

Technology Request

Calibration of non-invasive blood pressure measurement instruments

Summary

A German company specialised in the calibration of measurement instruments and engineering is looking for cooperation partners that are interested in further developing the respective method and jointly developing an EU-Standard for calibration of different blood pressure instruments (non-invasive) in a research cooperation scheme comprising technical collaboration as well.

Creation Date	12 June 2015
Last Update	14 September 2015
Expiration Date	13 September 2016
Reference	TRDE20150612001

Details

Description

A German company specialised in calibration of measurement instruments is interested in a European cooperation with the overall aim of developing an EU-Standard for calibration of different blood pressure Instrument.

The most commonly applied measurement is the oscillator measurement. For measurement purposes at least two measurement signals are recorded:

- exact measurement of the oscillation of the blood vessel wall
- exact measurement of the pressure in the cuff of the Instrument

Only the measurement of both signals gives reliable and useable statements of the systolic and diastolic blood pressure levels. Furthermore, the measurement procedure must be precisely and clearly described. That is why it is necessary to set up a measurement site where measurements can be carried out and recorded.

However, different regulations and guidelines in European countries with regard to blood pressure measurements haven't yet solved the problem. The development of calibration standards makes only sense in the frame of a European cooperation. This approach would consist of a uniform standard for the calibration of non-invasive blood pressure measurement instruments.

Currently, no such Standard exists on European Level. However, it is a necessary requirement in order to ensure comparability of measurement values and clinical diagnoses as well as disease Patterns within the EU.

Technical Specification or Expertise Sought

The measurement site as well as the technical data and parameters are to be comprehensively described. The measurement test site must provide for and comply with certain technical measurement transfer procedure, thus ensuring that the calibration method as well as technical implementation can be conducted according to normal technical specifications.

Measurements and calibration are at all times described with a statement of the measurement uncertainties. In this way, the same standards of regulation can be achieved for the measurement of blood pressure as it has been the case for decades in other areas, e.g. in the case of temperature measurement.

Stage of Development

Already on the market

Keywords

Technology

06001005	Diagnostics, Diagnosis
06001013	Medical Technology / Biomedical Engineering

Market

05001007	Other diagnostic
05004005	Diagnostic equipment

NACE

Q.86.9.0	Other human health activities
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Dissemination

Send to Sector Group

Materials

Restrict Dissemination to Specific Countries

Austria, Belgium, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Greece, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey,

Client

Type and Size of Organisation Behind the Profile

Industry SME 11-49

Year Established

0

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English

German

Client Country

Germany

Partner Sought

Type and Role of Partner Sought

- Type of partner sought:

clinics, manufacturer/developer of blood pressure instruments,

- Specific area of activity of the partner:

Medical scientists working in the area of blood pressure

- Medical Institutes for clinical testing

- Medical- technical- laboratory for technical development and equipment testing

- Task to be performed by the partner sought:

joint further development of blood pressure method, technical and clinical testing

Type of Partnership Considered

Technical cooperation agreement

Research cooperation agreement

Technology Offer

Device to assess cell barrier integrity through impedance spectroscopy for nanomedicine screening platforms

Summary

Researchers from Spanish research organisations have developed a device that allows real time monitoring of cell cultures that are present in cell barrier in-vitro models. The device is based on transendothelial /epithelial electrical resistance (TEER) measurements. This device is very useful for studies of new drugs that have to pass through different cell barriers. Companies interested in patent licensing and/or in service agreements for testing new drugs are sought.

Creation Date	16 June 2015
Last Update	15 September 2015
Expiration Date	14 September 2016
Reference	TOES20150305001

Details

Description

It is known that cell barriers cultures are difficult to reproduce and particularly to monitorize when a drug is acting. The developed devicbased on a microfluidic system better reproduces the in vivo cell barrier conditions than those performed in static in vitro ones. Furthermore, the system has implemented an interdigitated electrode system for TEER monitoring that allows optical inspection techniques. The monitoring is quantitative and in real time, which facilitates the use of the device for pharmacologic assays where the control of the integrity of the cell barrier is a hallmark.

The device is easily scalable into different geometries and for using different cell types. Moreover the microfluidic system is reusable (only the culture membrane requires disposal), which minimizes the material costs for its use in laboratories.

Therefore, the device permits to closely mimic in vivo conditions, being useful for the study of different physiopathologic diseases and allowing the development and validation of therapies for their treatment.

The prototype has already been validated by using endothelial cells from the brain of a mouse. Industrial partners in particular producesr of cell cultures equipment interested on patent license agreement are sought as well as pharmaceutical laboratories interested on cell cultures service agreement for testing new drugs.

Advantages and Innovations

- The device allows a quantitative motorization of cell cultures by using impedance spectroscopy measurements.
- The device allows the optical monitoring of cell cultures, thus facilitating the usability of the device.
- It allows real time monitoring of barrier cell culture such as blood-brain (epithelial and endothelial)

permitting the in-situ control of barrier integrity. This characteristic is very interesting for control without affecting cell physiology in the study of new drugs that should cross the barriers.

- The microfluidic design of the device includes and permits the application of a perfusion system (shear stress), indispensable for the culture of endothelial cells.
- The system is modular, dismountable and allows easy access to the cell culture chambers. This facilitates the handling and the post-experimental analysis of the different cell types.
- It also allows co-cultures of different cell types.

Stage of Development

Prototype available for demonstration

IPR Status

Patent(s) applied for but not yet granted

Comment Regarding IPR status

PCT status

Profile Origin

Other

Keywords

Technology

06001012 Medical Research

Market

005001002 Medical imaging

05007002 Pharmaceuticals/fine chemicals

05007004 Monitoring equipment

05007007 Other medical/health related (not elsewhere classified)

NACE

M.72.1.1 Research and experimental development on biotechnology

M.72.1.9 Other research and experimental development on natural sciences and engineering

Dissemination

Send to Sector Group

Healthcare

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Year Established

1900

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English

German

Spanish

Client Country

Spain

Partner Sought

Type and Role of Partner Sought

Producer of cell cultures equipment interested on patent license agreement.

Pharmaceutical laboratories interested on cell culture service agreement for testing drugs

Type of Partnership Considered

License agreement