Melatonin biological activity and binding sites in human melanoma cells.

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Abstract

The effects of melatonin, N-acetylserotonin and serotonin on the growth and tyrosinase activity of SK-Mel 23 and SK-Mel 28 human melanoma cell lines were investigated. Binding assays were also performed to establish the nature of the binding site. SK-Mel 28 cells were responsive to melatonin and its precursors, exhibiting a decrease in growth and an increase in tyrosinase activity after a 72 hr treatment. N-acetylserotonin was as potent as melatonin, the minimal effective concentration (MEC, which is defined as the smallest concentration that elicits a measurable biological response, significantly different from control) being 10-8 m. Serotonin was the least potent (MEC = 10-6 m). Both melatonin antagonists, prazosin and luzindole, exhibited no effect per se and reversed both responses to melatonin-related toxicity was observed. This preliminary study suggests that an adjuvant endocrine therapy with melatonin may be effective in preventing disease progression in node-relapsed melanoma patients.

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