

# Metacercariae of *Paracoenogonimus ovatus* Katsurada, 1914 (Cyathocotylidae) in the muscles of fishes from the Oder River estuary

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Many species of parasites pathogenic to humans can be transmitted through the consumption of fish, crustaceans and molluscs. Some are known to pose a significant threat of parasitosis to humans while others, such as the digenetic fluke *Paracoenogonimus ovatus*, are as yet unstudied. The infective metacercariae stage is found most frequently in the muscles and connective tissue of fish.

The aim of the study was to determine which of the most abundant and most frequently caught fish species occurring in the estuary of the Oder River were most heavily infected with *P. ovatus* metacercariae. The study also examines the survival of isolated metacercariae during the storage of raw fish under domestic conditions.

The study examined 147 fish caught in fishing boat hauls. The selected species reflected the range of fish caught by industrial and recreational / sports fishing, and those commonly occurring in Europe as well as in northern, western and central Asia.

The initial study was focused on evaluating the prevalence and intensity of infection of muscle tissue in specific fish species. Skinless muscles samples with a mass of approx. 2.0 g ( $\chi$  2.162g, 0.558g SD) were examined using the trichinoscope. Areas with the greatest number of locations chosen by metacercariae were identified. Encysted metacercariae were counted, and then isolated from muscle tissue by treatment with 0.1% pepsin solution activated in 5% citric acid at a temperature of 20°C. Larvae were isolated from the cysts, before being measured and identified using a Olympus BX 50 microscope with a camera and AxioVs40 V 4.8.2.0 software. The number of metacercariae in the tested samples of different fish species was calculated. Lethal conditions for the larvae were determined (cooling temp. +4°C and freezing at. -18°C, within 72 hours). The activity of larvae in cysts was examined over three successive days.

It was found that the prevalence of *P. ovatus* larvae was 78.5%. Fish species with the highest intensity of infection were roach, freshwater bream and white bream. Metacercariae were not found in the muscles of crucian carp, round goby, ruffe and perch but occasionally in pike. Although metacercariae were able to survive cooling conditions within 72 hours, they showed no mobility after 24 hours stored at -18°C.