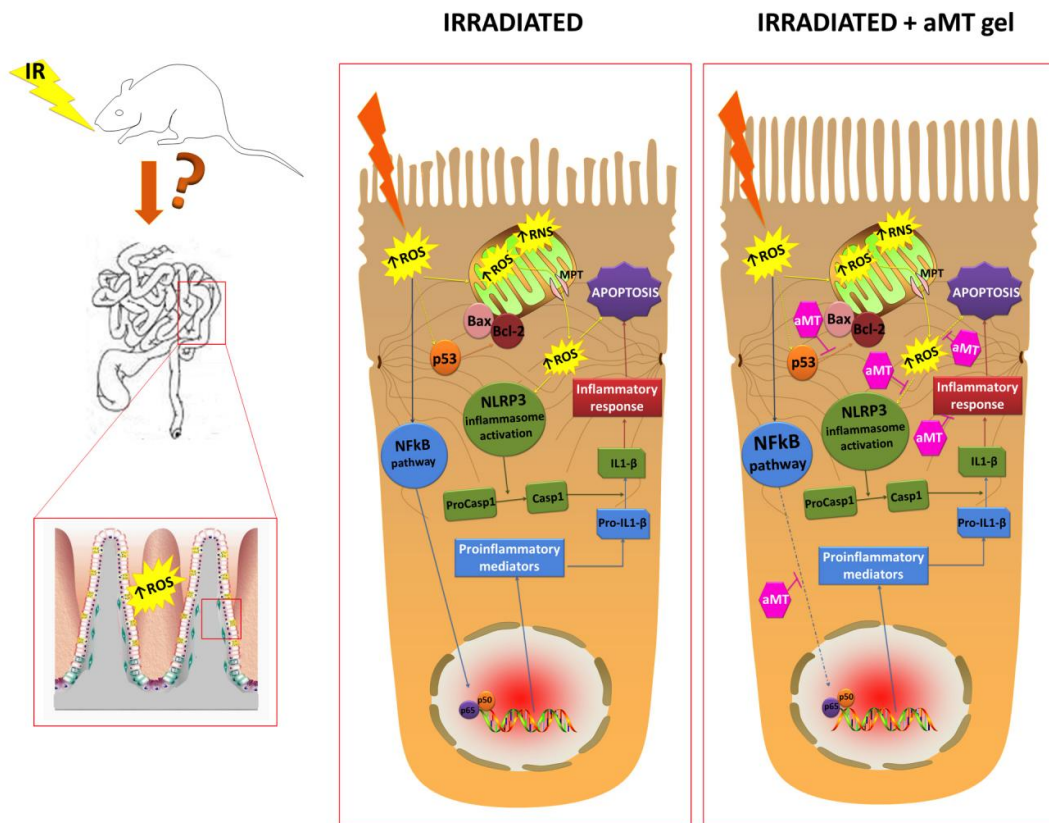


# Melatonin may protect the small intestine from oral radiation treatment in rats

April 12 2017



The molecular pathway involved in small intestine damage induced by external radiation, which is inhibited by melatonin gel. Credit: Fernández-Gil et al (2017)

Oral melatonin can protect the small intestine in rats subjected to radiotherapy of the tongue, according to a study published April 12, 2017 in the open-access journal *PLOS ONE* by Germaine Escames from Universidad de Granada, Spain, and colleagues.

Gut toxicity—a debilitating condition involving deep ulcerations—can limit the doses of radiotherapy given to [cancer patients](#). However, this side effect currently has no effective treatment. Following up on their previous work suggesting that melatonin might protect the gut from radiotherapy, Escames and colleagues irradiated the tongues of [rats](#) daily for five days, treated the rats with oral melatonin-gel for 21 days after radiation, and then assessed their [small intestines](#) for changes.

The researchers found that melatonin helped protect the small intestine of rats from radiotherapy, likely by protecting mitochondria and so reducing inflammation. Inflammatory mediators increase intestinal cell death, and the researchers found that melatonin reduced intestinal cell death in rats, thus facilitating intestinal recovery. This work suggests that oral treatment with melatonin might help prevent radiotherapy-induced gut toxicity in cancer patients.

**More information:** Fernández-Gil B, Moneim AEA, Ortiz F, Shen Y-Q, Soto-Mercado V, Mendivil-Perez M, et al. (2017) Melatonin protects rats from radiotherapy-induced small intestine toxicity. *PLoS ONE* 12(4): e0174474. [DOI: 10.1371/journal.pone.0174474](https://doi.org/10.1371/journal.pone.0174474)

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