

Steroid hormones assay on estrogen and progesterone group occurrences fate and pathway distributions In river and coastal environment

ABSTRACT

Birth control pills are one of the synthetic steroid hormones used as pharmaceutical drugs that are believed to cause higher transgender cases in the environment today, thus causing more cancer risk, such as vaginal and breast cancer, to human populations. This research aims to detect the occurrence and quantify the concentration of three types of steroid hormones (progesterone, 17 α -ethynylestradiol and estrone) in the riverine and coastal environment. A method called dispersive liquid-liquid microextraction with solidification of floating organic drop followed by HPLC was used for hormone determination. Water samples were obtained through grab sampling along coastal and river courses. The results show a trend of hormone concentration, where progesterone had the highest occurrence, with total average of 0.11679 ± 0.08796 ng/mL, followed by 17 α -ethynylestradiol at 0.53329 ± 0.30904 ng/mL, while estrone showed the least frequency of concentration with total average of 0.02406 ± 0.00481 ng/mL.