

**Supplementary file 1: List of serpins used for phylogenetic analysis**

Sequence Identifier	Name	Source organism	Class
MF288891.1	EnSerp1	<i>Eudiplozoon nipponicum</i>	MONOGENEA
scf7180006950201-processed-gene-0.1		<i>Gyrodactylus salaris</i>	
XP_018646699.1	Serpin, putative	<i>Schistosoma mansoni</i>	
XP_018646698.1	Serpin, putative		
XP_018646700.1	Serpin, putative		
XP_018646704.1	Serpin, putative		
CCD60071.1	Serpin, putative		
XP_012797534.1	Serpin B4	<i>Schistosoma</i>	T
XP_012797533.1	Serpin B8	<i>haematobium</i>	R
AAK57435.1	Serine protease inhibitor serpin	<i>Schistosoma japonicum</i>	E
AAW25282.1	SJCHGC02866 protein		
GAA35588.2	Leukocyte elastase inhibitor	<i>Clonorchis sinensis</i>	A
AHZ96593.1	Serine proteinase inhibitor 3		
GAA28469.2	Serpin B		
ADI60059.1	Serpin		
GAA37554.2	Serpin I2		
XP_009168246.1	Hypothetical protein T265_05071	<i>Opisthorchis viverrini</i>	
XP_009177032.1	Hypothetical protein T265_11935		
XP_009169304.1	Hypothetical protein T265_05905		
ABV57466.1	Serine protease inhibitor	<i>Paragonimus westermani</i>	
EUB63679.1	Serine protease inhibitor	<i>Echinococcus granulosus</i>	
CDS22753.1	Serine protease inhibitor		
BAU98534.1	Serine protease inhibitor 2b	<i>Echinococcus multilocularis</i>	C
BAU98533.1	Serine protease inhibitor 2		
CDS35969.1	Serine protease inhibitor		
ATG83400.1	Serpin	<i>Taenia solium</i>	O
ATG83397.1	Serpin		
JAP62381.1	Serpin I2 partial	<i>Schistocephalus solidus</i>	A
JAP54469.1	Serpin B13		
CDS32008.2	Estrogen regulated protein EP45	<i>Hymenolepis microstoma</i>	