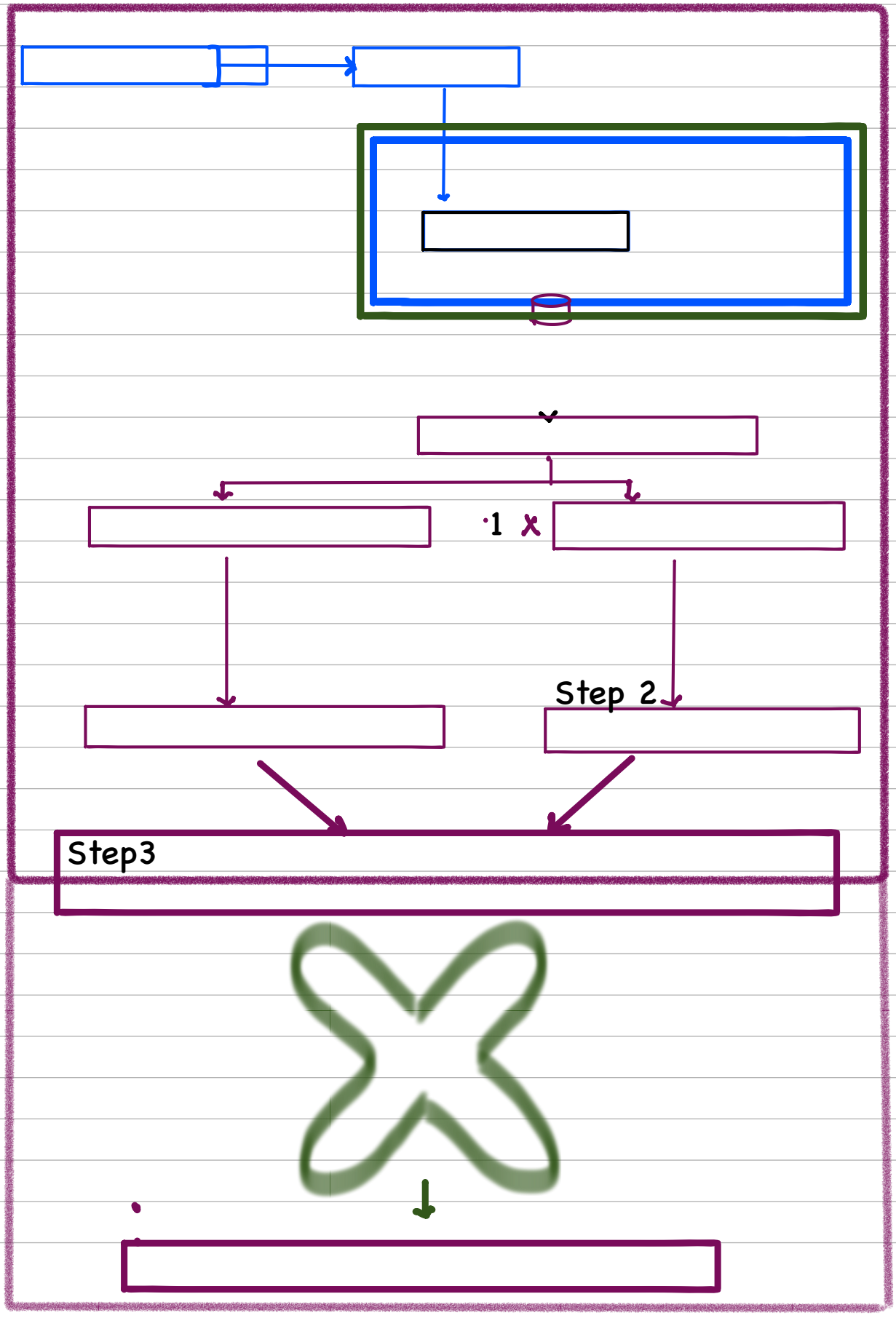
Chapter 21
Fatty acid metabolism

Fatty acid synthesis



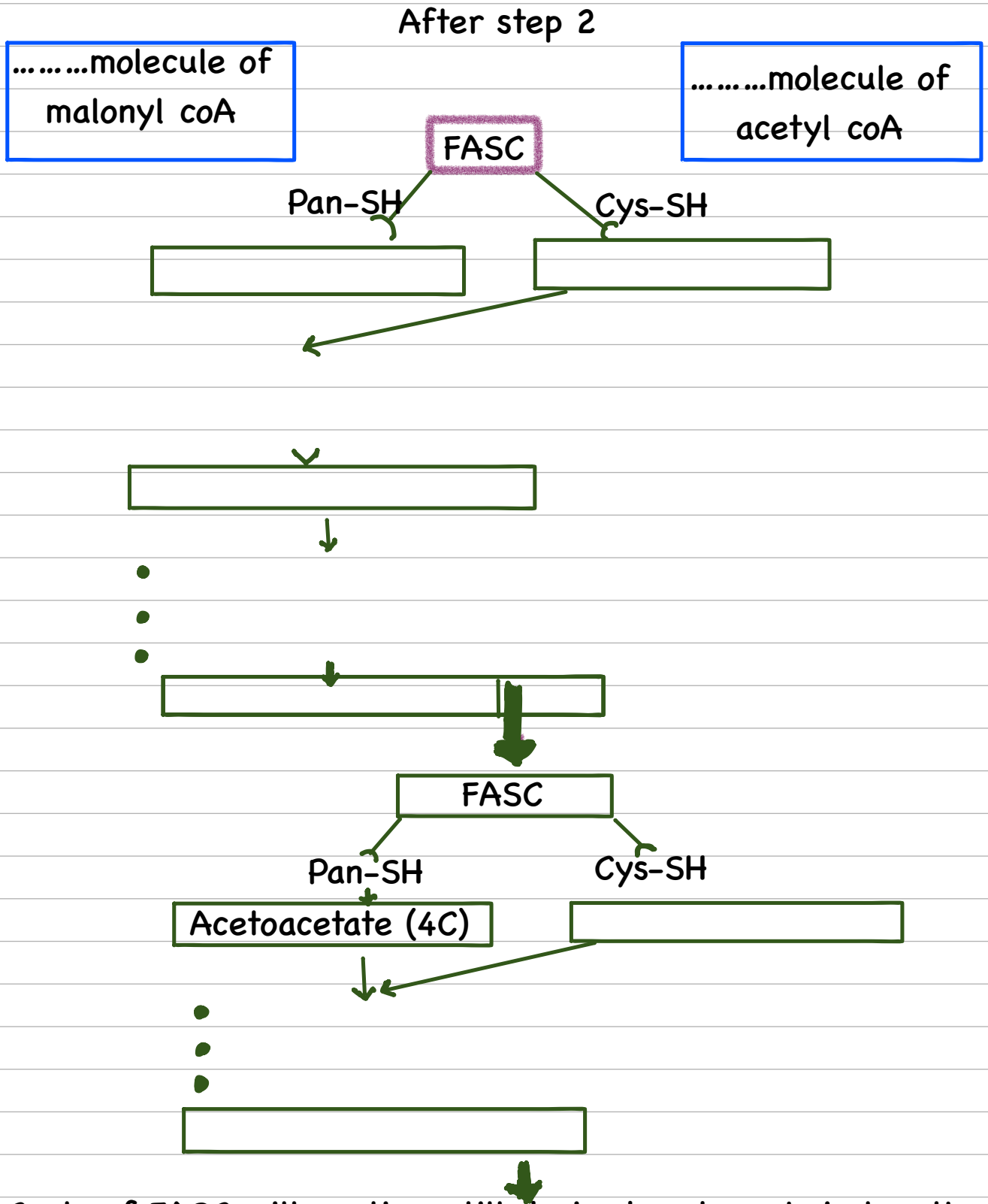
Step 1 - transport of …… via ……shuttle.

step 2 - conversion of …… molecule of acetyl coA to ……coA

Via ……. ……. ……enzyme .

Step 3- series of reaction at ……

- Series of reaction at FASC -



Cycle of FASC will continue till desired carbon chain length Is nit achieved.

- 1st cycle of FASC added …… carbon after that each subsequant Cycle added ……additional carbon.
- Each cycle utilized ……..NADPH.
- So to for palmitic acid - …… carbon fatty acid

Number of cycle by FASC -

NADPH used-

Extra mile

- Details of fatty acid synthase comple (FA.S.C)



- Shape -
- …….. identical arms , each arm consist of …… enzyme and …….. Acyl carrier protein(ACP)

Q- not a part of FASC ?
A) ketoacyl synthase
B) acetyl CoA carboxylase
C) thioesterase
D) acyl carrier protein

