New Peptide Drugs As A Treatment for Glioblastomas

VTIP 19-060: “A Small Peptide of the Phosphatidyl Inositol-3 Kinase Catalytic Subunit β, p110βC2in, as a Drug for Human Diseases”

THE CHALLENGE

New, effective therapies are needed to halt glioblastoma multiforme (GBM) disease progression. GBM accounts for 55% of all malignant brain cancers. After maximal debulking of the tumor and combinational treatment with radiation and chemo drugs, the 5-year overall survival rate is still 5%. This is largely attributed to the high incidence of tumor progression such as recurrence. Given that progressive GBMs are often refractory to current therapies, a better therapeutic strategy is to reduce the risk of disease progression by eliminating infiltrative cells from the original tumor of newly diagnosed GBM.

OUR SOLUTION

Zhi Sheng and Kevin Pridham have worked to develop a new invention that utilizes the unique peptide, p110β. They produced a peptide drug p110βC2in that serves as a specific p110β inhibitor. Given the important role of p110β in many human diseases, p110βC2in will be used as a drug to treat these diseases. The attractiveness of this invention comes from its ability to directly target p110β. Other companies have developed compounds that inhibit p110β; they are not effective in treating GBM in small animals. By using a unique amino acid sequence, this peptide drug will be more selective and effective in blocking PI3K signaling, therefore making it a better PI3K drug.

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