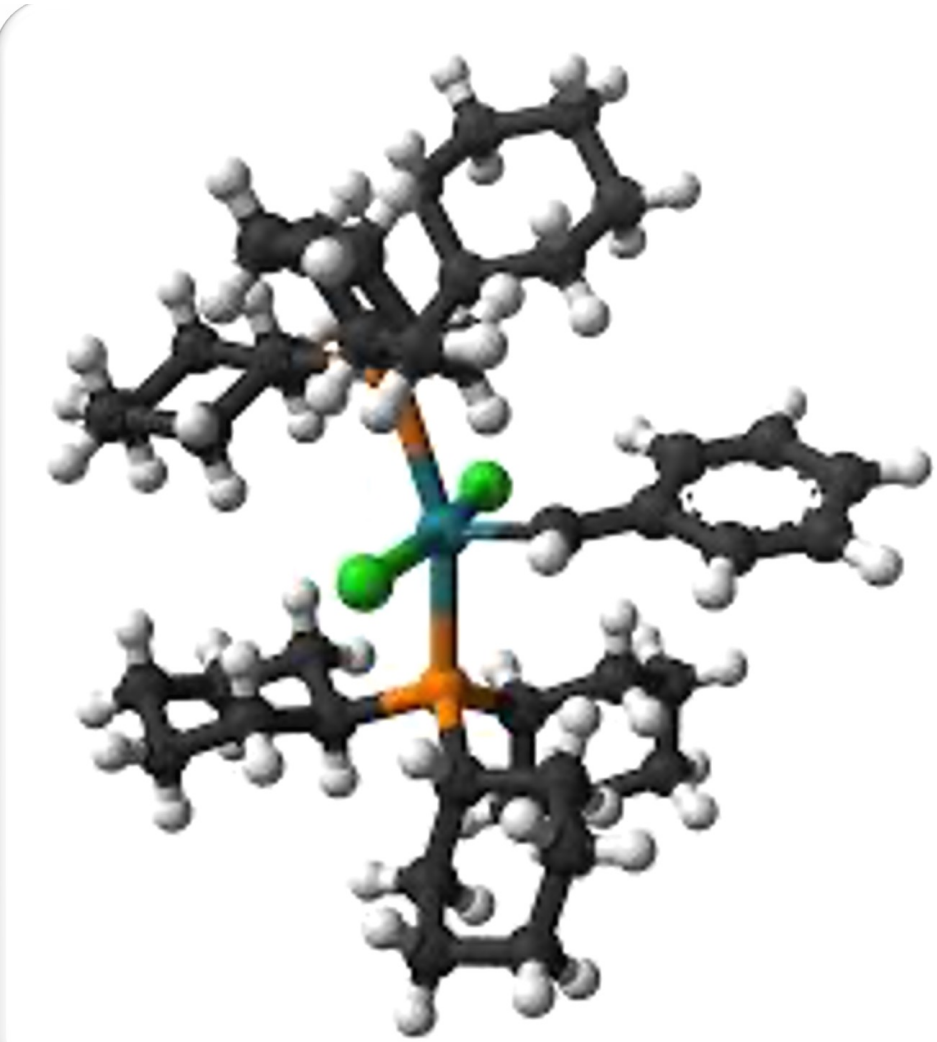


# LA CHIMIE ORGANIQUE


**W. TALEB BENDIAB**

**DR EN CHIMIE PHYSIQUE**

**MCB CHERCHEUR**

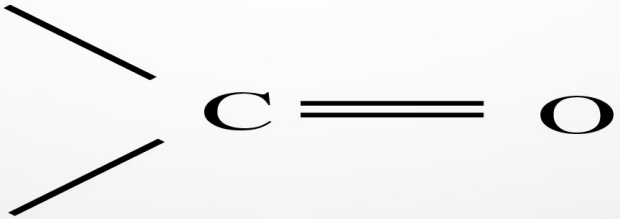
**FACULTÉ DE MÉDECINE**

**UNIVERSITÉ D'ORAN 1**

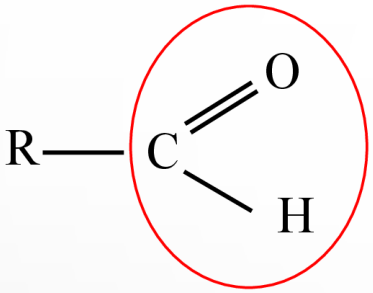
# COURS 5

# Carbonyles

- LES ALDÉHYDES ET LES CÉTONES POSSÈDENT :

