Melatonin and testicular function: Characterization of binding sites for 2-[125I]-iodomelatonin in immature rat testes

Vera, H.

Tijmes, M.

Valladares, L. E.

Melatonin-binding sites in membrane preparation of immature rat testes were demonstrated by utilizing 2-[125I]-iodomelatonin as a radioligand. Binding at these sites was found to be reversible, saturable, specific and of, high affinity. Scatchard analysis of the specific binding revealed an equilibrium binding constant (k(d)) of 215±23 pmol/L and a total number of binding sites (B(max)) of 0.94 ± 0.1 fmol/mg protein. The Hill coefficient of 1.O suggests a single class of 2-[125I]-iodomelatonin-binding site in the rat testes. The K(d) value determined from kinetic analysis was 179 pmol/L, which is in close agreement with the value determined from equilibrium studies. In competition studies, the order of pharmacological affinity for 2-[125I]-iodomelatonin binding sites in the rat membrane testes was: melatonin > 6-hydroxymelatonin > N-acetylserotonin > 5-hydroxyindole-3-acetic acid > 5-hydroxytryptamine > 5-hydroxy-L-tryptophan > tryptamine >> 5-methoxytryptamine, 5-methoxyl-DL-tryptoph