

**Degeneration of the olfactory epithelium in the Anguillid eels by  
hormone treatment**

**ABSTRACT**

While the olfactory cue hypothesis has been proposed for spawning migration of silver eels, it has been shown that olfactory cells and associated mucus cells degenerate in male and female eels after hormonally induced sexual maturation. However, the degeneration of the olfactory organ could be a real event in the sequence of maturation, or may be an unnatural side effect of the hormone treatment itself. We morphologically and histologically examined the olfactory rosettes of hormone-untreated and hormone-treated (mixture of hCG and PG) giant mottled eel (*Anguilla marmorata*) and Japanese eel (*A. japonica*). The olfactory rosette from all the hormone-treated specimens significantly degenerated at various degeneration levels even in sexually immature specimens, indicating the side effect of the hormone-treatment. However, a sexually immature non-hormone treated female *A. marmorata* (87.4 cm TL, 199.4 g BW, at less advanced maturity) had slightly degenerated olfactory rosette. Further studies should focus on conducting natural degeneration of the olfactory rosette during the sexual maturation in tropical eels