

Melatonin

Melatonin is a hormone produced in the midbrain, specifically in the pineal gland. The cells that produce it are called pinealocytes. Its production is circadian with a maximum at night. The main stimulus for melatonin degradation is light and especially its blue component with a wavelength from 460 nm to 480 nm. The target tissues in the body are, in addition to the brain (incl. suprachiasmaticus, brain cortex), retina, kidney vessels. Melatonin acts on melatonin receptors, which are 2 subtypes of MT1 and MT2 coupled to G-protein. Melatonin production decreases with age.

Effects of melatonin

- Regulation of diurnal rhythm via ncl.suprachiasmaticus.
- It is a terminal antioxidant. Causes:
 1. increase in the production of antioxidant enzymes (superoxide dismutase),^[1]
 2. reduces the production of prooxidizing enzymes (NOS, lipoperoxidase),^[1]
 3. by inactivating free oxygen and nitrogen radicals, it has a neuroprotective effect.^[1]
- Melatonin plays roles in immunity.
- It regulates vascular smooth muscle through MT1 and MT2.

Links

Related articles

- Epiphysis
- Circadian rhythm

Bibliography

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Citations

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