

# Compound could become important new antidepressant

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Chemists at Oregon State University have discovered and synthesized a new compound that in laboratory and animal tests appears to be similar to, but may have advantages over one of the most important antidepressant medications in the world.

A patent has been applied for on the compound, and findings on it published in the [Journal of Medicinal Chemistry](#). Continued animal studies and eventually, human clinical trials will be necessary before the compound could be approved for human medical use, researchers say.

"Based on our results so far, this promises to be one of the most effective [antidepressants](#) yet developed," said James White, a professor emeritus of chemistry at OSU. "It may have efficacy similar to some important drugs being used now, but with fewer [side effects](#)."

Early antidepressants such as tricyclic antidepressants, White said, often had undesirable effects such as constipation, dry mouth, drowsiness and hypotension, or low [blood pressure](#). They worked by helping the body to raise levels of such neurotransmitter compounds as serotonin, norepinephrine, [dopamine](#) and others. A second generation of antidepressants, which included the drugs Prozac and Zoloft, were more selective and produced only minor side effects, but often took weeks to become effective and sometimes didn't help patients adequately.

"The prototype of the third-generation drug in this field is Cymbalta, which tries to better balance the inhibited re-uptake of serotonin and

norepinephrine, further reducing side effects and offering more immediate efficacy," White said. "It's been extremely popular."

The new compound developed at OSU, however, has properties similar to Cymbalta in some ways, but in laboratory and animal studies does a better job at balancing body chemistry.

"Our compound is 10 times better than Cymbalta at inhibiting the re-uptake of norepinephrine and comes close to the holy grail of a perfectly balanced antidepressant," White said. "It should produce even fewer side effects, such as concerns with constipation and hypotension. Final results, of course, won't be known until the completion of human clinical trials."

The OSU research has been supported by the National Institute of Alcoholism and Alcohol Abuse - an agency interested in improved antidepressants, White said, because they are often used in treatment of alcoholism. The work has been done in collaboration with the University of Indiana.

Provided by Oregon State University

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