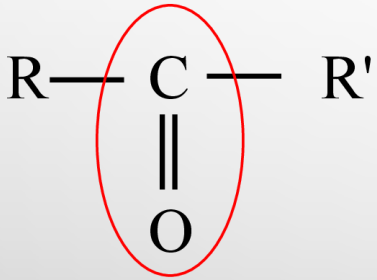


**GROUPE CARBONYLE**




Fonction carbonyle au bout de chaîne

**Aldéhyde**




Fonction carbonyle au milieu de la chaîne

**Cétone**

# VI. Aldéhyde

**Préfixe : formyl ou oxo**

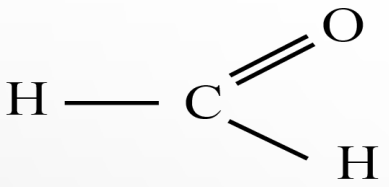
**Suffixe:**

**nbr de carbone+ (ane, éne ou yne)+ al**

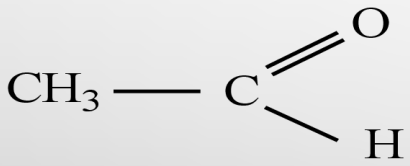
**Ou**

**nbr de carbone+ (ane, éne ou yne)+ carbaldehyde**

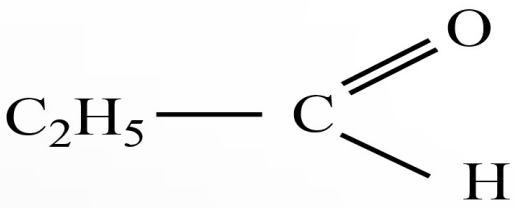
# FONCTION CHO PRIORITAIRE



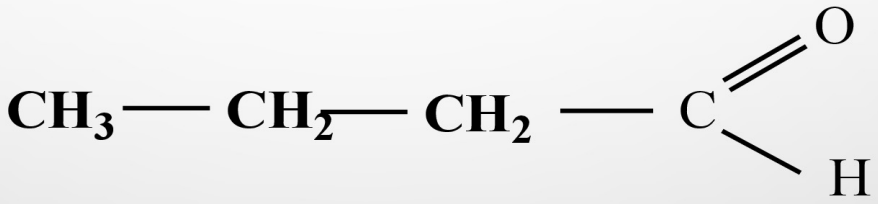

**méthanal**




**éthanal**

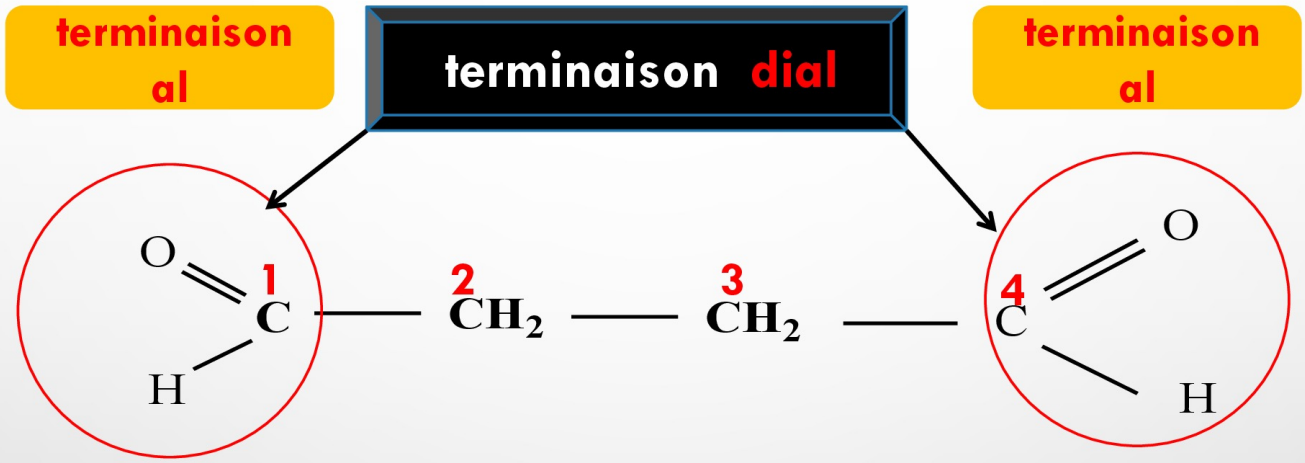



propanal



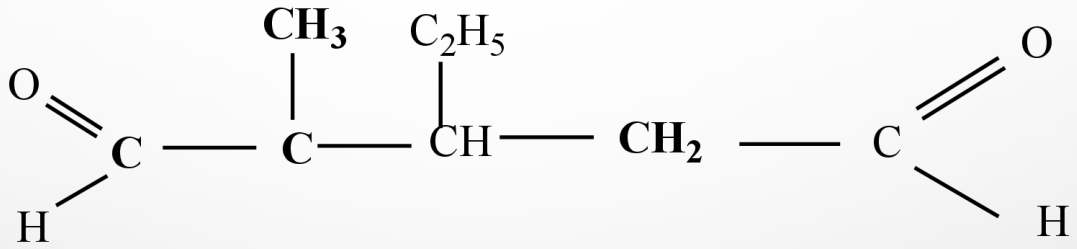

butanal

# CHAÎNE CONTENANT DEUX FONCTIONS (CHO)




**butane dial**

# CHAÎNE RAMIFIÉE CONTENANT DEUX FONCTIONS (CHO)

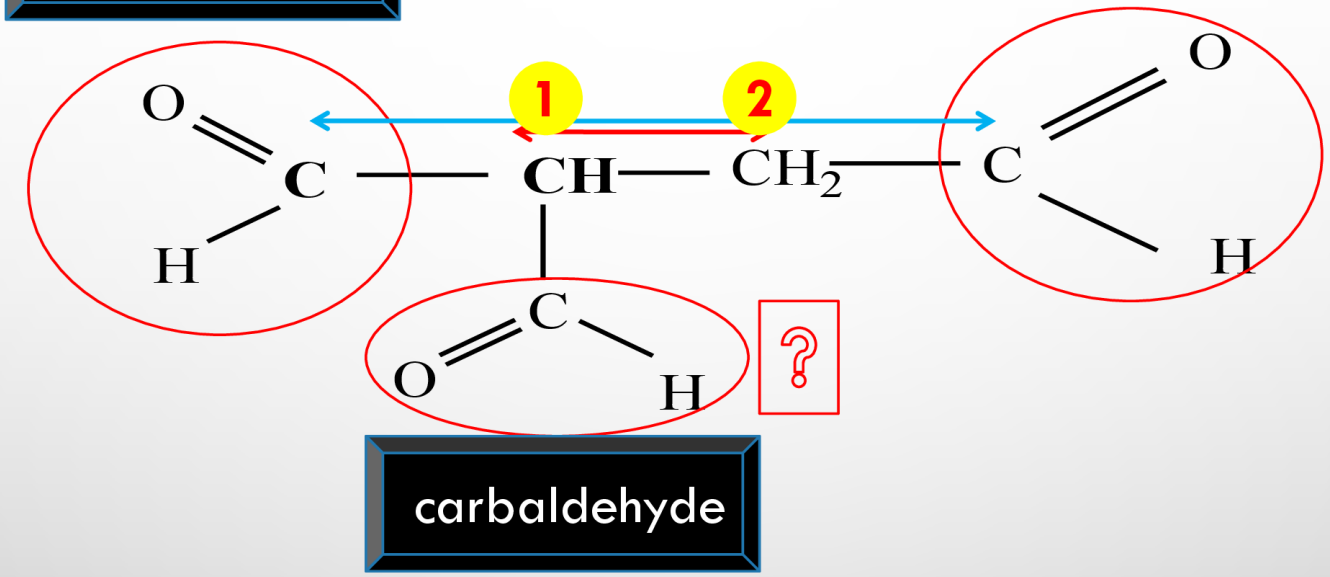



**3- éthyl 2- hydroxy 2- méthyl pentanedial**

## CHAÎNE CONTENANT TROIS FONCTIONS (CHO)

carbaldehyde

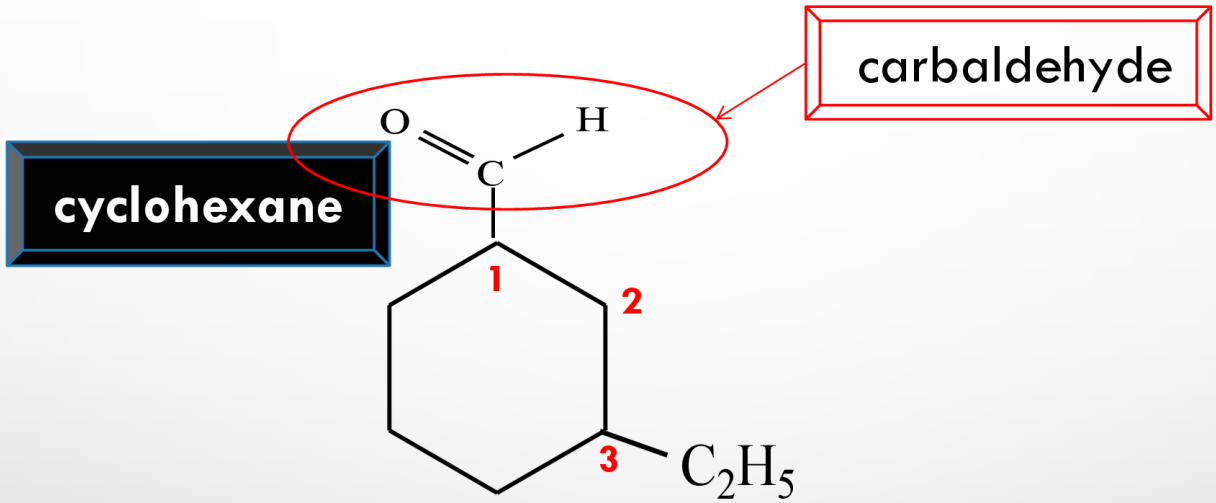
