Designing safer glucocorticoid drugs

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Glucocorticoid drugs are used widely to treat numerous conditions, including rheumatoid arthritis, allergic reactions, asthma, and some forms of cancer, and transplant recipients.

The beneficial effects of these drugs are their potent antiinflammatory and immunosuppressive properties. However, their long-term use is limited by severe side effects, including high blood levels of glucose, fatty liver, and type 2 diabetes.

A team of researchers, led by Carolyn Cummins, at the University of Toronto, Ontario, has now shown that the protein LXR-beta is required in mice for glucocorticoid drugs to elicit many of their negative side effects.

Importantly, although mice lacking LXR-beta did not develop high levels of blood glucose or fatty liver when administered a glucocorticoid drug, they did show all the signs of immunosuppression.

The authors therefore suggest that glucocorticoid drugs designed to selectively target the glucocorticoid receptor and not LXR-beta should be safer than those currently in clinical use.

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