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	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

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OTHER INFORMATION

CATEGORIZED AS

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

RELATED CASES

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

- 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
- Site-specific Chemical Ligation of Native Human Serum Albumin as a Carrier for Drugs
- Multifunctional Porphyrin-Based Nanomedicine Platform
- Transformable Smart Peptides as Cancer Therapeutics
- Engineered Biomaterial to Prevent Endothelial Inflammation
- PVA Nanocarrier System for Controlled Drug Delivery
- Systems and Methods of Single-Cell Segmentation and Spatial Multiomics Analyses

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