carbaldehyde




carbaldehyde

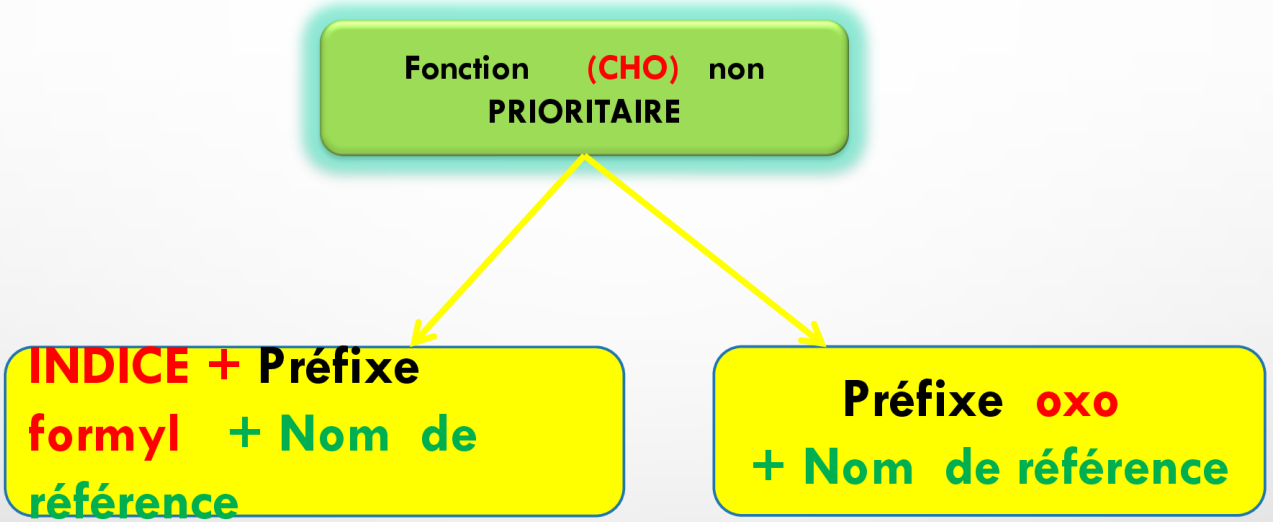
**éthane 1,1,2 tricarbaldéhyde**

# CHAÎNE CYCLIQUE CONTENANT CHO




**3 éthyl cyclohexane carbaldéhyde**

# FONCTION CHO NON PRIORITAIRE

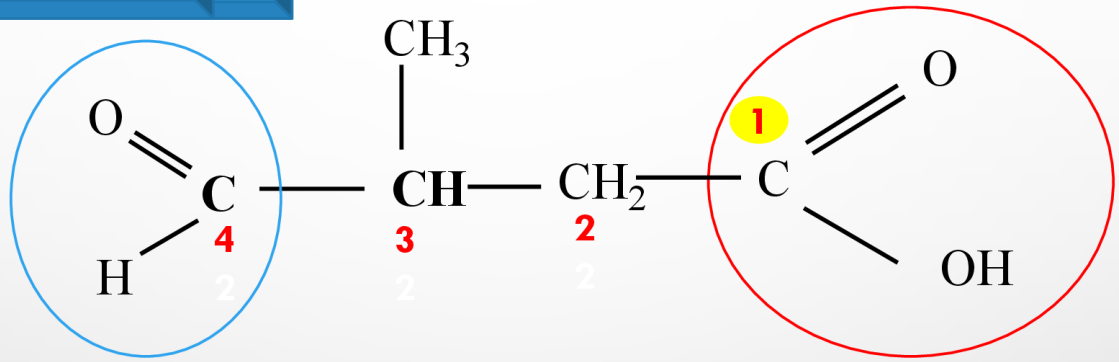


# EXEMPLES

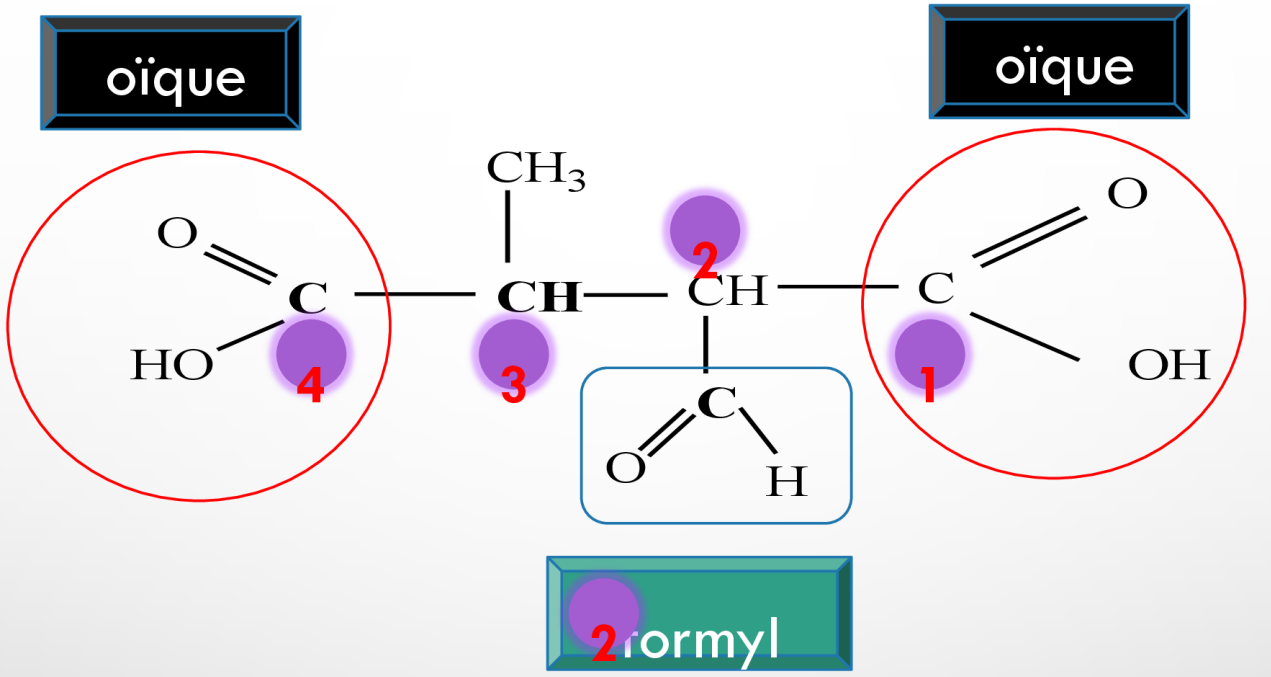
Préfixe

**oxo**

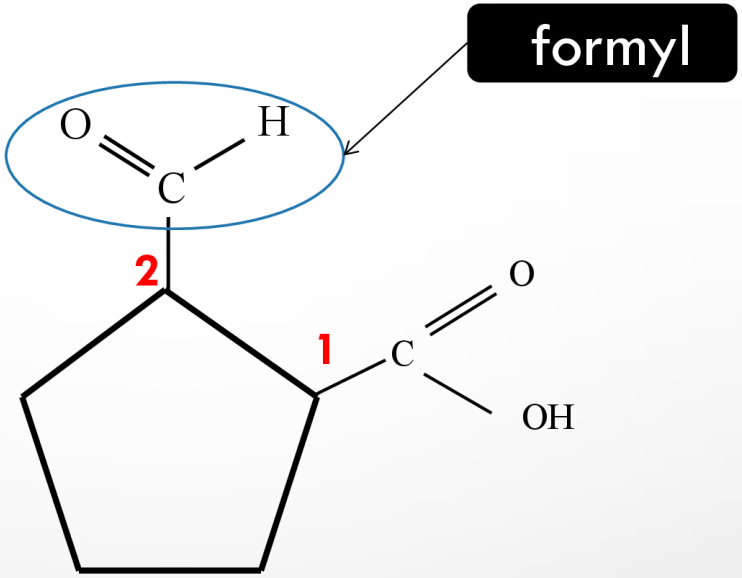
Fo **oïque**




**Acide 3- méthyl 4-oxo butanoïque**




**Acide 2-formyl 3-méthyl butanedioïque**




**Acide 2 formyl cyclopentane carboxylique**

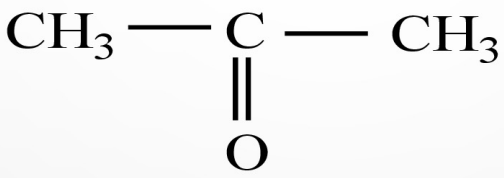
# VII. Cetone

**Préfixe oxo**

**Suffixe:**

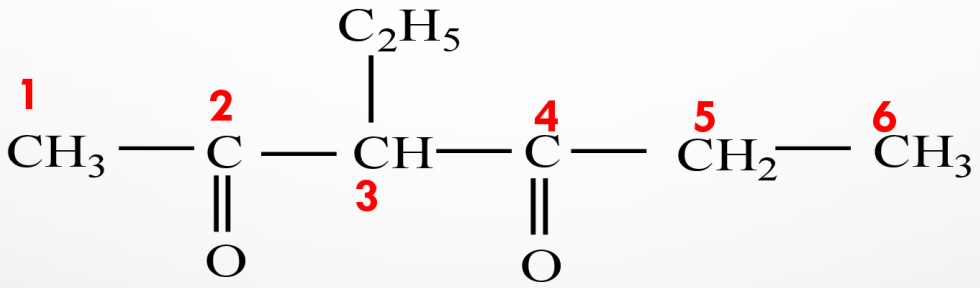
**nbr de carbone+ (ane, éne ou yne)+ one**

# Fonction **cétone** prioritaire



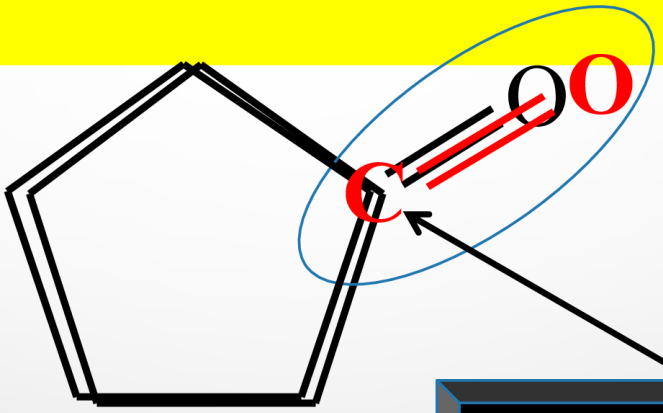

propanone

# CHAÎNE RAMIFIÉE CONTENANT DEUX FONCTIONS **CÉTONES**




3-éthyl hexane 2,4-dione

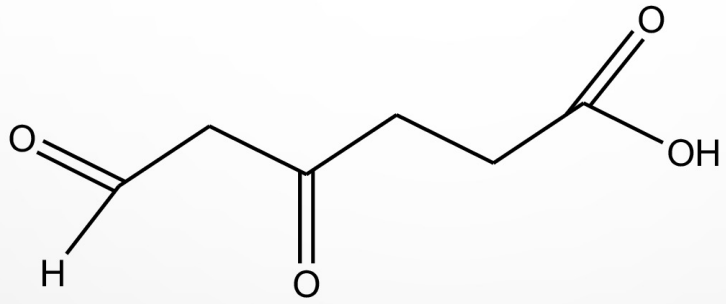
# CHAÎNE CYCLIQUE CONTENANT FONCTIONS
## CÉTONES




