



Melatonin Receptors and Reproduction

Guest Editors:

Dr. Felipe Martinez-Pastor

INDEGSAL and Molecular Biology
(Cell Biology), Universidad de
León, Leon, Spain

Dr. Cristina Soriano-Úbeda

Institute of Animal Health and
Cattle Development (INDEGSAL),
University of León, 24071 León,
Spain

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Message from the Guest Editors

Dear Colleagues,

Melatonin is a multifunctional molecule that influences many biological processes. Melatonin relays photoperiodic cues, coordinating many physiological functions and acting as a paracrine signal and potent antioxidant. Whereas the pineal gland produces circulating melatonin that regulates the reproductive seasonality by modulating the hypothalamic–pituitary–gonadal axis, many authors have identified local functions in the reproductive system.

The effects of melatonin, both circulatory and locally produced, have many potential functions in the reproductive tract and gamete functionality, from protective to regulatory. Melatonin also has a potent antioxidant effect, and many probed and putative receptors are present in these tissues, which could influence sperm chemotaxis, modulate its capacitation, and affect oocyte and embryo development. With so many effects, melatonin has attracted attention for its practical applications, with a great potential for contributing to artificial reproductive technologies.





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Editor-in-Chief

Prof. Dr. Maurizio Battino

Department of
Odontostomatologic and
Specialized Clinical Sciences,
Sez-Biochimica, Faculty of
Medicine, Università Politecnica
delle Marche, Via Ranieri 65,
60100 Ancona, Italy

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