

Properties

Title:

Determination of steroid hormones in river waters.

-Technology profile

-OFFER from Romania, reference: TORO20180523001, valid from 07-06-2018 until 09-06-2019

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9 juni 2018

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General information

Reference:

TORO20180523001

Profile type

Technology offer

Country of origin:

Romania

Deleted

Nee

Status:

Update

Start date:

7 juni 2018

End date:

9 juni 2019

Technologic information profile

Title:

Determination of steroid hormones in river waters.

Description:

The Romanian research institute is specialized in analytical chemistry, applied in three main directions: Environment and Health, Instrumental Analytical Chemistry, Bioenergy and Biofuels. The institute has a remarkable endowment that allows approaching projects from research stage up to prototype realization and technology transfer.

Scientific studies show that, in order to accelerate the growth rate of animals, farmers are presently using animal

feed doped with hormones, that may cause both reproductive disorders and abnormal development in wildlife as well as the reduced fertility of human males. The transfer of these toxic compounds from animal feed to the edible products of these animals (meat, organs, milk, eggs) determines human exposure to these contaminants. On the other hand, through the discharges from the sewage treatment stations, various quantities of steroid hormones (estrone and β -estradiol) are released in the aquatic environment, especially in rivers. These facts may put in danger the human health, as river waters are used as a source of drinking water in many countries.

A careful analysis of these steroid hormones is mandatory, in order to respect the water pollution control legislation. In this context, the Romanian institute has developed an extremely sensitive analytical method for the determination of steroid hormones (estrone and β -estradiol) that may exist in river waters.

As compared to other existing methods based on the extraction of steroid hormones from water by using chemicals, the method developed by the Romanian institute does not use any chemicals being, therefore, an environmentally friendly one. The method has two stages:

- solid-phase microextraction - SPME procedure, where the steroid hormones are extracted by their absorption on fiber;
- steroid hormones identification and quantification, by using high-tech equipment - gas chromatography coupled with mass spectrometry (GC-MS).

Thus, the method is very sensitive and precise because it can determinate the steroid hormones at trace and ultra-trace level from the river water samples tested.

The Romanian research institute is looking for partners abroad such as environmental analysis laboratories or water polluting SMEs/large companies. The considered partnership refers to commercial agreements with technical assistance (engineering and technical assistance) in the method transfer and implementation on the partner's equipment, as well as staff training.

Technologie keywords

- _Astronomy
- _Mathematics, Statistics

Activity codes

- _Other research and experimental development on natural sciences and engineering

Languages

- _Romanian
- _English

Certifications

- _ISO 9001:2008
- _ISO 17025:1999

Exploitations

- _COSME

Sector groups

- _Environment

More information

Plus Value:

The developed method is:

- sensitive and precise, allowing the determination of very low concentrations (ng/l) of estrogenic compounds from river water samples;
- innovative, by: 1) making use of a single step extraction, 2) determining the steroid hormones at trace and ultra-trace level, and 3) using the solid phase microextraction (SPME) procedure (a unique sample preparation technique that requires neither solvents nor complicated apparatus).

IPR Status:

Patents granted

EOI Status:

Yes

Experience:

Certification Standards: SR EN ISO/CEI 17025:2005

Organisation

Type of organisation:**Since:**

1992

Type and Size:

R&D Institution

Transnational

Ja

Turnover:

1M

Collaboration

Technical Specification or Expertise Sought:

pppType of partner sought:

- Environmental analysis laboratories accredited in water testing and analysis, interested to use the method for monitoring steroid hormones in river waters.
- Water polluting SMEs /large companies, active in different fields of activity, that have to comply with the legislation in force regarding the admissible water pollution levels.

In the commercial agreement with technical assistance, the sought partner is expected to implement the method for the determination of steroid hormones.

The Romanian Institute will support the partner with technical consultancy regarding the use of appropriate equipment and/or its purchase as well as with the know-how transfer of the method and staff training.

ppSME 11-50,University,R&D Institution,SME 10,500 MNE,251-500,SME 51-250,500p

Partnerships

_ Commercial agreement with technical assistance

Uitgevoerd door:



In opdracht van:



Ministerie van Economische Zaken



Ministerie van Buitenlandse Zaken

