

## Drug For Treatment of Multiple Sclerosis Approved



A transformational new treatment for multiple sclerosis (MS) has been approved by the EU agency responsible for regulating new drugs. This is the result of over three decades of research in Cambridge.

The European Medicines Agency (EMA) has approved the drug Alemtuzumab, to be known by the brand name Lemtrada and previously called Campath-1H (for 'Cambridge Pathology 1st Human'), for the treatment of MS.

Multiple sclerosis is an autoimmune disease in which the body's immune system mistakenly attacks nerve fibres and their protective insulation, the myelin sheath, in the brain and spinal cord. The resulting damage prevents the nerves from 'firing' properly and ultimately leads to their destruction, resulting in physical and cognitive disabilities.

Alemtuzumab reboots the immune system by first depleting a key class of immune cells, called lymphocytes. The system then repopulates, leading to a modified immune response that no longer regards myelin and nerves as foreign. But in so doing, roughly one third of MS patients develop another autoimmune disease after Alemtuzumab, mainly targeting the thyroid gland and more rarely other tissues especially blood platelets.

Dr Coles' research team is investigating how to identify people who are susceptible to this side-effect. Furthermore, they are testing whether this side-effect can be prevented, using an additional drug which boosts repopulation of the immune system, in a trial funded by the Moulton Charitable Trust and the Medical Research Council.

Dr Coles, from the Department of Clinical Neurosciences, said: "Alemtuzumab offers people with early multiple sclerosis the likelihood of many years free from worsening disability, at the cost of infrequent treatment courses and regular monitoring for treatable side-effects."

"We are very pleased and proud of this outcome," said Professor Herman Waldmann, who moved to Oxford University with his team in 1994 to work on the manufacture of Campath-1H, to understand its mode of action, and to apply the drug in a number of disease areas. "In particular, we have great admiration for the neurology team in Cambridge with whom we have worked on this project for so many years. Their commitment and focus has been exemplary, and this has been a good example of basic and clinical science collaboration at its best."

Multiple sclerosis affects almost 100,000 people in the UK, 400,000 in the US and several million worldwide. Symptoms of the disease can include loss of physical skills, sensation, vision, bladder control, and intellectual abilities.

Although approved for use in EU, the drug has not yet been assessed by the National Institute for Health and Care Excellence (NICE) for the treatment of MS in the UK.

In recognition of the new treatment, the University of Cambridge has produced a [video](#) which explores the history of the drug, showing the many challenges as well as successes experienced during the course of this development.

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