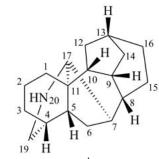
Division VIII Chemical Nomenclature and Structure Representation Division

Nomenclature of Organic Chemistry. IUPAC Recommendations and Preferred Names 2013.

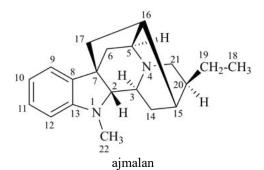
Prepared for publication by Henri A. Favre and Warren H. Powell, Royal Society of Chemistry, ISBN 978-0-85404-182-4

Appendix 3. STRUCTURES FOR ALKALOIDS, STEROIDS, TERPENOIDS, AND SIMILAR COMPOUNDS

1. Alkaloids



aconitane



10 CH₃

H 16 6 5 4 21 H

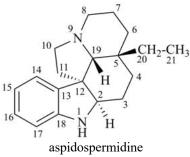
10 12 13 N H 3 14 15 CH₃

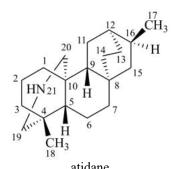
akuammilan (named systematically by CAS)

(named systematically by CAS)

aporphine (named systematically by CAS)

aspidofractinine (named systematically by CAS)





atidane (named systematically by CAS)

atisine (named systematically by CAS)

berbaman (named systematically by CAS)

berbine (named systematically by CAS)

cephalotaxine

cevane

chelidonine (named systematically by CAS)

cinchonan

23
CH₃ 21
CH₃ 22
N 20H
18 20H
19 11H
19 11H
20H
10
$$\frac{1}{8}$$
 $\frac{1}{8}$ $\frac{1}{15}$ 16
3 4 6 H

conanine

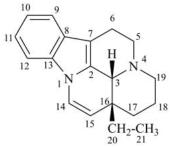
corynan (named systematically by CAS)

corynoxan (named systematically by CAS)

crinan (named systematically by CAS)

daphnane (named systematically by CAS)

dendrobane (named systematically by CAS)



eburnamenine

(named systematically by CAS)

ergotaman

Ac-O_H H O-Ac

(named systematically by CAS)

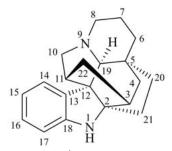
formosanan (named systematically by CAS)

galanthamine (named systematically by CAS)

galanthan (named systematically by CAS)

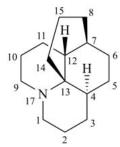
hasubanan

hetisan



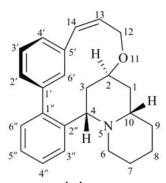
kopsan (named systematically by CAS)

lunarine (named systematically by CAS)



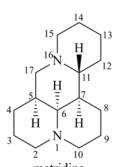
lycopodane (named systematically by CAS)

lycorenan (named systematically by CAS)

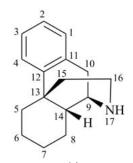


lythran (named systematically by CAS)

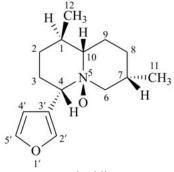
lythranidine (named systematically by CAS)



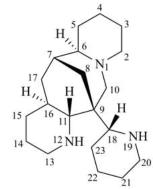
matridine (named systematically by CAS)



morphinan



nupharidine (named systematically by CAS)



ormosanine (named systematically by CAS)

18-oxayohimban

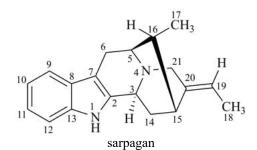
oxyacanthan (named systematically by CAS)

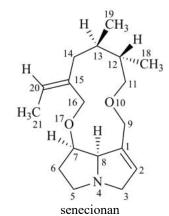
pancracine (named systematically by CAS)

rheadan (named systematically by CAS)

rodiasine (named systematically by CAS)

samandarine (named systematically by CAS)

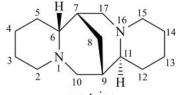




(named systematically by CAS)

$$\begin{array}{c} & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & &$$

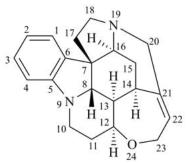
solanidane (the CAS name requires the chirality at C-22 to be specified)



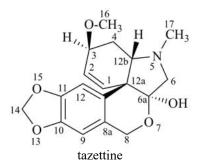
sparteine (named systematically by CAS)

$$\begin{array}{c} & & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\$$

spirosolane (the CAS name requires the chirality at C-22 to be specified)



strychnidine



(named systematically by CAS)



tropane (named systematically by CAS)

tubocuraran (named systematically by CAS)

tubulosan (named systematically by CAS)

veratraman (named systematically by CAS)

vincaleukoblastine

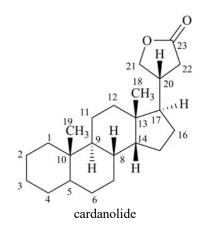
vincane (CAS name based on eburnamenine)

vobasan

(named systematically by CAS)

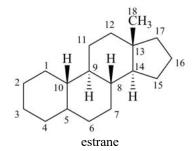
yohimban

campestane (named by CAS as a stereoisomer of ergostane in which the locant 241 is 28)



cholestane

ergostane



furostan

gorgostane (for CAS the locants 22^1 , 23^1 , and 24^1 are 34, 33, and 28, respectively)

$$\begin{array}{c} & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ &$$

poriferastane

(named by CAS as a stereoisomer of stigmastane in which the locants 24¹ and 24² are 28 and 29, respectively.)

