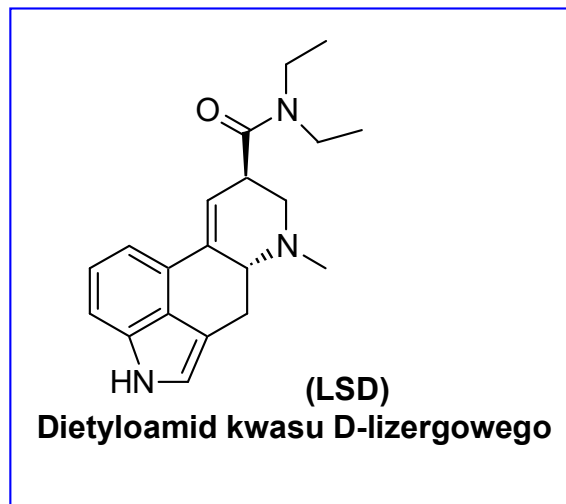
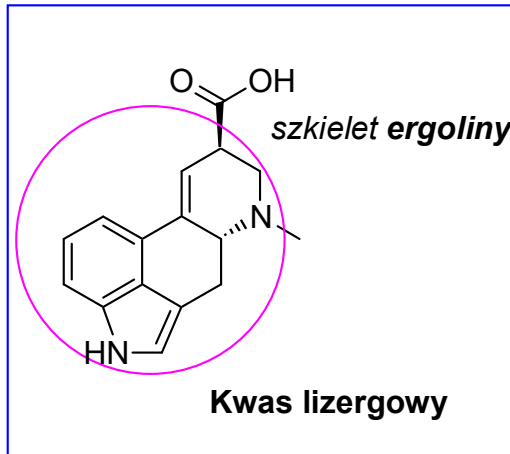
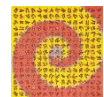


Alkaloidy – grupy indolu



✓ najaktywniejsza substancja psychodeliczna

„kwas”



Alkaloidy – w sporyszu

sporysz zbóż –

Sporysz zawiera:

- Alkaloidy:

Ergotaminę

Ergobazynę,

Ergotoksynę

- Aminokwasy:

Tyrozynę

Tryptofan

Histydynę

Leucynę

Kwas asparginowy

Betainę

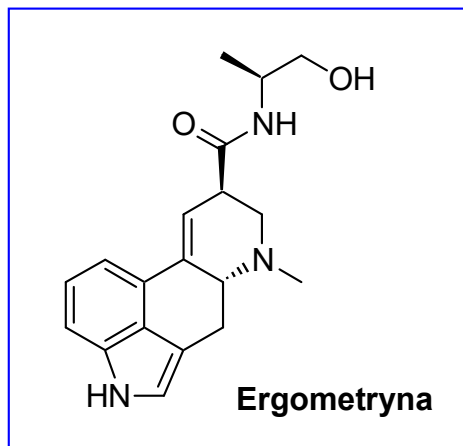
- Aminy biogenne:

Histaminę

Tyraminę

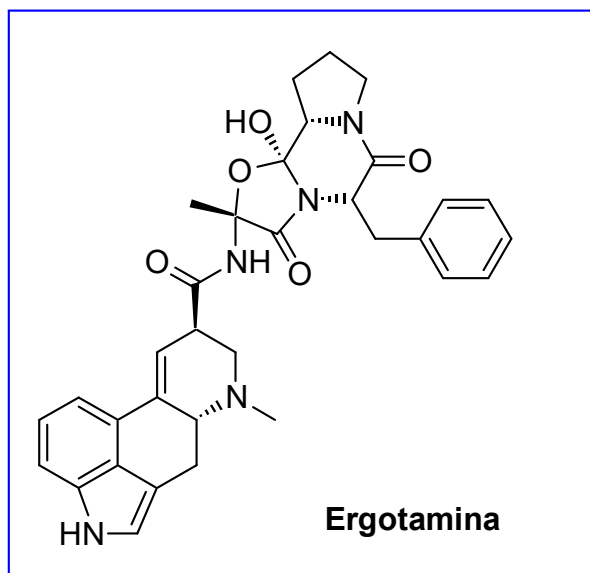


Alkaloidy – grupy indolu



ergobazyna
ergonowina

Alkaloidy – grupy indolu



Preparaty proste:

Ergo-Kranit mono[®] (Krewel Meuselbach, D): tabl. 2 mg (winian).

Ergotaminum tartaricum[®] (Filofarm, PL): draż. 1 mg (winian).

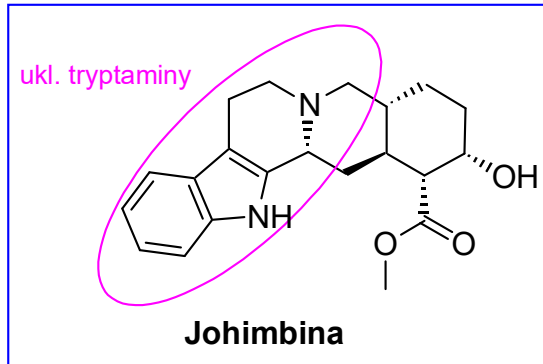
Preparaty złożone:

Cafergot-PB[®] (Novartis, CH): czopki 2 mg winianu ergotaminy, 100 mg kofeiny, 0,25 mg alkaloidów pokrzyku i 100 mg butalbitalu.

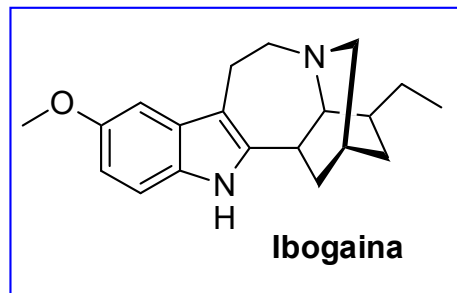
Cafergot[®] (Novartis, CH): tabl. 1 mg ergotaminy i 100 mg kofeiny.

