

Morphological and Molecular Variation Between Clinical and Environmental Isolates of *Uronema* spp. from Aquarium and Cultured Fish. P.J. O'DONOGHUE*, R.D. ADLARD, M. WATTS and B.L. MUNDAY

The scuticociliate *Uronema nigricans* has recently been implicated as a cause of acute fatal encephalitis in sea-caged southern bluefin tuna (*Thunnus maccoyii*), skin lesions in seahorses (*Hippocampus abdominalis*) and generalised infection in Tasmanian blenny larvae (*Pictiblenius tasmanianus*). *Uronema* spp. are common free-living ciliates in aquatic environments and some are regarded to be opportunistic pathogens of compromised fish. Few studies, however, have compared clinical and environmental isolates. We established cultures of six *Uronema* isolates (three from infected fish and three from water samples) and examined their morphological and molecular characteristics by protargol impregnation and ribosomal DNA sequencing. Conservative alignments of partial 18S and ITS regions revealed 21 phylogenetically informative sites. Two genetically distinct groups of organisms were identified. All three clinical

isolates and one environmental isolate grouped together (group A) to the exclusion of the other two environmental isolates (group B). Group A isolates were identified as the species *U. nigricans* on the basis of their size, somatic ciliation and position of oral structures. One group B isolate resembled *U. nigricans* and the other *U. marinum*. The results demonstrate the genetic homogeneity of clinical isolates and suggest an environmental source distinct from other *Uronema* species and, possibly, strains.