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Egg cases from mature *Scyliorhinus torazame* females at Hekinan Aquarium were collected. Egg cases were either semi-translucent or opaque and the pigmentation was a consistent characteristic of each female. Egg case dimensions were not different among females with an average length of 54 ± 3 mm and an average width of 19.6 ± 1 mm. The hatching terminus had a 13.6 ± 1.4 mm opening or slit. The tendrils at the hatching terminus were longer than the non-hatching terminus with lengths of 57 ± 8 mm and 31 ± 6 mm respectively. The wet weight of intact egg cases was 6.6 ± 0.5 g, with the ovum accounting for 1.9 ± 0.4 g and the egg case 1.9 ± 0.3 g.

Within the egg case the ovum is suspended by chalazae in a glycosaminoglycan matrix or egg jelly that accounts for the remaining egg case wet weight. There are three layers of egg jelly differing in proximity to the ovum and viscosity. The embryo moves freely in a cloudy liquid, jelly 1. Jelly 1 is surrounded by a clear viscous jelly layer, jelly 2. Finally the terminal ends of the egg case contain a dense plug of white semi-translucent jelly, jelly 3. The egg case has four respiratory slits, two on each side of the case. The respiratory slits are sealed with jelly 3 until 100 ± 8 days at 14 C after oviposition. The carbohydrate composition of each layer of egg jelly was investigated by HPLC analysis of acid-hydrolyzed samples. Six sugars were detected, N-acetylgalactosamine, N-acetylmannosamine, N-acetylglucosamine, fucose, galactose and mannose. The concentration of each monosaccharide differed among the jelly layers but remained relatively consistent between them. The monosaccharide with the highest concentration was N-acetylgalactosamine, accounting for 50% of the total carbohydrate measured in jelly 2 and jelly 3.

The egg case outer surface was readily colonized by bacteria while the inside remained sterile until the egg case was open to seawater. In addition, lesions were observed on the surface of egg cases. The lesions were investigated by scanning electron microscopy and found to originate from the external side of the egg case, but the causative agent remains undetermined. The lesions were common in semi-translucent eggs cases and increased in abundance with length of egg incubation. The amount of the egg case surface affected by lesions in opaque egg cases was nominal. The inner surface of the egg case, in direct contact with the developing embryo was not compromised by the lesions.