Coffecorn forte[®] (Filofarm, PL): draż. forte 1 mg winianu ergotaminy i 100 mg kofeiny. **Coffecorn mite**[®] (Filofarm, PL): draż. mite 0,5 mg winianu ergotaminy i 25 mg kofeiny. **Gynergène**[®] **caféiné** (Novartis, F): tabl. powł. 1 mg winianu ergotaminy i 100 mg kofeiny.

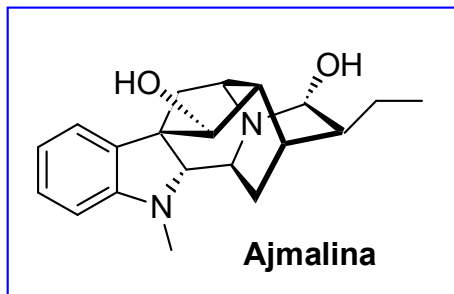
Alkaloidy – grupy indolu



✓ **Afrodyzjak !** (krople Yohimbinium hydrochloricum D4) – lek na receptę!

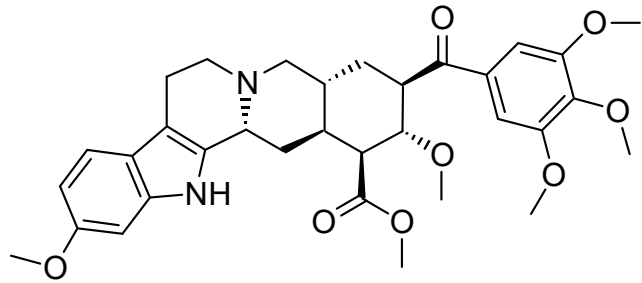


Alkaloidy – grupy indolu

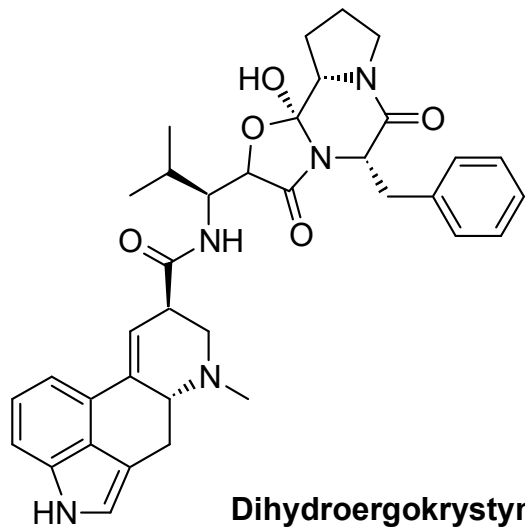


Rauwolfia wężowa

Alkaloidy – grupy indolu

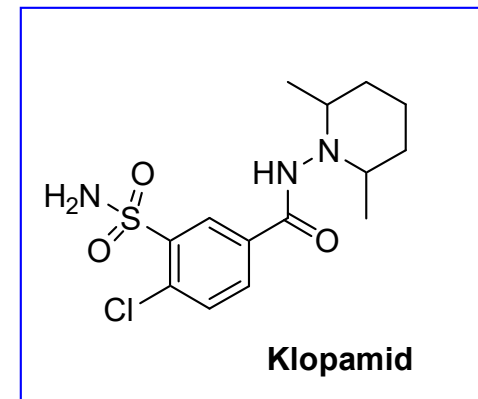


Rezerpina



Dihydroergokristyna

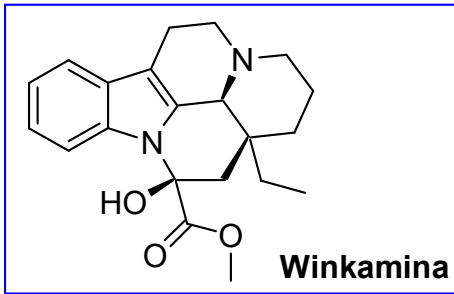
Wskazania:



Klopamid

✓ Sulfamidowy lek diuretyczny

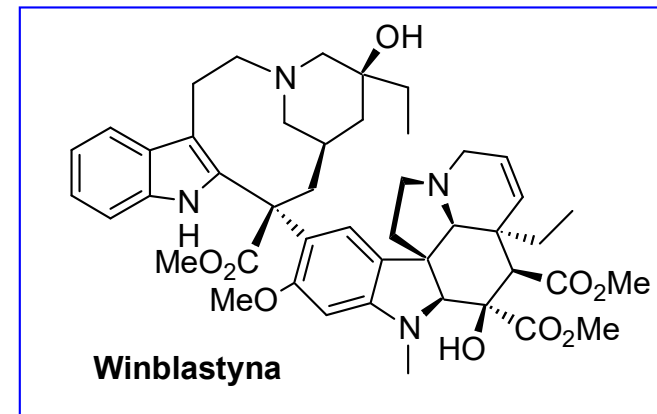
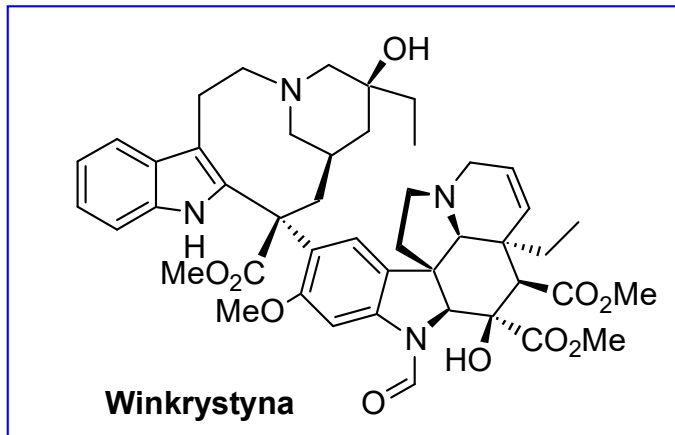
Alkaloidy – grupy indolu, alkaloidy barwinków



