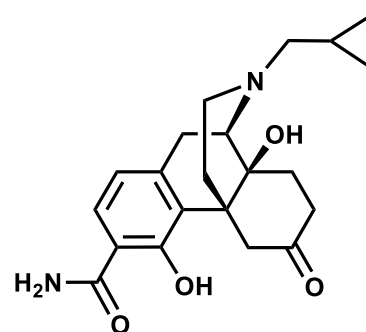


Samidorphan: Discovery of a critical component of FDA-approved LYBALVI.

Samidorphan was discovered at Rensselaer Polytechnic Institute in the laboratories of Professor Mark Wentland. Samidorphan, a new chemical entity, combined with olanzapine was approved by the US FDA on June 1, 2021 to treat schizophrenia and bipolar I disorder in adults. Named LYBALVI™ (aka, ALKS 3831), this combination drug was developed by the pharmaceutical company Alkermes plc ("Alkermes"). Olanzapine is an established antipsychotic agent that can cause significant weight gain. The role of samidorphan is to mitigate this olanzapine-associated weight gain.

[Samidorphan](#) emerged from an effort to identify orally available, long-acting modulators of opioid GPCRs as medications to treat opioid and cocaine use disorders in humans. Samidorphan is a high potency ($K_i = 0.052$ nM) mu opioid receptor antagonist that first appeared in the literature in [2005](#). A [2009](#) publication provided further details on the design, crystallography and structure-activity relationships of samidorphan. Alkermes licensed samidorphan from Rensselaer in 2006 and subsequently sponsored numerous clinical trials involving the drug. In a recent [publication](#), Alkermes described the human pharmacokinetic properties of samidorphan where they found the oral bioavailability and elimination half-life of the drug to be 69% and 7-8 h, respectively. The following press releases from Alkermes provides additional information:



Samidorphan

[Alkermes Announces FDA Approval of LYBALVI™ for the Treatment of Schizophrenia and Bipolar I Disorder](#)

[FDA Advisory Committee Votes in Support of ALKS 3831 for the Treatment of Schizophrenia and Bipolar I Disorder](#)

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