

Table S1. The Sequence Read Archives (SRAs) used in the analysis of RGP orthologs. RGP homologs were identified by searching the sequence data bases of SRA and identified by BLAST analysis against Trinity (<https://github.com/trinityrnaseq>) assembled contig sequences with the transcriptome sequence data.

Orders	Species	SRAs	Accession numbers of RGP and RGPR
Valvatida	<i>Patiria (Asterina) pectinifera</i>	SRR8627925	AB496611, LC027938, LC027939 LC757025
		SRR8627925	LC567883, LC757026
		SRR8627926	
	<i>Patiria miniate</i>	SRR2454338	LC057686
	<i>Parvulaster exigua</i>	SRR10389879	
	<i>Pateriella regularius</i>	ERR995409	
	<i>Asteropsis carnifera</i>	SRR2843236	
	<i>Acanthaster cf solaris (planci)</i>	SRR8613694	LC033566, LOC110989162
	<i>Cernardoa semiregularis</i>	SRR16157127	LC066682
	<i>Glabraster antarctica</i>	SRR2844627	
Paxillosida	<i>Astropecten duplicatus</i>	SRR28443238	
	<i>Astropecten latespinosus</i>	DRR179610	
	<i>Astropecten scoparius</i>	SRR12736189	LC131032
	<i>Luidia quinaria</i>	SRR16157128	
	<i>Luidia clathrate</i>	SRR1139195	
	<i>Luidia senegalensis</i>	SRR3217895	
Forciplatida	<i>Asterias amurensis</i>	SRR1139201	LC040882
	<i>Asterias rubens</i>	SRR1642063	KT601728
	<i>Aphelasterias japonica</i>	SRR16157129	LC104980
	<i>Marthasterias glacialis</i>	ERR6436374	
	<i>Piaster ochraceus</i>	SRR2846074	
	<i>Coscinaster acutispina</i>	—	LC131033
	<i>Labidiaster annulatus</i>	SRR2845324	
Velatida	<i>Pteraster tessellatus</i>	SRR2846094	
Spinulosida	<i>Henricia leviuscua</i>	SRR2844835	
	<i>Echinaster spinulosus</i>	SRR1139455	LC131034