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Serotonin transporter inhibitors inducing hypothermia at mice

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During our work concerning new antidepressive drugs we obtained several serotonin transporter inhibitors of nanomolal affinity [1]. During behavioural experiments on mice some of the compounds exhibited moderate activity at the force swim test and induced hypothermia. Similar behavioural profile exhibit citalopram, clinically used serotonin selective reuptake inhibitor (SSRI, it is assumed that hypothermia as a part of serotonergic syndrome is conveyed by the 5-HT_{1A} and 5-HT_{1B} receptors) [2]. One of our compounds (AZ-07) although did not evoke hypothermia, amplified substantially 8-OHDPAT (the referenced 5-HT_{1A} receptor agonist) induced hypothermia. It should be noted that another SSRI, fluoxetine, reversed 8-OHDPAT induced hypothermia [3]. Because our compounds did not exhibit any substantial 5-HT_{1A} receptor affinity one could assumed off-target of allosteric effects.

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The measurement of the radioactivity of ^{137}Cs in materials of plant origin with potential radioactive contamination

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The appearance of radioactive isotopes in the natural environment is very dangerous phenomenon leading to radioactive contamination. The main causes of radioactive contamination include: improper storage of radioactive materials, radioactive leakage from nuclear installations, emissions of radioactive gases as a result of the explosion at the nuclear power plant and falling of radioactive substances from a cloud of radioactive nuclear explosion after a bomb explosion. To acquire raw materials from such environment and using them in various industries can have a disastrous impact on human life. One such example is the acquisition of plants and herbs for the preparation of medicinal products. This situation may occur when the plant material is derived from radioactively contaminated areas. This applies mainly to the isotope ^{137}Cs. Half-life of this isotope is long enough to be deposited in the soil and plants for many years. Trial nuclear explosions in the atmosphere have caused widespread presence of fission and activation products in the environment. It is estimated that about 9,6 x10^{17} Bq of ^{137}Cs has been put into the atmosphere, with 76 % of it deposited in the northern hemisphere .

The spectrum of gamma radiation and radioactivity of ^{137}Cs in plant medicines available in pharmacies and plant products of unknown origin were measured. The aim of our interest comprised plant materials such as dried bilberry fruit, red blueberry and swamp cranberry. In addition, the dose of radioactivity of dried mushrooms obtained from south-east Poland (Bieszczady Mountains, Solska forest) was estimated as well.

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The measurement of antioxidant capacity and polyphenol content in selected food supplements

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Oxidative stress (OS), defined as a disturbance in the balance between the production of reactive oxygen species (ROS) and antioxidant defenses, can result in development of many serious diseases like diabetes or cancer. Moreover, the role of oxidative stress