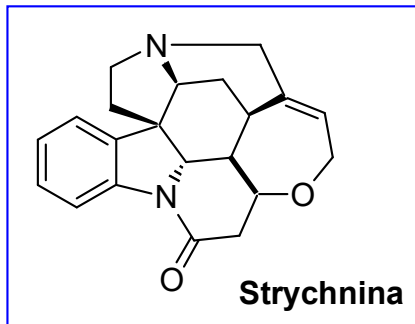
Barwinek pospolity
Vinca minor



barwinek różowy
Catharanthus roseus



Alkaloidy – grupy dihydroindolu

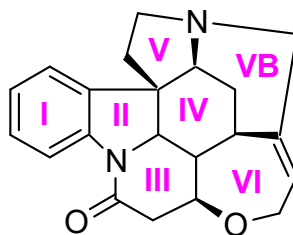


Alkaloidy – grupy dihydroindolu



Sir Robert Robinson

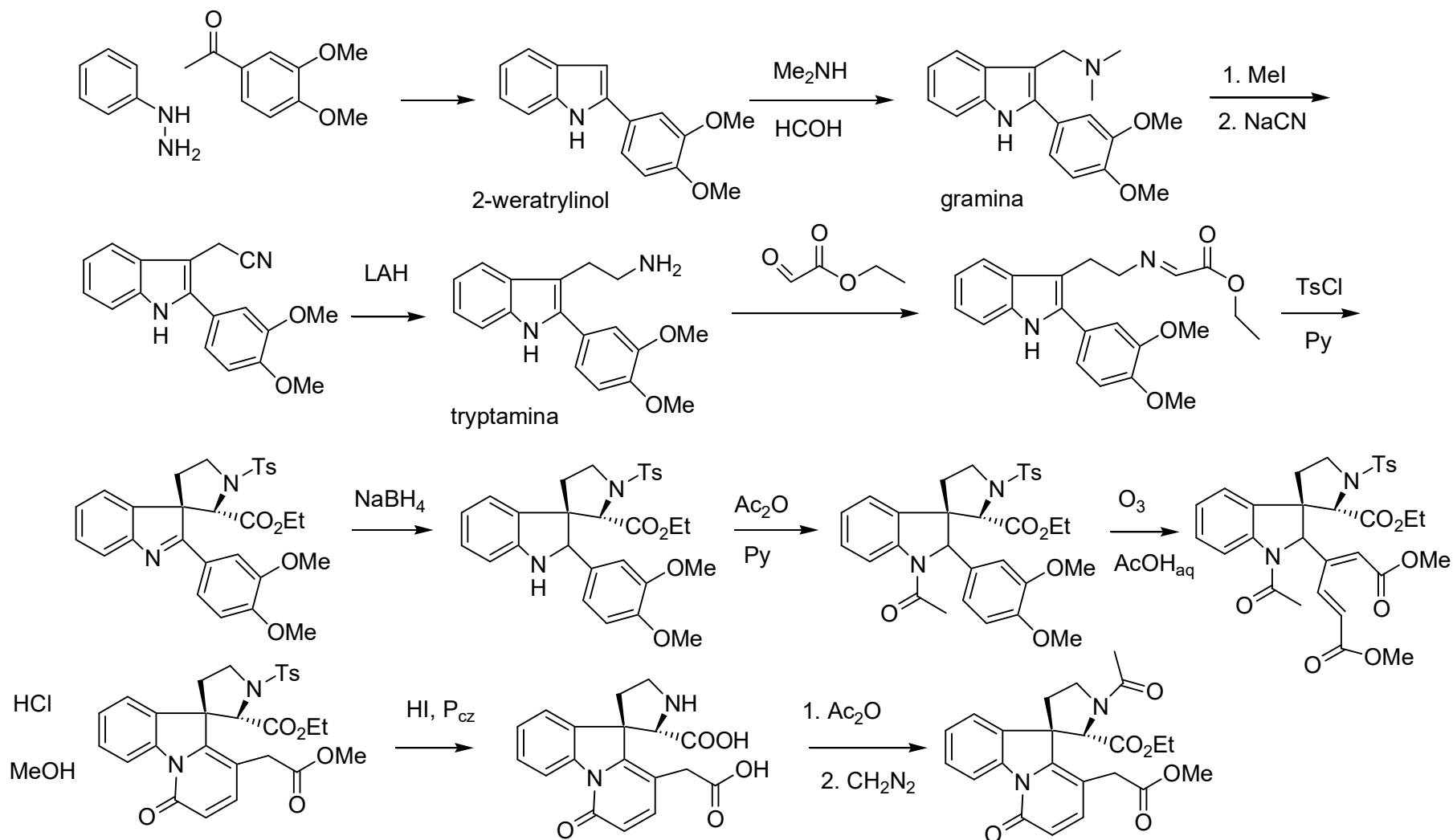
1947 – Nagroda Nobla za prace nad alkaloidami (w tym ustalenie struktury strychniny, synteza tropinonu),
„kreator kółka w benzenie”
założyciel czasopisma Tetrahedron



