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P118. MELATONIN'S PRO-OXIDANT EFFECT IS AN ADVANTAGE OR DISADVANTAGE FOR NORMAL AND CANCER CELLS?

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Melatonin is one of well-known antioxidants that prevents from many diseases. There is no evidence belong to in vivo studies that melatonin is pro-oxidant. In lots of in vivo investigations indicate that melatonin is antioxidant even at high concentrations. On the contrary, it has been revealed that it may have pro-oxidant effects in some normal and cancer cells. Melatonin shows this impact with producing reactive oxygen species (ROS). High dose melatonin administration to normal cells such as human liver cell line (HepG2) and melanoma cells, ovine embryos lead to ROS generation and inhibition of cell proliferation, respectively. Hence, melatonin can be considered as cytotoxic in high concentrations. Giving high dosages of melatonin to cancer cells such as human leukemia cells containing Jurkat cells, MOLT-4 and CMK cells, hematopoietic tumor cell lines were resulted with decrease in cell viability and ROS production. But this situation is an advantage for ceasing the tumorigenesis. In one of the experiment with normal and tumor leucocytes the similar responses to the same concentrations of melatonin were evaluated. Identical pro-radical effect was observed in both cells. On the other hand, their viability and proliferation were not affected.

It can be summarized that these function of melatonin in both healthy and cancer cells is challenging for tissue-specific cancer investigations. Due to the same effectiveness with melatonin both in normal and cancer proliferation may not seem advantageous.

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