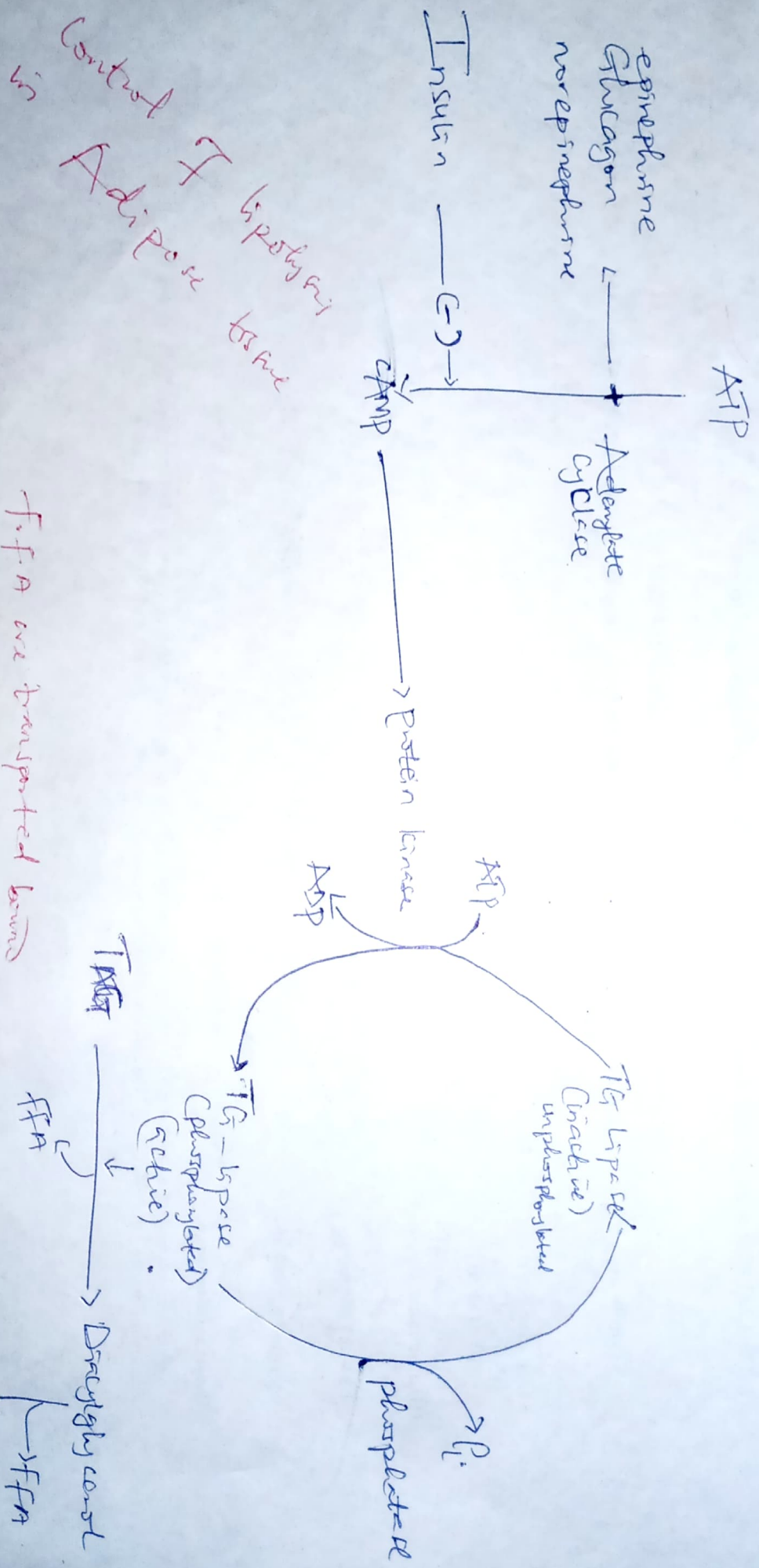


Hormone Sensitive — TG-lipase — <sup>(P)</sup> activated by a cAMP dependent protein kinase.



