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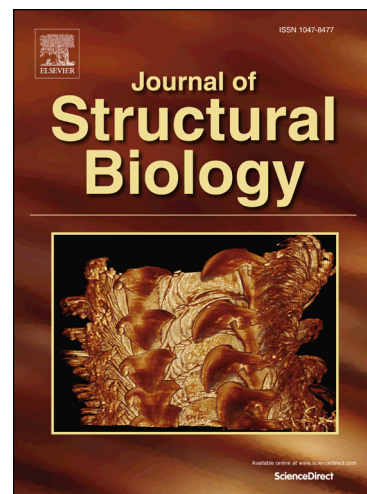
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Is the snail shell repair process really influenced by eggshell membrane as a template of foreign scaffold?

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Abstract

Biomaterials are inorganic-organic hybrid composites formed via self-assembled bottom up processes under mild conditions. Biomaterials show interesting physical properties, controlled hierarchical structures and robust remodeling or repair mechanisms. Biological processes associated with biomaterials remain to be developed into practical engineering processes. Therefore, the formation of biomaterials is inspiring for the design of materials, especially those fabricated at ambient temperatures.

The study described herein involves the influence of chicken outer eggshell membrane on the type of calcium carbonate (CaCO_3) polymorph deposited on the shell of the land snail *Helix aspersa* during the repair process after an injury. A piece of snail shell was removed by perforating a hole from the largest body whorl. The operated area was left either uncovered or covered with either a thermoplastic flexible polyolefin-based film Parafilm® or a piece of chicken eggshell membrane.

The repaired shells of control and experimental animals were analyzed using SEM, EDS, Raman and FTIR spectroscopies.

We found that in the presence of eggshell membrane, the polymorph deposited on the substratum during the first hours resembles calcite, the polymorph present in eggshell normal formation, But at 24 and 48 h, when snail mantle cells produced their normal

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