Profile Status: Published

Technology Offer

Novel anti-tuberculosis compounds

Summary

A German university developed an antibiotic that kills the mycobacterium tuberculosis without destroying the macrophages, cells that belong to the immune system. This novel class of compounds has the potential to overcome the resistance problems of mycobacterium tuberculosis to other drugs. The university is offering a license and research cooperation agreement.

Creation Date	20 October 2017
Last Update	30 October 2017
Expiration Date	30 October 2018
Reference	TODE20171019001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/ec3c7bb3-fb84-42ce-ad04-baba7861f365

Details

Description

The resurgence of tuberculosis, caused primarily by mycobacterium tuberculosis (Mtb), and the appearance of multi□drug and extensively drug resistant Mtb strains prove the need for new drugs with alternative modes of action. The interaction between the mycobacterial thioredoxin reductase (TrxR) and its substrate thioredoxin (Trx) is a promising new drug target for the treatment of tuberculosis, since Mtb lacks the common glutathione system and the mycobacterial TrxR shows a substantial difference in sequence, mechanism and structure to human TrxRs. It was shown that TrxR is essential for thiol redox homeostasis and genetic inactivation in vivo eradicates Mtb during acute and chronic mouse infections.

In order to further improve the bioactivity of promising compounds, researchers of a German university have focused on optimizing the physico-chemical properties that are important for permeability, since Mtb shows an unusual thick and impermeable cell wall.

The university offers a license and a research cooperation agreement to further develop the compounds and carry out tests. The profile addresses pharmaceutical companies.

Advantages and Innovations

This offer introduces a novel class of compounds that inhibit a novel target with the potential to overcome resistance problems of mycobacterium tuberculosis to other drugs. In addition to that the viability of infected macrophages is not affected. The compounds also show an increased bioactivity by optimized permeability through the cell wall of mycobacterium tuberculosis

Stage of Development

Under development/lab tested

Comments Regarding Stage of Development

The researchers are preparing the further development towards mice studies to confirm in vivo efficacy, as well as ADME(absorption, distribution, metabolism and excretion)□Tox studies.

IPR Status

Patent(s) applied for but not yet granted

Comment Regarding IPR status

A European patent has been filed.

Profile Origin

Private (in-house) research

Keywords

Technology

06001	Medicine, Human Health
06001015	Pharmaceutical Products / Drugs
06001018	Virus, Virology/Antibiotics/Bacteriology
06002	Biology / Biotechnology
06002001	Biochemistry / Biophysics

Market

04010	Microbiology
05	MEDICAL/HEALTH RELATED
05005007	Pulmonary medicine
05007002	Pharmaceuticals/fine chemicals

NACE

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

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

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
German

Client Country

Germany

Partner Sought

Type and Role of Partner Sought

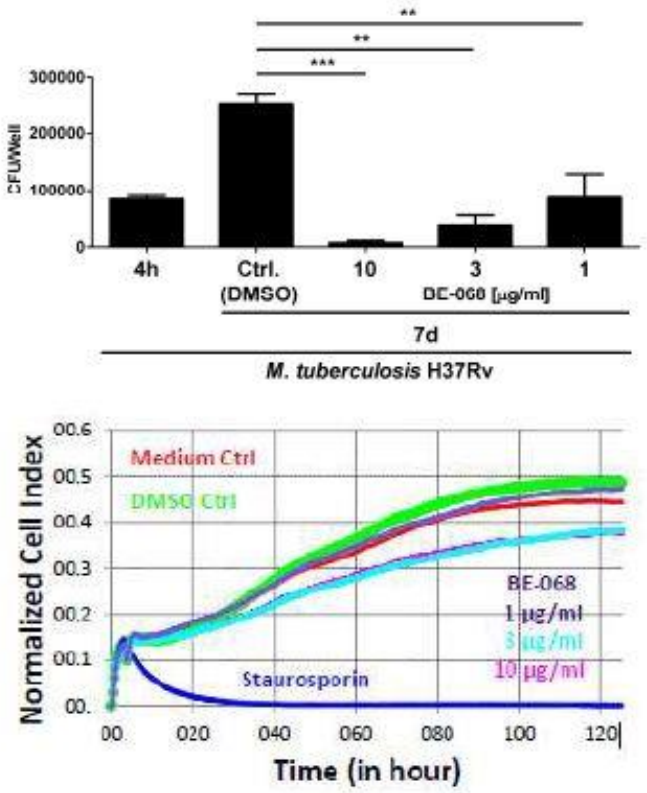
The university offers a license and a research cooperation agreement. Possible research activities refer to the fact that the compounds have only been tested preclinical so far. In order to become a drug the compounds have to pass clinical studies and the approval process.
The profile addresses pharmaceutical companies that already have antibiotics in their portfolio.

