HYD1 Peptides as Anti-Cancer Agents

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Technology description

Invention
The invention comprises the composition of HYD1 peptides which are peptides of a specific sequence composed of D amino acids that bind beta integrin and prevent cancer cells from attaching to the extracellular matrix. These peptides are useful as cancer therapeutics on their own. Also, these peptides can be combined with other therapies and be useful as a cancer diagnostic.
Background
Many tumors that initially respond to chemotherapy treatments later recur, often with multi-drug resistant phenotype, due to the treatment’ s failure to eliminate minimal residual disease. These tumor cells’ survival can be accounted for in part by de novo drug resistance. This mechanism by definition does not require selection by any particular drug and is instead more concerned with the tumor microenvironment. Specifically the inventors have shown that de novo drug resistance in leukemia cells is associated with attachment to the extracellular matrix protein fibronectin through beta integrin.

Application area

Peptides can be useful as cancer therapeutics on their own.
The invention could be used as a combination therapy to improve the efficacy of existing cancer therapeutics.
It also has potential use as a cancer diagnostic for circulating tumors such as leukemia.

Advantages

Decreases de novo drug resistance in tumors.
Effective at removing residual tumor cells and preventing a resurgence of disease.
The same technology can be used as a method of detection and a therapeutic.

Institution

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