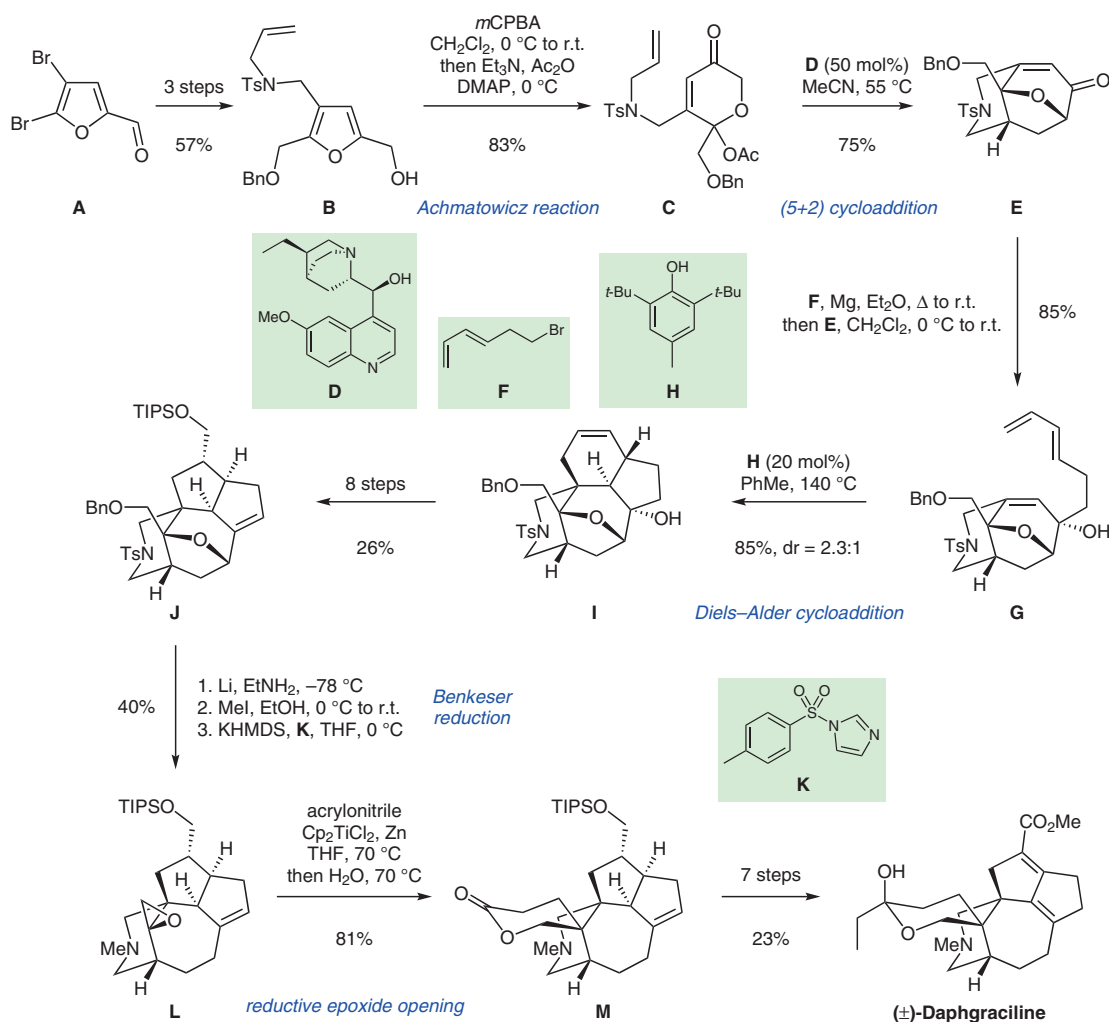


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 Total Synthesis of Yuzurine-type Alkaloid Daphgraciline  
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## Total Synthesis of (±)-Daphgraciline



**Significance:** Sun, Li, and co-workers present a synthesis of the *Daphniphyllum* alkaloid (±)-daphgraciline. Notably, this work constitutes the first total synthesis of a member of the yuzurine-type subfamily. The unique bridged azabicyclo[4.3.1]decane system combined with a spiro tetrahydropyran moiety presents a formidable challenge to total synthesis.

**Comment:** Achmatowicz reaction of furfuryl alcohol **B** furnished dihydropyran **C** which was used in a subsequent (5+2) cycloaddition to elaborate the characteristic azabicyclo[4.3.1]decane system of (±)-daphgraciline. After establishing the [6-7-5-5] ring system of intermediate **J**, Benkeser reduction cleaved the ether bridge and deprotected the tosyl amide. The free amine was methylated and the diol closed to epoxide **L**. A reductive epoxide opening–cyclization cascade forged the lactone in **M** and paved the way to (±)-daphgraciline.

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(±)-daphgraciline

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Achmatowicz reaction

(5+2) cycloaddition

Diels–Alder cycloaddition

Benkeser reduction

reductive epoxide opening

Synfact of the Month

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