

## ***InFlectisBioScience***

*Innovative therapeutics to treat  
protein misfolding diseases*

### **InFlectis BioScience banks €1.75m to realise the potential of IFB-088 drug candidate, a breakthrough therapeutic approach to treat neurodegenerative diseases**

**Nantes, France, 13 January 2015.** InFlectis BioScience, a pharmaceutical drug discovery company focused on degenerative diseases caused by protein misfolding, has completed its seed funding round, having raised €1.75 million. A diverse group of investors has been attracted to the potential of the company's approach to hitherto untreatable chronic degenerative diseases such as Charcot-Marie-Tooth disease, Retinitis pigmentosa, and Amyotrophic Lateral Sclerosis. The company shares global rights for the exploitation of a promising candidate drug, **IFB-088**, with the UK's **Medical Research Council (MRC)**.

Two successive wins in French Ministry of Higher Education and Research competitions in 2013 and 2014 (€300k) have helped to boost the company's profile with investors. In addition to the strong support offered by public sector investor **Bpifrance** (€300k), have come funds from venture capital firm **GO Capital** and private family investor **Participations Besançon**, who each contribute €500k. The remaining investment was made by the founders.

This first round of funding will allow the company to perform several *in vivo* studies with IFB-088 to select the first indication that the company will focus on to satisfy all of the regulatory preclinical stages. The first studies in humans are slated for 2017. A second chemical series, directed more broadly at degenerative diseases whose etiology lies in the accumulation of misfolded proteins, is also in the pipeline.

*"The arrival of our partners is a critical step for the company. It will allow us to demonstrate our innovative therapeutic approach in animal models of several orphan neuro-degenerative diseases. Our partners' commitment is affirmation of our potential and validates our strategy."*-Philippe GUEDAT, CEO, **InFlectis BioScience**.

*"InFlectis BioScience's strong management team, promising science, and open target market all make us think that the company has a prominent future in French biotech."*-Jérôme GUERET, partner and investment manager, **GO Capital**.

*"We are proud to be financing this promising therapeutic approach to these devastating neurodegenerative diseases with so much unmet medical need."*-Pierre BESANÇON, CEO, **Participations Besançon**.

Contact details for further comment and interviews: see Notes for editors (p2 & 3).

## Notes for editors:

### 1. ON PROTEIN MISFOLDING

A large amount of proteins fold in a specific region of the cell known as the endoplasmic reticulum. The quality control mechanism of endoplasmic reticulum, known as the **unfolded protein response**, normally ensures that proteins are folded into their correct three-dimensional shape before being exported to their eventual destination elsewhere in the cell. The so-called “**misfolded proteins**” are normally retained in the endoplasmic reticulum, and then eliminated by the unfolded protein response. But in some cases, misfolded proteins accumulate in the endoplasmic reticulum instead of being eliminated. The resulting reduced biological activity of trapped misfolded proteins can lead to impaired cellular function and ultimately to disease. In addition, misfolded protein accumulation stresses the cell, and may contribute to cellular dysfunction and to degenerative or age related diseases.

Protein misfolding disorders have been identified in most traditional therapeutic areas from neurology, cancer, inflammatory, metabolic and cardiovascular diseases. Neurodegenerative disorders account for a large part of protein misfolding disorders because neuronal tissues are exquisitely sensitive to defective proteins. For example protein misfolding is associated with Alzheimer’s disease, Parkinson’s disease, transmissible spongiform encephalopathies (prion diseases) but also less common or rare diseases, such as, without limitation, Amyotrophic Lateral Sclerosis, Huntington disease, retinal ciliopathies (e.g. Retinitis Pigmentosa) and Charcot-Marie-Tooth diseases.

**InFlectis BioScience** is developing a new generic approach to treat diverse neurodegenerative diseases with an immeasurable unmet clinical need, by modulating a protein-protein interaction involved in protein folding process control that improve cells’ ability to deal with misfolded proteins.

### 2. ABOUT IFB-088

**InFlectis BioScience**'s current lead asset is a **first-in-class orally available small molecule drug** candidate, named **IFB-088**, having a validated mechanism of action and a promising pharmacokinetic profile to target the central & peripheral nervous system.