spirostan

(the CAS name requires the chirality at C-22 to be specified)

$$\begin{array}{c} & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & &$$

3. Terpenoids

abietane (named systematically by CAS)

ambrosane (named systematically by CAS)

aristolane (named systematically by CAS)

20 11 13 16 15 H 3 C CH₃ H 6 H₃C CH₃ H₁₈ 19

beyerane (CAS name based on kaurane)

bornane

(named systematically by CAS)

cadinane (named systematically by CAS)

carane (named systematically by CAS)

 $\beta,\!\phi\text{-carotene}$

 β , ψ -carotene

 ϵ , κ -carotene

 ϵ , χ -carotene

Note: There are 28 possible carotene parent structures of which four are illustrated above. The 28 are derived from all permutations of the following seven end groups:

(named systematically by CAS)

cedrane (named systematically by CAS)

dammarane

2 10 9 8 CH₃
3 4
$$\bar{H}$$
 6
H₃C CH₃
13 14

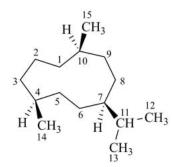
drimane (named systematically by CAS)

eremophilane (named systematically by CAS)

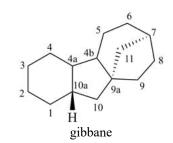
eudesmane (named systematically by CAS)

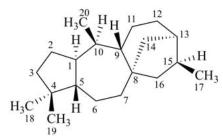
fenchane (named systematically by CAS)

gammacerane



germacrane (named systematically by CAS)

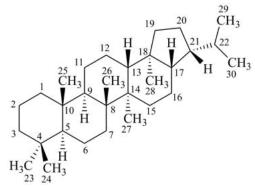




grayanotoxane

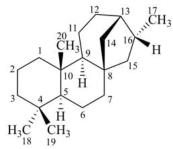
guaiane (named systematically by CAS)

himachalane (named systematically by CAS)



hopane (CAS name based on gammacerane)

numulane (named systematically by CAS)



kaurane (named by CAS *ent*-stereoisomer)

2
17
17
17
17
17
17
18
19
10
$$\frac{1}{H}$$
 8
10 $\frac{1}{H}$ 8
11
12
13
14
15
CH₃
16
CH₃
16
16
17
20
18
19
10 $\frac{1}{H}$ 6
18
18
19
19
10 $\frac{1}{H}$ 6
18
18
19
19
10 $\frac{1}{H}$ 6
19
10 $\frac{1}{H}$ 7
20
10 $\frac{1}{H}$ 8
10 $\frac{1}{H}$ 7
20 $\frac{1}{H}$ 8
10 \frac

labdane (named systematically by CAS)

H₃C₁₈, 12 CH₃

21 H₂

22 24 26 CH₃

18 20 23 25

19 H₁₃

10
$$\frac{1}{2}$$

10 $\frac{1}{2}$

lanostane

lupane

 H_3C_9 CH_3 p-menthane
(named systematically by CAS)

oleanane

ophiobolane (named systematically by CAS)

picrasane

pimarane (named systematically by CAS)

pinane (named systematically by CAS)

podocarpane (named systematically by CAS)

protostane

(named by CAS as a stereoisomer of dammarane)

retinal

rosane

(named systematically by CAS)

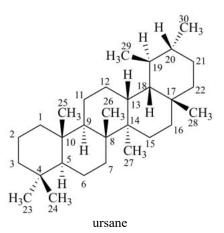
taxane

(named systematically by CAS)

thujane

(named systematically by CAS)

$$H_{3}C$$
 $\begin{array}{c} 9 \\ 10 \\ \hline{ } \\ \hline{ } \\ 11 \\ \hline{ } \\ H_{3}C \\ \hline{ } \\ 12 \\ \hline{ } \\ 13 \\ \hline{ } \\ 14 \\ \hline \end{array}$
 $\begin{array}{c} H \\ 0 \\ 2 \\ 11 \\ H_{3}C \\ \hline{ } \\ 12 \\ \hline{ } \\ 3 \\ \hline{ } \\ 5 \\ \hline{ } \\ CH_{3} \\ \hline{ } \\ 14 \\ \end{array}$
 $\begin{array}{c} H \\ 10 \\ 2 \\ 12 \\ \hline{ } \\ 3 \\ \hline{ } \\ 5 \\ \hline{ } \\ CH_{3} \\ \hline{ } \\ 14 \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ 5 \\ \hline{ } \\ 14 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ 5 \\ \hline{ } \\ 14 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ 13 \\ \hline{ } \\ \hline{ } \\ 14 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ 14 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$
 $\begin{array}{c} H \\ 12 \\ \hline{ } \\ \end{array}$



4. Miscellaneous

$$\begin{array}{c}
H \\
\hline
5 \\
8 \\
N \\
5
\end{array}$$

cepham (named systematically by CAS)

(named systematically by CAS)

is of lavan(named systematically by CAS)

lignane [only through a 8.8' ($\beta.\beta'$) linkage] (named systematically by CAS)

neoflavan (named systematically by CAS)

$$H_3C_9$$
 6
 $2'$
 1
 $2'$
 $1'$
 $6'$
 CH_3
 CH_3

3,3'-neolignane

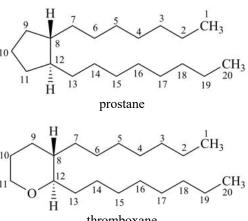
[and other structures not connected through a 8,8') (β,β') linkage] (named systematically by CAS)

$$\begin{array}{c|c}
H & 1 \\
\hline
6 & 5 \\
7 & N \\
0 & 4 \\
3
\end{array}$$

penam (named systematically by CAS)

21*H*,23*H*-porphyrin

(named by CAS on the basis of the parent name porphine)



thromboxane (named systematically by CAS)