0_g1_i1		2.6e-49								7.9e-54									
TRINITY_DN148623_c0_g3_i1		4.0e-61								1.1e-66									
TRINITY_DN148698_c0_g1_i1				5.1e-62															
TRINITY_DN149306_c0_g2_i1												5.6e-90							
TRINITY_DN151046_c0_g1_i1			6.3e-144											8.1e-36	6.2e-20	4.9e-08			
TRINITY_DN151819_c0_g1_i1			2.0e-08																
TRINITY_DN152339_c0_g2_i1			2.0e-43																
TRINITY_DN152517_c0_g2_i2			1.9e-26											7.1e-07					
TRINITY_DN153617_c0_g2_i2				9.7e-167								3.3e-12							
TRINITY_DN154042_c0_g1_i1								7.0e-33	2.0e-28										
TRINITY_DN155888_c0_g1_i1			7.0e-10		3.4e-11			2.0e-10											
TRINITY_DN156703_c1_g1_i1			8.5e-32																
TRINITY_DN158222_c1_g1_i1			8.8e-13																
TRINITY_DN158856_c2_g2_i2		1.4e-46								1.8e-61									
TRINITY_DN159040_c0_g1_i1												1.1e-98							
TRINITY_DN160372_c0_g2_i1		8.5e-69								2.8e-63									
TRINITY_DN162010_c0_g1_i1		3.2e-63								3.1e-103									
TRINITY_DN164204_c0_g2_i1		3.9e-25								8.1e-86									
TRINITY_DN165100_c0_g1_i1		1.1e-97								3.3e-105									

TRINITY_DN165994_c1_g1_i1			3.3e-05		1.2e-06						7,00E-10						
TRINITY_DN165994_c1_g2_i1					1.3e-05						8,00E-08						
TRINITY_DN166152_c0_g4_i1								8.9e-13	3.8e-44								
TRINITY_DN167615_c0_g1_i3								8.8e-08									
TRINITY_DN168039_c0_g1_i2		3.9e-123								3.2e-166							
TRINITY_DN168321_c1_g3_i1		9.9e-61								1.9e-77							
TRINITY_DN168537_c1_g1_i1		3.3e-27								5.8e-86							
TRINITY_DN168797_c1_g4_i1			5.1e-86										8.2e-51	1.3e-36	1.2e-10		
TRINITY_DN169459_c1_g1_i1		4.6e-50								9.4e-82							
TRINITY_DN169527_c1_g2_i1		1.2e-51								6.7e-103							
TRINITY_DN169625_c1_g2_i1											2.5e-89						
TRINITY_DN170202_c1_g1_i2				2.1e-164													
TRINITY_DN170522_c0_g2_i1											1.6e-108						
TRINITY_DN170998_c0_g1_i1		4.5e-19								1.3e-58							
TRINITY_DN171647_c0_g1_i2		9.9e-108								2.9e-150							
TRINITY_DN172053_c0_g1_i1		5.2e-60								2.2e-99							
TRINITY_DN172574_c0_g1_i1																	
TRINITY_DN172862_c0_g1_i1											7.4e-98						
TRINITY_DN173209_c0_g1_i1		1.2e-107								1.5e-170							
TRINITY_DN173521_c0_g1_i1										8.6e-26							
TRINITY_DN173521_c0_g2_i1		1.1e-65								1.5e-91							
TRINITY_DN173654_c0_g1_i1		6.0e-106	4.3e-10							3.8e-168							
TRINITY_DN173682_c0_g3_i1									2.5e-11								
TRINITY_DN174721_c2_g1_i1		1.1e-109								8.8e-181							
TRINITY_DN174853_c0_g1_i1		2.4e-70								1.5e-88							
TRINITY_DN175107_c3_g1_i2		1.4e-66								2.8e-93							
TRINITY_DN176493_c0_g2_i1		8.2e-54								4.5e-60							
TRINITY_DN177453_c0_g1_i1											3.2e-62						
TRINITY_DN177751_c0_g4_i2			7.0e-36														
TRINITY_DN178050_c0_g1_i2					2.8e-18												
TRINITY_DN178387_c0_g1_i1								3.7e-10	7.3e-12								
TRINITY_DN178487_c0_g3_i4			4.1e-44														
TRINITY_DN178565_c0_g4_i1		1.8e-127	2.0e-07							6.9e-185							
TRINITY_DN178934_c0_g2_i7		1.5e-77								1.5e-134							
TRINITY_DN178934_c0_g6_i1										7.8e-58							
TRINITY_DN179851_c1_g5_i2		5.2e-89								2.1e-140							
TRINITY_DN181162_c0_g2_i1		3.0e-106								2.6e-131							
TRINITY_DN181254_c1_g3_i2			1.6e-53														
TRINITY_DN182323_c1_g7_i7		2.0e-88								7.8e-142							
TRINITY_DN184033_c1_g1_i1					2.6e-14			2.6e-09									1.1e-09
TRINITY_DN184550_c1_g1_i1		4.1e-35								2.5e-81							
TRINITY_DN184738_c2_g2_i1			4.5e-77										5.9e-51	9.5e-79			
TRINITY_DN184913_c1_g2_i6				6.5e-136													
TRINITY_DN186455_c3_g1_i1			4.3e-51														
TRINITY_DN186503_c2_g1_i1		1.6e-37								1.2e-27							
TRINITY_DN248782_c0_g1_i1			5.0e-96					2.4e-05					1.3e-21		1.4e-07		
TRINITY_DN61298_c0_g2_i1	2.5e-32															3.3e-22	
TRINITY_DN95037_c0_g2_i1		1.5e-44								8.9e-69							
TRINITY_DN96230_c1_g1_i1				3.6e-67													
TRINITY_DN97107_c0_g1_i1					1.3e-24			1.3e-05									
TRINITY_DN97579_c0_g1_i1			8.9e-83										1.6e-34		3.3e-15		

