

# MediBeacon®

## PRECLINICAL

## Transdermal, Continuous, Measurement of Renal Function

MediBeacon's system is used to monitor measured Glomerular Filtration Rate (mGFR) in the preclinical setting. The device is placed on the animal's body. The system allows researchers to calculate and track the animal's kidney function over time without requiring the animal to be restrained during monitoring.

Determination and monitoring of mGFR is essential for various preclinical studies, e.g. characterization of renal function, assessment of new and existing kidney therapeutics, evaluation of nephrotoxicity, discovery of novel chemical or medical agents, and fundamental understanding of kidney function.

However, the research standard for measuring renal function has traditionally required several blood draws as a function of time and subsequent sophisticated laboratory analysis to measure tracer agent concentrations in each blood sample. This methodology using blood and/or urine sampling is not only labor-intensive but, also puts a strain on the animal.

Utilization of the MediBeacon device and a fluorescent tracer agent is independent of blood sampling, urine collection, and laboratory assays and thus enables streamlined preclinical trial design and execution.

## Successful Use in Nephrology Research

MediBeacon technology is used by leading medical schools, academic centers, research institutes, and pharmaceutical companies worldwide to enhance preclinical assessment of kidney therapeutics, evaluate nephrotoxicity, and gain fundamental understanding of kidney function in animals.

Research using the MediBeacon preclinical product has been featured in numerous posters presented at previous American Society of Nephrology (ASN) Kidney Week meetings. In all there are over **100 peer reviewed publications** in which this transdermal mGFR technique was used (peer reviewed and conference abstracts).

## Key Advantages\*

- *Longitudinal GFR measurements in the same animal are possible.*
- *System can be used in conscious freely moving mice, rats, and larger animals.*
- *Changes of GFR can be observed earlier compared to endogenous markers.*
- *Streamlined specimen-free trial design and execution are the result.*

\*Technique is similar to the system currently in human clinical studies.

## System

- Device and Patch are Affixed to Animal.
- Fluorescent Tracer Agent is Administered.<sup>(a)(b)</sup>
- Software Analyzes Data from the Device.

(a) NOT FOR HUMAN USE

(b) The Fluorescent tracer agent is administered IV into the animal.



This device is not approved for human use.

# Preclinical Device - Technical Specifications

The instrument contains light emitting diodes capable of exciting the fluorescent tracer agent and a photodiode that collects the emission light.

After amplification and digitization, the data sets are stored in the internal memory of the device. The data is later transferred to a PC via USB connection. A basic PC software package is provided with the device. An advanced evaluation software (Preclinical Data Studio) is sold separately.

The product is sold with batteries and a USB charger. Patches for use with laboratory animals as well as fluorescent tracer agents are sold separately.<sup>(a),(b)</sup>

*(a) NOT FOR HUMAN USE*

*(b) For information regarding compatible fluorescent tracer agents contact us at [sales@medibeacon.com](mailto:sales@medibeacon.com).*

## About MediBeacon

MediBeacon's mission is to commercialize biocompatible optical diagnostic agents for physiological monitoring, surgical guidance, and imaging of pathological disease. Several product concepts in these arenas are contained in the MediBeacon Intellectual Property estate. MediBeacon's portfolio includes a renal function system that uses an optical skin sensor with a proprietary fluorescent tracer agent that glows in the presence of light. Clinical studies in subjects with normal and impaired kidney function are ongoing. The goal is to provide a point of care GFR monitoring solution.

The company's product for the preclinical market, which is the size of a small coin, enables detection of a GFR fluorescent tracer agent and hence the determination of kidney function. MediBeacon products for preclinical animal research provide an efficient and proven methodology through which researchers can measure and track kidney function over time.

### MediBeacon Inc.

1100 Corporate Square Drive  
Helix Center, Suite 175  
St. Louis, MO 63132  
USA

+1 (314) 269-5808  
[info@medibeacon.com](mailto:info@medibeacon.com)

### MediBeacon GmbH

Cubex41  
Theodor-Kutzer-Ufer 1-3  
68167 Mannheim  
Germany

+49 (0)621-150283-15  
[sales@medibeacon.com](mailto:sales@medibeacon.com)



MediBeacon Clinical Study Transdermal GFR Monitor

**Tracer agents and devices are not approved for human use.**

***Fluorescent Tracer Agents Enabling Medical Innovations™***