Zebra Fish model for drug targeting, gene therapy and ADME

Market Sectors: In vivo model, Drug discovery, Drug delivery

Type of Opportunity: Licensing

Researchers from Leiden University have developed a transparent Zebra Fish model enabling in vivo investigation of delivery, absorption, distribution metabolism and excretion of therapeutics in live embryonic animals in a whole organism approach.

Using a transparent test animal or embryo makes it possible to apply highly sensitive detection methods that are not applied because the test systems used such as rodents give detection problems. By using our methods we now offer novel high-throughput methods for screening and optimization of compositions

Therapeutic compounds are labelled with small fluorescent dye's (or other types of labels allowing other detection methods) and can be followed through the whole organism from uptake to drug delivery to excretion. Effects of compounds on growth, migration apoptosis, morphology, adhesion of biological material including transplanted cells, tissue and organisms can also be used as a read out.

The present invention will solve problems of read outs related to detection, working distance of the detector, invasiveness of the detector, monitoring of compound and compound effect, penetrability, organism size, non-transparency, compound administration, high throughput screening applicability, uptake and ADME.

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Key Benefits

- High throughput testing
- Animals don't need to be sacrificed: follow-up experiments are possible
- High sensitivity imaging techniques can be used

Applications

- Early stage drug development: pipeline library screening
- Gene therapy testing
- Drug delivery testing
- ADME testing

Patent status

A patent application has been filed.

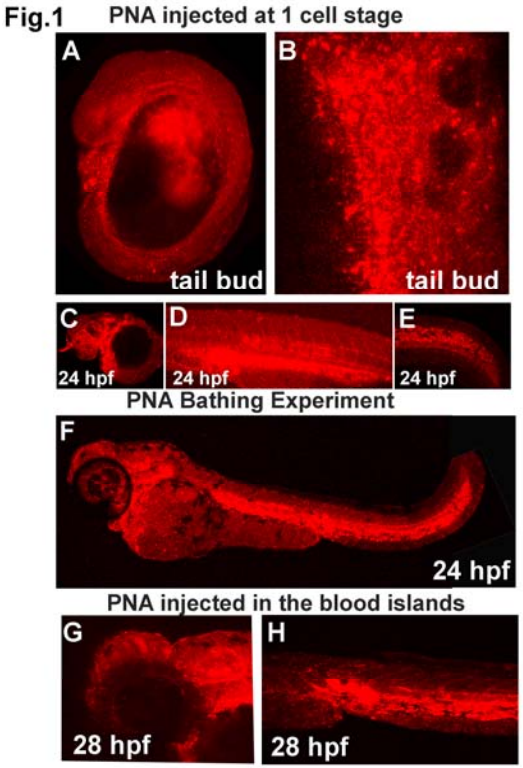

Fig. 1: Different types of administration of a Peptide Nucleic Acid (PNA) coupled to Tamra and its uptake in zebrafish embryos.

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