

EPSC newsletter

Supplement 5

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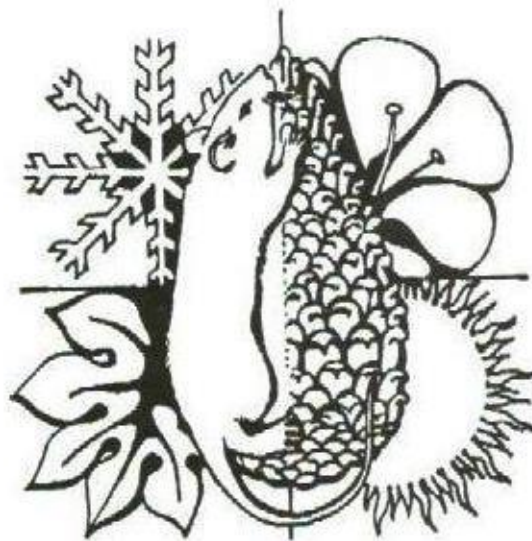
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ABSTRACTS



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Bone marrow platelet production after Melatonin i.v. infusion.

The addition in vitro of Melatonin (MLT) to a suspension of fresh rat bone marrow induces the appearance over the surface of megacariocytes of a number of fluorescent corpuscles, which can be identified with platelets.

Such platelet appearance is moreover conditioned by the addition in vitro of NAT—more than by HIOMT inhibitors. When MLT is injected i.v. copious platelets do not appear on the surface of bone marrow megacariocyte, nor is a MLT fluorescence any longer visible. I.v. MLT seems to be able to reduce the toxicity of i.v. injected NAT inhibitors, but in such experimental conditions platelets seem to emerge from megacariocytes from isolated scattered points on the surface of the megacaryocytes. The different behaviour of i.v. injected or locally applied MLT is perhaps pertinent to the different MLT concentrations as well as to its different binding. Platelet production on the surface of megacariocytes is enhanced by NAT inhibitors probably through a transferring of Acetyl-CoA from tryptamin and/or tryptamin derivatives to cholin, which results in formation of Acetylcholin instead of MLT.

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Some aspects of the neurotropic action of Melatonin (MLT)

The biological activity of MLT reveals itself well beyond the contraction of melanosomes of the melanocytes. MLT exerts, indeed a more or less clear effect on central and/or peripheral nervous tissue. Some lung, heart and vascular receptors become less responsive to chemical stimuli after MLT treatment. The metamorphosis of *Rana esculenta* tadpoles is accelerated by MLT, and the degeneration and/or migration of neural tube cellular elements is intensified. In some, but not in all patients sleep or a state of relative alertness are induced by MLT; this effect can change according to the health conditions of the patients.

These effects, along with the influence of MLT on the synthesis of some releasing factors, are evidence that MLT is ubiquitously active, particularly on the nervous system, but probably also on every tissue where HIOMT, COMT and methyl donors reciprocally interfere, as well as on the substrates where NTA and ACh-esterase, MLT and ACh interact. According to this view MLT may play a very important role, by modulating synaptic transmission.

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Ten years experience on the action of Melatonin on humans

Melatonin (MLT) was administered to some thousand humans over about ten years without danger or pain. The administration was accomplished by oral or i.m. route. It is preferable to not use i.v. route (in one case there was reversible cardiac arrest), unless an extremely slow perfusion rate is followed (about 1mg/min). There seems to be no effective difference between sexes.

In some pancreatic diabetic patients i.m. MLT (4 mg) brought about a sudden but transient fall of arterial pressure. In some cases MLT induces a more or less noticeable drowsiness, so that some sleepless patients induce their nocturnal sleep by taking some mgs MLT. Several people have taken daily 1-5 mgs MLT for ten years now without any appreciable trouble. Neither menses, pregnancy, lactation, nor sexual drive are influenced by chronic MLT administration. The effect of MLT may change after recovery from the disease.