Preliminary Communication

Central Activity of New Xanthone Derivatives with Chiral Center in Some Pharmacological Tests in Mice

Magdalena Jastrzębska-Więsek¹, Tadeusz Librowski¹,Ⅱ, Ryszard Czarnecki¹, Henryk Marona², Gabriel Nowak³,Ⅳ

¹Department of Pharmacodynamics, ²Department of Chemical Technology of Drugs, ³Department of Pharmacobiology, Jagiellonian University, Medical College, Medyczna 9, PL 30-681 Kraków, Poland, ⁴Department of Neurobiology, Institute of Pharmacology, Polish Academy of Sciences, Smętna 12, PL 31-348 Kraków, Poland


The study was designed to investigate some central effects of chiral xanthone derivatives [(R,S)-2-N-(6-chloro-2-xanthonemethyl)-amino-1-propanol – MH-31, R enantiomer – MH-32 and S enantiomer – MH-33] in mice. The effects of these chiral compounds were examined in picrotoxin-induced seizures, spontaneous locomotor activity and chimney tests. The tested compounds demonstrated variable influence on the central nervous system in mice. The compound MH-32 exhibits anticonvulsant activity in picrotoxin-induced seizures, whereas MH-31 and its R enantiomer – compound MH-32 demonstrated antidepressant-like activity in the forced swimming test. Moreover, all tested xanthones reduced the locomotor activity in mice. The obtained results indicate the importance to examine pharmacologically enantiomers rather than only racemic mixtures of newly synthesized compounds.

Key words: chiral derivatives of xanthone, anticonvulsant activity, antidepressant activity, picrotoxin-induced seizures, chimney test, forced swimming test, mice