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Ligands for Alpha-4-Beta-1 Integrin

Tech ID: 11318 / UC Case 2004-325-0

ABSTRACT

Alpha-4 beta-1 ligands as targeting agents for cancer and autoimmune diseases

FULL DESCRIPTION

Highly potent ligands for activated alpha-4 beta-1 integrin have been identified by University of California, Davis researchers. These ligands can potentially be used as targeting agents for cancer as well as anti-inflammatory agents for autoimmune diseases.

Notable applications of these alpha-4 beta-1 ligands include:

- ▶ Targeting therapy for imaging of cancers including lymphoid malignancies, which have high level of activated alpha-4 beta-1 integrin on the cell surface;
- ▶ Therapeutic uses as anti-inflammatory agents for autoimmune diseases such as multiple sclerosis, rheumatoid arthritis and lupus; and,
- ▶ Treatment of both human and dog diseases listed above.

The compounds for activated alpha-4 beta-1 integrin of the present invention have high affinity to human malignant lymphoid cells (both T- and B-cells, and including fresh malignant cells from patients with acute lymphocytic leukemia). Importantly, the binding affinities of these ligands are much higher than products currently developed.

RELATED MATERIALS

- ▶ Peng L, Liu R, Marik J, Wang X, Takada Y and Lam KS. 2006. "Combinatorial chemistry identifies high-affinity peptidomimetics against alpha(4)beta(1) integrin for in vivo tumor imaging." Nat Chem Biol. 2(7):381-9.
- ▶ UC DAVIS RESEARCHERS REPORT NEW MOLECULE THAT TARGETS LEUKEMIA AND LYMPHOMA CELLS

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,486,370	07/16/2013	2007-154
United States Of America	Issued Patent	7,576,175	08/18/2009	2004-325

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ Novel Solid Tumor Chemodrug LLS2
- ▶ Affinity Peptides for Diagnosis and Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 and Zika Virus Infections
- ▶ Nanoparticles for Drug Delivery, Tissue Targeting and Imaging Analysis
- ▶ Conjugates That Combine HDAC Inhibitors and Retinoids into Disease Preventatives/Treatments
- ▶ Artificial Intelligence-Based Evaluation Of Drug Efficacy
- ▶ A Novel RGD-Containing Cyclic Peptide for use in Cancer Imaging and as a Targeted-Therapy Ligand
- ▶ Site-Specific Ligation and Compound Conjugation to Existing Antibodies
- ▶ Functional Illumination in Living Cells
- ▶ Multifunctional Porphyrin-Based Nanomedicine Platform
- ▶ Engineered Biomaterial to Prevent Endothelial Inflammation
- ▶ Early Detection of Ovarian Cancer Using Markers to Short Chain Carbohydrates
- ▶ PVA Nanocarrier System for Controlled Drug Delivery

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OTHER INFORMATION

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Proteomics
- ▶ **Medical**
 - ▶ Therapeutics

RELATED CASES

2004-325-0, 2007-154-1,
2007-154-2

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