



## EROD and metallothionein in *Limnodrilus profundicola* (Oligochaeta: Tubificidae) as an indicator of pollution exposure in the Curuksu stream of Menderes river, Denizli–Turkey

Adile Ozdemir, Mustafa Duran, Gurcay Kivanc Akyildiz, Alaattin Sen\*

Pamukkale University, Faculty of Arts & Sciences, Department of Biology, Kinikli 20070, Denizli, Turkey  
Tel. +90 258 296 3574; email: sena@pau.edu.tr, alaattinsen@hotmail.com

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### ABSTRACT

In this study, pollution in Curuksu Stream of Menderes River has been followed by measuring the chemical and biological parameters on five predetermined stations for about 20 mon. Our previous studies have shown that *Limnodrilus profundicola*, *Eristalis sp.* and *Chironomus thummi* taxa are valuable bioindicators for the Curuksu stream and *Limnodrilus profundicola* Metallothionein (MT) and EthoxyResorufin-O-deEthylase (EROD) levels are valuable and useful biomarkers for biomonitoring heavy metals and PAHs pollutions, respectively. Cu-, Cr-, Cd- and Pb-type pollution was detected in all sediment samples taken from all of the stations, including reference station. Pollution source of these heavy metals are considered to be industrial wastewater, atmosphere and soil. Similarly, PAHs level was found to be considerably higher for Curuksu and Guzelkoy stations than other stations. These heavy metal- and PAHs-pollution were also confirmed with elevated MT and EROD levels measured with *Limnodrilus profundicola* sampled from corresponding stations. Industrial wastewaters, coal, exhaust gas and forest fires are among the expected sources of PAHs-type pollutants in Curuksu stream. This heavy pollution seen in Curuksu and Guzelkoy stations could probably have arisen from receiving more wastewater than other stations and there would not be enough time for natural purifications. In conclusion, our results clearly stated that food chain has completely broken for Curuksu and Guzelkoy stations which are also extensively polluted with heavy metals and PAHs.

**Keywords:** Bioindicator organism; Biomarker; Curuksu stream; Heavy metal pollution; PAHs pollution

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\*Corresponding author.