

Characteristics of shell formation from larvae to adult oyster, *Crassostrea gigas*

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The mineralization sequence with respect to the developmental stages, from the embryonal and larval to the juvenile oyster (*Crassostrea gigas*), has been studied by X-ray diffraction and FT-IR. At the stage of prodissoconch I the fractions of aragonite and the amorphous organic tissue are similar, and the formation of the prodissoconch II takes place. A further increase of the fraction of aragonite (95% or more) suggests that the prodissoconch II has been formed. In the prodissoconch II, HCO₃-groups related to the shell formation can be detected in the whole (organic and mineral) of veliger. The plankton period is followed by morphological changes of the prodissoconch II, which retains its unchanged mineral composition. Aragonite is dominant; the amorphous tissue is present in small amounts, while calcite is not detectable. Finally, at the end of metamorphosis the developed juvenile oyster has a mostly calcitic shell (up to 98%) with small fractions of aragonite (2%).