

Changes in the amino acid profiles during embryonic development of the blacklip abalone (



Changes in the total amino acid (TAA) and the free amino acid (FAA) contents during embryonic development, through newly spawned eggs, to pre-settled larvae of blacklip abalone (*Haliotis rubra*) are described. The TAA (protein bound + free) and the FAA contents increased prior to hatching but decreased towards settlement, but the changes were not always significant between different stages of development. Threonine, arginine, lysine and leucine accounted for nearly 50 % of the total essential amino acids (TEAA) in all developmental stages. The mean FAA content of newly spawned eggs was 262.8 ± 28.2 pmol-ind⁻¹ and accounted for 11.5 ± 8.3 % of the TAA. Free essential amino acid (FEAA) content increased significantly as development progressed ($P < 0.05$), in which threonine, arginine and lysine accounted for over 63 % of this pool. In all developmental stages, the FAA pool was dominated by the non-essential amino acids taurine + proline which accounted for 79.5 % of the total. Generally, the FAA accounted for between 10 to 15 % of the TAA in the different developmental stages of blacklip abalone. All evidence appears to

indicate that in blacklip abalone the energy requirements during early ontogeny are mostly met with from the lipid reserves, and that there is a tendency to conserve amino acids until pre-settlement.

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