



<p><b>Finance</b></p> <ul style="list-style-type: none"> <li>• Strategic collaboration agreement with Janssen Pharmaceuticals, Inc., one of the Janssen Pharmaceutical Companies of Johnson &amp; Johnson</li> <li>• Further shareholder funds used for back up plans and overheads.</li> </ul>	<p><b>CEO</b> Dr Catherine Beech OBE <a href="mailto:Catherine.Beech@exonate.com">Catherine.Beech@exonate.com</a></p> <p><b>CSO</b> Professor David Bates <a href="mailto:David.Bates@exonate.com">David.Bates@exonate.com</a></p>	<p><b>CAB</b></p> <ul style="list-style-type: none"> <li>• Professor Lloyd Paul Aiello</li> <li>• Professor Peter Campochiaro</li> <li>• Professor Usha Chakravarthy</li> <li>• Professor Robyn Guymer</li> </ul>
<p><b>Board Members</b></p> <ul style="list-style-type: none"> <li>• Chairman - Sunil Shah</li> <li>• CSO - Professor David Bates</li> <li>• CEO - Dr Catherine Beech OBE</li> <li>• Medical Director - Professor Steven Harper</li> <li>• Dr Chris Torrance – CEO – Phoremest Ltd</li> <li>• Dr John Kurek – Uniseed</li> <li>• Dr Andrew Naylor – University of Nottingham</li> </ul>	 <p>Quick Facts</p>	<p><b>Key Investors</b></p> <ul style="list-style-type: none"> <li>• Janssen and J&amp;J innovation</li> <li>• Angel Co fund</li> <li>• University of Nottingham</li> <li>• O2h</li> <li>• Uniseed</li> <li>• Cambridge Angels</li> <li>• Parkwalk</li> <li>• IP Group PLC</li> <li>• Wren Capital</li> <li>• Martlet</li> <li>• Angel Investors</li> </ul>

## Contacts

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## Exonate Company Profile

Location	Headquarters Cambridge
R&D Focus	mRNA targeted therapies
Disease area	Ophthalmology – wet Age-related Macular Degeneration and Diabetic Macular Oedema
Founding date	December 2013
Founders	Dr Catherine Beech, Prof David Bates, Prof Lucy Donaldson, Prof Steven Harper
No of employees	17
Financing to date (amount)	£2.6 million equity financing; £4.9 million Wellcome Trust Seeding Drug Discovery Investment
Investors	Janssen, Wellcome Trust, Angel Co fund, University of Nottingham O2h, Uniseed, Cambridge Angels, Parkwalk, IP Group PLC, Wren Capital, Martlet, Angel Investors

## About Exonate:

Exonate's mission is to profoundly improve the treatment of patients with retinal vascular diseases and transform the lives of those suffering from vision loss. We aim to introduce a revolutionary, game-changing Eye Drop for the treatment of retinal vascular diseases including Diabetic Macular Oedema (DME) and wet Age-Related Macular Degeneration (wAMD).

Exonate is an early stage biotechnology company with global reach. We have a strong, well-funded business, supported by a highly-respected Clinical and Scientific Advisory Board, Blue-chip investors and extremely experienced, international management team. Our strength is scientific expertise with cross-disciplinary experience in medicine and drug development, alongside a track record of raising capital for early stage companies. Exonate have developed small molecules that inhibit production of pro-angiogenic VEGF through selective inhibition of serine/threonine-protein kinase 1 (SRPK1)-mediated VEGF splicing. These inhibitors have already demonstrated superior efficacy as topical agents in preclinical models of wet AMD. The Company is founded on scientific excellence with strong links to Professor David Bates and his lab at Nottingham University specialising in the biology and biochemical pathways of VEGF splice variants.

Through a Wellcome Trust funded project, Exonate will complete an optimisation programme to nominate a pre-clinical candidate drug with optimal characteristics ahead of regulatory toxicology and safety pharmacology studies which will support an application to the regulatory authorities for clinical evaluation. Exonate expects to reach this milestone and enter the clinic in early 2020.

### About Diabetic Macular Oedema (DME)\*:

DME is the build-up of fluid (oedema) in a region of the retina called the macula. The macula is important for the sharp, straight-ahead vision that is used for reading, recognising faces, and driving. DME is the most common cause of vision loss among people with diabetic retinopathy. About half of all people with diabetic retinopathy will develop DME and although it is more likely to occur as diabetic retinopathy worsens, DME can happen at any stage of the disease.

### About wet Age-Related Macular Degeneration (wAMD):

Today, wAMD is a leading cause of vision loss in people aged 60 years or older and affects more than 30 million patients worldwide, over 200,000 of those in the UK alone. If untreated patients are likely to lose sight in the affected eye within 24 months of disease onset.

