



ONCOLOGY

New anti-tumoral approach: peptides targeting the hexokinase 2 protein

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TRL scale



What it is needed for?

Current antineoplastic treatments are not sufficient to cure cancer, in part due to lack efficacy and/or selectivity. Further, they often display significant side effects calling for new therapeutic approaches.

The invention consists in the design, realization and administration of peptides that target hexokinase 2 (HK2) specifically in tumors and display antineoplastic activity.

HK2 is glycolytic enzyme that contributes to metabolism, growth and death inhibition of tumor cells. Its expression is associated with poor prognosis and chemotherapeutic/radiation resistance in diverse solid and hematopoietic tumors.

Advantages

- Hexokinase 2 (HK2) is a unique and specific target in cancer treatment.
- Selective targeting of tumor cells limits off-target side effects in healthy tissues;
- The invention is designed to accumulate in tumors and be retained by tumor cells, thus maximize its toxic effects;
- The invention induces tumor cell death in minutes by activating apoptotic cell death pathway;
- Cell death through apoptosis leads to rapid and selective clearing of tumor cells without eliciting inflammation, thus avoiding potential toxic effects caused by the inflammatory process.
- The invention causes HK2 intracellular redistribution and does not inhibit its activity avoiding untoward effects.

Applications

- Treatment of benign and malignant tumors expressing HK2
- Treatment of solid and hematopoietic tumors expressing HK2
- Treatment of metastatic tumors expressing HK2
- Treatment of drug/radiation resistant tumors that over-express HK2

What we are looking for

Technology is available for licensing and/or co-development