

Fiche Chimie des Sucres I

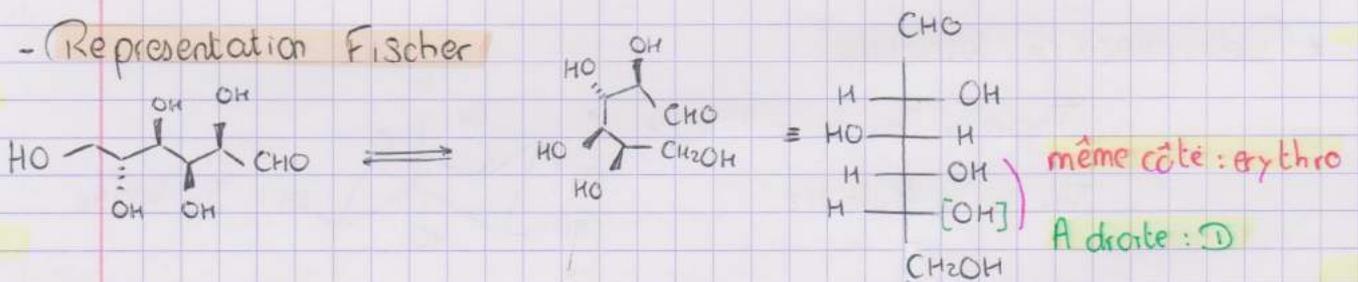
* Définitions et nomenclature:

- geminés = grp^z fixés sur le même atome
- Vicinaux = grp^z fixés sur atomes voisins (n et n+1)
- Sucres: formule $C_n(H_2O)_n$

↳ oses = monosaccharides (non hydrolysables) (pool chiral)

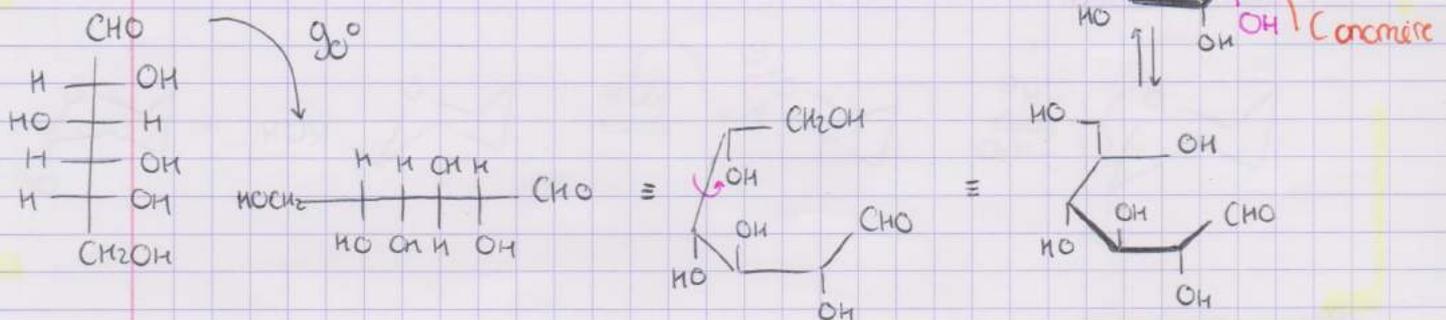
↳ Hlosides = } polysaccharides (> 10 monomères)
 } disaccharides (2-10 monomères)

- Representation Fischer



- Fermeture spontanée des cycles

- cycles à 5 ou à 6
- Haworth.

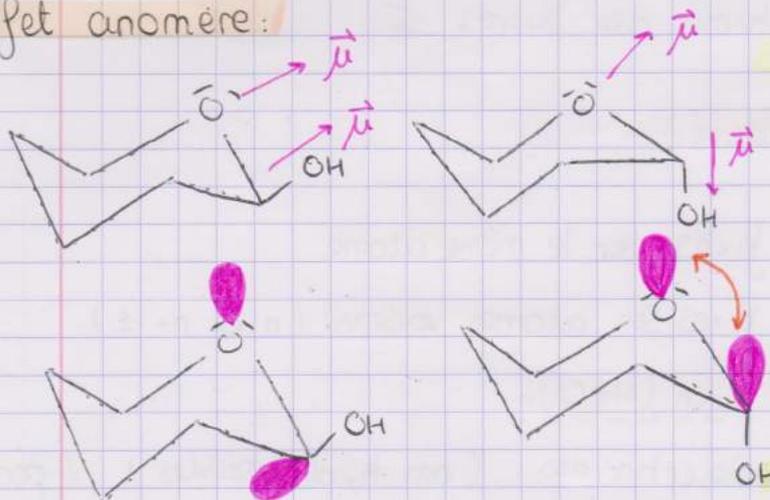


• Sacre D: CH₂OH au dessus du plan

↳ α : groupement 1 et 5 en trans \neq

↳ β : groupement 1 et 5 en cis \neq

• Effet anomère:



minimisation repulsion dipolaire.

