New preprints: 9 preclinical studies point to Lithium Ascorbate as a promising alternative to lithium-based support

Lithium has helped with mood for decades, but comes with risks. Lithium Ascorbate is a gentler safer alternative chosen by AI from 1,245 options

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>
> *Olga Gromova, M.D. Chief Scientific Officer for Normotim*

PREPRINT NOTICE. These manuscripts are publicly available on Zenodo and have not undergone formal journal peer review. All reported findings are preclinical and should not be used to guide treatment, dosing, or substitution of prescribed lithium medication.

Why Is Lithium Important?

Lithium has been used for decades in psychiatry, particularly in the treatment of bipolar disorder and major depression. More than that, a recent paper published in Nature showed that lithium has the potential to reverse neurodegenerative effects.

However, conventional lithium treatment is limited by a narrow therapeutic range, concerns about kidney and thyroid side effects, and the need for regular blood testing. These challenges have encouraged researchers to investigate alternative lithium compounds that may be effective at lower doses.

It is an organic compound formed from lithium and ascorbic acid (vitamin C). The papers present results from preclinical animal studies funded by Normopharm.

What Is Lithium Ascorbate?

In AI-modeling, lithium ascorbate stood out from 1,245 possible organic lithium salts for its ability to inhibit key enzymes and receptors involved in brain health. It was particularly good at

blocking the GSK-3β enzyme.

“One key target is glycogen synthase kinase-3 (GSK-3), an enzyme involved in metabolism and brain signaling. This enzyme influences glucose metabolism, brain function, and neurotransmitters such as serotonin and noradrenaline.”
Olga Gromova, M.D.
Chief Scientific Officer for Normotim

Further studies confirmed that lithium ascorbate has antidepressant, anti-anxiety, and neurogenerational properties.

The Studies

The first paper, “Toxicity and Pharmacokinetics of Lithium Ascorbate,” examines how the body processes lithium ascorbate and what dosages are safe.

Analysis showed rapid absorption, broad tissue distribution, and prolonged lithium retention in blood and frontal brain tissue.

The second paper, “Pharmacological Safety of Lithium Ascorbate,” evaluates the effects on the cardiovascular, respiratory, and central nervous systems, as well as its potential to cause any allergic or reproductive-organ effects.

Overall, lithium ascorbate demonstrated low-to-moderate preclinical toxicity and safety, supporting further studies.
All of the studies were conducted in accordance with Good Laboratory Practice, an international standardized quality system for non-clinical safety studies.

Do You Want to Learn More?

Download Preprints
Toxicity and Pharmacokinetics of Lithium Ascorbate doi.org/10.5281/zenodo.21127518
Pharmacological Safety of Lithium Ascorbate doi.org/10.5281/zenodo.21129955

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wikipedia.org/wiki/Lithium_ascorbate
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