Novel Anti-Mitotic Peptides for the treatment of Cancer

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Technology description

Description

Using peptide-array technology Researcher from the Universite d'Angers, INSERM and McGill University have identified peptides with sequence homology to multiple types of intermediate filaments that bind tubulin. Intermediate filaments are highly cell type specific. It has been demonstrated biochemically that the peptides prevent the polymerization of tubulin but do not affect existing microtubules. Both biochemical and in-vitro experiments show that this activity is sequence specific. Furthermore, human glioma cells naturally take up the peptides causing tubulin to agregate and cell division to arrest. Peptide administration is effective in delaying or, in some cases, completely preventing progression of transplanted glioblastoma cells in vivo. This makes these peptides prime candidates for the control of pathologies caused by cell proliferation such as cancer and infectious diseases

Application area

Because cancer is characterized by abnormal cell proliferation and migration, agents that affect mitosis and cell migration have great therapeutic potential. However, existing agents with these properties such as Taxol and Colchicine act on all cell types and cause significant side effects. Thus there is a need for anti-mitotic agents with greater cell specificity and reduced toxicity.

Institution

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