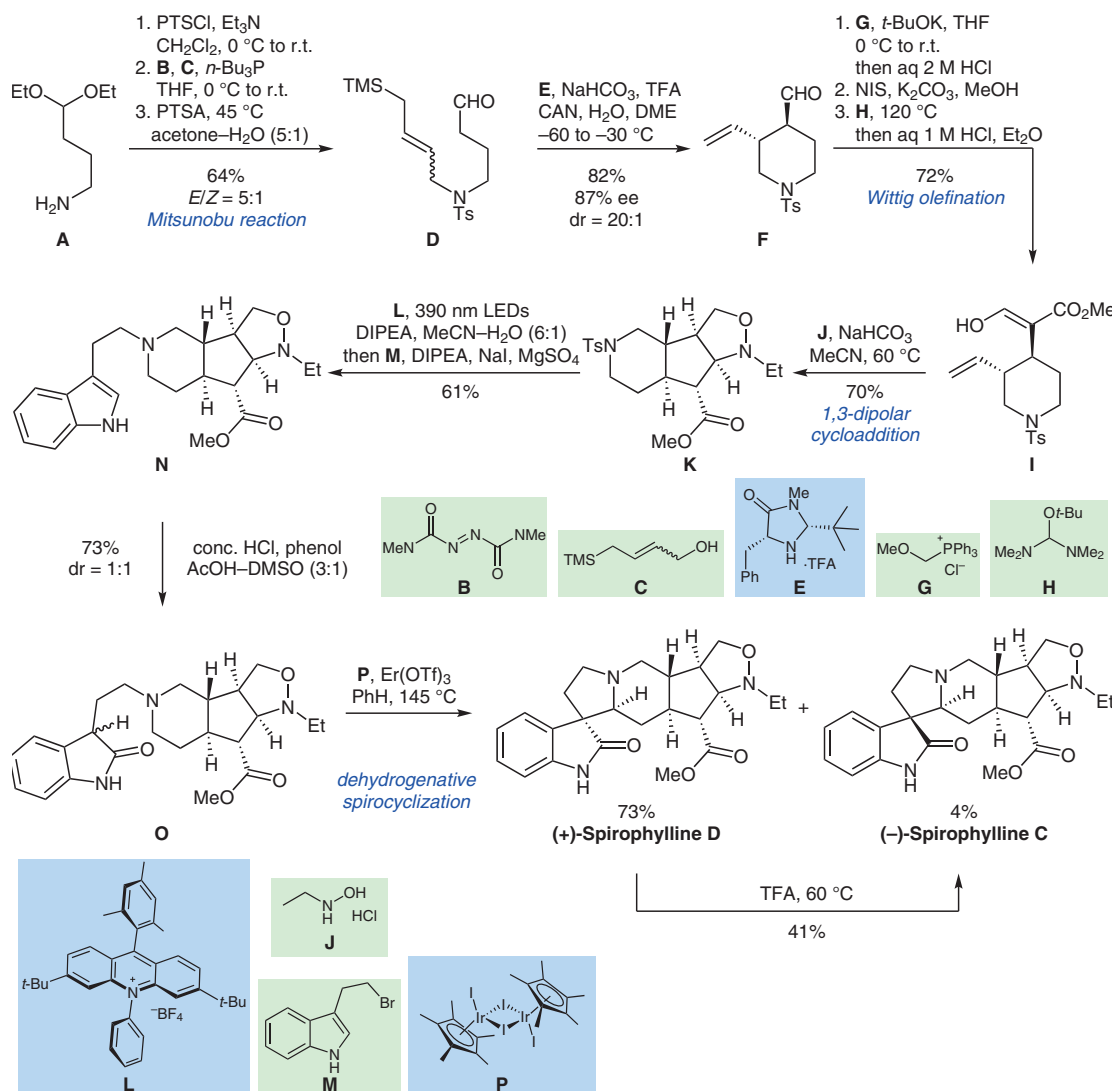


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Unified Strategy Enables the Collective Syntheses of Structurally Diverse Indole Alkaloids

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Total Synthesis of (–)-Spirophylline C and (+)-Spirophylline D



Significance: The authors present a unified approach towards the synthesis of structurally diverse indole alkaloids. Key to their synthetic endeavors is a dehydrogenative spirocyclization that enables access to overall 29 natural alkaloids belonging to different families.

Comment: The synthesis commences with the formation of aldehyde **D**. Optically active piperidine-carbaldehyde **F** is accessed by intramolecular α -allylation. Tricyclic intermediate **K** is assembled via 1,3-dipolar cycloaddition. Photocatalyzed desilylation, followed by the addition of tryptophyl bromide and subsequent oxidation, forms oxindole **O**. Dehydrogenative spirocyclization affords (+)-spirophylline **C** and (–)-spirophylline **D**.

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