Supplementary Table S4. Results of the HMM analysis in *A. japonicus*.

Protein ID	Sea urchin (Surreal)						Hidden Markov Model (HMM)												Sea anemone
	Group A	Group B	Group C	Group D	Group E	Group F	Group A	Group B	Group C	Group D	Group E	Group F	Group G	Group H	Group I	Group J	Group K		
Aja.PIK33197.1								5.5e-11	3.3e-13										
Aja.PIK33210.1		3.2e-18								7.7e-77									
Aja.PIK33580.1		1.3e-24								2.5e-68									
Aja.PIK33772.1		4.9e-84								1.8e-101									
Aja.PIK33908.1			1.7e-06																
Aja.PIK34350.1										9.7e-50									
Aja.PIK34351.1										5.2e-51									
Aja.PIK34355.1		2.1e-61								5.3e-87									
Aja.PIK34888.1			7.1e-65											7.0e-41	1.0e-17				
Aja.PIK35204.1												6.9e-59							
Aja.PIK35427.1		4.5e-29								6.9e-59									
Aja.PIK35879.1			2.0e-98											2.4e-64	5.1e-38	4.6e-09			
Aja.PIK36567.1										1.6e-37									
Aja.PIK36688.1		4.9e-23								1.8e-68									
Aja.PIK36693.1		5.1e-121								1.0e-115									
Aja.PIK36694.1		1.3e-24								9.1e-36									
Aja.PIK37406.1												8.5e-58							
Aja.PIK37689.1								1.9e-09											
Aja.PIK37947.1				1.5e-81															
Aja.PIK38193.1			1.6e-114											7.7e-28	5.3e-08	8.5e-10			
Aja.PIK39029.1												2.8e-76							
Aja.PIK39287.1								2.1e-24	7.6e-28										
Aja.PIK39302.1				5.1e-166															
Aja.PIK39336.1			1.2e-76											4.4e-48	4,00E-76	2.6e-15			
Aja.PIK39864.1										6.9e-22									
Aja.PIK39897.1			1.7e-40											3.7e-27					
Aja.PIK39927.1				5.1e-147															
Aja.PIK40478.1						1.2e-78							1.4e-12						
Aja.PIK41151.1								2.8e-10	2.4e-11										
Aja.PIK41271.1				2.1e-171															
Aja.PIK41413.1		3.1e-78								6.2e-100									
Aja.PIK41414.1		7.3e-40								1.7e-56									
Aja.PIK41415.1		5.9e-74								1.2e-97									
Aja.PIK41591.1										4.2e-51									
Aja.PIK41601.1										8.1e-26									
Aja.PIK42805.1			1.2e-12		1.8e-19			1.7e-16	1.2e-07										
Aja.PIK42823.1			7.8e-12		1.1e-15			6.1e-16	8.8e-10										
Aja.PIK43000.1			1.5e-38																
Aja.PIK43106.1					7.8e-15														
Aja.PIK43110.1					2.8e-19														
Aja.PIK43514.1					6.8e-14			4.3e-05											
Aja.PIK43705.1			4.8e-06																
Aja.PIK43739.1			4.6e-99											3.4e-34	2.3e-58				

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