

**Table S4 - Support values for internal nodes, position of *Turbanella* and position of *Paraplanocera spec.* and *M. lignano* obtained by all analyses**

S = *Seison*, A = Acanthocephala, B = Bdelloidea, M = Monogononta, Syn = Syndermata, G = Gnathostomulida, T = *Turbanella ambronensis*

\*: possible positions for the gastrotrich *Turbanella ambronensis* ("=*Turbanella*"): 1 = sister to (Platyhelminthes + Syndermata + Gnathostomulida), 2 = sister to Gnathifera, 3 = trichotomy (Mollusca, *Turbanella*, (Platyhelminthes+Gnathifera)), 4 = sister to Platyhelminthes, 5 = clade (*Turbanella* + *Gnathostomula*) sister to Syndermata, 6 = sister to Syndermata, 7 = clade (*Turbanella* + *Gnathostomula*) sister to Platyhelminthes

Phylogenomic dataset	program	number of partitions						Syn+(G+T)	Position of <i>Turbanella</i> *	Topology of <i>Paraplanocera spec.</i> + <i>M. lignano</i>
			Lerniscea	Pararotatoria	Hemirotrifera	Syndermata	Gnathifera			
mintax4	MrBayes	7	/	1,0	1,0	1,0	1,0	/	1	Para basal
	PhyloBayes	1	/	1,0	1,0	1,0	0,84	/	2	Macro basal
	RAxML	8	/	100	87	100	76	/	1	Para sister to Macro
	Treefinder	8	/	100	82	100	87	/	3	Para sister to Macro
mintax4_noRPs	MrBayes	7	/	1,0	1,0	1,0	1,0	/	4	Macro basal
	PhyloBayes	1	/	1,0	1,0	1,0	0,89	/	4	Macro basal
	RAxML	8	/	100	97	100	71	/	4	Macro basal
	Treefinder	8	/	99	96	100	90	/	4	Macro basal
mintax8	MrBayes	7	/	1,0	1,0	1,0	1,0	/	1	Para basal
	PhyloBayes	1	/	1,0	1,0	1,0	0,86	/	2	Macro basal
	RAxML	8	/	100	96	100	54	/	1	Para sister to Macro
	Treefinder	8	0	/	99	100	56	/	2	Para sister to Macro
mintax8_noRPs	MrBayes	7	/	1,0	1,0	1,0	1,0	/	4	Macro basal
	PhyloBayes	1	/	1,0	1,0	1,0	0,96	/	4	Macro basal
	RAxML	8	/	100	97	100	80	/	4	Macro basal
	Treefinder	8	/	100	99	100	91	/	4	Macro basal
most purposive subset	MrBayes	1	/	1,0	0,99	1,0	/	1,0	5	Para basal
	RAxML	1	/	100	49	100	/	56	5	Para basal
	Treefinder	1	/	100	58	100	/	73	5	Para basal
most purposive subset_noRPs	MrBayes	1	/	1,0	1,0	1,0	/	/	1	Para basal
	RAxML	1	/	69	47	95	/	25	5	Para basal
	Treefinder	1	/	91	71	94	/	/	6	Para basal
mintax4_slow	RAxML	8	/	99	85	100	79	/	1	Para basal
mintax4_4Synd	RAxML	1	/	68	64	99	65	/	1	Para basal
mintax4_4Synd-DS	RAxML	1	/	86	86	95	/	/	7	Para basal