Ce carbone fait partie du cycle

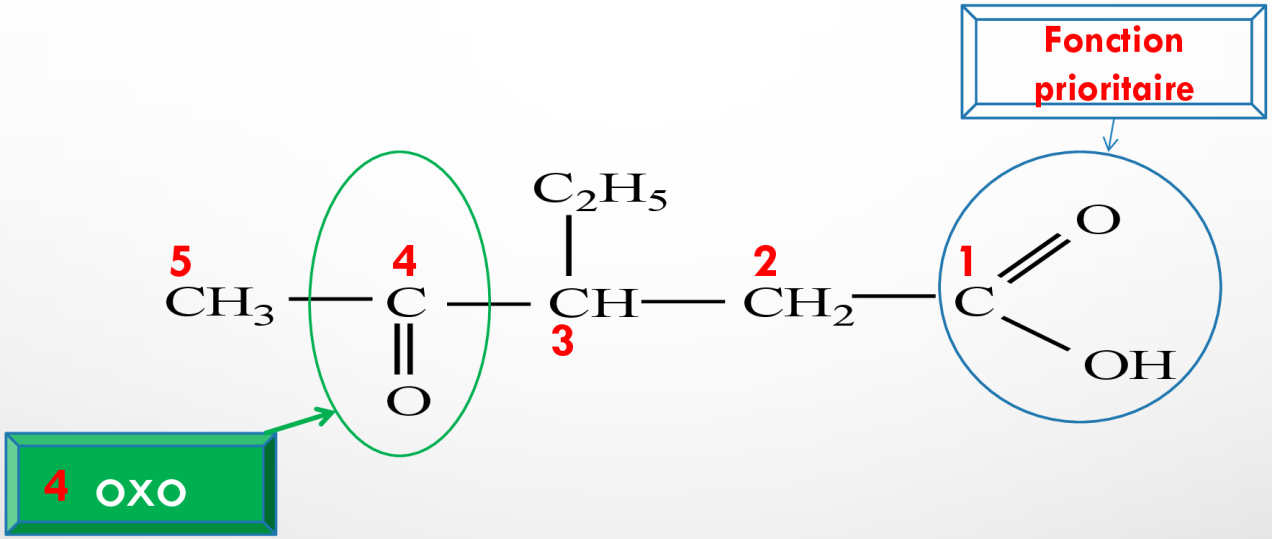
cyclopentanone

# Fonction **cétone** non prioritaire



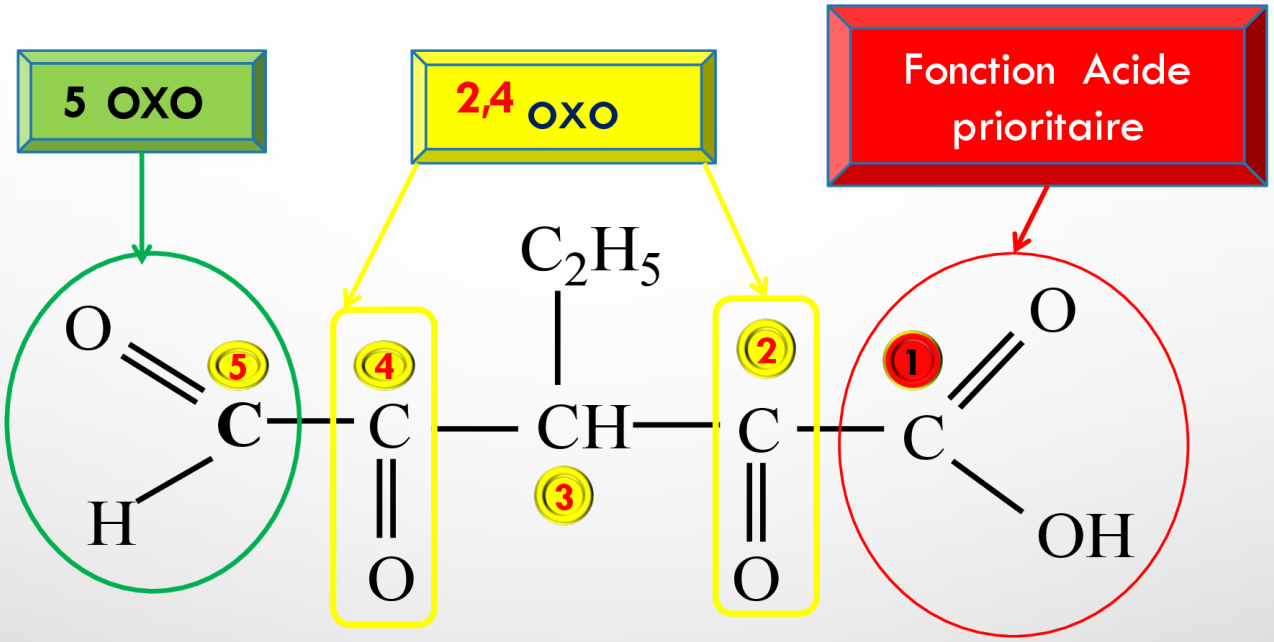

Acide 4,6-dioxo hexanoique

# FONCTION CÉTONE NON PRIORITAIRE

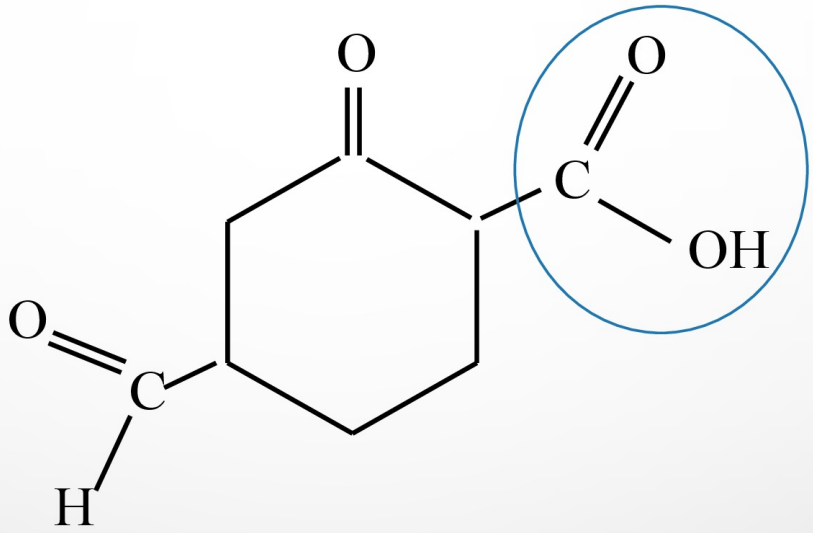



Acide 3-éthyl 4-oxo pentanoïque

## AUTRES EXEMPLES




Acide 3-éthyl 2,4,5-trioxo pentanoïque



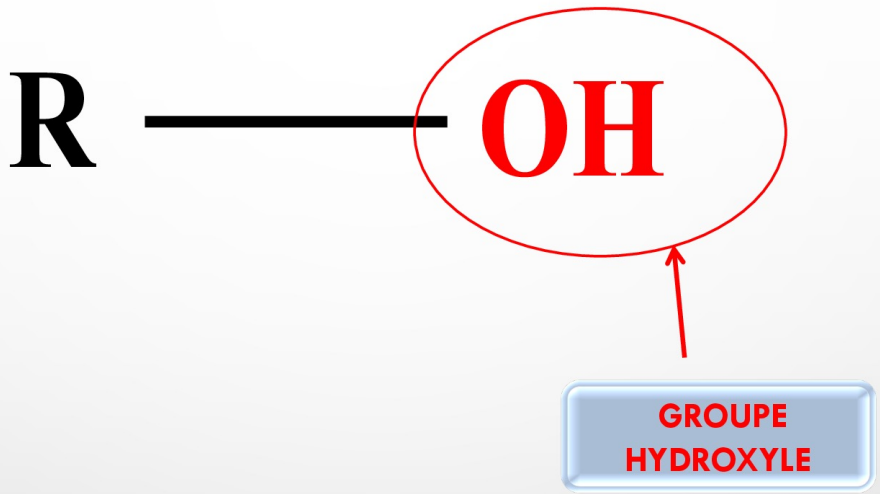

Acide 4-formyl  2-oxo cyclohexane carboxylique

# VIII. Alcools

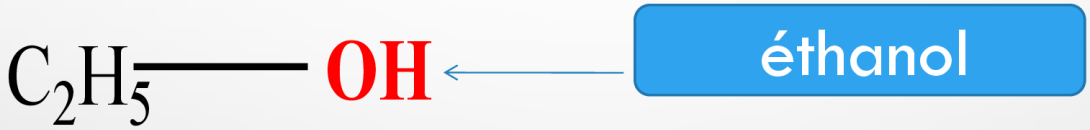
**Préfixe : Hydroxy**

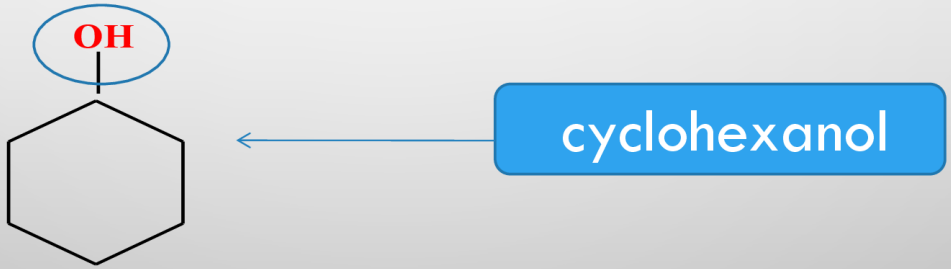
**Suffixe:**

**nbr de carbone+ (ane, éne ou yne)+ ol**

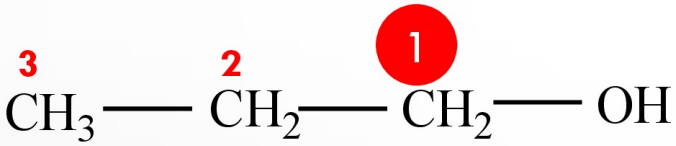

R
OH
GROUPE
HYDROXYLE

# FONCTION (OH) PRIORITAIRE

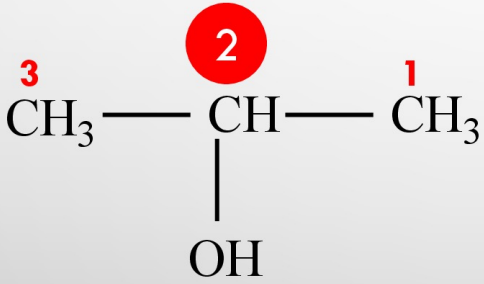



# CHAÎNE CONTENANT 3C ET PLUS

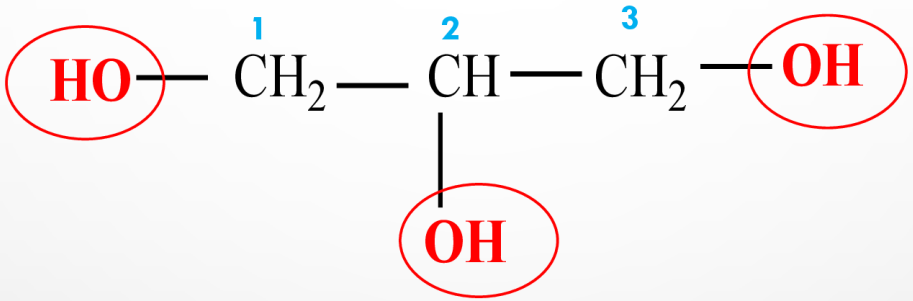