IFB-088 is a selective inhibitor of PPP1R15A (GADD34), a stress-induced PP1 phosphatase regulatory subunit, involved in the unfolded protein response. PPP1R15A inhibition by IFB-088 sets the protein translation rate in stressed cells to a level manageable by the available cellular proteins that assist the protein folding (i.e. chaperones), thereby restoring proteostasis. Strikingly, IFB-088 is highly specific and acts only on stressed cells thus avoiding intolerably persistent inhibition of protein synthesis in non-stressed cells (i.e. normal cells).

Unlike most competitors in the field, who are developing tailored drugs that target specific misfolded proteins or increase chaperone expression, IFB-088 aims at boosting the natural cellular defence system against misfolded proteins to correct protein folding defects and restore cell fitness **in stressed cells only**. Through its unique and selective mode of action on the unfolded protein response, IFB-088 minimizes target diversification and the ensuing need for a tailored drug medicine and has the potential to be potent in the treatment of a wide range of neurodegenerative disorders.

### 3. ABOUT THE COMPANIES

#### **InFlectis BioScience** ([www.infectisbioscience.com](http://www.infectisbioscience.com))

InFlectis BioScience was founded in September 2013 by Philippe Guédât and Pierre Miniou. With a PhD in medicinal chemistry and pharmacology, Philippe, who serves as CEO, brings over 15 years of experience in the drug discovery industry having worked variously for Hybrigenics, Merck Serono, and Valneva. The company's Chief Business Officer, Pierre Miniou, has both an MBA and a PhD in molecular biology. His 15 years of intellectual property experience include time at Pierre Fabre Laboratories, Cabinet Regimbeau and in business development at Valneva.

InFlectis BioScience's equity investors are GO Capital, Participations Besançon and the MRC.

The company aims to discover and develop new molecules for the treatment of protein misfolding diseases. One promising candidate, IFB-088, already in preclinical development, targets the so-called "orphan" neurodegenerative diseases. The company aims to demonstrate clinical efficacy in humans in order to partner with a pharmaceutical company for its subsequent development and commercialization. In parallel, the company continues the development of new chemical series for the treatment of non-orphan diseases whose etiology also lies in the accumulation of misfolded proteins.

Based in Nantes in the west of France, InFlectis BioScience is supported by **Atlanpole** ([www.atlanpole.com](http://www.atlanpole.com)), the Science and Technology Park of Nantes Atlantique economical area.

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#### **The UK Medical Research Council** ([www.mrc.ac.uk](http://www.mrc.ac.uk))

The Medical Research Council has been at the forefront of scientific discovery to improve human health. Founded in 1913 to tackle tuberculosis, the MRC now invests taxpayers' money in some of the best medical research in the world across every area of health. Thirty MRC-funded researchers have won Nobel prizes in a wide range of disciplines, and MRC scientists have been behind such diverse discoveries as vitamins, the structure of DNA and the link between smoking and cancer, as well as achievements such as pioneering the use of randomised controlled trials, the invention of MRI scanning, and the development of a group of antibodies used in the making of some of the most successful drugs ever developed. Today, MRC-funded scientists tackle some of the greatest health problems facing humanity in the 21st century, from the rising tide of chronic diseases associated with ageing to the threats posed by rapidly mutating micro-organisms. [www.mrc.ac.uk](http://www.mrc.ac.uk)

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#### **GO Capital** ([www.gocapital.fr](http://www.gocapital.fr))

GO CAPITAL is a venture capital firm managing more than €100 million, mainly invested in highly innovative technology companies in the west of France. The GO CAPITAL investment in InFlectis BioScience was made with the support of the French State-owned seed Fund (Fonds National d'Amorçage, FNA), managed by bpifrance's Future Investments Programme, the European Investment Fund, the regions of Brittany, Pays de la Loire and Normandy, and banking partners Crédit Mutuel Arkea and Crédit Agricole.

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#### **Participations Besançon:**

Participations Besançon is a family company headed by Mr. and Mrs. Pierre Besançon, head-quartered in Paris, France. Its primary investments are in listed and unlisted French pharmaceutical and biotech companies.

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