

Vitellogenin is a female sex-specific protein, and a validated and suitable method for its assay can be applied as a biomarker of reproductive disorders in male and female aquatic animals. Therefore, the present study was designed to validate an ELISA for measuring plasma vitellogenin in wild carp (*Cyprinus carpio* L.) living in the Lake of Trasimeno (Umbria, Italy); plasma samples were taken during pre-spawning, spawning, and post-spawning periods; in addition to vitellogenin, in both male and female carps, plasma changes of estradiol-17 β were monitored together with those of estrogen receptor density in the liver.

In females, VTG showed high seasonality, reaching the highest levels in March during the pre-spawning period; the VTG levels correlated with those of estradiol-17 β (E_2), and with the changes of gonadosomatic index (GSI), while a non parallel trend was found in the liver estrogen receptor (ER) density. In forty percent of males, VTG was found to be present in the plasma and changes of ER density in the liver were observed.

The data here reported suggest that the common carp can be a useful sentinel species for biomonitoring studies of environmental estrogens, and of their effects on its reproductive biology.