Control of lipolysis in Adipose tissue

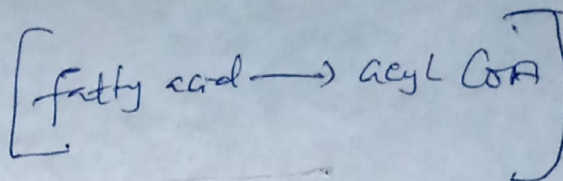
FFA are transported bound to albumin in circulation and transported to the liver where oxidation takes place. brain & erythrocytes cannot.

① Activation of fatty acid.  $\beta$ -oxidation @  $\beta$ -carbon. Cytosol.

— Thiolase or acyl CoA Synthetase

— ATP, CoA &  $Mg^{2+}$

→  $PP_i$  (pyrophosphate).

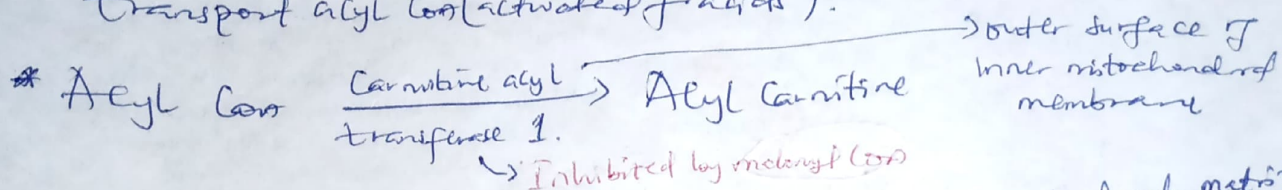


ii Transport of acyl CoA to mitochondria

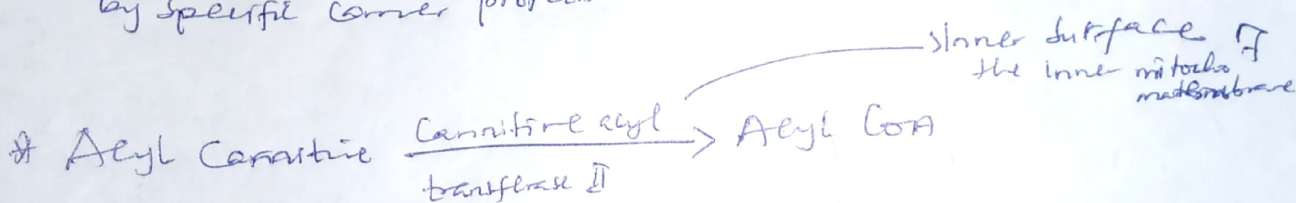
— Mitochondrial membrane impermeable to fatty acids.

— Specialized Carnitine Carrier System (Carnitine shuttle)

Transport acyl CoA (activated fatty acid).



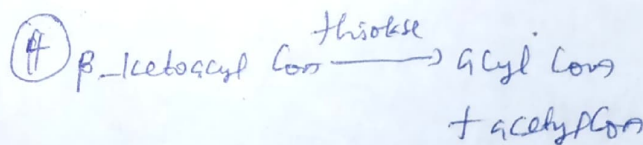
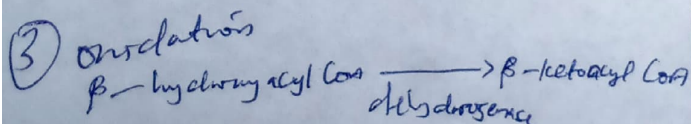
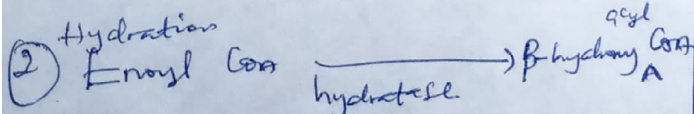
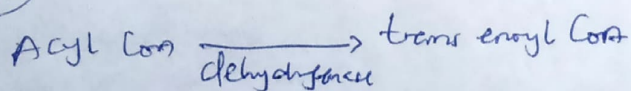
\* Acyl Carnitine is transported across membrane to mitochondrial matrix by specific carrier protein



