

APC Microbiome Institute at University College Cork announces €4.8m Autism Spectrum Disorder research alliance with 4D pharma plc

Collaborative Project to explore microbiome-based therapies for Autism Spectrum Disorder

The APC Microbiome Institute (APC) at University College Cork is pleased to announce that it has signed an agreement with 4D pharma plc, a UK-based pharmaceutical company focusing on the development of live biotherapeutics, to collaborate on a €4.8 million four-year project that will focus on the discovery and development of live biotherapeutics for Autism Spectrum Disorder and associated CNS Disorders ('ASD'). The programme, which will create and support several hi-tech jobs in Cork, will focus on strains identified as potentially therapeutically relevant by the Company's proprietary MicroRx platform. The prevalence of ASD is estimated to be around 1 in 70 children with reported cases steadily increasing since the 1960's attributed to improved societal awareness and diagnosis. Although the genetic basis of a minority of cases is known, the disease pathways and mechanisms are poorly understood, presenting a significant challenge to drug discovery.

Current pharmaceutical treatment options focus on managing the abnormal behaviour associated with autism. More than 50% of children in the US diagnosed with ASD are prescribed psychoactive drugs or anticonvulsants, with the most common drug types being antipsychotics, stimulants and antidepressants. There are currently only two FDA approved drugs for the treatment of ASD. Both of these treatments are antipsychotics originally approved for other neurological indications both have significant side effect profiles and both only address non-core symptoms such as irritability. The ASD therapeutics market was worth \$1.44 billion in 2012, with the US accounting for 98% of the market.

"The collaboration brings together the world leading research at the APC on the effects of the microbiome on cognitive function with our proprietary Micro Rx platform to target ASD. There is a high unmet medical need for safe and efficacious therapies which treat the core symptoms of ASD." Duncan Peyton, 4D's Chief Executive Officer commented. "Over the last 18 months we have been able to show the importance of live biotherapeutics as potential treatments for diseases such as arthritis, multiple sclerosis and asthma. Using our proprietary Micro Rx platform this work has led to rapid identification of candidates that are now undergoing a development programme prior to human trials. We believe the collaboration with the APC will further the understanding and treatment of diseases such as ASD with live biotherapeutics and reinforce the emergence of this new therapeutic class."

The project will be led at the APC Microbiome Institute by Professors John Cryan and Ted Dinan, whose research on the brain-gut-microbiota axis has far reaching public health implications. The APC was formed over a decade ago, is supported by funding from Science Foundation Ireland (SFI) and national and global partner companies in the food and medical areas.

"The APC has a long history in understanding how the microbiome influences human health, and exploring the brain-gut-microbiota relationship " said Fergus Shanahan, M.D., Director of the APC Microbiome Institute and Professor of Medicine at UCC. "4D's MicroRx platform together with the company's commercial acumen and track record in progressing live biotherapeutics towards the market represents an ideal partnership opportunity for the APC. This collaboration will allow our teams to work together to bring new, badly-needed treatment approaches for people with ASD."

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About the APC Microbiome Institute

The APC (<http://apc.ucc.ie>) formed over a decade ago, is a partnership between UCC and Teagasc, the agriculture and food development authority of Ireland, with more than 170 scientists and clinicians working on the human microbiome - the vast collection of microbes living in and on the human body which is now known to play an important role in human health. The microbiome is not only a target for diagnosis, treatment and prevention of disease, it is a repository for functional food ingredients, new drugs and biomarkers of disease. Over the past decade APC scientists have related food and microbial diversity with health, have discovered new anti-microbials and anti-inflammatories, and developed templates for future foods. The APC is funded by Science Foundation Ireland (SFI) and by funding from national and global partner companies.

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