

AI Overview

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Yes, melatonin can block the expression of matrix metalloproteinase 13 (MMP-13) in prostate cancer cells. This can reduce the ability of prostate cancer cells to migrate and invade, and can slow tumor growth.

Explanation

- Melatonin is a neurohormone that has been studied as a potential cancer treatment.
- Melatonin's anti-metastatic effects are mediated by the MT1 receptor.
- Melatonin suppresses the phospholipase C (PLC) and p38 mitogen-activated protein kinases (p38) cascades.
- This suppresses the phosphorylation and activation of c-JUN, which is a transcription factor that helps regulate MMP expression.
- Melatonin's anti-metastatic effects have been demonstrated in both in vitro and in vivo models.

Additional effects of melatonin

- Melatonin can also inhibit lipid accumulation in prostate cancer cells.
- Melatonin can limit glycolysis, the tricarboxylic acid cycle, and the pentose phosphate pathway in prostate cancer cells.
- Melatonin can reduce the risk of prostate cancer.
- Melatonin can increase the overall survival of prostate cancer patients with poor prognosis when combined with radiation.
- Melatonin impedes prostate cancer metastasis by suppressing MMP-13 expression

Nov 29, 2020

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