- Regulation of fatty acid synthesis

FA synthesis

Fatty acid

Effect of Insulin -

Glucagon-

Step 1

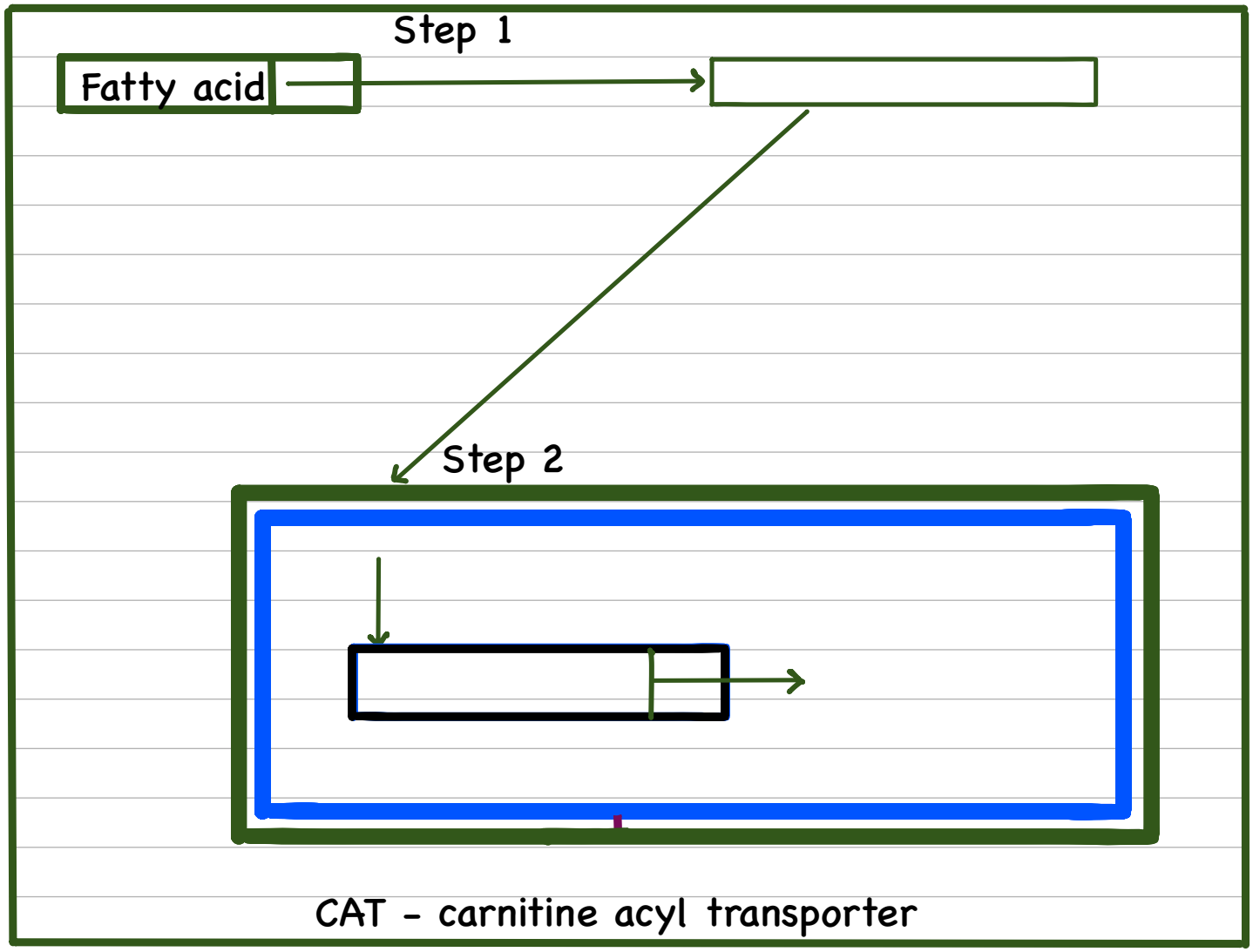
Fatty acid oxidation

Basic concept

B- oxidation	α- oxidation	ω- oxidation

C - C - C - C - C - COOH C - C - C - C - C - COOH C - C - C - C - C - COOH

Steps of B-oxidation



Step 1 - synthesis of activated fatty acid (……)

Via enz.……

Step 2 - transport of acyl coA through ……mito.

