Technology Offer

Single-use electrochemical eco-friendly sensors based on herbal silver nanoparticles

Summary

A group of researchers from department of pharmaceutical technology of a university located in Izmir, Turkey has developed electrochemical single-use, eco-friendly sensor platform based on herbal silver nanoparticles (AgNp) in order to detect heavy metals in water. Specificly, an extensive research is conducted for the analysis of mercury ions. Licensees from industry specialized in pharmaceutical technology are sought to scale this technology to industrial level by licensing agreement.

Creation Date	18 July 2017
Last Update	25 July 2017
Expiration Date	25 July 2018
Reference	TOTR20170718002

Details

Description

A group of researchers specialized in pharmaceutical applications from a state university located in Izmir, Turkey has developed a single use eco friendly sensor to detect unwanted heavy metals in water, especially mercury ions which is severely dangerous for human health.

Heavy metals but especially mercury ions may cause environmental pollution, and soil pollution caused by mining practices, fertilizer and pesticides and chemical substances from industrial wastes. Agriculture in polluted soil by heavy metals becomes a source of contamination for food chain. Thus, it becomes harmful for human health as well as for other living systems.

The existing technologies for the mercury analysis like fluorescence, atomic absorption spectroscopy, inductively coupled plasma optical emission spectroscopy are really expensive. And also they have a difficult analysis procedure.
In the present invention, vegetable origin with silver nanoparticles (AgNp) modified green sensor has been developed for the rapid, sensitive and selective electrochemical analysis of mercury (Hg2 +)
Mentioned invention is related sensors which are plant-derived, obtained with the green synthesized nanoparticles comprise silver are used for mercury analysis.
In near future test kits could be developed as a result of combination with the environmentally friendly disposable sensor and chip technologies within the scope of this invention.

The commercialization potential of the developed sensor is very high, due to its ability of continuous analysis of mercury contamination in water samples. Mercury is a potent neurological toxin and also it can cause kidneys, respiratory system, immune system, mouth tooth and skin disorders. Having known from academic studies, mercury concentration increases in water and food chain due to many reasons.

Due to this commercialization potential it is aimed to collaborate with an industrial partner who would be interested in licensing this technology and scale up to industrial level to obtain the commercial product.

Advantages and Innovations

Main advantage is that the sensor is disposable and environmentally friendly. Also, this product enables removal heavy metals like mercury in water in a short time with high sensitivity. Finally, it is cost effective, practical to use and provides quick testing opportunity for mercury (Hg2 +) analysis.

Stage of Development

Field tested/evaluated

Comments Regarding Stage of Development

Scale up is essential to reach the final product although a number of tests are successfully completed.

IPR Status

Patents granted

Comment Regarding IPR status

Patent granted nationally.

Profile Origin

National or Regional R&D programme

Keywords

Technology

01003023	Environmental and Biometrics Sensors, Actuators
03004007	Pharmaceutics
05002001	Biosensor
10002013	Clean Production / Green Technologies

Market

04017	Micro- and Nanotechnology related to Biological sciences

NACE

M.72.1.1	Research and experimental development on biotechnology

Network Contact

Issuing Partner

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Open for EOI : Yes

Dissemination

Send to Sector Group
Bio Chem Tech

Client

Type and Size of Organisation Behind the Profile
University

Year Established
1955

Already Engaged in Trans-National Cooperation
Yes

Languages Spoken
English

Client Country
Turkey

Partner Sought

Type and Role of Partner Sought

Type of Partner: Industrial manufacturer specialized in developing biotechnological products, test kits and similar analyzing equipment as well as manufacturer partners specialized in environmental technologies are also welcome. Both type of partners are expected to have a comprehensive laboratory facilities.

Role of Partner: The ideal partner is expected to license the mentioned technology and develop

commercial bio sensors to analyse contamination levels in water. As a result a scale up study will be needed to commercialize the technology. Moreover, it would also be possible to develop test kits as a future work.

Type and Size of Partner Sought

SME 11-50,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

License agreement

Attachments

Development and Manufacture of lentiviral vectors

Summary

This Spanish SME is a lentiviral specialized CDMO offering personalized solutions based on the review of customer´s requirements and lentivirus vector design and cloning. The company is specialized in the manufacture of research, preclinical toxicology and GMP-grade lentiviral vectors. The company is looking to collaborate with Biotech/Pharma or biotechnology dedicated companies with a genetic therapy pipeline, with the need of developing, producing or using lentivirus vectors.

Creation Date	20 September 2017
Last Update	27 September 2017
Expiration Date	27 September 2018
Reference	TOES20170908002

Details

Description

The company proposes herein a technology for the development and manufacture of Lentiviral vectors by using a new type of bioreactors in comparison with the classical static bioreactors.

The company´s bioreactor innovative technology allows obtaining relevant titter results comparing to other classical manufacturing technologies. Moreover, importantly, the company is developing both Upstream (USP) and Downstream (DSP) processes for a given batch.

Additionally, this innovation presents a greater scalability between different size bioreactors and allows working with several bioreactors in parallel.

The experience of more than two thousand lentiviral batches manufactured by the company made possible implementing this innovations within it´s manufacturing platform.

The company develops and manufactures lentiviral vectors from very early stages to the manufacture for preclinical toxicology or for advanced phases requiring GMP manufacture.

Advantages and Innovations

Comparing to other companies developing and manufacturing lentiviral vectors, this profile offers the following advantages:
- Sealed as Excellence Centre by European Union.
- Own Lentivirus-based technology
- More than 2.000 lentiviral batches manufactured.
- iCELLis-nano bioreactor technology: Compatible equipment at R&D and GMP suites.
- USP+DSP (Upstream and Downstream Process Development
- Improved transient transfection method.
- Increased final yield compared with regular protocols.
- Capacities, capabilities and infrastructure to increase current capacity.

Stage of Development

Already on the market

Comments Regarding Stage of Development

The company has preclinic, clinic and commercial production capacity of this technology.

IPR Status

Secret Know-how

Comment Regarding IPR status

Technology secrecy is assured by confidentiality agreements with colaborating companies.

Profile Origin

Private (in-house) research

Keywords

Technology

06001013	Medical Technology / Biomedical Engineering
06002001	Biochemistry / Biophysics
06002002	Cellular and Molecular Biology
06002005	Genetic Engineering

Market

04003	Gene Splicing and Manufacturing Equipment
04004	Other Genetic Engineering
04005	Biochemistry / Biophysics
04006	Cellular and Molecular Biology
04008	Genetic Engineering

NACE

M.72.1.1	Research and experimental development on biotechnology
Q.86.2.2	Specialist medical practice activities
Q.86.9.0	Other human health activities

Network Contact

Issuing Partner

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Open for EOI : Yes

Dissemination

Send to Sector Group

Bio Chem Tech

Client

Type and Size of Organisation Behind the Profile

Industry SME 11-49

Year Established

2015

Turnover

1 - 10M

Already Engaged in Trans-National Cooperation

Yes

Experience Comments

The company is currently working for different customers based both in Europe and USA.

Certification Standards

EMAS
other

Languages Spoken

English
Spanish

Client Country

Spain

Partner Sought

Type and Role of Partner Sought

The company is looking to collaborate with Biotech/Pharma or biotechnology dedicated companies with a genetic therapy pipeline, and with the need of developing, producing or using lentivirus vectors with specific characteristics.

The company offers itself to develope and produce these lentiviral vectors.

Type and Size of Partner Sought

SME 11-50,SME <10,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

Manufacturing agreement
Commercial agreement with technical assistance
Technical cooperation agreement
Research cooperation agreement

Attachments