

AUBURN UNIVERSITY

INNOVATION ADVANCEMENT & COMMERCIALIZATION

Ligand Sensor Devices and Uses Thereof

Contact

Brian Wright
Auburn University
Innovation Advancement
& Commercialization
334-844-4977
brian.wright@auburn.edu
<https://iac.auburn.edu/>
Reference: Ligand Sensor

Inventors

Dr. Vitaly Vodyanov
Professor
College of Veterinary Medicine

Dr. Alexander Samoylov
Research Associate
College of Veterinary Medicine

Dr. Tatiana Samoylova
Professor
College of Veterinary Medicine

Dr. Suram Pathirana
Research Associate

[Click here](#) for a listing of Auburn patents available for immediate licensing

[Click here](#) for a listing of Auburn's available life science technologies

[Click here](#) for a listing of Auburn's available physical science technologies

Follow Auburn IAC



Auburn University is an equal opportunity educational institution/employer

Overview

Auburn University is seeking licensees for a technology involving methods and compositions for evaluating the natural attraction of one or more ligands. Assays using the ligand sensor (LS) device allow detection of ligand-peptide interactions directly in tissue samples and thus provide an *in vitro* method to characterize peptide ligands. The LS Device and assays find particular use in characterizing cell-specific peptides isolated from *in vivo* screening in animals to determine their suitability for use in human therapy. The technology can also be used in the development of biosensors.

Advantages

- Allows detection of ligand-peptide interactions directly in tissue samples
- Provides an assay for the ligands specific to various organs, tissues, and cell types
- Allows for the isolation of tissue-specific molecules that may be used as targeting ligands in gene/drug therapy protocols

Description

Pharmaceuticals which are very effective for treating a disorder in one organ or tissue may have undesirable effects in other tissues. In this way, the effectiveness of drugs and therapeutic genes depends on tissue-specific delivery. One prospect for achieving tissue-specific delivery of drugs is the use of ligands which bind to specific cell types. However, the development of tissue-specific ligands for many differentiated tissues is limited by a lack of information on their cell-specific surface receptors.

One solution to this problem is the selection of ligands using phage display libraries. Peptides generated by phage display may have both therapeutic and diagnostic utility. They can be useful for the development of gene therapy vectors or drugs targeting various organs and tissues. However, while the *in vivo* phage display screening protocol has been successful in identifying tissue-specific ligands in mice and dogs, *in vivo* screening requires euthanasia and thus cannot be applied to humans.

Our technology provides a ligand sensor device which comprises an acoustic wave device coupled to a peptide of interest. The invention allows detection of ligand-peptide interactions directly in tissue samples. In this manner, the invention provides an *in vitro* assay to examine the cross-species properties of peptide ligands isolated in *in vivo* phage-display screening and thus provides an assay for the ligands specific to various organs, tissues, and cell types.

Status

- Issued U.S. Patent [7,138,238](#)

Licensing Opportunities

- This technology is available for [immediate non-exclusive licensing](#) through Auburn's customizable "[Ready to Sign](#)" licensing program.
- Similar patents are available in the [Biosensor Technology](#) field.