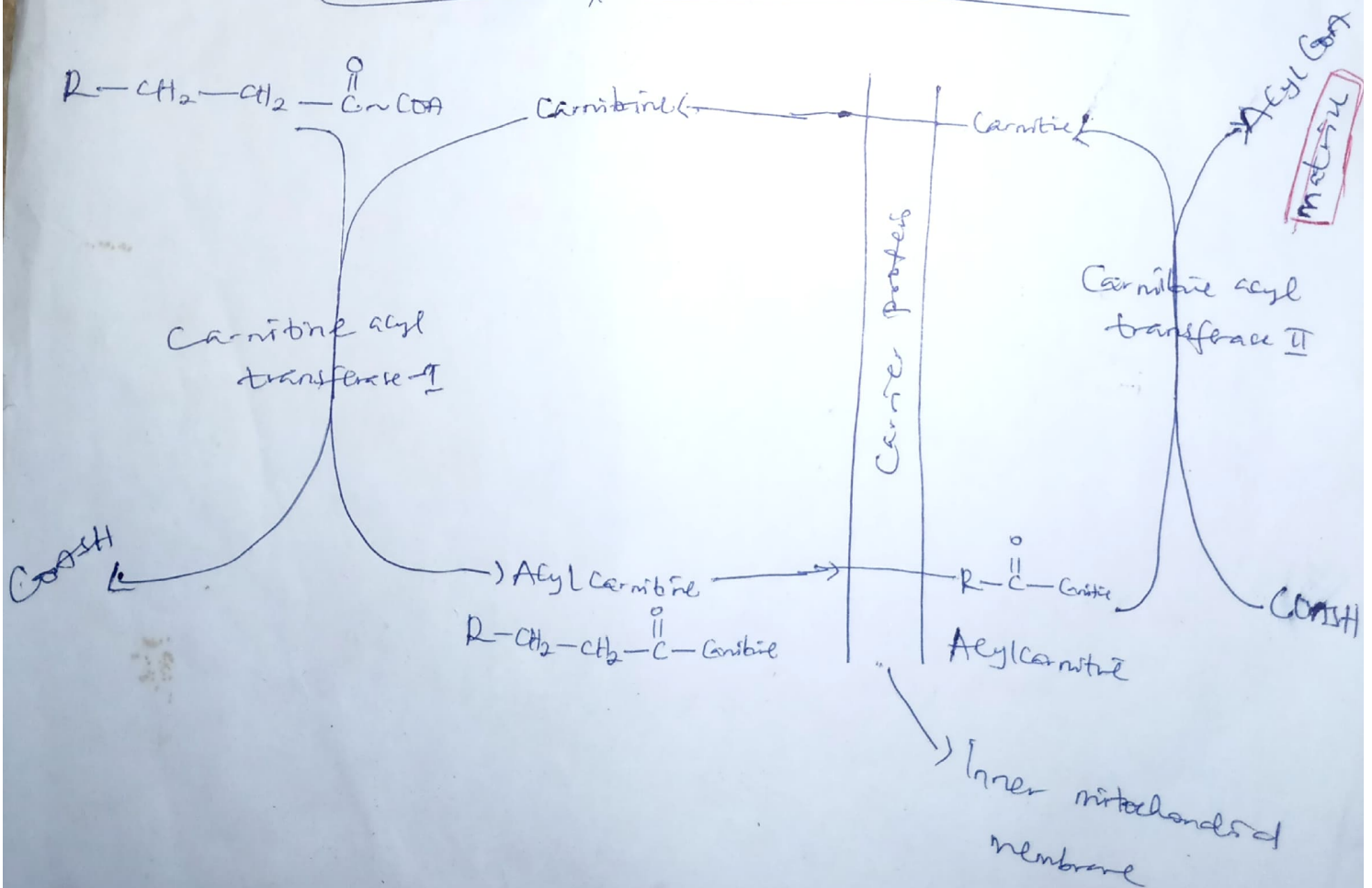
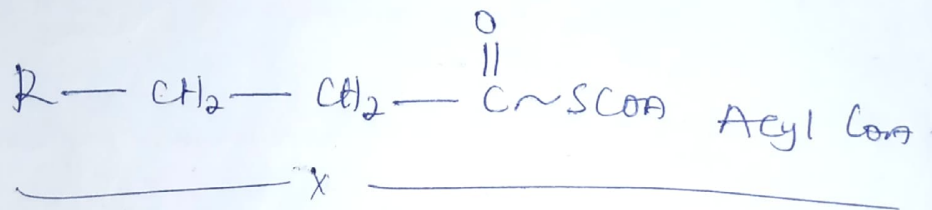
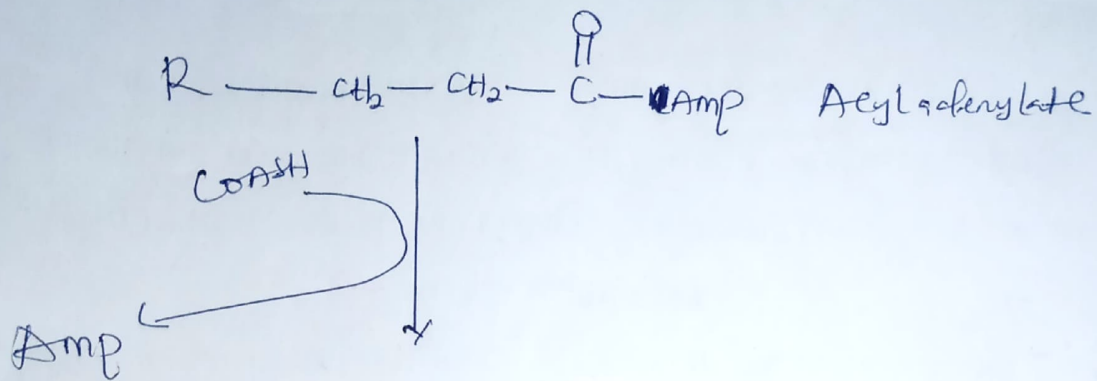
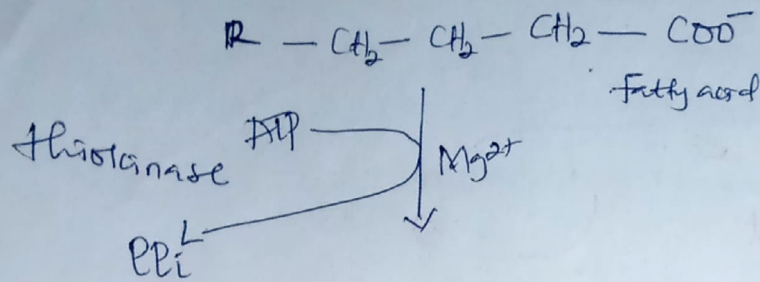
\* Carnitine released returns to cytosol for re-use.

