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Effects of Sodium (1*S*, 2*S*, 3*R*, 5*S*, 7*E*)-2[(1*E*, 3*S*, 5*R*)-5,9-dimethyl-3-hydroxy-1,8-decadienyl]-3-hydroxy-7-(4-carboxylactobutylidene)-[3. 3. 0]-bicyclooctane (CS-570), a Carbacyclin Derivative, on Central Nervous and Motor Systems

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Sodium (1*S*, 2*S*, 3*R*, 5*S*, 7*E*)-2[(1*E*, 3*S*, 5*R*)-5, 9-dimethyl-3-hydroxy-1, 8-decadienyl]-3-hydroxy-7-(4-carboxylactobutylidene)-[3.3.0]-bicyclooctane (CS-570) is a new anti-platelet agent. The effects of high doses of CS-570 were studied on the central nervous and motor nervous systems. CS-570 (0. 3 and 1. 0 mg/kg, s.c.) caused a slight sedation and a weak muscle relaxation, and produced an analgesic-like effect in a tail-flick and a paw-pressure test on rats. CS-570 (0. 1 and 0. 3 mg/kg, s.c.) produced a hypothermic effect in rats. CS-570 (1. 0 mg/kg, i.v.) caused weak arousal effects on the rat EEG. On the motor function, CS-570 (0. 3 and 1. 0 mg/kg, i.v.) reduced the muscle rigidity developed by radio frequency decerebration of the midbrain in rats, although this drug did not produce any direct depressant effect on the neuro-muscular junction in rats or frogs. In the spinal cord function, CS-570 (0. 1～1. 0 mg/kg, i.v.) increased the monosynaptic reflex and decreased the polysynaptic reflex in rats. CS-570 did not strongly affect the crossed extensor reflex in chicks. High concentrations of CS-570 were required to affect the isolated frog spinal cord. CS-570 did not change [^{3}H] diazepam binding to rat brain membranes, but prostaglandin A_1 effectively displaced [^{3}H] diazepam. The observed CNS effects may be direct effects or indirect effects on the CNS through the effects on the circulation, etc.

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