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*Microcleidus melusinae*, a new plesiosaurian (Reptilia, Plesiosauria) from the Toarcian of Luxembourg

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Supplementary Material S1

The phylogenetic analysis is based on the data matrix of Benson *et al*. (2012). From the matrix used by Benson *et al*. (2012), two character coding were modified for *M. brachypterygius*: the parasphenoid bears a distinct midline keel (character 63.2 ; S. Sachs pers. com.), absence of a midline contact of the pterygoids posterior to the posterior interpterygoid vacuity (character 76.0 ; S. Sachs pers. com.) and one character coding was modified for *M. homalospondylus*: the frontal participates to the orbit margin (character 29.0)

Additional taxa included in the data matrix:

*Microcleidus melusinae*

00000????0102100??0?10??000110111100?01001?0?11??????????????02????0????0??01?0100?1?1?00?1?0???0??0?010011?1??0??021012?11020010???100?1?0111?0????????????1??1????????????????????????0?1101200??????????????

Supplementary Material 2

Pairwise dissimilarity between all four species of *Microcleidus* and *Seeleyosaurus*, based on the cladistics data matrix.