steps

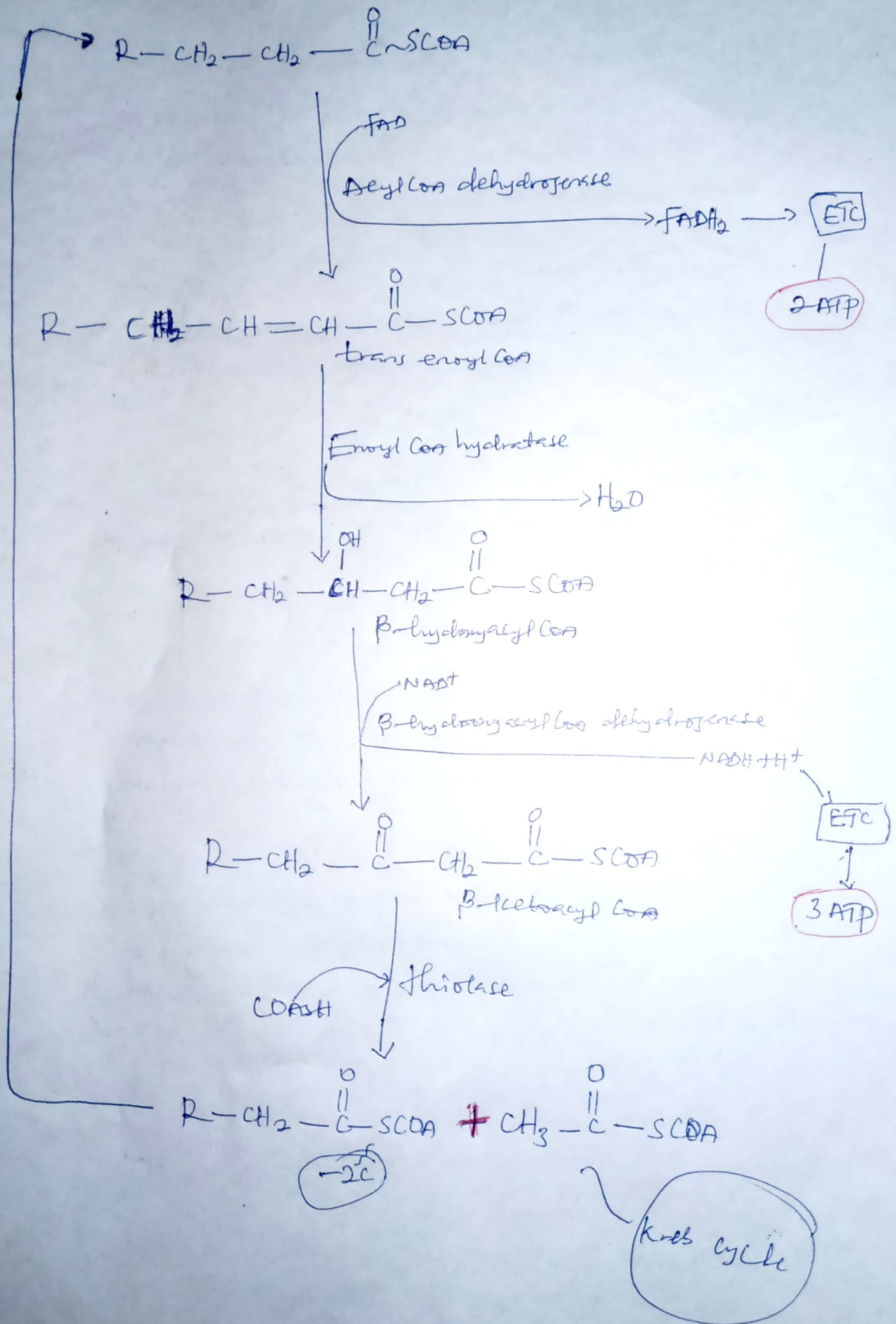
① oxidation (double bond @  $\alpha$  &  $\beta$  C.)



