Cell Adhesion Inhibition

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Technology description

The Need

The National Cancer Institute estimates that 1.7 million new cases of cancer are diagnosed each year. Substantial evidence indicates that cell adhesion is critical to the development of different aspects of malignant cancer cells, including survival, invasion, metastasis, and drug resistance. Consequently, therapeutics that target cell adhesion and/or its associated pathways represent strategies to improve the clinical outcomes of many solid and hematological malignancies. Although many humanized antibodies against different adhesion molecules have entered human trials, development of new small-molecule cell adhesion inhibition agents is necessary to improve treatment of malignancies.

The Technology

Researchers at The Ohio State University, led by Dr. Ching-Shih Chen, developed a small molecule cell adhesion inhibitor that blocks adhesion of 4T1 metastatic breast cancer cells. This method has the potential to serve as a template for cell adhesion inhibition for other malignancies. The inhibitor, vitamin E succinate, may also provide a foundation for additional cell adhesion inhibition characteristics. These molecules are therapeutically significant because they operate via a unique mechanism, have the potential to translate into use with several other metastatic cancers, and exhibit low toxicity to normal cells.

Application area

Small-molecule metastatic cancer treatment
Treatment of acute and chronic inflammatory diseases:
Inflammatory bowel disease
Autoimmune inflammation

Advantages

Efficiently blocks cell adhesion to decrease cancer cell viability
Does not induce significant toxicity to normal cells

Potential to treat multiple metastatic cancers
Exposing cancer cells to poor cell adhesion environments via small molecule agents as a strategy to improve clinical outcomes of several solid malignancies.

Institution

Ventech Solutions

Inventors

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