SYNTHETIC APPROACHES TO VELBANAMINE, VINDOLINE, VINCAMINE, AND EMETINE

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Synthetic approaches to the indole alkaloids, velbanamine, vindoline, and vincamine, and the isoquinoline alkaloid, emetine, are presented.

A formal synthesis of velbanamine and a completely new synthesis of emetine have been successfully accomplished by employing the same unit reaction, the cleavage of α-diketone monothioketal bonds, which also has brought about a total synthesis of eburnamine and eburnamenine though an approach to their carbomethoxylated compound, vincamine, has been unsuccessful.

Two novel approaches to the key intermediate of the Büchi vindoline synthesis have been developed by exploiting the properties of the Fischer base and the α-keto carbonium ion.