The role of neurotensin and its receptors in non-gastrointestinal cancers

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Abstract

Neurotensin is a small protein found throughout the central nervous system and gastrointestinal tract. Here, neurotensin stimulates the growth of various tissues like the gut, pancreas, adrenal gland, and liver. But abnormal expression of neurotensin can lead to or strengthen different types of cancer. A new review examines the roles of neurotensin in non-gastrointestinal cancer. In lung cancer, for example, neurotensin and its most tightly binding receptor, NTSR1, activate the formation of tumor cells. Test-tube experiments suggest a similar role for neurotensin in pancreatic and breast cancers. Tight binding between neurotensin and NTSR1 also promotes cell division in prostate tumors. And in head and neck tumor cells, adding neurotensin promotes invasion and migration. Other forms of cancer that could owe their development to neurotensin include glioma, liver cancer, malignant melanoma, and leukemia. Understanding how neurotensin and its receptors promote tumor cell proliferation is therefore crucial, as it could lead to anti-tumor drugs that disrupt neurotensin's deadly functions.