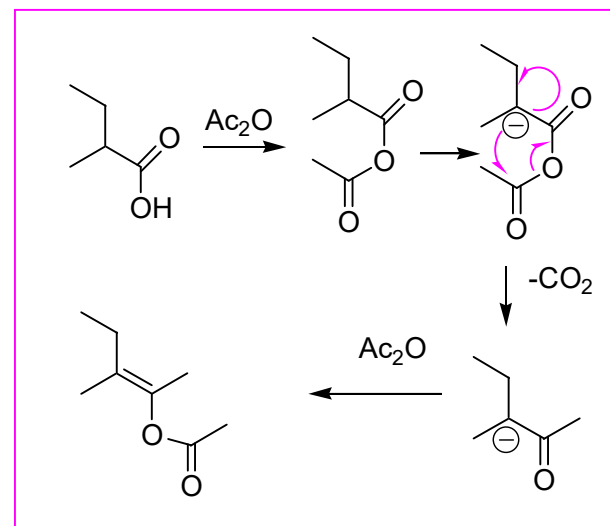
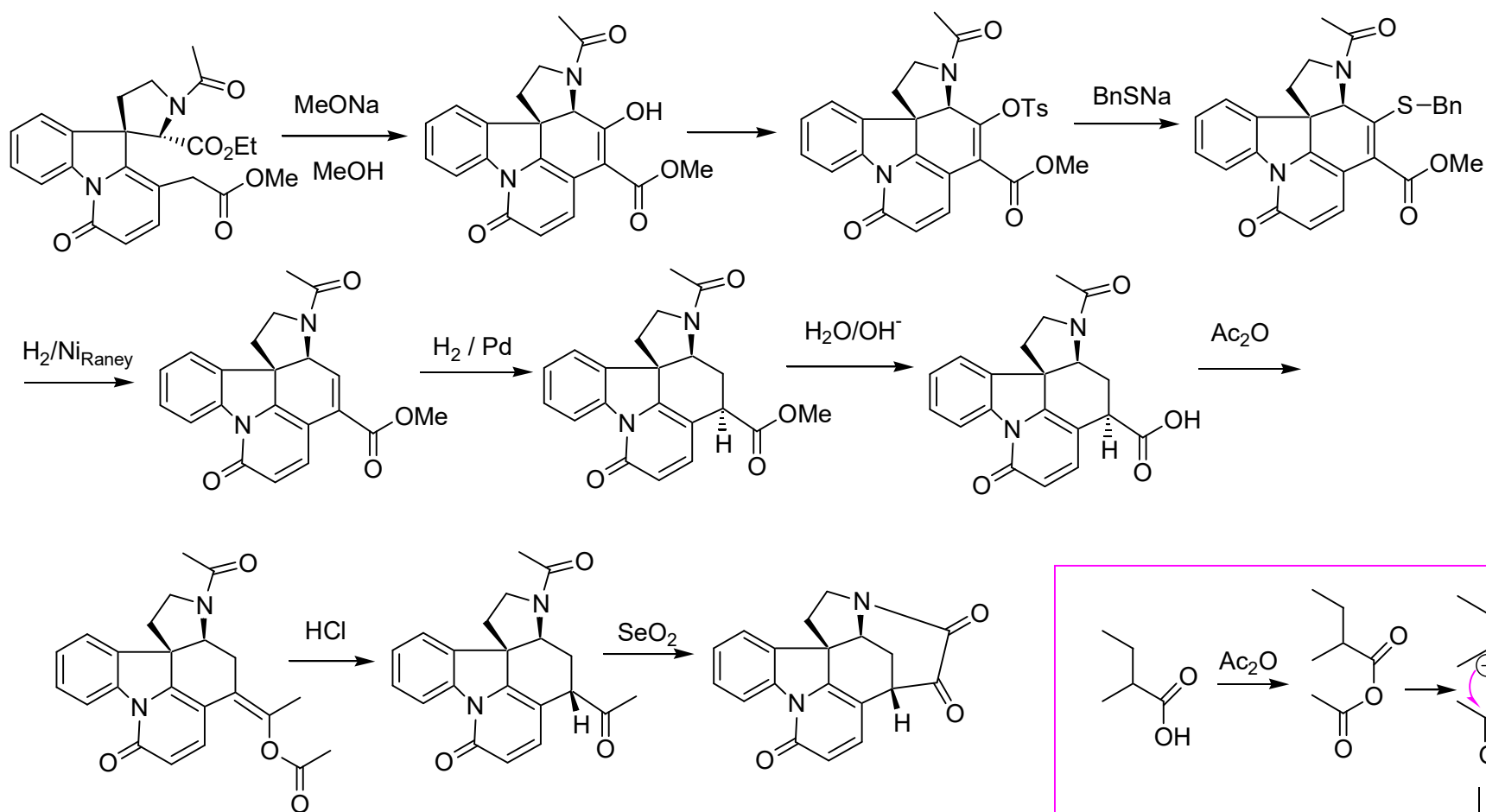
Robert Burns Woodward

