Molecular identification of *Anisakis* spp. complex from gastrointestinal tract of stranded cetaceans in Adriatic Sea

Kristina Blažeković (1), Ivana Lepen Pleić (2), Martina Đuras Gomerčić (3), Tomislav Gomerčić (4), Ivona Mladineo (2)

(1) Center of Marine Studies, University of Split, Livanjska 5/III, 21000 Split, Croatia University of Zagreb, Croatia
(2) Laboratory of Aquaculture, Institute of Oceanography & Fisheries, POBox 500, 21000 Split, Croatia
(3) Department of Anatomy Histology and Embryology, Faculty of Veterinary Medicine, University of Zagreb, Heinzelova 55, 10000 Zagreb, Croatia
(4) Department of Biology, Faculty of Veterinary Medicine, University of Zagreb, Heinzelova 55, 10000 Zagreb, Croatia

kristinab2002@gmail.com

There is a general lack of data concerning cetacean ecology in the Adriatic Sea, moreover on migrational patterns, feeding habits and health, thus any information that might contribute to clarification of such mechanisms is important. Parasites have been considered as good biomarkers in revealing their host history, reflecting their natural ecological relationships and possibly enabling tracing of host migrational patterns. Marine mammals serve as a definitive host in lifecycle of Anisakid species, representing the only source where the parasite matures to the adult stage and reproduces. Available information indicates that as a probable result of co evolution, cetacean-Anisakis relationship is species specific. The lack of firm morphological features differentiating between members of genus *Anisakis*, makes molecular identification the only tool of choice for their identification. Parasites showing morphological features consistent with genus Anisakis were collected from gastric compartments of eighteen cetacean carcasses belonging to three species (*Ziphius cavirostris*, *Stenella coeruleoalba* and *Tursiops truncatus*), found along Croatian coastline from 2004 to 2011. In detecting possible mixed infection at least 10 parasites per dolphin were analysed by molecular identification of mtDNA. In total, DNA was isolated from 96 samples preserved in ethanol and 2 fixed in formalin, and PCR reaction amplified 500 bp fragment of COXII gene using published primers and protocol. BLAST analyses with homologous sequences in GenBank indicated the presence of three different Anisakis species in stranded cetaceans of the Adriatic Sea: Anisakis pegreffi, Anisakis simplex and Anisakis physeteris. This represents an important first geographical report of the last two species, previously recorded only in the west Mediterranean and Atlantic. *Anisakis pegreffi* showed the highest prevalence (94.9 %) which is in accordance with occurrence of its preferred host, bottlenose dolphin, in Adriatic. The finding of new *Anisakis* spp. in this area might elucidate migrational patterns of their cetacean hosts.

GALWAY, IRELAND 2012

26th EUROPEAN CETACEAN SOCIETY CONFERENCE

26th – 28th MARCH 2012
GALWAY, IRELAND

"Information and Ideas Worth Sharing"

Galway Bay Hotel, Salthill, Galway
Galway-Mayo Institute of Technology, Galway
Galway Atlantiquarium

Marine Institute
Foras na Mara

An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

epa
Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

An Chomhairle Oidhreachta
The Heritage Council

Roinn Cumarsáide, Fuinnimh agus Acmhainní Nádúrtha
Department of Communications, Energy and Natural Resources

BIM
Bord Iascaigh Mhara
Irish Sea Fisheries Board

Edited by: Barry McGovern, Simon Berrow, Enda McKeogh, Ian O'Connor

Design: Cóilín MacLochlainn