

FRET-BASED BIOSENSOR OF MMP-9 ACTIVITY

PROBLEM DESCRIPTION

There is a growing interest in matrix metalloproteinase 9 (MMP-9), which is an enzyme involved in the modification of the extracellular matrix. The reason for this is its involvement in numerous physiological and pathological processes, including i.a. synaptic plasticity, angiogenesis, cell survival, inflammation. The lack of specificity is the most commonly raised objection against sensors used for testing MMP-9 activity.

STAGE OF DEVELOPMENT

DISCOVERY

VERIFIED IN ANIMAL MODEL

MINIMAL VIABLE PRODUCT

READY FOR SALE

INNOVATION OF THE SOLUTION

A genetically encoded MMP-9 sensor based on FRET (Förster/ Fluorescence Resonance Energy Transfer) mechanism utilizes fluorescent proteins as a signal generator. The sensor uses cellular mechanisms to anchor itself in the cell membrane and enables real time monitoring of MMP-9 activity by fluorescent microscopy, at subcellular resolution.

THE MOST IMPORTANT ADVANTAGES

Specificity – unique linker designed specifically for MMP-9 is not cleaved by MMP-2.

Localised signal – allows observation at subcellular level
and provides good temporal resolution.

Non-toxic – allows observation in live imaging technique.

PROJECT CORE TEAM

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KEY PUBLICATION

Stawarski M, et al. Genetically Encoded FRET-based Biosensor for Imaging MMP-9 Activity. Biomaterials. 2014 Feb;35(5):1402-10.

KEY WORDS



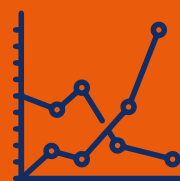
RESEARCH TOOL



BIOLOGICS



IMAGING



ENZYME ACTIVITY

INTELLECTUAL PROPERTY STATUS

Patent granted in US9914955
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CONTACT DETAILS

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