# Activation

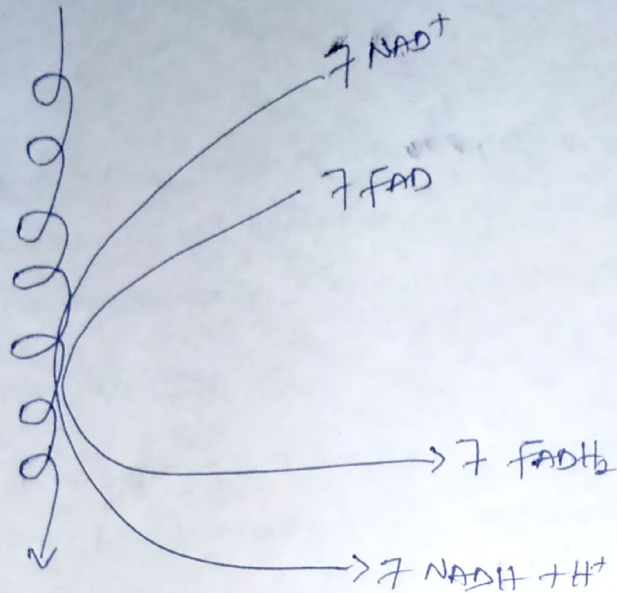


# $\beta$ -oxidation proper



Palmitic acid  
Activation

↓  
Palmitoyl CoA



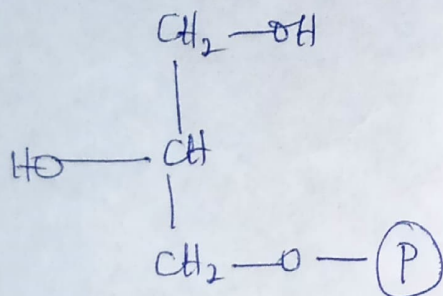
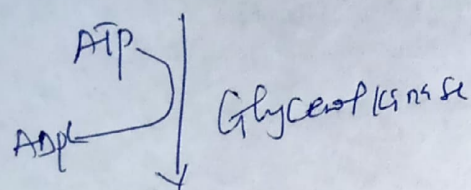
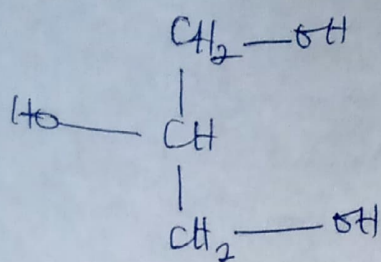
36 ATP  $[5 \times 7]$

8 Acetyl CoA

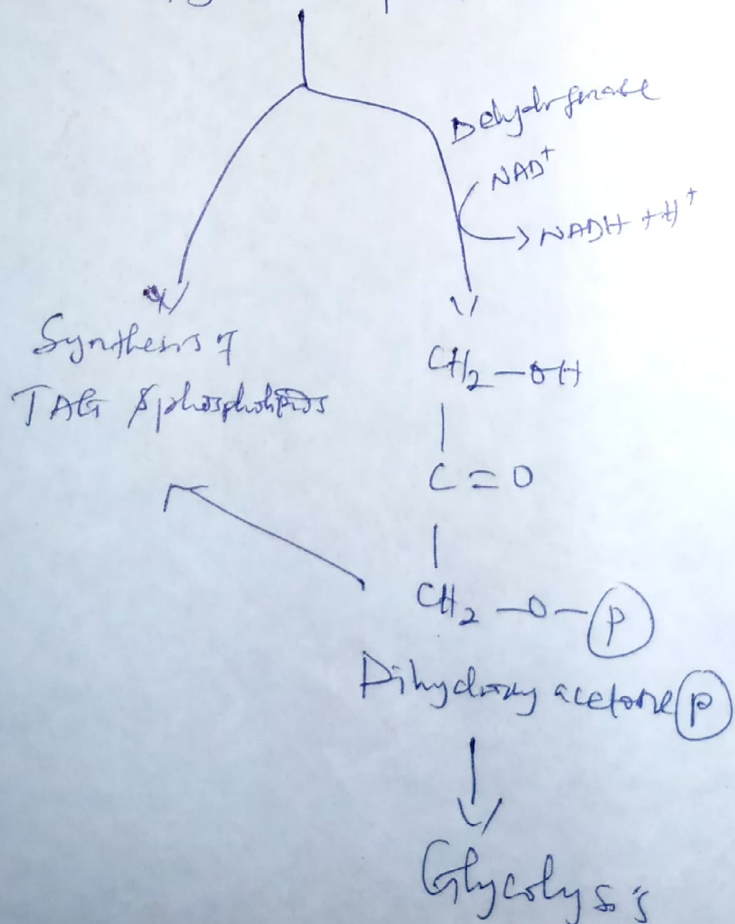
→ TCA cycle.

