

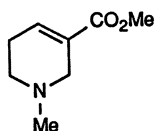
20.1 Introduction

Binglang, Semen Arecae, is the dry mature seed of *Areca catechu* L. (Palmaceae) collected between late spring and early fall. It is recommended in traditional Chinese medicine as an anthelmintic, antimalarial, antidyenteric, and digestant for treatment of ascaris, tapeworms, fasciolopsiasis, malaria, dysentery, and dyspepsia.

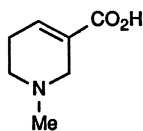
Dafupi, Pericarpium Arecae, is the dry pericarp of the mature or immature fruits and is mainly used as a diuretic for treatment of edema.

20.2 Chemical Constituents

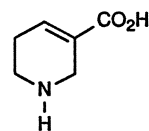
The areca nut is well known to contain a number of closely related alkaloids with a pyridine ring. The major alkaloid arecoline (20-1) was first reported about 100 years ago [1–3]. Later, arecaidine (20-2) [2–4], guvacine (20-3) [4–6], guvacoline (20-4) [7], arecolidine (20-5) [8], and isoguvacine (20-6) [6, 9] were isolated and structurally determined.



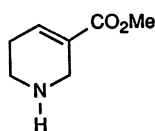
Arecoline (20-1)



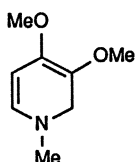
Arecaidine (Arecaidine) (20-2)



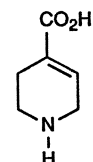
Guvacine (20-3)



Guvacoline (20-4)



Arecolidine (20-5)



Isoguvacine (20-6)

The total alkaloid content was 0.15%–0.67%, in which 0.07%–0.50% is arecoline. The other five alkaloids are minor components. In addition to alkaloids, tannins, sitosterol, carbohydrate, saponins, and carotene were detected in areca nut [10].

Arecaidine and its methyl ester arecoline could be synthesized from aliphatic compounds either by cyclization or directly from pyridine derivatives [11–19].