Type of Partnership Considered

License agreement
Research cooperation agreement

Attachments

4941_picture.jpg



Compounds with improved physicochemical properties with regard to increased permeability and bioactivity were designed. The most promising compound (BE-068) was also tested on infected human macrophages and showed a clear dose-dependent activity on mycobacterial growth (upper graph), without affecting macrophage viability (lower graph).

Profile Status: Published

Business Offer

A French hospital provides clinical bio-informatics services dedicated to next-generation sequencing (NGS)

Summary

The French hospital has a strong expertise in next-generation sequencing (NGS) raw data analysis and clinical interpretation. With its two in-house developed and user-friendly softwares, the hospital offers services from storage and analysis of raw data to clinical report issuing. The hospital is looking for medical biology laboratories from public hospitals or private organizations interested in service agreements.

Creation Date	16 March 2018
Last Update	25 April 2018
Expiration Date	26 April 2019
Reference	BOFR20180316001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/e39d1697-f0f4-4462-aad6-081aaa16ce62

Details

Description

This French university hospital center is a well-known specialist in clinical next-generation sequencing (NGS) raw data processing.

Based on the bio-informatic plaform, two softwares suited for routine clinical diagnosis have been developed. They are dedicated to various applications in personalized medicine, i.e. cancer, rare diseases and microbiology. The softwares complement one another, the first focusing on safe storage and robust analysis while the second achieves clinical interpretation:

(1) The first software allows to load, store, document and analyze the raw data from sequencing output to variant calling. The processing chain used for the analysis can be custom-designed for any pathology of interest. These protocols are fixed and versioned for robustness and repeatability purposes. The output file is in Variant Call Format (VCF). All bio-informatics workflows are based on published reference open source algorithms, and are accessible transparently.
(2) The second software takes as input VCF files and facilitates the interpretation of the NGS analysis results, carrying out annotation, filtering, viewing and conversion in a clinical report. All the public databases of variant frequencies are available for annotation. For repeatability purposes again, the filtering steps, of varying complexity, can be fixed. Variant viewing is carried out through a genome browser, integrated in an identity card of the variant. Through the software, the partner can build a database of validated and optionally commented variants.

Both softwares are being deployed in all the hospitals of the French university hospital center. These softwares are independent and can be used separately. In practice, there is no installation whatsoever: the partner would connect to the software website, drag and drop the input files, analyse them through either or both softwares and export the output files on its personal computer.

The hospital offers service agreements to hospitals or private companies, from startups to big pharmaceutical companies. The hospital proposes to analyze clinical NGS data. Partners will can therefore interpret and capitalize on their NGS data.

Advantages and Innovations

- The hospital can offer its expertise in all DNA-sequencing technologies: panel, exome or genome sequencing.
- All the steps of the processes of both softwares are quality checked through a management quality system.
- The storage servers are certified for health data hosting.
- The processing chain used for data analysis can be custom-designed for any pathology of interest.
- The system is suited for routine clinical diagnosis in cancer, rare diseases and microbiology.

Keywords

Market

02006004	Data processing, analysis and input services
02007012	Medical/health software
04014	Bioinformatics
05001001	Diagnostic services
05007006	Computer-aided diagnosis and therapy

NACE

J.62.0.1	Computer programming activities
J.62.0.3	Computer facilities management activities
J.63.1.1	Data processing, hosting and related activities
M.72.1.1	Research and experimental development on biotechnology
Q.86.1.0	Hospital activities

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Open for EOI : Yes

Dissemination

Send to Sector Group

Healthcare

Restrict Dissemination to Specific Countries

Albania, Argentina, Armenia, Austria, Belarus, Belgium, BosniaandHerzegovina, Brazil, Bulgaria, Cameroon, Canada, Chile, China, Croatia, Cyprus, CzechRepublic, Denmark, Egypt, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Latvia, Lithuania, Luxembourg, Macedonia,TheformerYugoslavRepublicof, Malta, Mexico, Moldova, Montenegro, Netherlands, NewZealand, Norway, Paraguay, Peru, Poland, Portugal, Romania, Russia, Serbia, Singapore, Slovakia, Slovenia, SouthKorea, Spain, Sweden, Switzerland, Taiwan, Tunisia, Turkey, Ukraine, UnitedKingdom, USA, Vietnam,

Client

Type and Size of Organisation Behind the Profile

Other

Year Established

2016

Turnover

<1M

Already Engaged in Trans-National Cooperation

No.

