Abstract View

MELATONIN PROTECTS NEURONAL CELLS AGAINST CELL INJURY INDUCED BY OXYGEN-GLUCOSE DEPRIVATION

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Melatonin protects neuronal cells against cell injury induced by oxygen-glucose deprivation
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Melatonin is a neurohormone secreted from the pineal gland. The present study was designed to study whether melatonin protects against cell injury due to oxygen-glucose deprivation (OGD) using cultured neuronal cells and whether the protection is mediated via melatonin membrane receptors.
The neuronal SHSY5Y cells were seeded in 96-well microtiter plates for four days before subjected to 1 hour OGD. Melatonin at different doses was added to the medium beginning at 5 minutes before OGD. Twenty four hours after OGD, cell viability was quantitatively assessed by the measurement of 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) in the medium at 24 h after OGD. The melatonin membrane receptors (mt1 and MT2) were detected using reverse transcription-polymerase chain reaction (RT-PCR). The results of RT-PCR show that neither mt1 nor MT2 membrane receptor was expressed in this neuronal cell line.
Melatonin protects neuronal cells against OGD-induced cell injury in a dose-dependent manner. The protective action of melatonin is not mediated via its membrane receptors.

Citation:
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