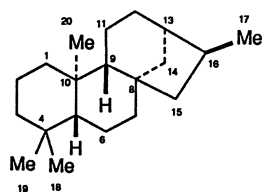
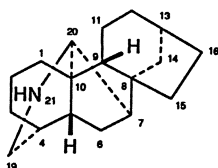


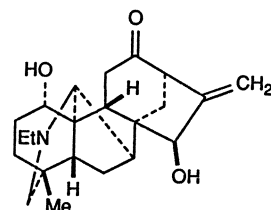
The second class contains a skeleton with a seven-membered ring, carbon atoms C-17 and C-19 being connected to an amine to form a heterocycle. The majority of aconite alkaloids have this ring system. The most important basic structure is aconitane (3-4), and the most important representative is aconitine (3-5).



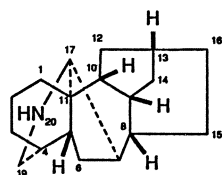
Kaurane (3-1)



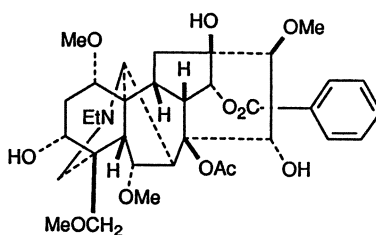
7,20-Cycloveatchane (3-2)



Songorine (3-3)



Aconitane (3-4)

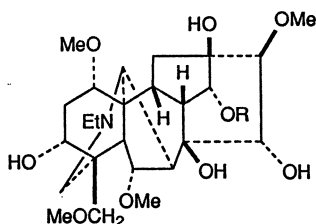


Aconitine (3-5)

3.2.1 Diterpene Alkaloids of *Aconitum carmichaeli*

Chen et al. were the first to study the chemical constituents of the roots and lateral roots of *A. carmichaeli* and to isolate six alkaloids. Four of them were identified as aconitine, mesaconitine, hyaconitine, and talatisamine. One of the other two, provisionally named Chuan-wu base A, was proved later to be identical with isotalatisidine [2]. Aconitine, mesaconitine, and hyaconitine are the main alkaloids present in *A. carmichaeli*.

Aconitine is the diester of the aminoalcohol aconine (3-6) and can be easily hydrolyzed to form benzoyleaconine (3-7) by loss of the acetyl group and to subsequently form aconine by elimination of the benzoyl group. Since benzoyleaconine and aconine are less toxic than aconitine, the toxicity of aconite roots decreases with increasing storage time or by processing.



Aconine (3-6): R = H

Benzoyleaconine (3-7): R = C₆H₅CO