

## Partnering Opportunity

Profile Status: Published

### Technology Request

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## Development of novel class of compounds for eye delivery to stop neurodegeneration in glaucoma

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### Summary

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*A French pre-clinical stage start-up develops novel solutions to treat neurodegeneration, a process linked with microtubule disorders. It develops compounds to restore microtubule stability. One application is stopping neurodegeneration of the optic nerve in glaucoma, the leading cause of irreversible blindness. The company seeks partners specialized in biopolymers and/or surface chemistry to develop drug formulation and delivery solutions into the eye under research or technical agreements.*

<b>Creation Date</b>	27 June 2019
<b>Last Update</b>	04 July 2019
<b>Expiration Date</b>	04 July 2020
<b>Reference</b>	TRFR20190621001
<b>Public Link</b>	<a href="https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/38cf43e0-0889-4198-af5d-c336f057a87d">https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/38cf43e0-0889-4198-af5d-c336f057a87d</a>

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### Details

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#### Description

In view of the ageing population, finding a cure for glaucoma, the first cause of irreversible blindness worldwide, remains a priority challenge of the EU.

Glaucoma is the result of neurodegeneration of the ganglionic cells of the optical nerve and is accompanied by an increase of the intra-ocular pressure within the eye cavity. While drugs that stabilize and or reduce intra-ocular pressure are quite efficient, it does not always stop neurodegeneration. In glaucoma models, dissociation of the microtubule associated protein tau from microtubules, was recently shown to be linked to the degenerative process. There is a single molecule on market, brimonidine, which beneficial effects remain controversial. While current pharmaceutical efforts focus on acting on tau itself, therapeutics that target the enzymes modifying the microtubules, have so far never been explored. In turn, the company develops compounds to prevent tau dissociation and restore its binding to microtubules. The solutions developed by the company are therefore unique in the healthcare landscape and open the road

to novel class of medication

Based on breakthrough discoveries, proprietary technologies and unique expertise, the French company has developed first-in-class compounds that specifically target microtubule modifying enzymes. These compounds regulate the biophysical properties of the microtubule surface to favorize the binding of structural microtubule associated proteins and hence promote neuroprotection. The novel compounds that have been developed are aimed at stopping the process of neurodegeneration within the optic nerve, by targeting microtubule modifications.

SMEs and pharma industries specialized in biopolymers and/or surface chemistry are sought to contribute to develop and improve drug formulation and delivery solutions into the eye. The idea is to attach the compounds to matrices that allow efficient drug delivery intravitreally and follow the outcome in appropriate models to obtain proof of concepts.

According to the stage of development of the delivery system of the partner, research agreements for co-development or technical agreements in case of use of an existing solution will be made.

### Technical Specification or Expertise Sought

The start-up company is looking for a drug delivery vessel (natural or synthetic biopolymer) for the delivery and sustained release of its compounds into the eye. Ideally the vessel/polymer should be:

- inducing minimal or no inflammatory response and should not lead to loss of photoreceptor cells
- tested in vivo
- result in sustained release of the compound
- function as a reservoir to reduce the number of injection

The compounds will be coupled to the delivery system and tested in relevant models for validation of the approach.

### Stage of Development

Under development/lab tested

### IPR Status

Granted patent or patent application essential

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## Keywords

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### Technology

03004007	Pharmaceutics
06001014	Neurology, Brain Research
06001015	Pharmaceutical Products / Drugs
06002001	Biochemistry / Biophysics
06006004	Biopolymers

### Market

04005	Biochemistry / Biophysics
05003005	Drug delivery and other equipment

05005002 Ophthalmology, ear, nose and throat diseases  
05007002 Pharmaceuticals/fine chemicals

**NACE**

M.72.1.1 Research and experimental development on biotechnology

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**Open for EOI :** Yes

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**Dissemination**

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**Relevant Sector Groups**

Bio Chem Tech  
Healthcare

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**Client**

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**Type and Size of Organisation Behind the Profile**

Industry SME <= 10

**Year Established**

2019

**Turnover**

<1M

**Already Engaged in Trans-National Cooperation**

No.

