

# 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	<a href="#">7,576,175</a>	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
- ▶ Multifunctional Porphyrin-Based Nanomedicine Platform
- ▶ A Two-step Drug Delivery System Based on Click Chemistry
- ▶ Transformable Smart Peptides as Cancer Therapeutics
- ▶ Engineered Biomaterial to Prevent Endothelial Inflammation
- ▶ Programmable Peptide Nucleic Acid-Based Nanoplatfrom for Customizable Drug Delivery
- ▶ Systems and Methods of Single-Cell Segmentation and Spatial Multiomics Analyses
- ▶ Nanoplatfrom for Cancer Therapy

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