membrane via ……

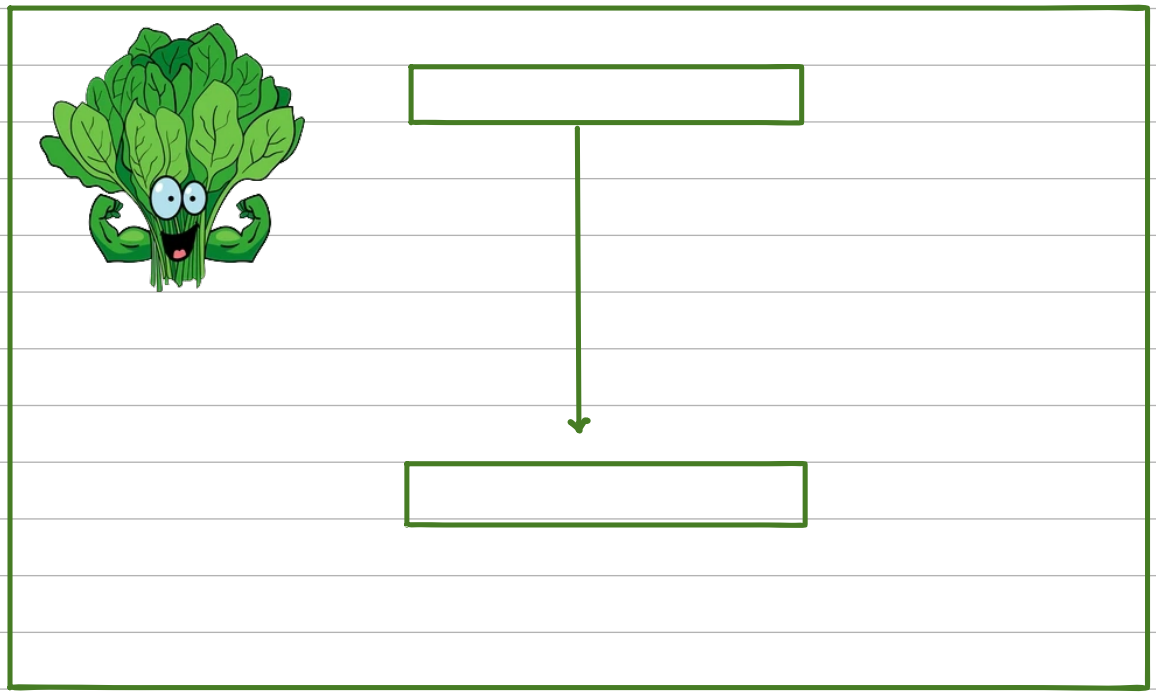
Step 3 - ……. ……

Energectic of B-oxidation

1 molecule of palmitic acid - ……ATP

1 molecule of stearic acid - ……ATP

α - oxidation Place - peroxisome of



C/f-

Rx-

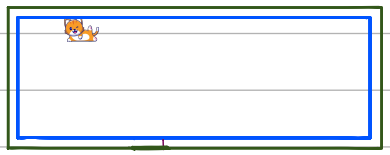
☆ Energetic of α-Oxidation =

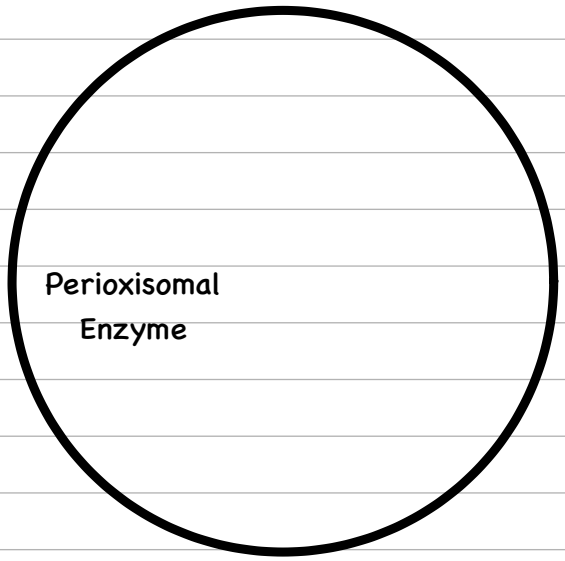
☆ Very long chain fatty acid oxidation (VLCFA)

Very long chain fatty acid oxidation (VLCFA)

Carbon chain >= ……carbon

VLCFA





Perxoisome

Summary

Deficiency of phytanoyl coa hydroxylase -……disease

peroxisomal enzyme are defective- ……syn

Transport of VLCFA to peroxisome is defective -

Palmitic acid - b-oxidation - gives - ……ATPs