1965 – Nagroda Nobla

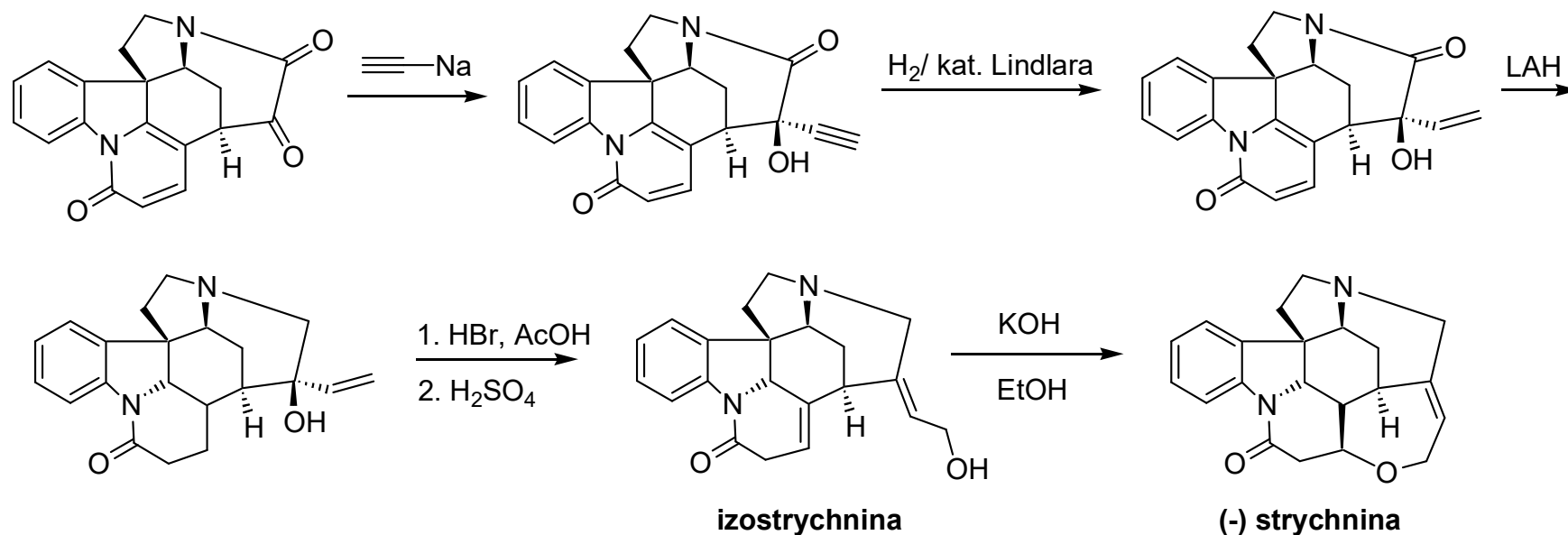
Alkaloidy – synteza strychniny



Alkaloidy – synteza strychniny



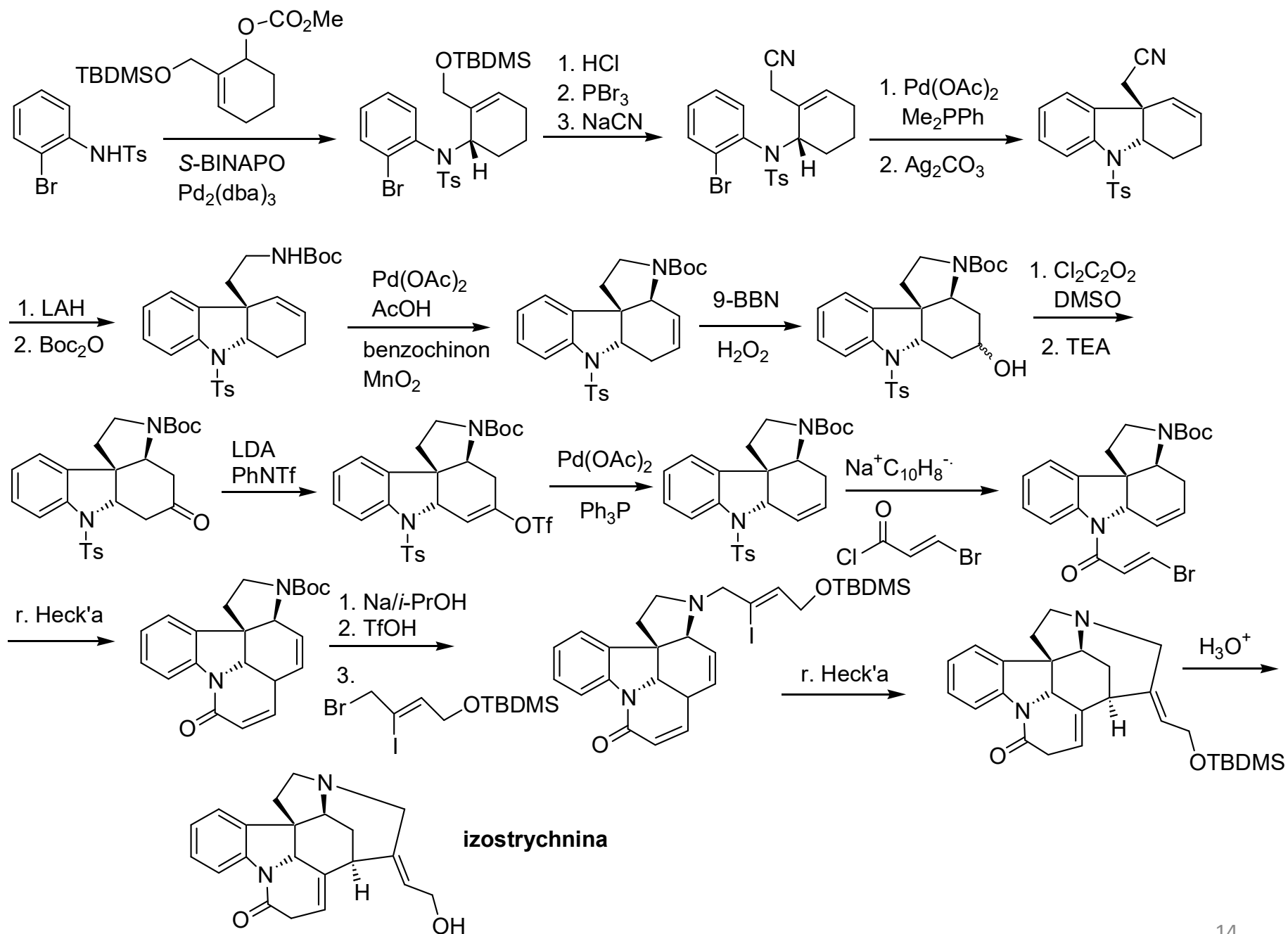
Alkaloidy – synteza strychniny



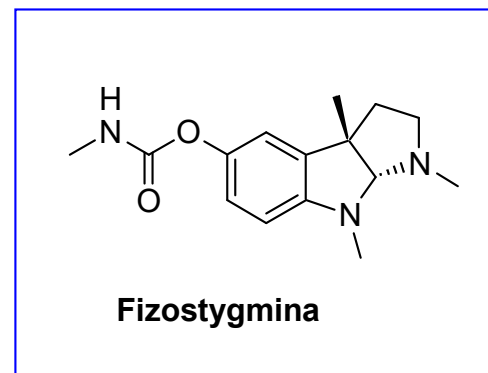
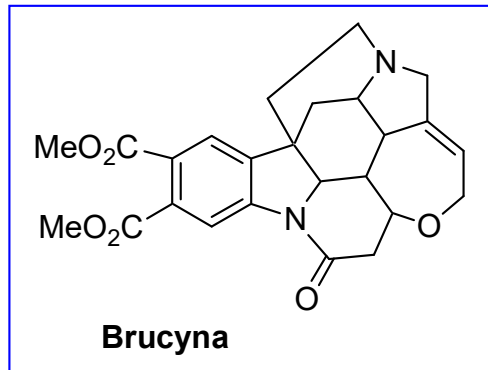
Alternatywna metoda syntezy strychniny

Masato Nakanishi, **Miwako Mori**

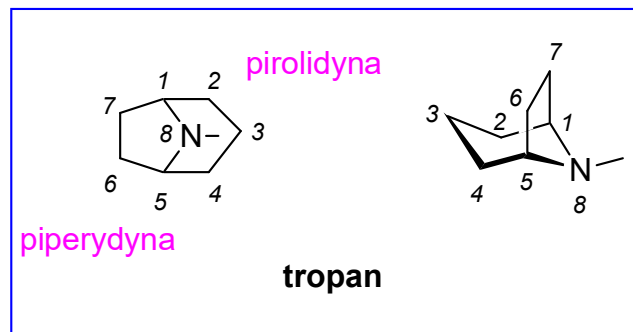
Total Synthesis of (-)-Strychnine *Angew. Chem. Inter. Ed.* **2002**, 41 (11), 1934



