Highly Active and Selective Ligands for Integrin avß6

Reference No: B75165

CHALLENGE
The family of human heterodimeric integrin receptors consists of 24 members. Eight integrins of this superfamily (avß1, avß3, avß5, avß6, avß8, α5ß1, α8ß1 and αIIß3) are able to recognize the RGD tripeptide fragment in natural and artificial ligands with various activity and selectivity. avß6 is usually undetectable in normal adults' cells, but is highly upregulated in different types of cancer (including pancreatic, breast, skin, head and neck, lung (NSCLC) and ovarian cancer) and exclusively expressed on epithelial cells. Therefore, avß6 is an emerging target for therapy as well as imaging across several common tumor types.

INNOVATION
Only few ligands are known so far that are highly active for avß6 integrin and at the same time possess no binding affinity towards other RGD-recognizing integrins. Unfortunately, their metabolic instability, their high molecular weight and the complexity of their structures limit their medical application. Having regard to this situation, there is a need for novel functionalized or non-functionalized avß6-ligands that can be used as drugs or as tools for molecular imaging and diagnosis (PET/SPECT/UV-Vis tracers), for coating of medicinal relevant surfaces or for biophysical investigations of the function of this integrin subtype. Surprisingly, peptides with a remarkable affinity for avß6 and at the same time high selectivity against other integrins have been found.

COMMERCIAL OPPORTUNITIES
The novel integrin ligands are ideally suited for use in/as:
- Pharmaceuticals (cancer treatment, fibrosis treatment, anti-virus agents)
- Diagnostics (PET tomography, fluorescence bioimaging)
- Surface Coating of Biomaterials
- Science

DEVELOPMENT STATUS
Proof of Concept. Ready to use.

REFERENCES: