

## Systems, Methods and Devices for Rapid Tissue-Based Diagnosis

Tech ID: 20845 / UC Case 2009-490-0

### BRIEF DESCRIPTION

Novel systems, methods, and devices that apply energy to tissue in order to generate a liquefied sample of tissue constituents so as to provide for rapid tissue sampling.

### BACKGROUND

The biomolecular composition of human tissues is a sensitive indicator of local pathologies, several systemic diseases, and critical information about the body's exposure to exogenous chemicals and biological entities. However, this information is not currently used in diagnostic methods due to lack of patient-friendly and standardized methods for routine sample collection from tissues. Instead diagnosis is performed by visual observation and histopathological analysis of tissue biopsies, which are highly limited due to their qualitative nature, leading to misdiagnosis. In addition to being invasive, current methods do not explain a complete molecular genesis of diseases, and fail to distinguish between diseases.

### DESCRIPTION

Researchers at the University of California, Santa Barbara, have developed novel systems, methods, and devices that apply energy to tissue in order to generate a liquefied sample of tissue constituents so as to provide for rapid tissue sampling, as well as qualitative and/or quantitative detection of analytes that may be part of tissue constituents.

### ADVANTAGES

- ▶ Rapid tissue sampling
- ▶ Sensitive indicator of various local and systemic diseases
- ▶ Accurate drug detection
- ▶ Higher fluxes and greater control of drugs into a tissue

### APPLICATIONS

- ▶ Diagnosis of local and systemic diseases
- ▶ Forensic drug detection
- ▶ Evaluation of bioavailability of therapeutics following drug administration
- ▶ Evaluation of tissue following exposure to a harmful agent
- ▶ Drug delivery

### CONTACT

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### INVENTORS

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### OTHER INFORMATION

#### KEYWORDS

drug detection, tissue diagnosis

#### CATEGORIZED AS

- ▶ **Medical**
- ▶ Devices
- ▶ Diagnostics

#### RELATED CASES

2009-490-0

This technology is available for licensing.

## PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,814,422	11/14/2017	2009-490
United States Of America	Issued Patent	8,642,664	02/04/2014	2009-490
United States Of America	Issued Patent	8,609,041	12/17/2013	2009-490
United States Of America	Issued Patent	8,389,582	03/05/2013	2009-490

Additional Patent Pending

## ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ Synthetic Platelets (SynPlats) to Treat Internal & External Bleeding
- ▶ Polymer-Drug Conjugates for the Co-delivery of Synergistic Chemotherapy Drugs
- ▶ Multiple Nanoemulsions and Complex Nanoparticles for Encapsulation and Release
- ▶ Soft Tissue Augmentation by Needle-Free Injection
- ▶ Mucoadhesive Devices for Oral Delivery of Various Active Agents

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