Alkaloidy – grupy dihydroindolu



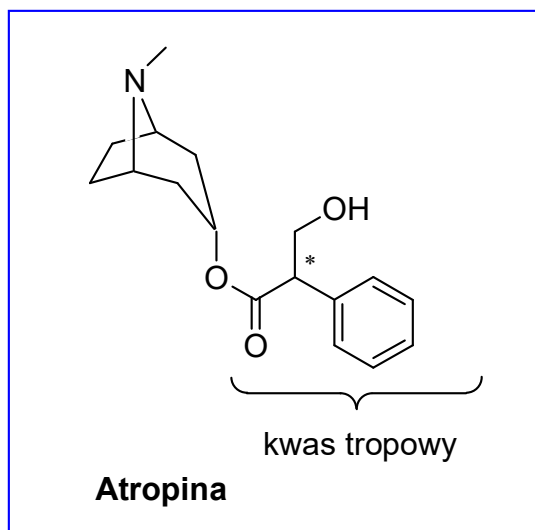
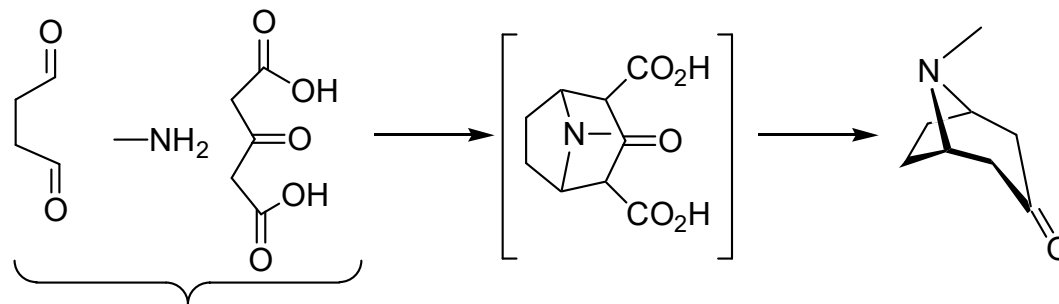
Alkaloidy – grupy tropanu



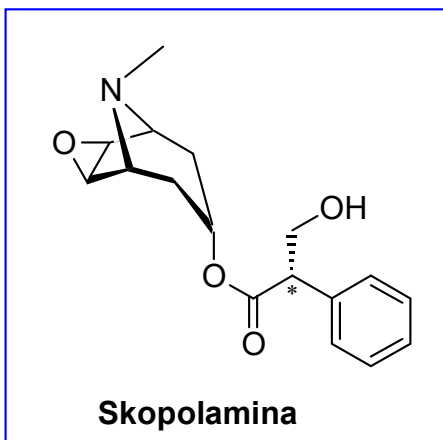
Alkaloidy – grupy tropanu

Tropinon – organiczny związek chemiczny z grupy alkaloidów - syntetyczny prekursor atropiny

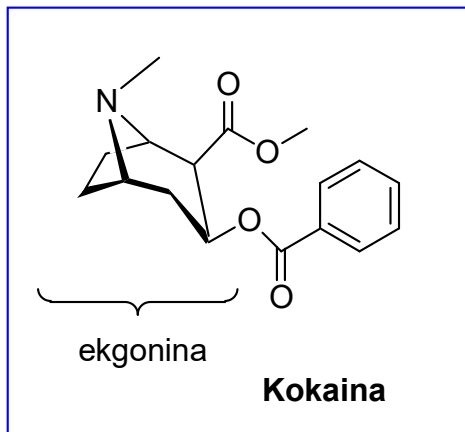
- ✓ Pierwsza synteza w 1901 (Richard Willstätter) – c. wyd. 0,75%
- ✓ Synteza w 1917 roku (Roberta Robinsona)- klasyczny przykład syntezy totalnej c. wyd 17%, wzrosła do 90%