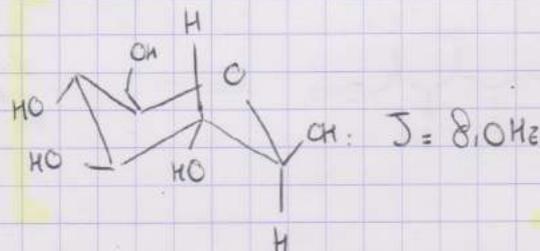
Stabilisation par hyperconjugaison

↳ on a souvent le CH₂OH en équatorial.

* Détermination structure.

• $J_{eq-eq} = J_{ax-eq} = 1-4 \text{ Hz}$

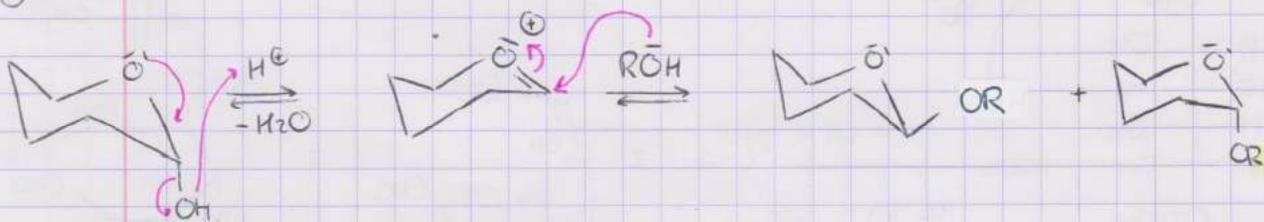
• $J_{ax-ax} = 8-10 \text{ Hz}$



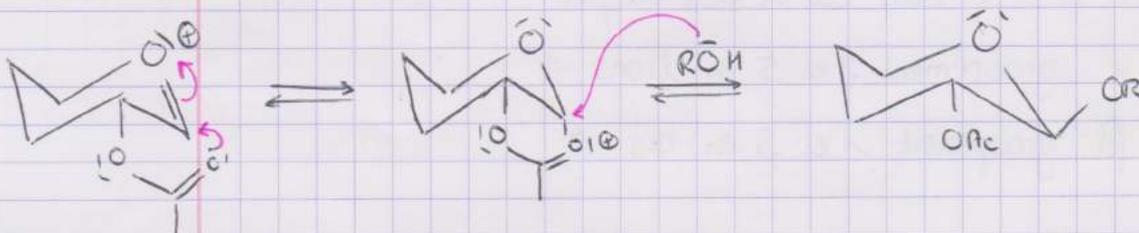
↳ RNN 2D

* Réactivité de la position anomères

• glycosylation

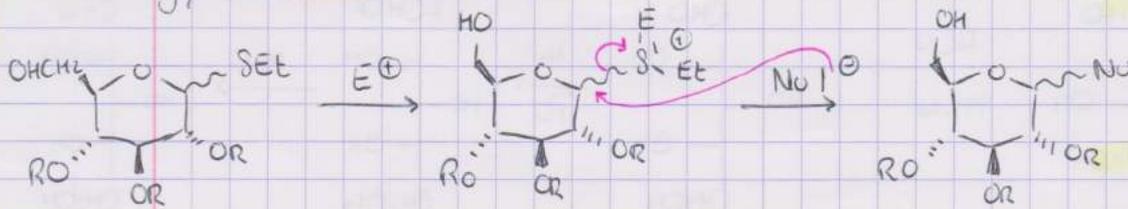


* effet ancheri Q

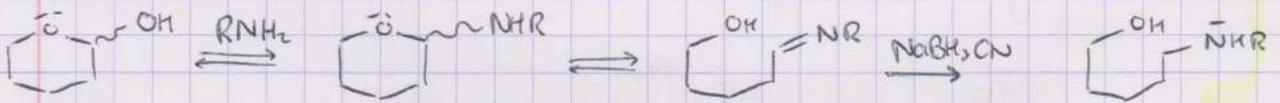


Fiche revision chimie Sacre II

* Thioglycosylation:



