Notes 10/22

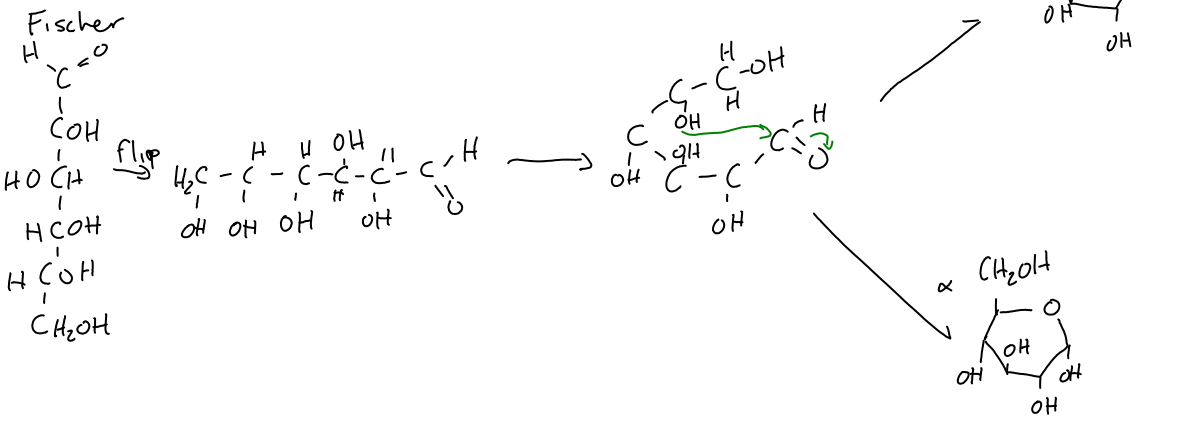
Monday, October 22, 2007
9:00 AM

Notes 1022

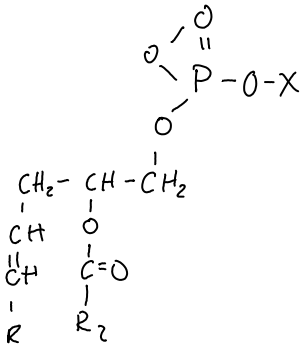
Audio recording started: 9:06 AM Monday, October 22, 2007

Today:
- Review D-luc
- Cholesterol & steroids
- Lipid-linked proteins
- Lipoproteins
- Biological membranes

- D-glucose



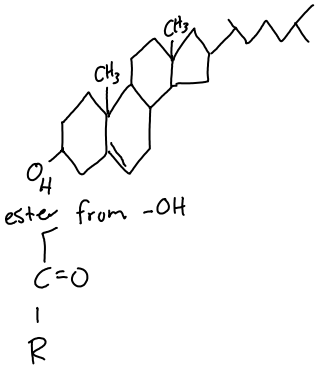
- Are polysaccharides are reducing sugars? Sometimes… check with toullens
- Plasmologens
  - Phospholipid



← general formula of plasmologen

X = ethanolamine, choline, or serine

- Cholesterol



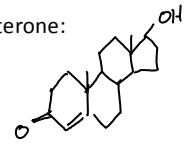
CPPP

Precursor to steroid hormones
Membrane proteins
Lipoproteins
70% esterified to long chain fatty acids.

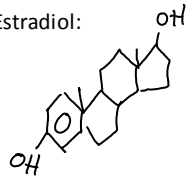
Steroids:

Molar polar than cholesterol
Move through blood as protein carriers from site of production to target tissue.
Trigger changes in gene expression and metabolism

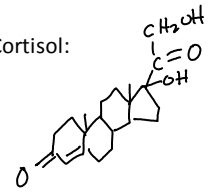
Testosterone:



Estradiol:

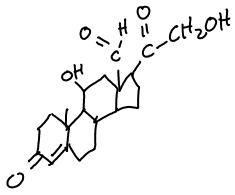


Cortisol:



Regulates glucose metabolism

Aldosterone - produced in cortex of adrenal gland and regulates salt



Lipid-linked proteins (pg 402-404)	**Lipoproteins (pg 439+)**
Covalent	Noncovalent
Found in membranes	Function in blood plasma
Mediate protein protein interactions	"taxi" triacylgycerol of cholesterol.

Lipid linked proteins:

1. **Isoprenoid groups**
2. **Fatty acyl groups**
3. **Gylcoinositol phospholipid**

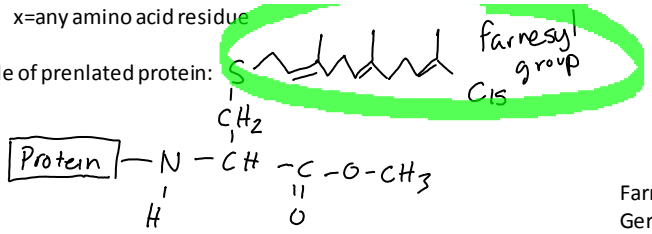
- **Isoprenoid**

When protein is connected to isoprenoid it is called prenlated protein

- Prenlated proteins usually follow CaaX motif
  - c=cys
  - a=aliphatic amino acid

- x=any amino acid residue

Example of prenlated protein:



(C_{20} → geranyl/geranyl group)

Farnesylated when X=Gln, Met, or Ser
Geranylgeranylated when X=Leu

Prenlated proteins anchors proteins to membranes and mediates protein-protein interactions.

- **Fatty Acylated proteins**
  - Eukaryotic proteins
  - Myristic acid - alphaamino n-termo gly
  - Palmitic acid thioester linkage
  - Functions of fatty acylated protiens:
    - Anchors protein into membrane
    - Targets it to membrane
    - Palmytoylated proteins usually occur on cytoplastmic face
    - Myristoylated protein usually occurs in subcellular compartment (ie E.R. and nucleus)

- **GPI linked proteins**