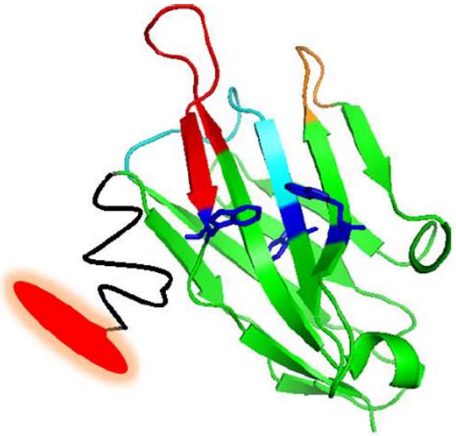
AARHUS UNIVERSITY

TECHNOLOGY PRESENTATION



Novel Biosensors based on quenching domain antibodies (miniQ-bodies)

TECHNOLOGY SUMMARY

Aarhus University and Tokyo Institute of Technology have made an invention relating to a new biosensor system, which is based on single chain domain antibodies (VH or VL alone), to bind a ligand of interest.

This domain antibody comprises a fluorescent probe and tryptophan residues around the ligand-binding sites, which quenches the fluorescent probe in the absence of ligand. Thus, when ligand is bound, a fluorescent readout can be detected, while no fluorescence is observed in the absence of ligand. These antibodies have been coined, miniQ-bodies.

APPLICATIONS

MiniQ-bodies with affinity towards specific ligands can be prepared by in vitro selection, in particular by phage display, and the system can therefore be directed to any target/ligand of interest. Thus the technology represent a broad area of use. Examples include quantitative measurement of biomarkers, biopharmaceuticals, flavour compounds, pesticides and pollutants.

CURRENT STATE

Proof-of-concept has been provided using 4 target ligands. We are open to develop new miniQ-bodies, targeting other ligands in order to demonstrate the applicability towards targets of interest.

COMMERCIAL PERSPECTIVES

The new biosensor technology can be used for quantitative analysis of a wide range of compounds.

Compared to currently used sensors, we believe that miniQ-bodies are cheaper to produce and more stable in use. In addition they have a broader field of usage due to a smaller size and due to a large array of ligands.

Potentially, miniQ-bodies can be incorporated into new analytical devices, offering a mobile analytical system to supplement currently used instruments, such as HPLC and GC.

INTELLECTUAL PROPERTY RIGTHS

The technology is jointly owned by Aarhus University and Tokyo Institute of Technology and is protected through a Danish patent application filled in May 2017 (17172194.7).

BUSINESS OPPORTUNITY

We are looking for a commercial partner interested in further developing the technology together with our research group. We envision developing new miniQ-bodies, targeting ligands of commercial interest with the aim of incorporating them into quantitative analytical systems.

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