**Languages Spoken**

English  
Dutch  
French  
Polish  
Arabic  
Spanish

**Client Country**

France

## Partner Sought

### Type and Role of Partner Sought

SMEs and pharma industries with an expertise in biopolymers and/or surface chemistry are being sought for drug formulation.

In the context of research agreements and/or technological cooperation, the companies are expected to provide matrices of biopolymers and/ or surface chemistry on which the compounds that modify microtubule biophysical properties of microtubules can be attached for appropriate and efficient drug delivery into the eye.

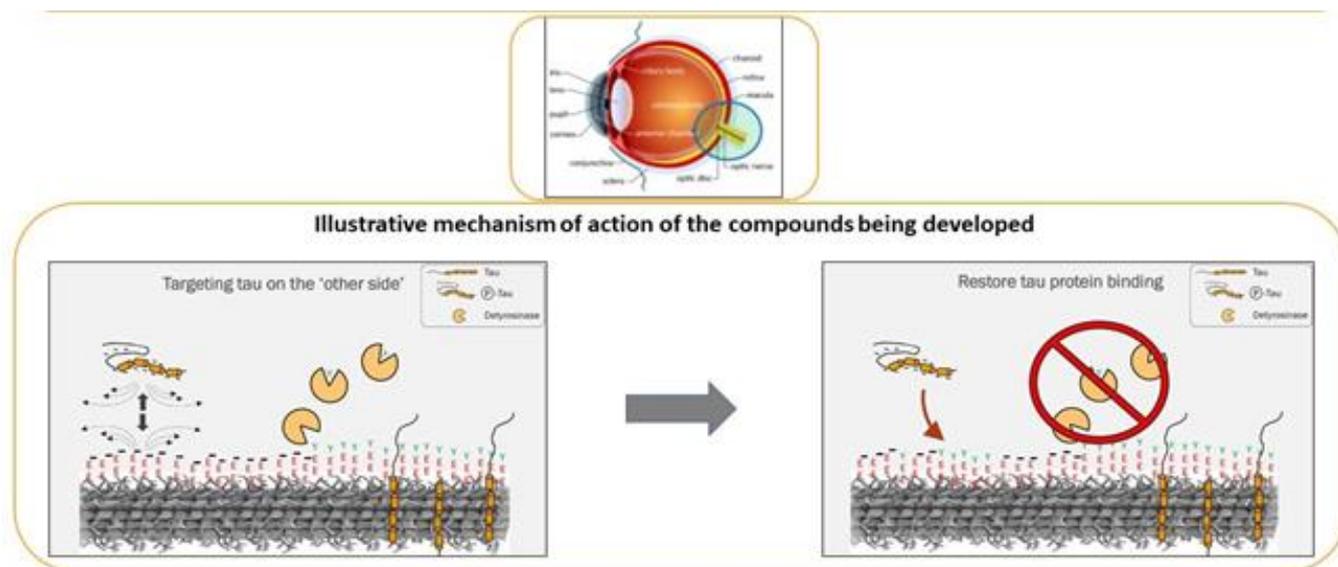
### Type and Size of Partner Sought

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

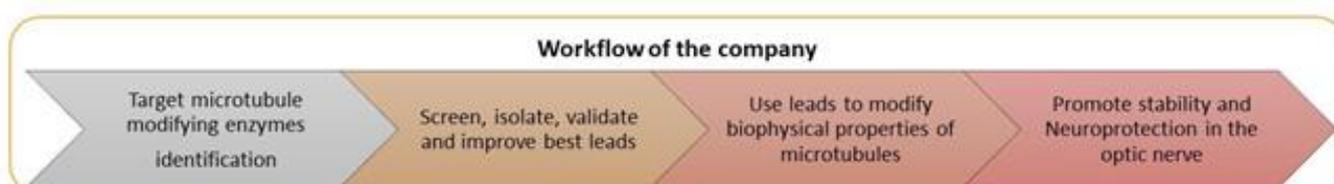
### Type of Partnership Considered

Technical cooperation agreement  
Research cooperation agreement

## Attachments



### Illustrative mechanism of action of compounds



Company expertise