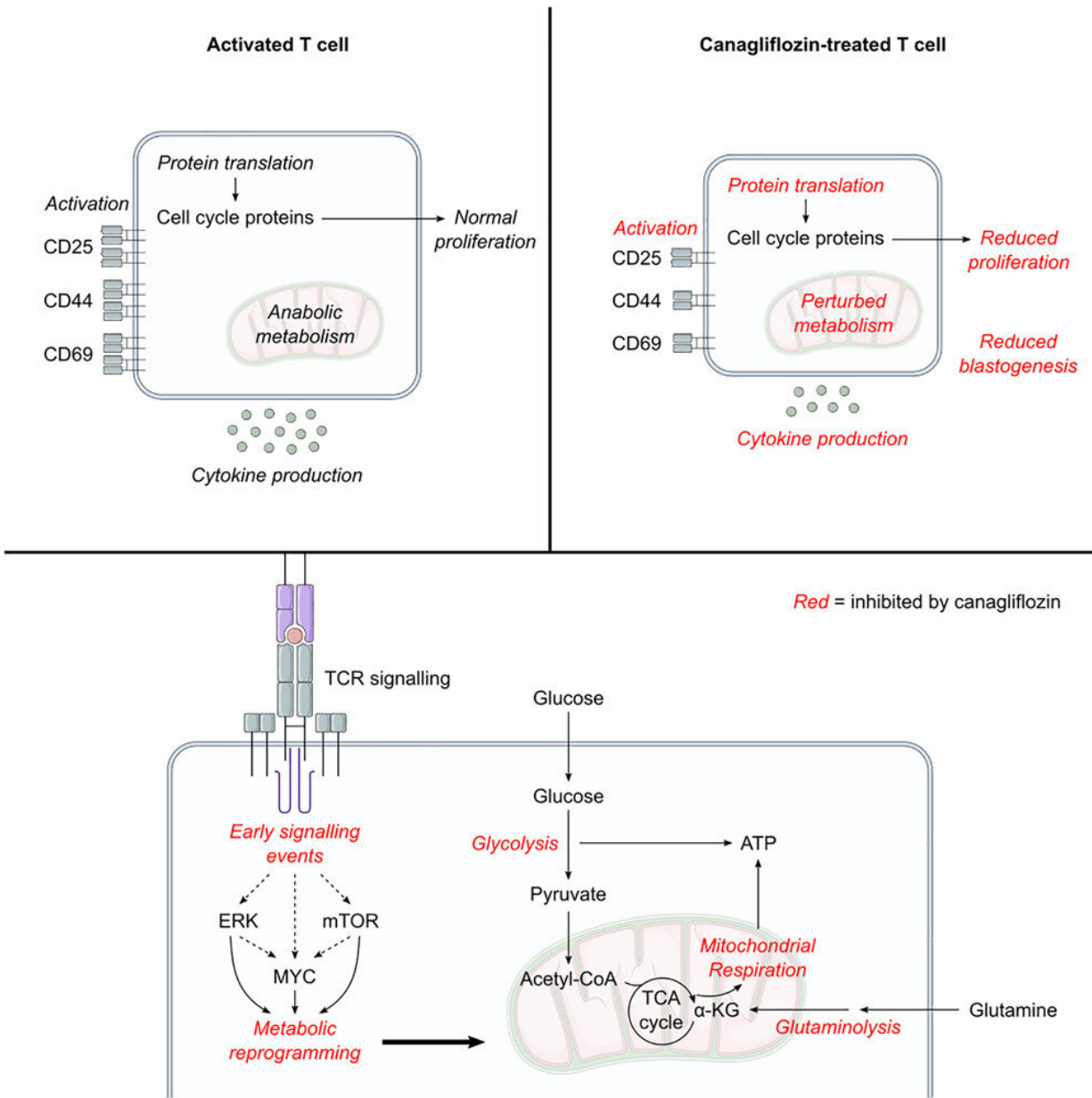


New study: Type 2 diabetes drug could treat autoimmune disorders

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Graphical abstract. Credit: *Cell Metabolism* (2023). DOI: 10.1016/j.cmet.2023.05.001

Swansea University researchers have found that a drug commonly used to treat type 2 diabetes can potentially be used in the treatment of autoimmune disorders.

Academics at the University's Faculty of Medicine, Health and Life Science have found that the drug, canagliflozin (also known as Invokana), could be used to treat [autoimmune disorders](#) such as [rheumatoid arthritis](#) and [systemic lupus erythematosus](#) as it targets T-cells, which form an essential component of the immune system. Canagliflozin is a drug that controls [blood sugar levels](#) in people with type 2 diabetes, however researchers have found an unexpected role for the drug involving the human immune system.

Existing research has reported that targeting T-cell metabolism in autoimmunity can lead to therapeutic benefits. T-cells are a type of white blood cell that help the body fight infections and diseases, but in autoimmune diseases they have been observed to attack healthy tissues.

The new study, published in the journal *Cell Metabolism*, found that canagliflozin dampens T-cell activation, suggesting that the drug could be repurposed as a treatment for T-cell driven autoimmunity.

Dr. Nick Jones, senior author who led the study said, "Our findings are significant as they provide the foundation for the clinical development of canagliflozin for the treatment of certain autoimmune diseases. As the drug is already widely used and has a known safety profile in humans, it could potentially reach clinic quicker than any new drugs developed and bring valuable benefits more swiftly to patients with autoimmune

disorders."

Ben Jenkins, first author and postdoctoral researcher at Swansea said, "Identifying new roles for drugs that are currently being used in other disease settings is an exciting area of research. Given that our research primarily targets the metabolism of immune cells, we hope that the potential therapeutic benefits of our findings are applicable to a wide range of conditions."

The researchers are hopeful that canagliflozin will enter a clinical trial to treat certain autoimmune disorders in the future.

More information: Benjamin J. Jenkins et al, Canagliflozin impairs T cell effector function via metabolic suppression in autoimmunity, *Cell Metabolism* (2023). [DOI: 10.1016/j.cmet.2023.05.001](https://doi.org/10.1016/j.cmet.2023.05.001)

Provided by Swansea University

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