Alkaloidy – grupy tropanu



Alkaloidy – grupy tropanu

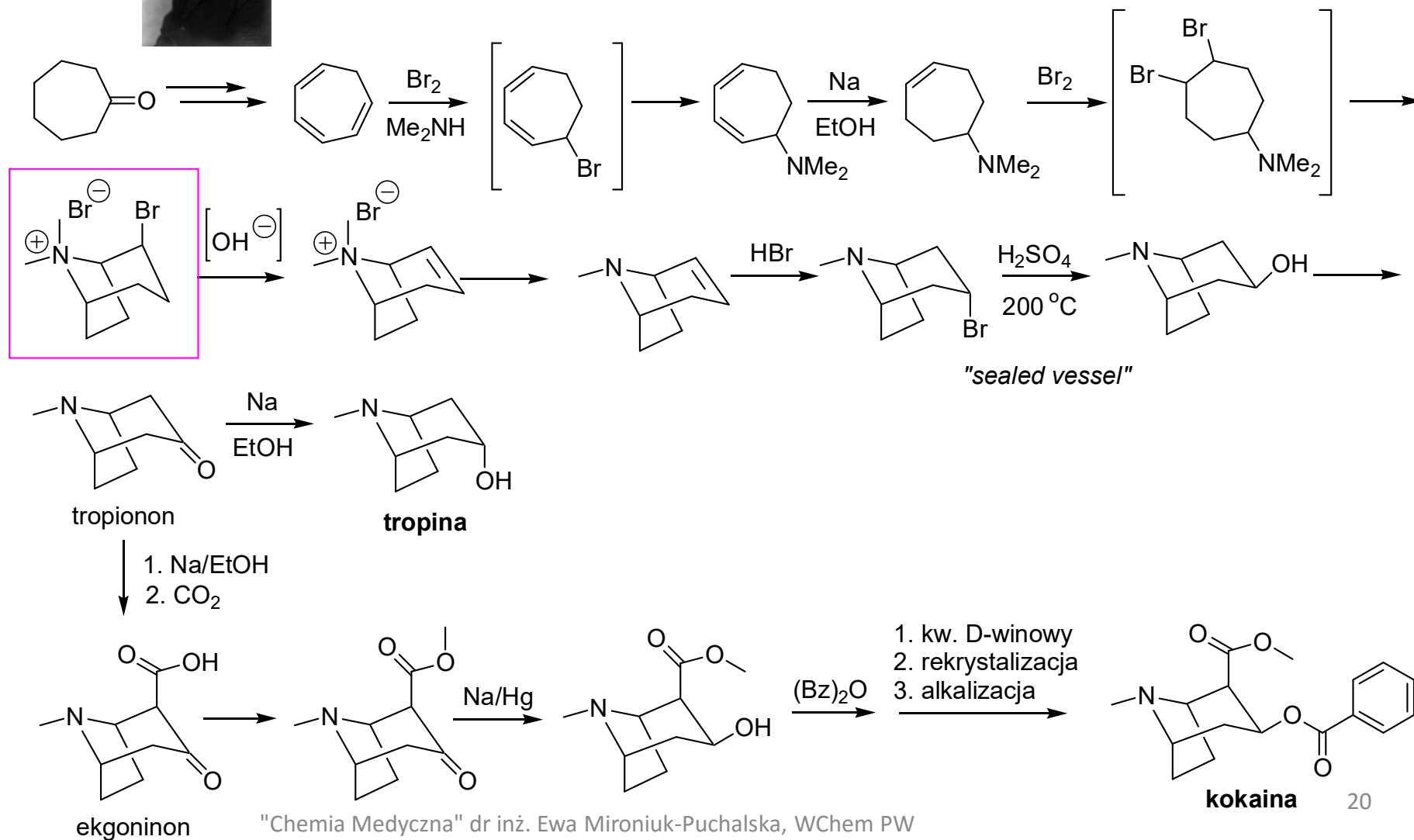


Alkaloidy – grupy tropanu

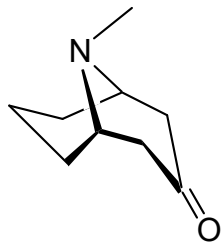


Richard Martin Willstätter *Annalen*, 1903, 317, 204

1915 nagroda Nobla !



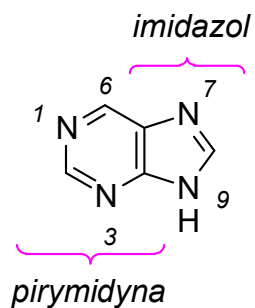
Alkaloidy – Pseudopelletieryna -homolog tropanu



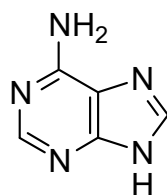
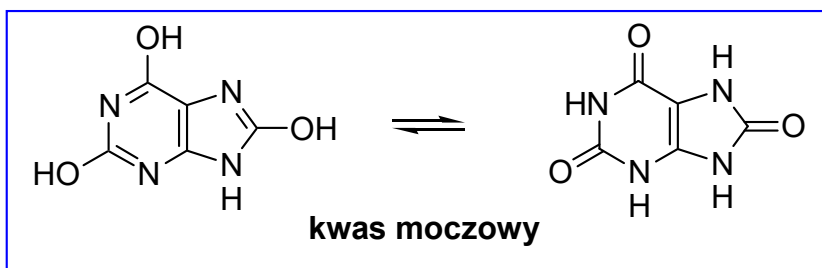
Pseudopelletierina