Propan-1-ol



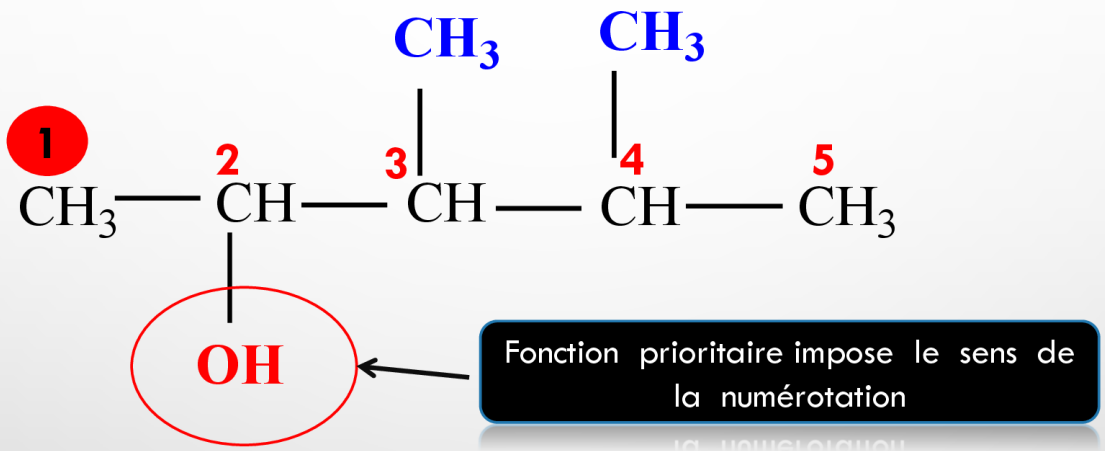

Propan-2-ol

# PLUSIEURS FONCTIONS HYDROXYLES



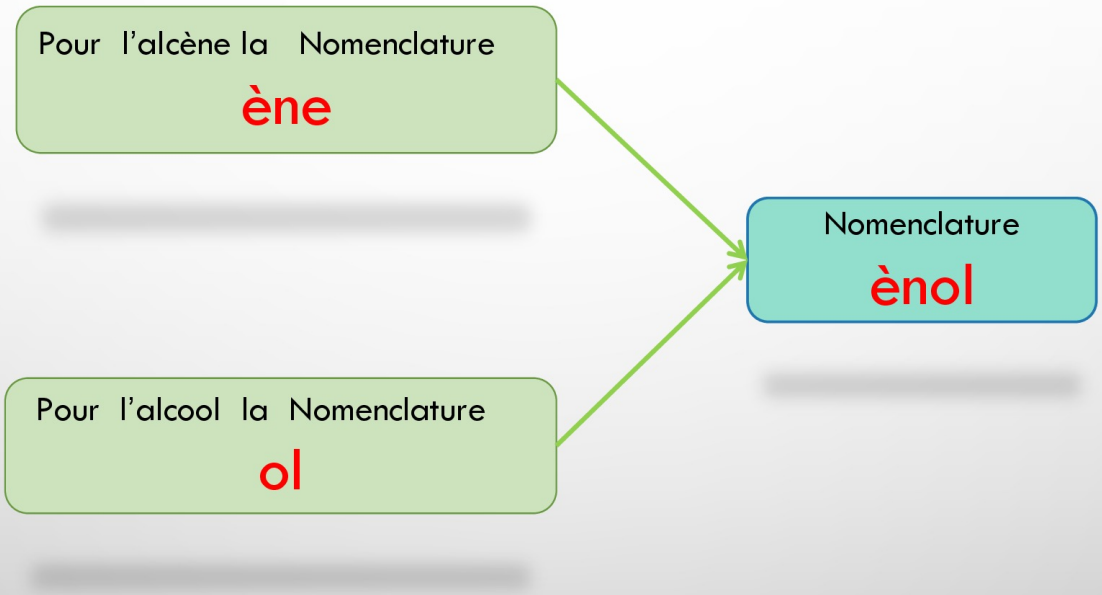

**Propane -1,2,3- triol**

# CHAÎNE RAMIFIÉE

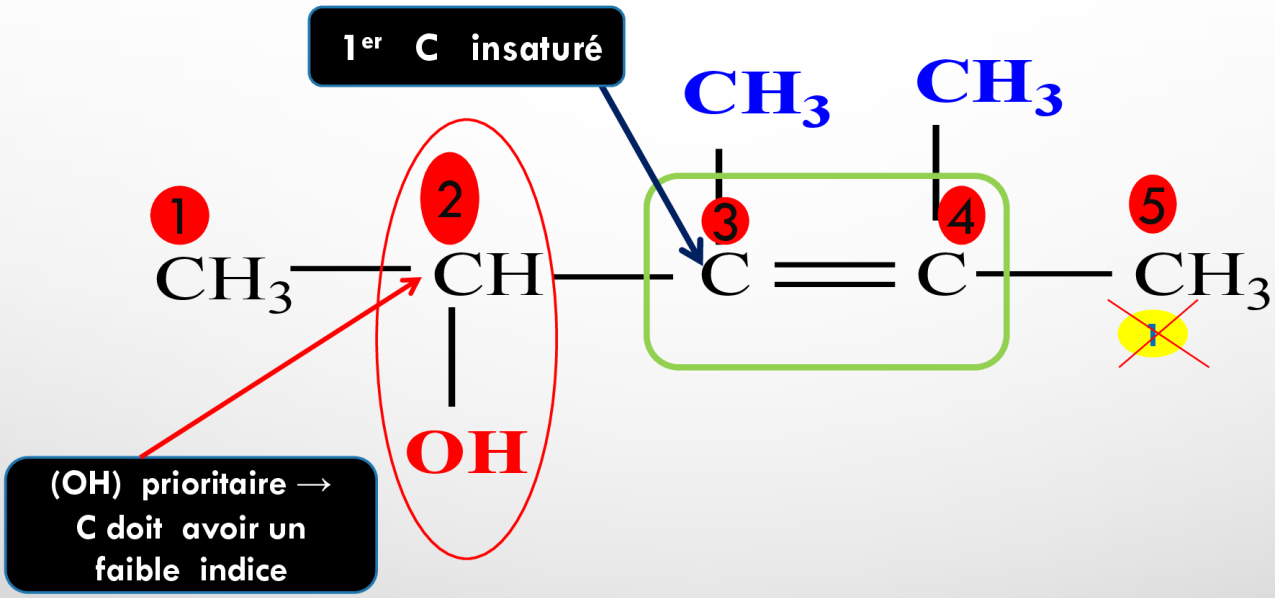



**3,4 - diméthyl pentan-2-ol**

# (OH) PRIORITAIRE À PAR RAPPORT (ALCÈNE)

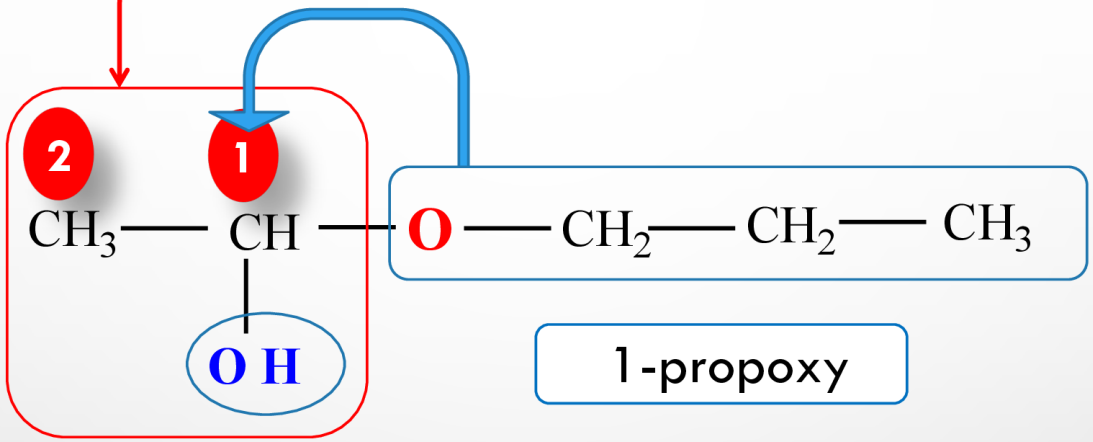


# EXEMPLE




**3,4 – diméthyl pent-3- ène –2- ol**

Prioritaire car elle contient la fonction

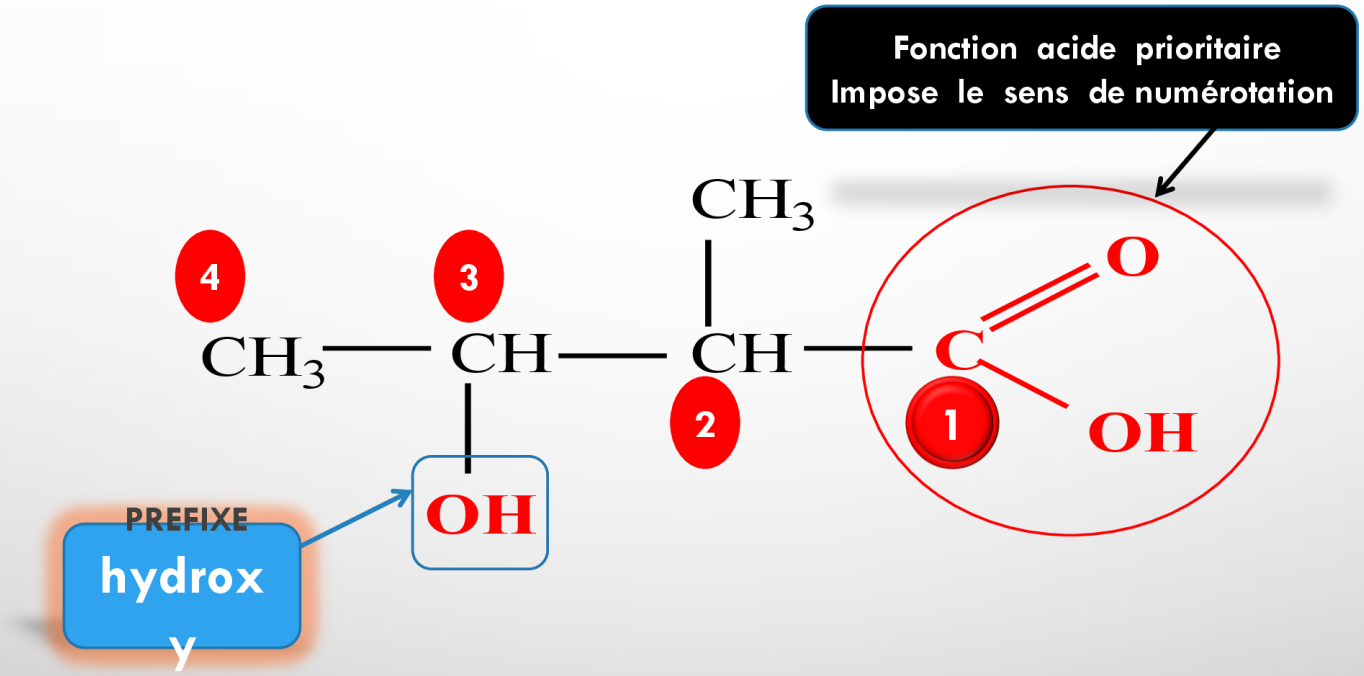



1-propoxy

éthan-1-ol

**1-propoxy éthan-1-ol**

# FONCTION (OH) NON PRIORITAIRE




**Acide 3- hydroxy -2- méthyl butanoïque**

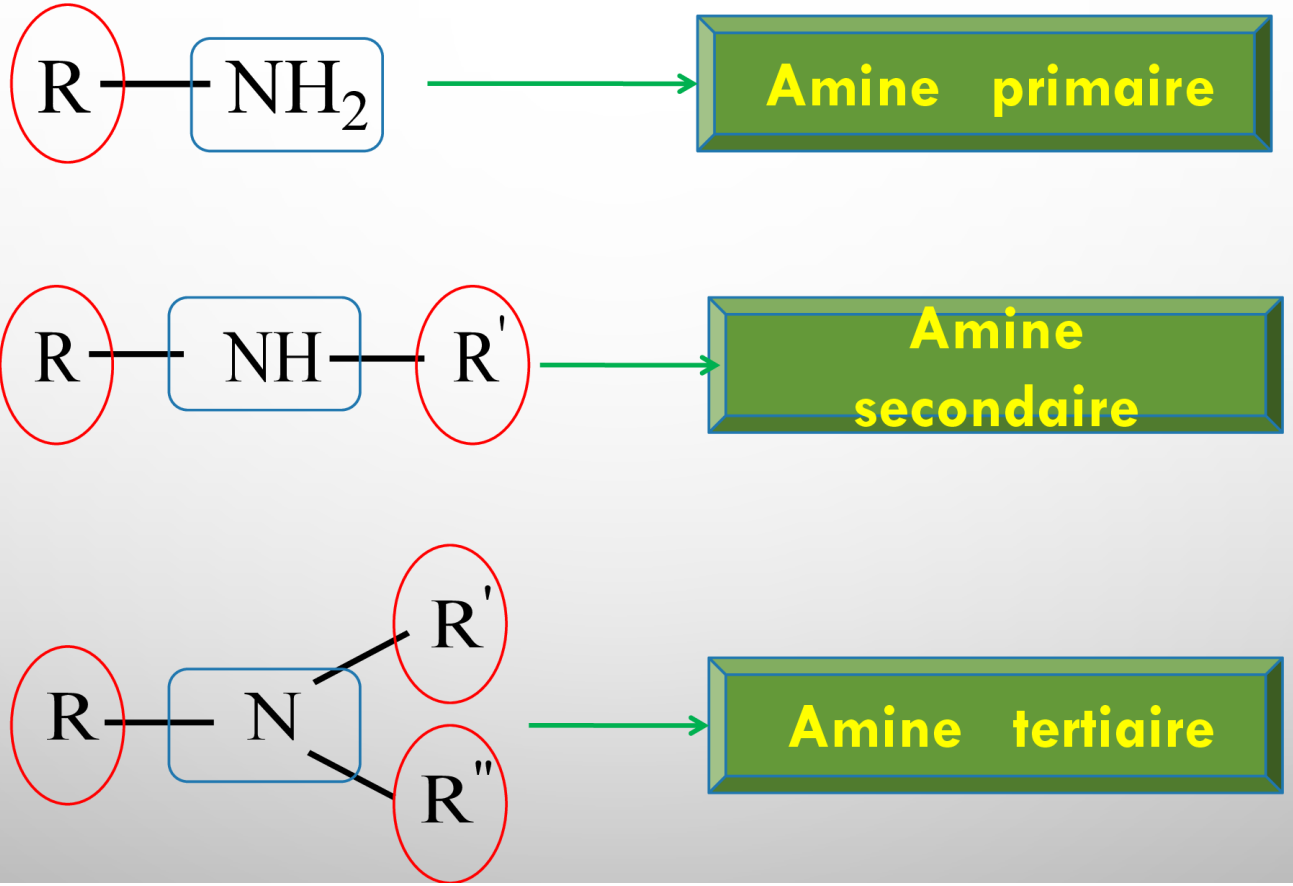
# IX. Amine

**Préfixe : Amino**

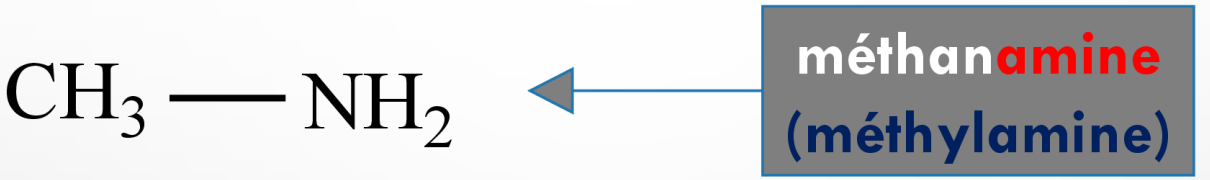
**Suffixe:**

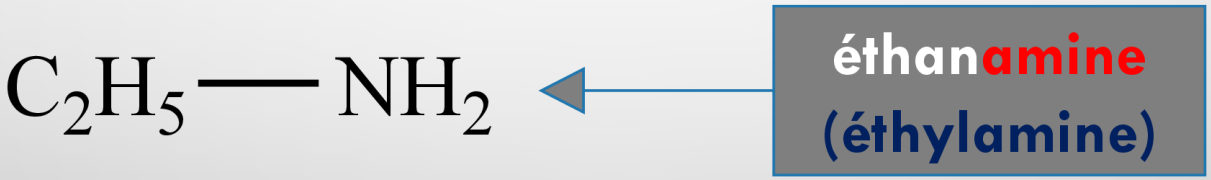
**nbr de carbone+ (ane, éne ou yne)+ Amine**

