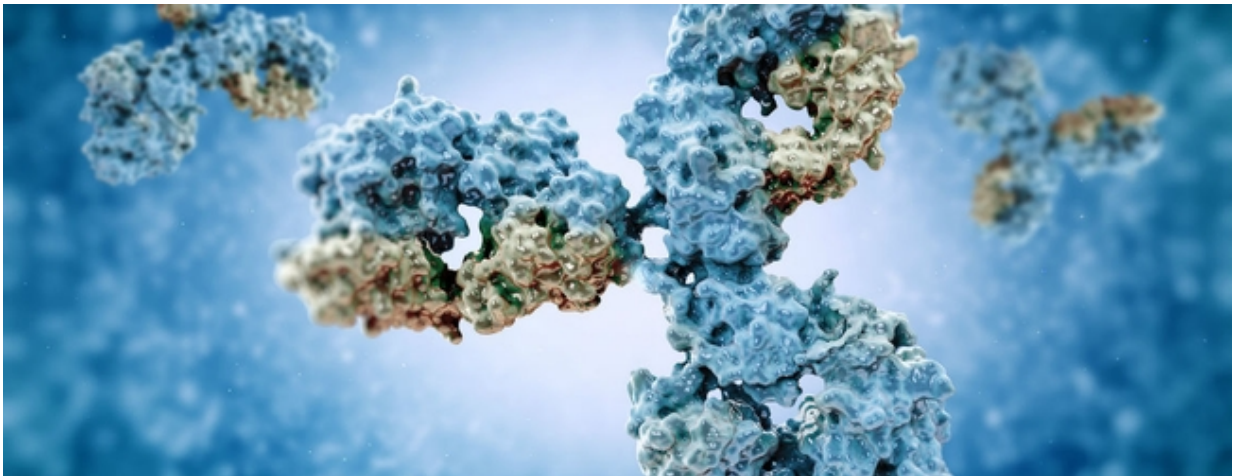


Research supports targeting enzyme group to treat autoimmune diseases

August 12 2016



Credit: Medical Research Council

New research from the University of Dundee, and funded by Arthritis Research UK and the MRC, has shown that targeting a specific group of enzymes could be a viable strategy for treating autoimmune diseases such as psoriasis and multiple sclerosis, which affect millions of people.

Autoimmune diseases develop when the immune system, which defends the body against disease, is convinced that our healthy cells are foreign. As a result, the immune system then attacks the healthy cells.

Researchers led by Dr Simon Arthur in the School of Life Sciences at

Dundee examined the way that a drug called dimethylfumarate (DMF), which is licensed in the UK as Tecfidera, works. DMF is primarily used to treat [multiple sclerosis](#) but has also been shown to be an effective treatment for psoriasis, both of which are [autoimmune diseases](#).

The team found that DMF is effective because it blocks the action of a particular group of enzymes called E2s, some of which are active in inducing inflammation.

"This is significant because previously the pharmaceutical industry has been sceptical about the viability of targeting these enzymes as a means of treating diseases," said Dr Vicky McGuire, lead author on the study.

"We have found that DMF is actually already targeting these enzymes with very positive results. This follows on from previous research from the University's School of Life Sciences that showed that another drug, BAY 11-7082 also works by inhibiting E2 enzymes. However, unlike BAY 11-7082, DMF is approved for clinical use."

Dr Arthur added, "This suggests that more selective inhibitors of E2's may be well tolerated and validates these enzymes as targets for future drug development."

Dr Stephen Simpson, director of research and programmes at the charity Arthritis Research UK, said he was excited by the results of the study they cofounded.

"Autoimmune conditions such as rheumatoid arthritis, lupus and [psoriatic arthritis](#) can have a devastating impact on people's lives, causing extreme pain and fatigue that can make even everyday tasks incredibly difficult," he said. "We welcome this research in helping identify pathways in these types of conditions that may offer targets for

new and effective treatment"

The results of the research are published in Nature's *Scientific Reports*.

Provided by Medical Research Council

Citation: Research supports targeting enzyme group to treat autoimmune diseases (2016, August 12) retrieved 10 April 2024 from <https://medicalxpress.com/news/2016-08-enzyme-group-autoimmune-diseases.html>

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