

6-Gingerol May Protect Against Autoimmune Disease

A study has found 6-gingerol, is therapeutic in countering the mechanism that fuels certain autoimmune diseases in mice. VulcanChem.

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/EINPresswire.com/ -- In a [study](#) published in the journal JCI Insight, [6-gingerol](#), the most abundant bioactive compound of ginger root, lowered autoantibody production and helped halt disease progression in mice models of lupus and antiphospholipid syndrome.



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Ginger has long been perceived to have anti-inflammatory and anti-oxidative properties and has been used traditionally as an herbal medicine for the treatment of many ailments including chronic conditions such as asthma and arthritis. The health-promoting properties of ginger have been attributed to its richness in phenolic phytochemicals (21) such as gingerols and shogaols. Of these bioactive compounds, 6-gingerol is the most abundant in fresh ginger, with concentrations up to 2,100 µg per gram.

Previous studies have shown whole ginger extract can [inhibit](#) IL-12, TNF- α , IL-1 β , RANTES, and MCP-1 production by lipopolysaccharide (LPS)-stimulated macrophages. Similar effects can be achieved using 6-gingerol alone, which also extend to human synoviocytes and chondrocytes. In vivo, 6-gingerol blocks activation of NF- κ B in phorbol ester-stimulated mouse skin and suppresses the inflammatory response to carrageenan-induced paw edema in rats. In addition, an in silico study identified three candidates (including 6-gingerol) from ginger as potential PDE4 inhibitors capable of inhibiting cAMP binding and hydrolysis by PDE4.

In this study, Dr. Ramadan Ali and colleagues from the University of Michigan looked at lupus, a disease which attacks the body's own immune system, and its often associated condition antiphospholipid syndrome, which causes blood clots, since both cause widespread inflammation and damage organs over time. In mice with either antiphospholipid syndrome or lupus, the team found that 6-gingerol prevented neutrophil extracellular trap (NET) release, which is triggered by the autoantibodies that these diseases produce. The study results also

suggest a potential mechanism by which gingerols mitigate NETosis, namely by suppressing ROS formation. In addition, 6-gingerol reduced PDE activity by 40%, as compared to a 50% reduction by the synthetic PDE4 inhibitor rolipram.

Although the study was done in mouse models, Ali the team thinks the preclinical data, showing that 6-gingerol has anti-neutrophil properties that may protect against autoimmune disease progression, encourages clinical trial development. The bioactive compound can't be the primary therapy for someone with active antiphospholipid syndrome or lupus, but the team is interested to see if the natural supplement may help those at high risk for disease development.

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