# TROIS CLASSES D'AMINES

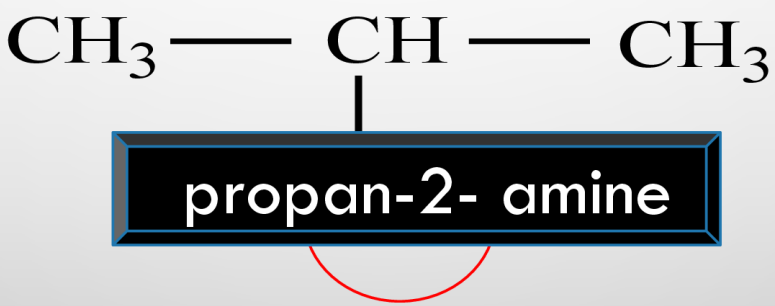


# A -NOMENCLATURE DES AMINES PRIMAIRES

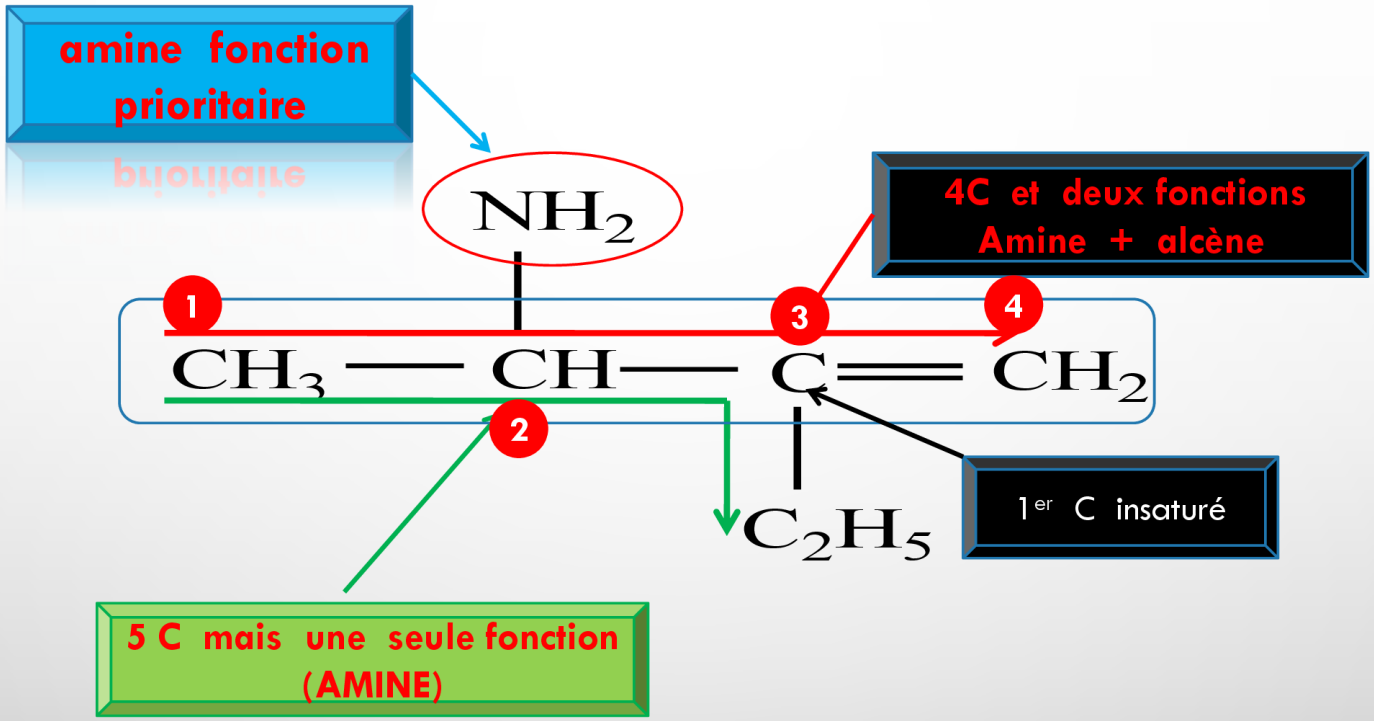


## CHAÎNE CONTENANT PLUS DE 3C

# AUTRE EXEMPLE



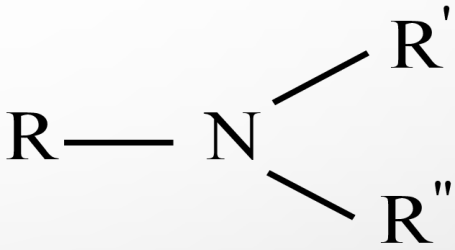

3 éthyl but -3- ène -2- amine

# B- AMINES SECONDAIRES ET TERTIAIRES

## b.1- symétriques


R = R'

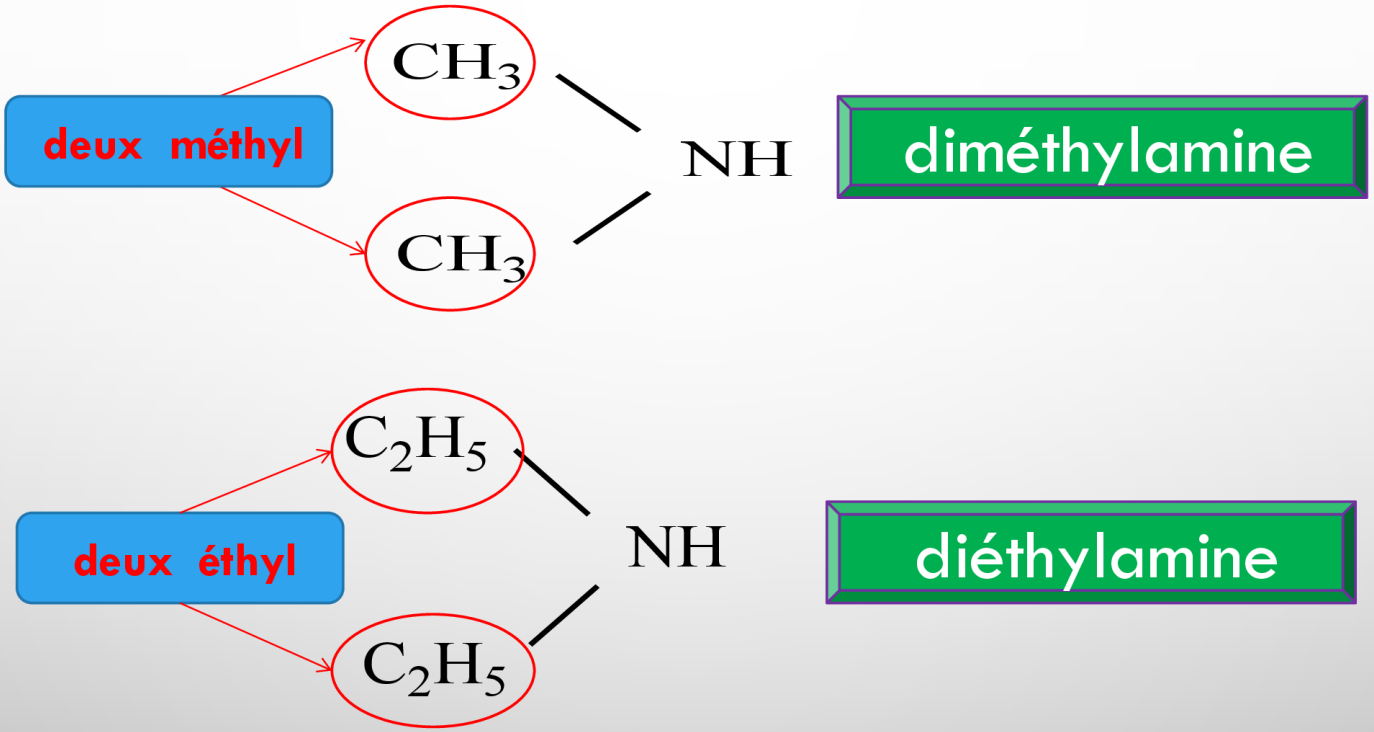
di + nom du groupe R + amine

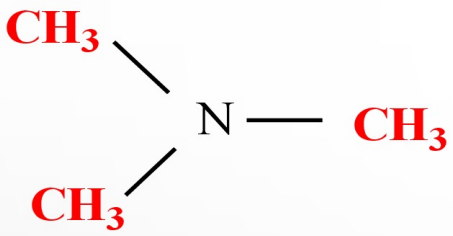



R = R'= R''

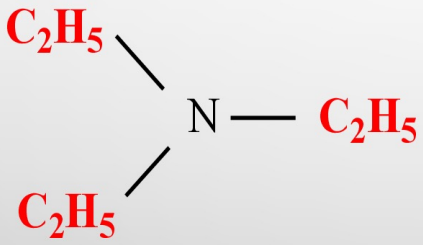
tri + nom du groupe R + amine

# EXEMPLES


deux méthyl
$CH_3$
$CH_3$
NH
diméthylamine
deux éthyl
$C_2H_5$
$C_2H_5$
NH
diéthylamine

