

Supplementary Table 4 | Naming convention for LBA check, for additional information for the datasets see Supplementary Table 2.

Long-Branch attraction tests			Ctenophora-sister vs Porifera-sister (Total n. of sp.)	Relationships of Xenacoelomorpha - taxon exclusion	
Outgroup Sapling	LBA effect from	Method		Xenoturbella (Total n. of sp.)	Acoeloorpha (Total n. of sp.)
Opisthokonta	distant outgroup	Ab initio	Opi-homo/ortho-disAb47	OpiXen-homo/ortho-disAb41	OpiAco-homo/ortho-disAb44
		Pruning	-	OpiXen-homo/ortho-disP41	OpiAco-homo/ortho-disP44
	in-groups (near group)	Ab initio	Opi-homo/ortho-neAb44	OpiXen-homo/ortho-neAb38	OpiAco-homo/ortho-neAb41
		Pruning	Opi-homo/ortho-neP44	OpiXen-homo/ortho-neP38	OpiAco-homo/ortho-neP41
Holozoa	distant outgroup	Ab initio	Hol-homo/ortho-disAb41	HolXen-homo/ortho-disAb35	HolAco-homo/ortho-disAb38
		Pruning	Hol-homo/ortho-disP41	HolXen-homo/ortho-disP35	HolAco-homo/ortho-disP38
	in-groups (near group)	Ab initio	Hol-homo/ortho-neAb38	HolXen-homo/ortho-neAb32	HolAco-homo/ortho-neAb35
		Pruning	Hol-homo/ortho-neP38	HolXen-homo/ortho-neP32	HolAco-homo/ortho-neP35
Choanozoa	distant outgroup	Ab initio	Cho-homo/ortho-disAb39	ChoXen-homo/ortho-disAb33	ChoAco-homo/ortho-disAb36
		Pruning	Cho-homo/ortho-disP39	ChoXen-homo/ortho-disP33	ChoAco-homo/ortho-disP36
	in-groups (near group)	Ab initio	Cho-homo/ortho-neAb36	ChoXen-homo/ortho-neAb30	ChoAco-homo/ortho-neAb33
		Pruning	Cho-homo/ortho-neP36	ChoXen-homo/ortho-neP30	ChoAco-homo/ortho-neP33