P. WANG, Y. GAO, D. MA* (SHANGHAI INSTITUTE OF ORGANIC CHEMISTRY, P. R. OF CHINA)

Divergent Entry to Gelsedine-Type Alkaloids: Total Syntheses of (–)-Gelsedilam, (–)-Gelsenicine, (–)-Gelsedine, and (–)-Gelsemoxonine

J. Am. Chem. Soc. **2018**, *140*, 11608–11612.

Divergent Route to Gelsedine-Type Alkaloids

Significance: Gelsedine-type natural products have attracted considerable interest from the synthetic community owing to their interesting biological properties and complex architectures. Ma and co-workers have developed and executed an elegant synthetic route culminating in the preparation of four such alkaloids relying on an asymmetric Michael addition, tandem oxidation-aldol cyclization, and a pinacol rearrangement.

Comment: Indole derivative **B** and enone **E** underwent conjugate addition to furnish **F**. Oxidation and aldol cyclization resulted in the formation of key structure **G** in a single pot. Cationic rearrangement of **G** provided the oxabicyclo[3.2.2]nonane skeleton present in all targets. (–)-Gelsedilam was synthesized from **H** in four steps. (–)-Gelsemoxonine, (–)-gelsenicine, and (–)-gelsedine were accessed via ethyl ketone **J**.

SYNFACTS Contributors: Erick M. Carreira, Niels Sievertsen
Synfacts 2018, 14(12), 1217 Published online: 19.11.2018
DOI: 10.1055/s-0037-1611130; Reg-No.: C06318SF

2018 © THIEME STUTTGART • NEW YORK

Category

Synthesis of Natural Products and Potential Drugs

Key words

Gelsemium alkaloids

Michael addition

aldol cyclization

pinacol rearrangement

Synfact
of the month

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.