Researchers uncover critical metabolic switch for inflammatory diseases

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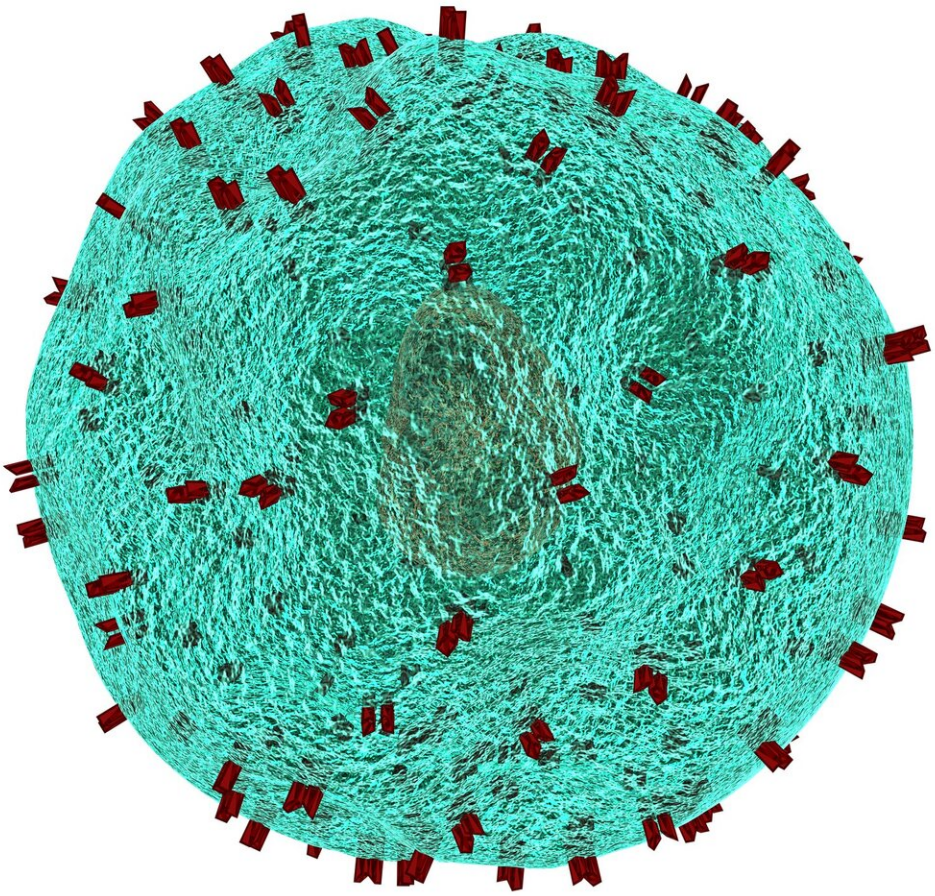

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A research team in Trinity College Dublin has uncovered a critical role for a protein called 'PKM2' in the regulation of immune cell types at the heart of multiple inflammatory diseases.

The work identifies PKM2 as a potential therapeutic target for treating a host of diseases mediated by over-active immune cells, such as psoriasis and multiple sclerosis. The findings are reported today in the world's leading metabolism journal *Cell Metabolism*—with the chief discovery being that PKM2 is a central 'on' switch for these cells.

Lead author Stefano Angiari, working with a team led by Luke O'Neill, Professor of Biochemistry in the School of Biochemistry and Immunology in the Trinity Biomedical Sciences Institute, has been exploring the role of PKM2 in the regulation of two cell types called 'Th17' and 'Th1' cells.

Dr. Stefano Angiari, Trinity, said: "Th17 and Th1 cells are very important for the damage that happens in autoimmune diseases such as psoriasis and multiple sclerosis. We have found that interfering with PKM2 blocks these cells and limits inflammation."

Professor Luke O'Neill added: "PKM2 is a fascinating protein that has a role in how cells use glucose for energy, but it also moonlights in the immune system, where we have found it can be especially troublesome. We are currently exploring it as a new target for therapies that might work in patients with diseases like psoriasis and multiple sclerosis, where treatment options are limited."

More information: Stefano Angiari et al, Pharmacological Activation

of Pyruvate Kinase M2 Inhibits CD4+ T Cell Pathogenicity and Suppresses Autoimmunity, *Cell Metabolism* (2019). DOI: 10.1016/j.cmet.2019.10.015