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Distribution of organic linings within the calcitic test of Orbulina universa

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The formation of the calcitic test of formaminifera is a complex process in which crystal nucleation and growth is mediated by organic molecules. In this study we investigated the spatial distribution of organic linings, of which it is thought that they serve as at template for crystal nucleation, within the test of the planktonic foraminifera Orbulina universa. Here we show for the first time that several organic linings are present in the test of Orbulina universa and how their position relates to the inhomogeneous Mg distribution within the test. These results give a new insight to the biomineralization process itself, which can help to evaluate the dependence of trace element incorporation to changing environmental parameters.