7 cycles yield 8 acetyl CoA

# Fate of Glycerol



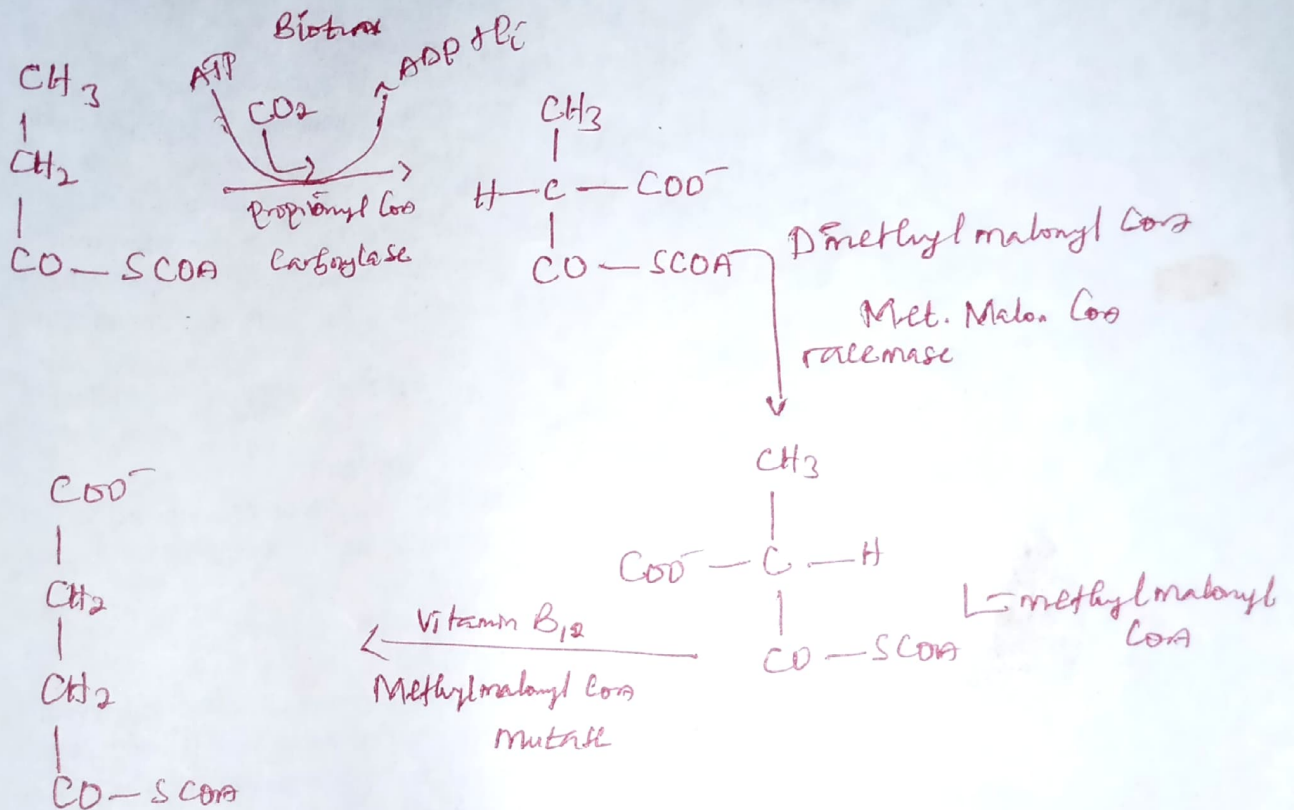
Glycerol-3-phosphate



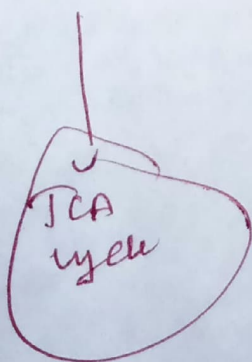
Adipose tissue lack the enzyme Glycerol kinase. Therefore Glycerol is transported to the liver where it is converted to the DHAP for Glycolysis

# ODD CARBON CHAIN FATTY ACIDS Oxidation

- 17 Carbon
- In the last cycle, three carbon moiety propionyl CoA is left behind
- Propionyl CoA is converted to Succinyl CoA.



Succinyl CoA



Unsaturated fatty

Isomerase and epimerase.