The current standard-of-care treatment options for DME and wAMD are:

- anti-VEGF antibody drugs – to prevent the growth of new blood vessels in the eye. Unlike small molecule drugs or eye drops, these treatments must be injected into the eye once every 1-2 months. Resistance can develop to these drugs causing the disease to progress anew.
- laser surgery – to destroy abnormal blood vessels in the eye. This type of surgery is only suitable if blood vessel damage is not too extensive and if the abnormal blood vessels aren't close to the fovea, as performing surgery close to this part of the eye can cause permanent vision loss.
- With DME, Corticosteroids either injected or implanted into the eye, may be used alone or in combination with other drugs or laser surgery to treat DME.

\*source: <https://nei.nih.gov/health/diabetic/retinopathy>

## Exonate's Science

The Company specialises in the discovery and development of innovative medicines that alter mRNA splicing in areas of unmet medical need. The focus of work is on diseases that have the formation of new blood vessels as a significant contribution to the disease process such as wet Age Related Macular Degeneration (wet AMD) and Diabetic Macular Oedema (DME).

Vascular Endothelial Growth Factor (VEGF) is a protein that exists in the body and as its name suggests promotes the formation of new blood vessels in a process known as angiogenesis. In some diseases, this process gets out of balance and new blood vessels proliferate. These vessels are generally not properly formed and tend to leak and cause oedema in surrounding tissues. In wet AMD, it is these blood vessels that cause the loss of vision through swelling of the retina at the back of the eye.

However, in a healthy state, the body has a method of controlling this VEGF-mediated new blood vessel growth. VEGF exists in two isoforms, one which causes new vessels to grow and the other which switches the formation process off. Professor Bates' work demonstrated that it is possible to switch the balance of these two isoforms so that the anti-angiogenic form is increased and new blood vessel growth is inhibited. This is done by inhibiting a kinase called SRPK1. This is a novel drug target that has not been identified previously.

The company has been working to produce compounds which are small molecules and therefore can penetrate to the back of the eye, reach the retina and stop blood vessel growth. We have a clear understanding of the physio-chemical properties of a compound that penetrates the eye and one that does not, which has enabled us to rationally design compounds with increasing potency and permeability.

Exonate has generated compelling data demonstrating in-vivo efficacy in a rodent choroidal neo-vascular (CNV) model and compound penetration to the back of an in-vivo rabbit eye. The Company has developed expertise in predicting the physio-chemical properties of its compounds that will facilitate permeability through the back of the eye in an ex vivo eye model.

Exonate is seeking to develop a treatment for wAMD that not only decreases the treatment burden for patients i.e. eliminates the requirement for monthly injections but also improves the outcome for patients in terms of the length of time that their vision is preserved for and for some patients actually improves.

## Catherine Beech MB,ChB,OBE - Personal Biography

Catherine is a serial entrepreneur with experience in founding, growing and investing in early stage life science companies. She was a co-founder of The Cambridge Gateway Fund and a non-executive director of Regenerative Medicine, Medtech, Biotech and Digital health companies.

Catherine gained a degree in medicine and then worked in multinational pharmaceutical companies in the USA and as European Medical Director.

Catherine is currently the CEO of Exonate a UK/Australian biotechnology company which aims to develop a revolutionary, game-changing eye drop for the treatment of retinal vascular diseases.

Catherine was a member of the UK Government's Technology Strategy Board, Chair of the UK BioIndustry Association's Fledgling Company Committee, Chair of Women in Technology, an industry adviser to the UK Governments Department of Business and Regulatory Reform Bioscience group and a member of the Eastern Region Biotechnology Initiative steering group.

In 2008 Catherine was awarded the OBE in the Queen's Birthday Honours for Services to Technology and Innovation.

## Professor David Bates PhD, F.Physiol. FRSB - Personal Biography

Dave has extensive expertise in angiogenesis and the regulation of pre-mRNA splicing. He received his PhD in Physiology from the University of London in 1992 and has been working on VEGF regulation of physiological function since 1994.

In 2001 he established the Microvascular Research Laboratories within the School of Veterinary Sciences at the University of Bristol. In the same year, he discovered the anti-angiogenic class of VEGF splice variants, VEGF-A<sub>xxx</sub>b, and has published almost one half of the total publications on VEGF-A<sub>165</sub>b in the scientific literature. Dave was appointed Professor of Microvascular Biology and Medicine in the Department of Physiology and Pharmacology in Bristol in 2007, the year he identified how VEGF splicing was regulated. He now investigates the therapeutic potential of VEGF-splice variants and their control in eye disease, cancer, diabetes, pregnancy, lung and kidney disease.

He is the lead inventor of the patents on regulation of splicing and therapeutic use of this mechanism and 9 other patents including composition of matter patents on splicing regulatory molecules (SPHINXes) and that describe VEGF<sub>165</sub>b as a therapeutic.

In 2013 he was appointed Professor of Oncology and Head of Division of Preclinical Oncology at the University of Nottingham where he has re-established and extended the laboratory expertise from Bristol and added numerous cancer models to the armoury of research approaches that he has pioneered.