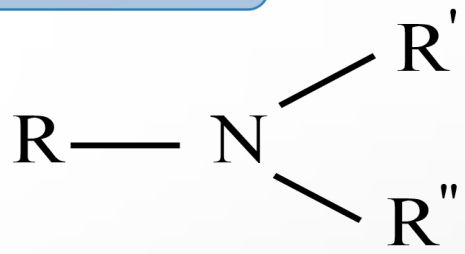



triméthylamine




triéthylamine

## b.2- Non symétriques

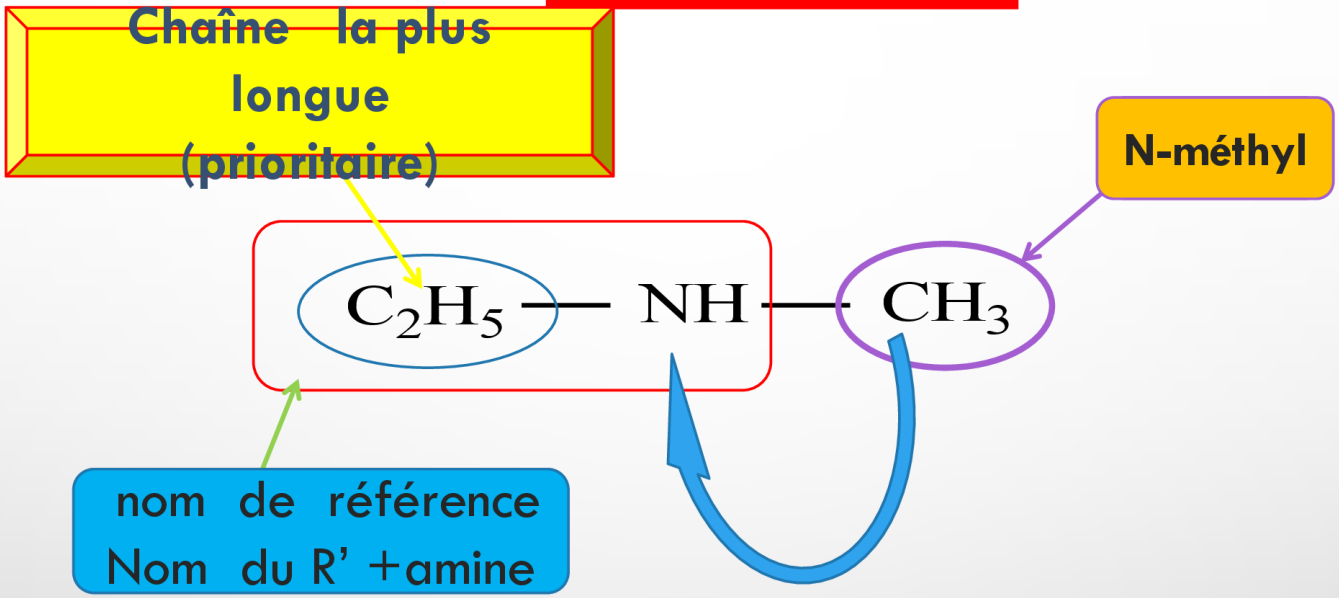

R ≠ R'

R ≠ R'= R''
R = R'≠ R''
R ≠ R'≠ R''

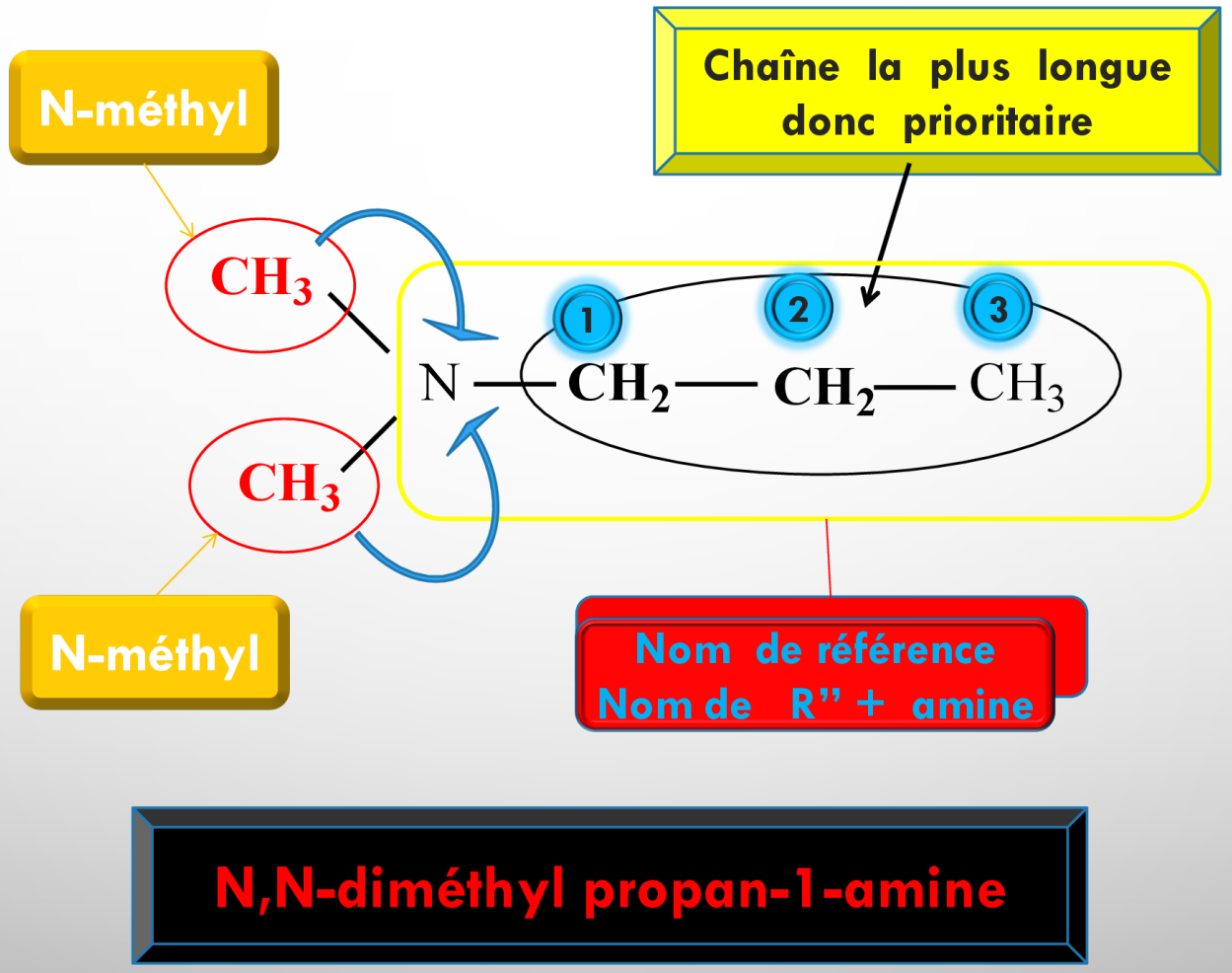
**N-alkyl R + nom du groupe R' + amine**

**N,N'- alkyl R, alkyl R' + nom du groupe R'' + amine**

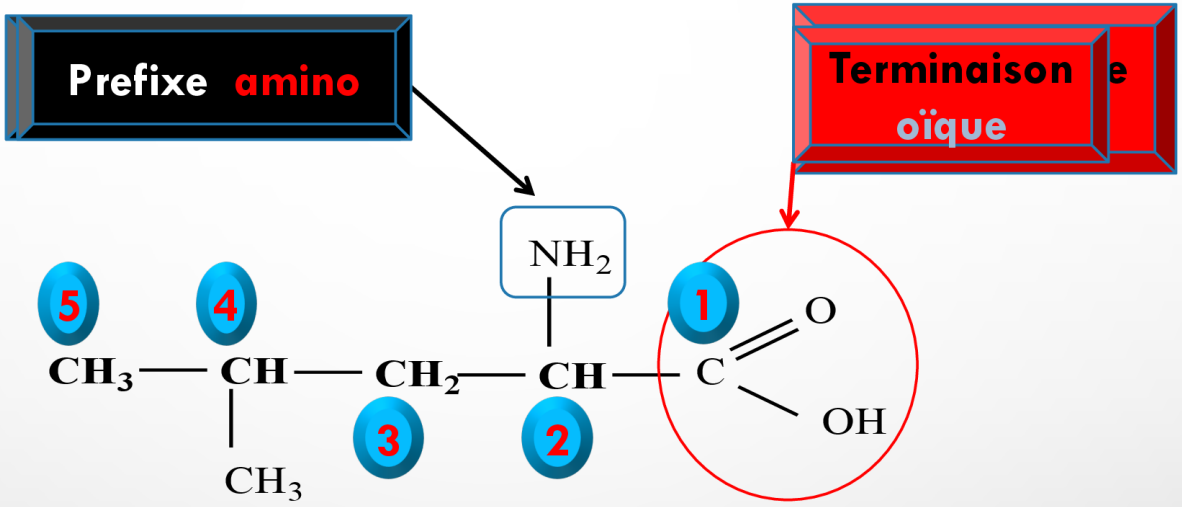
# EXEMPLES




**N-méthyl éthanamine**

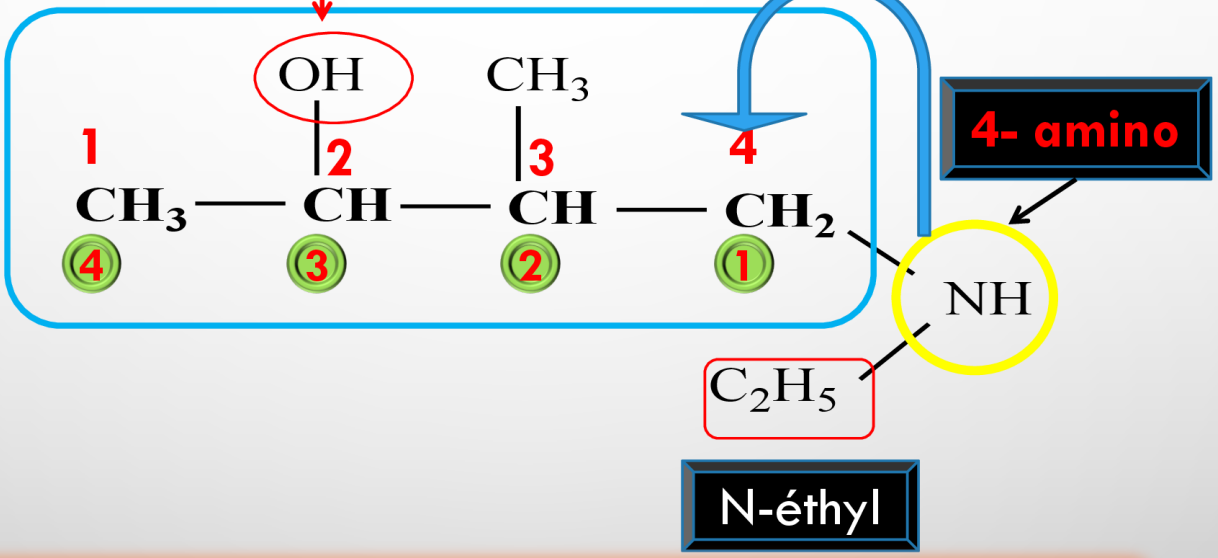

N-méthyl
Chaîne la plus longue donc prioritaire
CH3
CH3
N — CH2 — CH2 — CH3
1
2
3
N-méthyl
Nom de référence
Nom de R" + amine
N,N-diméthyl propan-1-amine

# C- FONCTION AMINE NON PRIORITAIRE




Acide 2 amino 4 méthyl pentanoïque

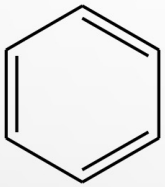
fonction (OH ) est prioritaire (indice faible )
cette partie de la molécule donne le nom de référence



