Non-competitive metabotropic glutamate subtype 5 receptor antagonist (SIB-1893) decreases body temperature in rats

Jarogniew J. Łuszczki¹,*; Kinga K. Borowicz¹; Stanisław J. Czuczwar¹,²

¹Department of Pathophysiology, Medical University of Lublin, Jacekiewicza 6, PL 20-600 Lublin, Poland
²Department of Physiopathology, Institute of Agricultural Medicine, Jacekiewicza 2, PL 20-650 Lublin, Poland

Correspondence: Jarogniew J. Łuszczki, e-mail: jarogniew.luszczki@am.lublin.pl
*Recipient of the Fellowship for Young Researchers from the Foundation for Polish Science.

Abstract:
This study examined the effect of (E)-2-methyl-6-(2-phenylethynyl)-pyridine (SIB-1893), a selective non-competitive metabotropic glutamate subtype 5 receptor (mGluR₅) antagonist, on body temperature in freely moving Wistar rats. Temperature was monitored using programmed microchips, implanted subcutaneously in rats, at several times: 0, 5, 10, 20, 30, 45, 60, 90, 120 and 180 min after intraperitoneal administration of SIB-1893 at increasing doses of 10, 20 and 30 mg/kg. The results analyzed with two-way ANOVA with repeated measures on time revealed that SIB-1893 at 30 mg/kg considerably lowered the body temperature in animals at 90, 120 and 180 min after its systemic injection. In contrast, the drug at 10 and 20 mg/kg remained without effect on the body temperature in rats. Based on our preclinical study, one can conclude that SIB-1893 produces hypothermia in freely moving rats in a dose-dependent manner.

Key words:
SIB-1893, metabotropic glutamate receptors, body temperature, hypothermia, rats