

# **Analysis of matrix proteins of otolith in upside-down catfish**

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We have previously suggested that the calcium density of the otolith in upside-down swimming *Synodontis nigriventris* is lower than that in upside-up swimming *Synodontis multipunctatus* (Biol. Space Sci., 2002). In this study, we examined EDTA-soluble matrix proteins of otolith in the utricle of the catfish (*S. nigriventris*, *S. multipunctatus* and upside-up swimming *Synodontis brichadi*) and goldfish (*Carassius auratus*). We detected two main bands (about 55 kD and 80 kD) with SDS-PAGE in the 3 species of the catfish. In contrast, goldfish had the about 55 kD band alone. The band of about 80 kD was consisted of two sub-bands (a lighter and a heavier band). A lighter band was observed in *S. brichadi* and a heavier band was observed in *S. nigriventris*. *S. multipunctatus* had the both bands. Furthermore, mass spectrometric analysis showed there were some proteins of molecular weight under 14 kD. The molecular weights of the proteins were different among the fishes. These results suggest that many different kinds of matrix protein may cause different degree of calcification in otolith formation.