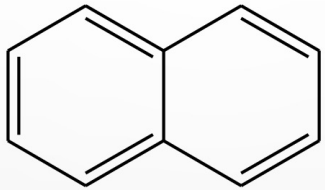

N-éthyl 4 amino 3 méthyl butan-2-ol

# NOMENCLATURE DE QUELQUES COMPOSÉS AROMATIQUES

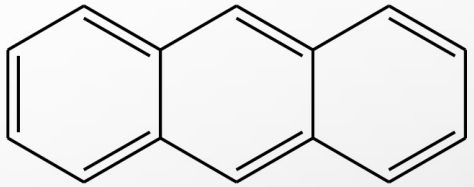
HYDROCARBURES BENZÉNIQUES



Benzène

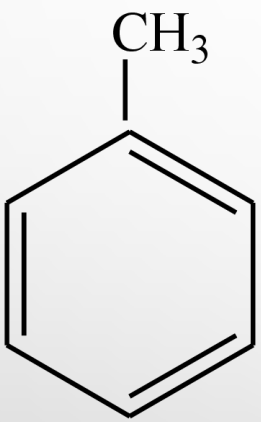


Naphtalène

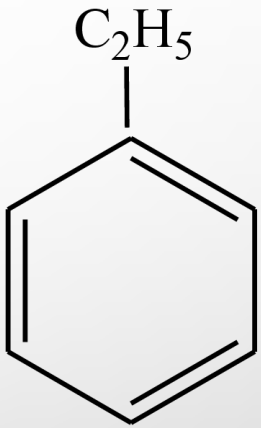


Anthracène

# BENZÈNE SUBSTITUÉ ( 1 SEUL)

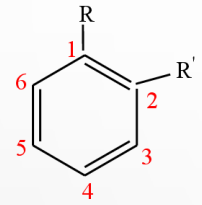



méthyl benzène

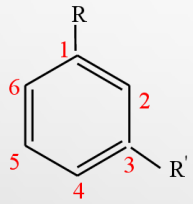



éthyl benzène

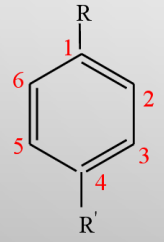
# BENZÈNE SUBSTITUÉ (2 SUBSTITUANTS)




**Position Ortho « o. »** R et R' sont en position 1,2

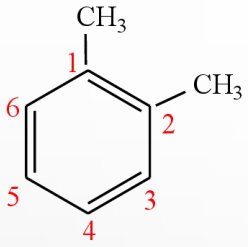



**Position méta « m. »** R et R' sont en position 1, 3

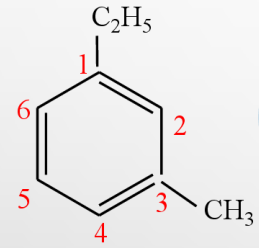



**Position para « p. »** R et R' sont en position 1,4

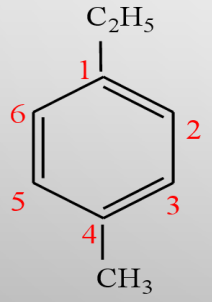
# Exemples



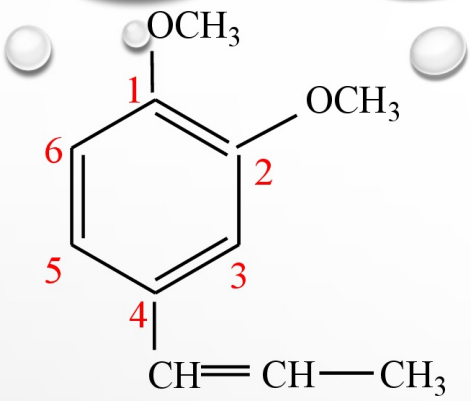

**ortho** diméthyl benzène ( o.diméthyl benzène )



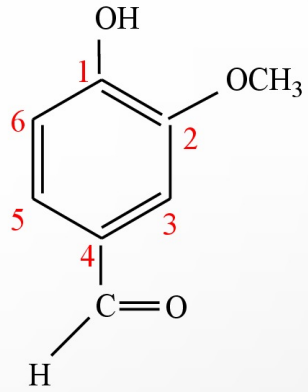

**méta** éthyl méthyl benzène
( **m**.éthylméthyl benzène)



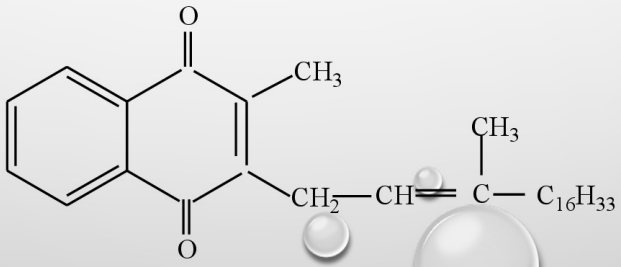

**para** éthyl méthyl benzène
( **p**.éthyl méthyl benzène)



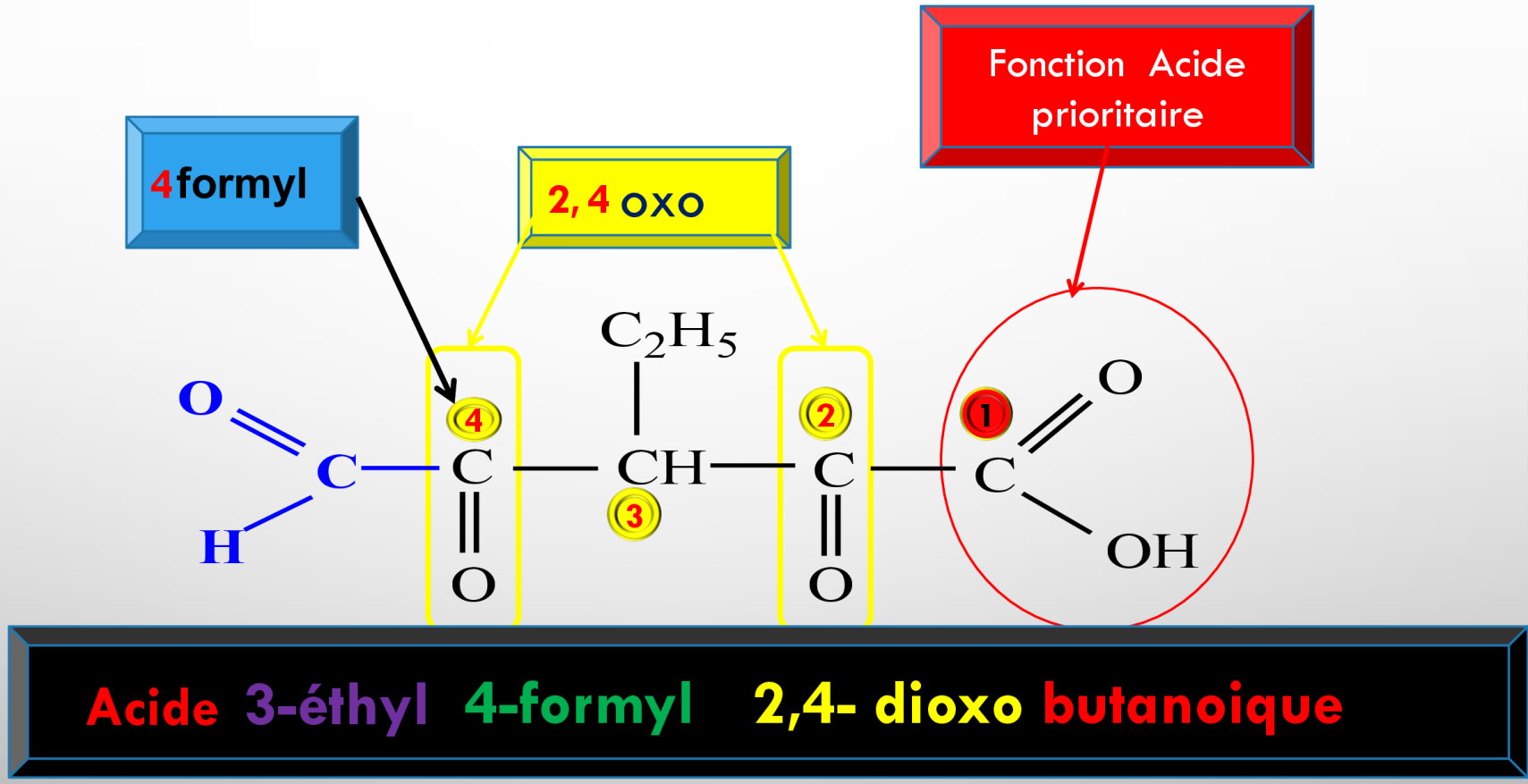

isoeugénol
Utilisé par les dentiste



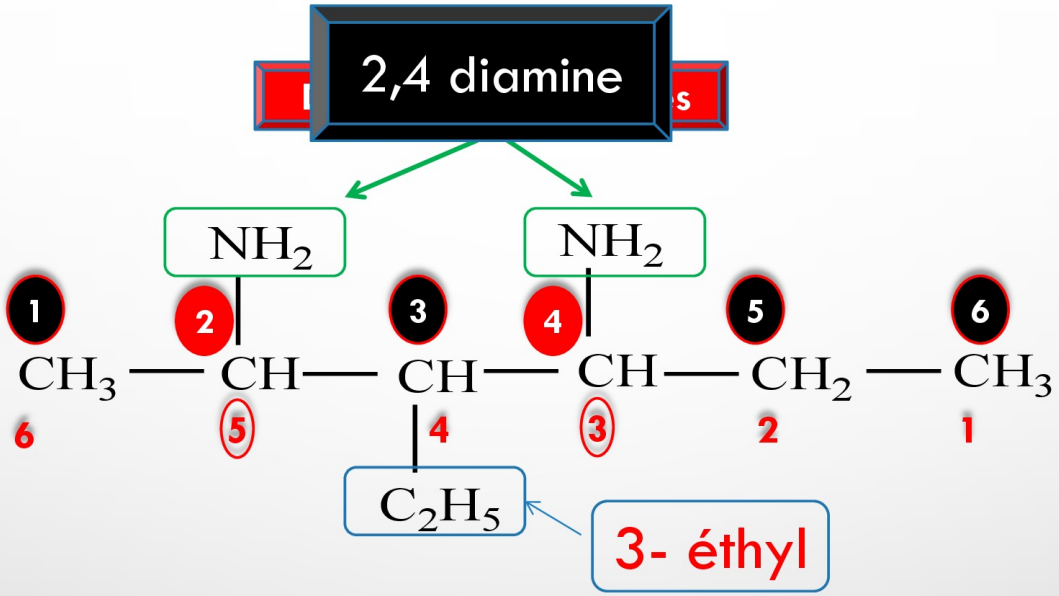

le vanillal
contenu dans la vanille




VITAMINE K


Fonction Acide prioritaire
4formyl
2, 4 oxo
$C_2H_5$
O
C
H
4
C
O
CH
3
2
C
O
1
C
O
OH
Acide 3-éthyl 4-formyl 2,4- dioxo butanoique

# CHAÎNE RAMIFIÉE CONTENANT DEUX FONCTIONS AMINES PRIMAIRES




**3- éthyl hexane-2,4-diamine**