

59. A novel inhibitor targeting matrix accumulation

(Max-Planck Innovation)



▶ Asset Overview

Product Type	Peptide
Disease Area	Cancer
Indication	breast cancer, melanoma
Current Stage	Preclinical(Lead Optimization)
Target	Reducing tumor growth
MoA	inhibit overproduction and/or excess accumulation of extracellular matrix
Brief Description	Scientists have identified a unique cyclic molecule that diminishes extracellular matrix production thereby reducing tumor growth in cancer with no toxicity. Our scientists have validated the reduction of tumor growth in the presence of the molecule in two distinct models: breast cancer and melanoma.
Intellectual Property	WO2021018923A1, US20220267378A1, EP3996694A1, CN114364691A, JP2022543227A
Publication	
Inventors	Inaam Nakchbandi, Stefan Hamelmann, Stephan Uebel

▶ Highlights

- The present invention relates to peptides that inhibit overproduction and/or excess accumulation of extracellular matrix in an organ or tissue.
- The inventive peptides have the general sequence Xa-Leu-Gln-Gly-Xb (SEQ ID NO: 1), wherein Xa is selected from Pro-Gly, Gly and Ac-Gly and Xb is selected from Glu and Glu-NH₂, and are able to inhibit overproduction and excess accumulation of extracellular matrix in an organ or tissue both as linear peptides and as cyclic peptides.
- In particular the peptides disclosed herein can be used for treating fibrotic conditions characterized by an excess accumulation of extracellular matrix such as liver fibrosis, cirrhosis of the liver, lung fibrosis, chronic respiratory failure, cardiac fibrosis, ischemic heart disease, heart failure, diabetic nephropathy, glomerulonephritis, myelofibrosis, and various types of cancers such as breast cancer, uterus cancer, prostate cancer, pancreas cancer, colon cancer, skin cancer, blood cell cancers, cancers of the central nervous system, fibroids, fibroma, fibroadenomas and fibrosarcomas.

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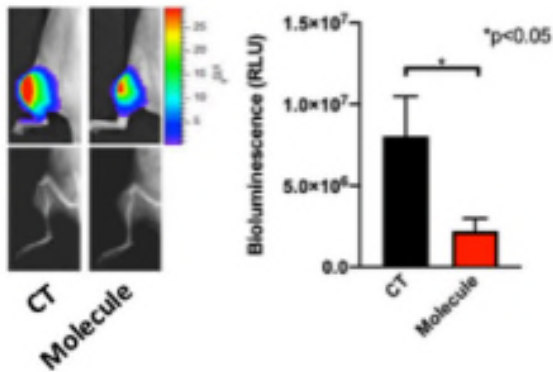
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5TH KDDF GLOBAL C&D TECH FAIR

► Key Data

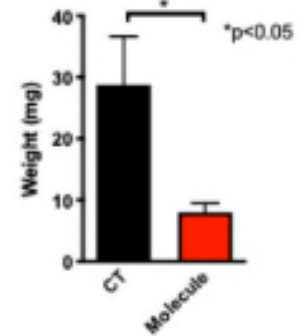
Reduction of tumor growth in the Breast cancer and Melanoma

Breast cancer

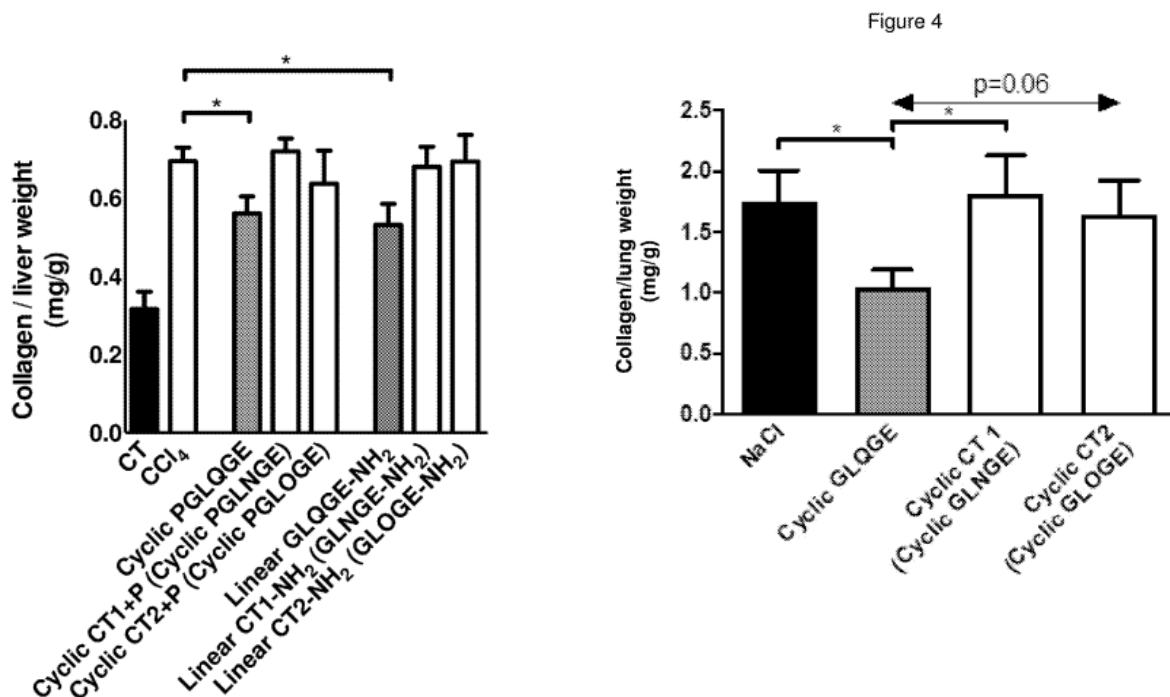


Melanoma

Metastatic breast cancer lesions were induced in mice. Administration of the peptide significantly reduced tumor size.



Liver fibrosis and lung fibrosis in mice



Source: <https://patents.google.com/patent/WO2021018923A1/en?q=WO2021018923A1>