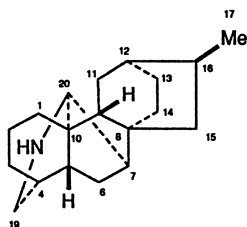


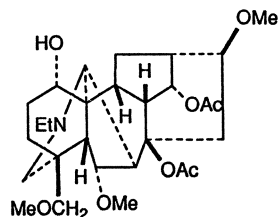
Denudatine (3-28)



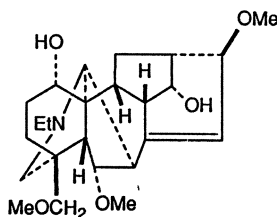
7,20-Cyclootidane (3-32)

3.2.3.4 *Aconitum nagarum* var. *heterotrichum* f. *dielsianum*

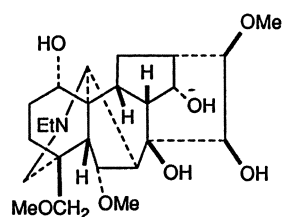
Mody et al. reported the isolation of two known alkaloids, aconitine and deoxyaconitine, and of a new alkaloid nagarine (3-33), from *A. nagarum* var. *heterotrichum*. They are used in Chinese folk medicine for treatment of rheumatic and neuralgic disorders [21]. The structure of nagarine was determined on the base of its ^{13}C NMR spectrum and was confirmed by a partial synthesis from delphisine (3-34) via pyroneoline (3-35). The structure of nagarine is unusual because it is the only C_{19} diterpene alkaloid in which the hydroxyl group at position C-15 exists in the β configuration.



Delphisine (3-34)



Pyroneoline (3-35)

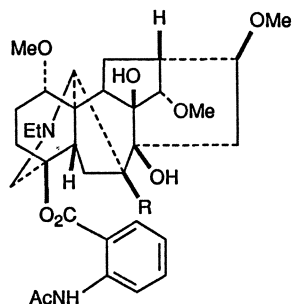


Nagarine (3-33)

Note that 10-hydroxymesaconitine, isolated from *A. nagarum* var. *lasiandrum*, has also been called nagarine [1].

3.2.3.5 *Aconitum sinomontanum*

Ranaconitine (3-36) and lappaconitine (3-37) are two known alkaloids isolated from *A. sinomontanum*. Both alkaloids are characterized by a methoxy group at C-14 and a hydroxyl group at C-4 that is esterified with *N*-acetylthranilic acid [22, 23].



Ranaconitine (3-36): R = OH
Lappaconitine (3-37): R = H