

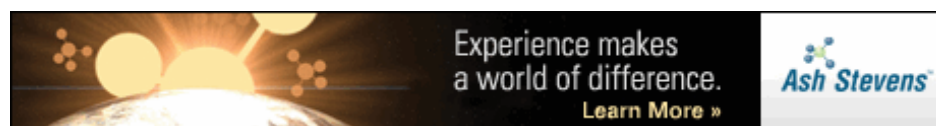
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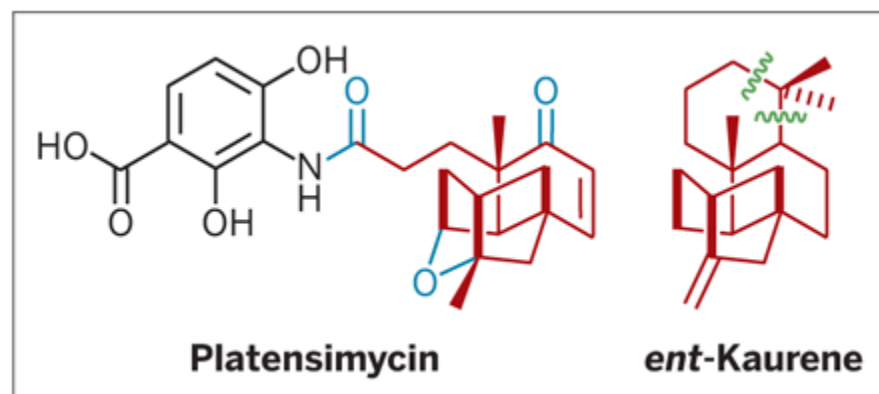
Volume 89, Number 33

p. 31

Natural Product Syntheses Analyzed

Mechanistic details could aid combinatorial efforts for drug discovery

[Stu Borman](#)



Researchers have figured out how the bacterial natural products platensimycin and platencin are biosynthesized by analyzing their biosynthetic gene clusters in detail. Platensimycin and platencin are fatty acid synthase inhibitors discovered in 2006 and 2007 by researchers at Merck & Co. They were initially identified as antibiotic agents, but platensimycin was later found to have potential for treating diabetes and related metabolic disorders as well. [Ben Shen](#) of Scripps Research Institute, in Jupiter, Fla., and coworkers have now analyzed the gene clusters bacteria use to biosynthesize the two compounds (*Proc. Natl. Acad. Sci. USA*, DOI: [10.1073/pnas.1106919108](#)). They find that platensimycin's gene cluster produces an *ent*-kaurene unit (red), whereas platencin's creates *ent*-atiserene. Two bonds are broken (green) in each of these compounds, and each is then added to a 3-amino-2,4-dihydroxybenzoic acid moiety (black) common to both natural products. The study could aid combinatorial biosynthesis efforts to produce analogs of platensimycin and platencin for drug discovery.

Chemical & Engineering News
ISSN 0009-2347