9-metylo-9-azabicyklo[3.3.1]nonan-3-on

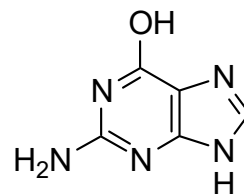
Alkaloidy – grupa puryn



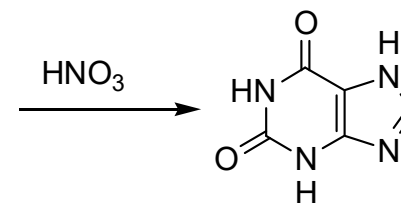
Puryna



adenina

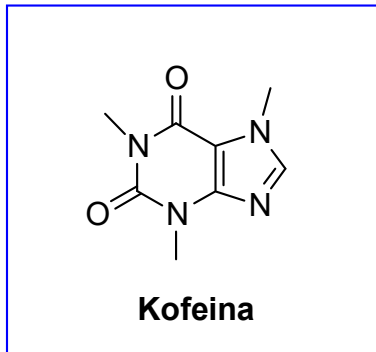


guanidyna



ksantyna

Alkaloidy – grupa puryn



1,3,7-trimetylo-1H-puryno-2,6(3H,7H)-dion

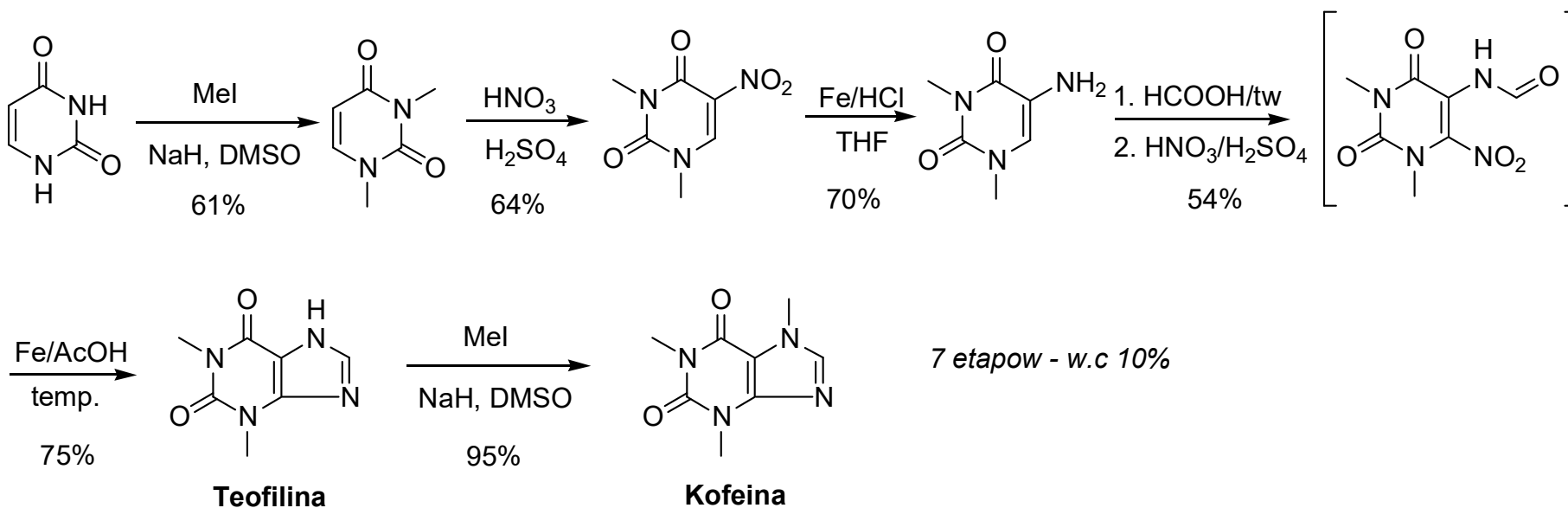
Alkaloidy – grupa puryn

Jest niewiele opracowanych metod syntezy kofeiny:

A. Fisher *Ber.* **1895**, 28, 2473, 3135

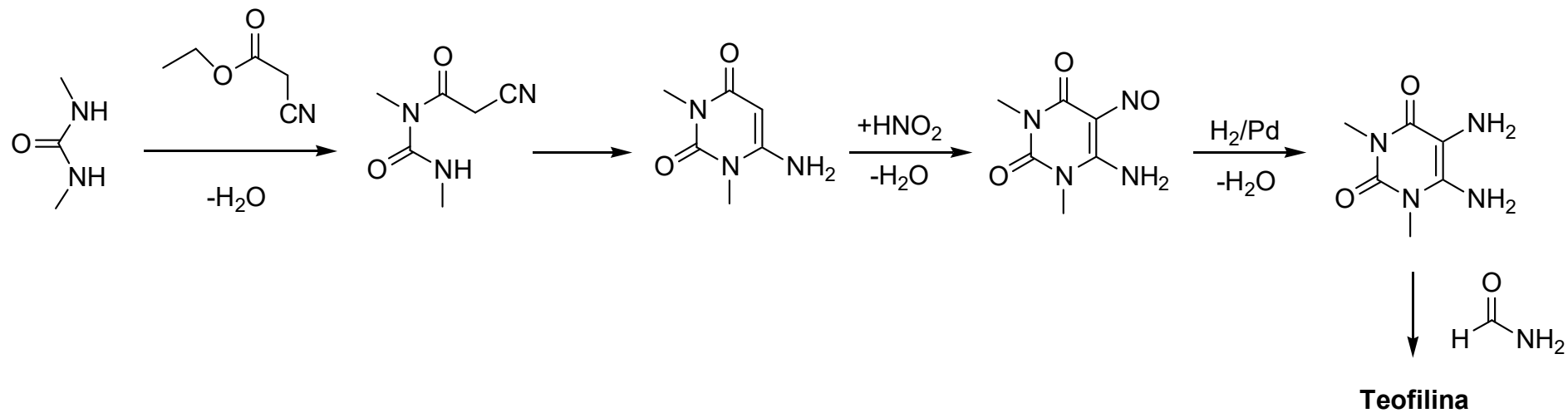
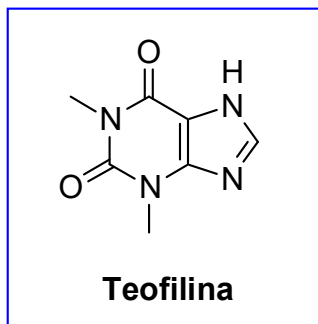
S. Traube *Ber.* **1900**, 33, 3035

Patenty w latach 1960-70

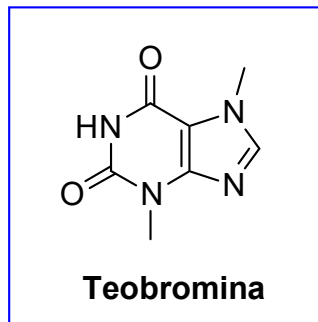


M.A. Zajac, A.G. Zakrzewski, M.G. Kowal, S. Narayan *Synthetic Comm.* **2003**, 33, 3291

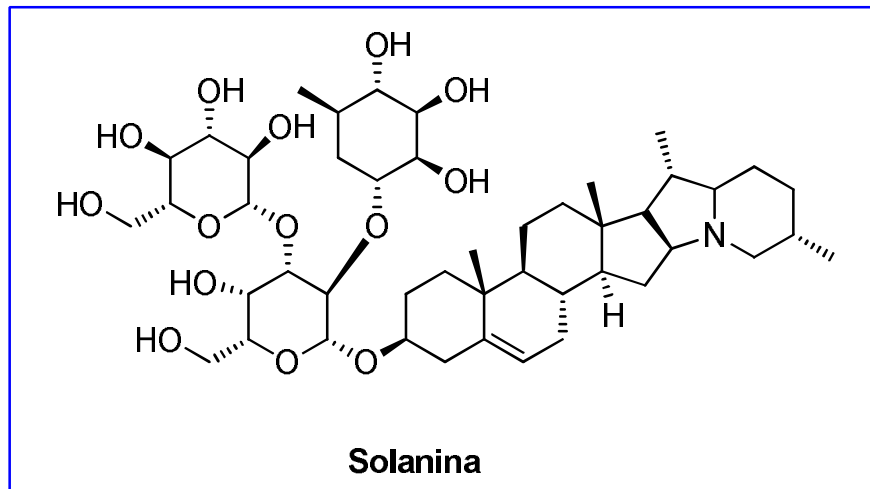
Alkaloidy – grupa puryn



Alkaloidy – grupa puryn



Alkaloidy – grupa steroidowe



Alkaloidy – grupa sole amoniowe

