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A Concise Two-Step Synthesis of Thalidomide
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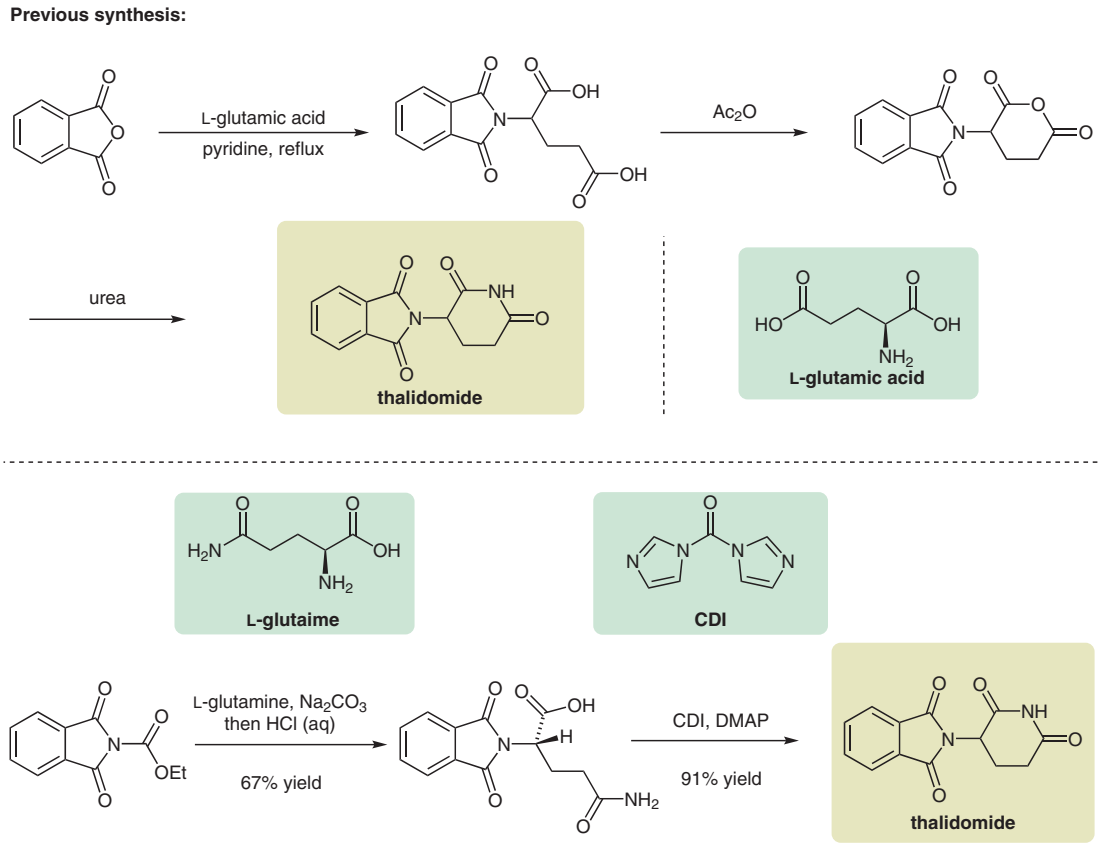
Concise and Scalable Synthesis of Thalidomide



Significance: Thalidomide is a widely used drug in clinics for its immunomodulating and anti-inflammatory properties. Previously, thalidomide was synthesized with three steps, but the last step is a high-temperature melt reaction to afford crude thalidomide that needs to be purified with multiple recrystallizations. The authors aim to develop a more efficient and convenient synthesis to aid further research into thalidomide's biological activities and mode of action.

Comment: The synthesis starts with readily available L-glutamine. Treatment of L-glutamine with Na_2CO_3 in water, followed by the addition of *N*-carbethoxyphthalimide yields a white solid that does not need purification. Thalidomide crystallizes out of the cyclization-reaction mixture during the reflux. Then thalidomide is filtered out as a white solid, generally of greater than 99% purity.

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