

Preferred presentation type:
I only want to present a POSTER.

Topic:
Cellular Stress, Apoptosis and Autophagy

Protective effects of melatonin in inflamed intestinal epithelium are associated with reduced NF- κ B activation and changes in DNA methylation status

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Melatonin is the main product of the pineal gland but is also released in the gastrointestinal tract (GIT). Production of melatonin at GIT is independent of the photoperiod and contributes almost completely to plasma melatonin concentration during daylight hours. The physiological role of melatonin at GIT is poorly characterized but recently anti-inflammatory effects have been reported. In this study, we evaluated the effect of Melatonin in intestinal epithelial cells (IEC) stimulated by Interleukin-1 β . Our results clearly show that melatonin at micromolar concentrations inhibits the inflammatory response in IEC. The protective effect is expressed through a marked decrease in release and expression of inflammatory mediators, inhibition of DNA damage, and reduced activation of the NF- κ B. Moreover, our results provide evidence that local inhibitor effect of Melatonin can involve an epigenetic mechanism also.

In conclusion, our findings suggest that the intake of small amounts of melatonin, comparable with those found in pharmaceutical preparations used for sleep disorders, can also exert beneficial effects to the gastrointestinal physiology.