* Glycosylamine



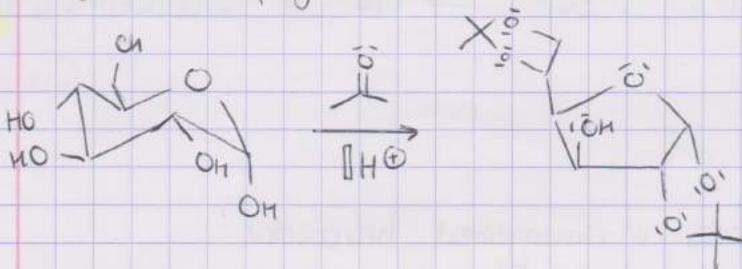
* Reduction avec Na/Hg or $NaBH_4$

- * Oxydation:
- dures: HNO_3 : oxyde CHO et CH_2OH en CO_2H
 - douces: Br_2 : oxyde CHO en CO_2H
 - non menagee: $NaIO_4$: Repture des liaisons

* Protection et deprotection:

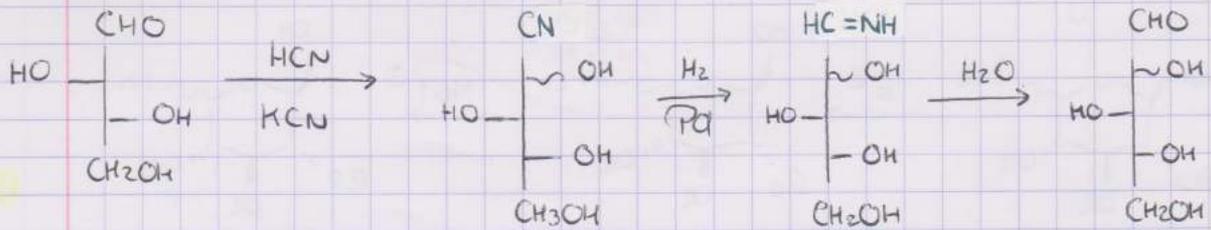
- Transesterification avec Ac_2O
- Ester silyles
- Formation acetals

↳ Formation preferentielle de cycle a 5 : cycles acetals trans



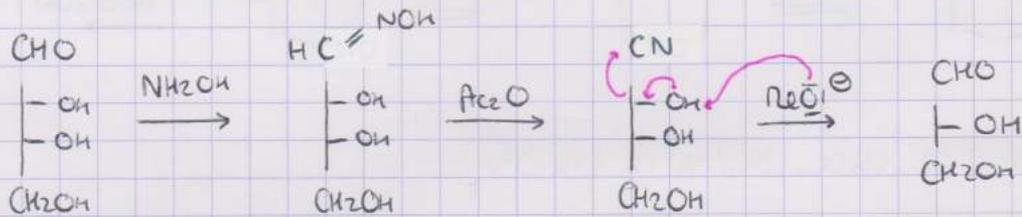
* Kiliani - Fischer

• Homologation: gain d'un carbone.

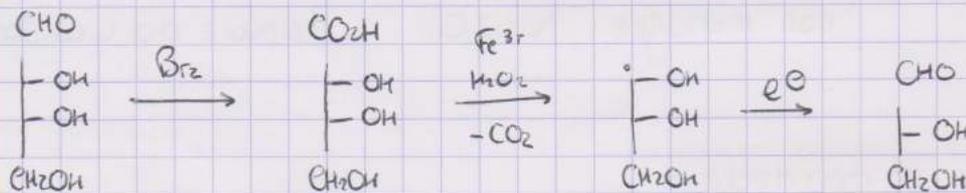


* Wohl:

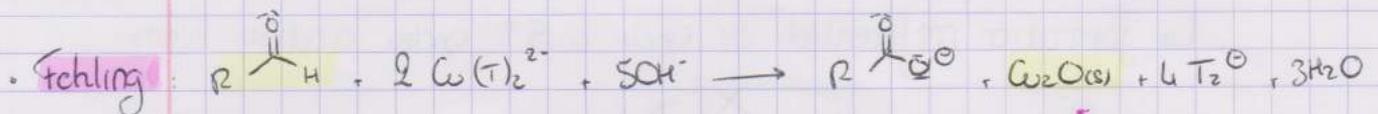
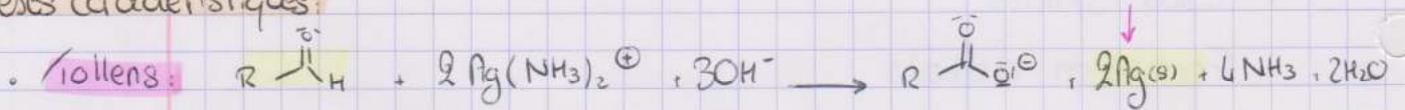
• Dégradation: perte d'un carbone



* Ruff:



* Tests caractéristiques:



Formation miroir argent

Rouge brique

• On des polymères de sucres

- Amidon: polymère glucoses en arrangement hélicoïdal
- Cellulose: polymère glucose linéaires
- ADN / ARN