Experience Comments

All their processes are carried out with respect of a quality management system. Several certifications are under way: - ISO 9001:2015 for certification of their quality management system - ISO/TS20428:2017 for certification of their electronic health report, structured with the clinical genomic sequence information.

Certification Standards

other

Languages Spoken

English
German
French
Spanish

Client Country

France

Partner Sought

Type and Role of Partner Sought

Partners could be any public or private medical biology laboratory using NGS sequencing technologies and interested in bio-informatics analysis services for diagnostic purposes.

Type and Size of Partner Sought

SME 11-50,University,Inventor,R&D Institution,SME <10,>500 MNE,251-500,SME 51-250

Type of Partnership Considered

Services agreement

Attachments

Profile Status: Published

Technology Offer

Photoactivatable, mussel-based bioadhesives

Summary

A Berlin-based German university has developed a way to produce mussel proteins which can be activated by irradiation with UV light. Those proteins could be used in the production of bio-glues which are suitable for the treatment of bone fractures or accelerated wound healing. The university is looking for partners interested in a license or a research cooperation agreement.

Creation Date	26 September 2017
Last Update	06 November 2017
Expiration Date	06 November 2018
Reference	TODE20170926001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/d5fcdfb2-d5b5-4e8e-b857-a49f1c4c3ba0

Details

Description

In medicine, there is a long-standing demand for biocompatible glues, which can be applied for the treatment of bone fractures or accelerated wound healing. Biocompatible bio-glues must meet several demands, such as good binding strength to the tissue (adhesion), high stability under physiological wet conditions (cohesion), controllable biodegradability, no immunogenicity in the organism as well as no toxicity. However, a bio-glue that meets these demands is currently not available.

Mussel bio-adhesives are protein-based natural polymeric materials and could meet the demands mentioned above. Therefore they have the potential to revolutionize small-bone surgery and wound healing.

However, extraction of these bio-adhesives from homogenized raw-shell material, is possible, but complicated. It is expensive and results in very low yields. Chemical synthesis or biotechnological routes for simplified production of synthetic adhesive polymers with features similar to natural ones are still not feasible.

Scientists at a Berlin-based German university now found a possibility to produce mussel proteins in Escherichia coli whereby those caged proteins can be activated by simple irradiation with UV light at 365 nanometers. The advantages of such photo-protected proteins are that they allow the production of photoactivatable bio-glues, thus one can avoid the currently well-known Dopa autoxidation to Dopaquinone (a compound involved in melanin production) as this was described to negatively impair the adhesive properties of the glue.

The photoactivatable, mussel-based bioadhesives are suitable for treatment of bone fractures

and wound healing.

The university is looking for partners interested in the further development of the technology. This could happen in the framework of a license agreement where the rights to exploit the technology would be transferred to the partner in return for a fee or a share of royalties.

Another way to cooperate could be a research cooperation agreement where both partners would cooperate on the further exploratory research and development of the new technology.

Advantages and Innovations

- Synthetic production of mussel proteins
- High yield

Stage of Development

Under development/lab tested

Comments Regarding Stage of Development

Development status is proof of concept.

IPR Status

Patent(s) applied for but not yet granted

Comment Regarding IPR status

European patent is pending

Profile Origin

Other

Keywords

Technology

06001015	Pharmaceutical Products / Drugs
06001024	Medical Biomaterials
06002004	Protein Engineering
06002006	Synthetic Biology

Market

04005	Biochemistry / Biophysics
04007	Enzymology/Protein Engineering/Fermentation
05003002	Surgical instrumentation and equipment
05005013	Emergency medicine
05005019	'Surgery and Anaesthesiology

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

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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

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
German

Client Country

Germany

Partner Sought

Type and Role of Partner Sought

The university is looking for partners from the life science sector with a focus on tissue engineering and surgery for the further development of the technology. They offer a cooperation in the framework of a research cooperation agreement where both partners (e.g. industry, SME or research organisation) would cooperate on the further research and development of the process.

Another way of cooperation would be the transfer of rights involving the authorization to use the technology to a licensee (e.g. industry, SME or research organisation) who could develop a product which is ready to the market.

Type and Size of Partner Sought

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

Type of Partnership Considered

License agreement
Research cooperation agreement

Attachments