

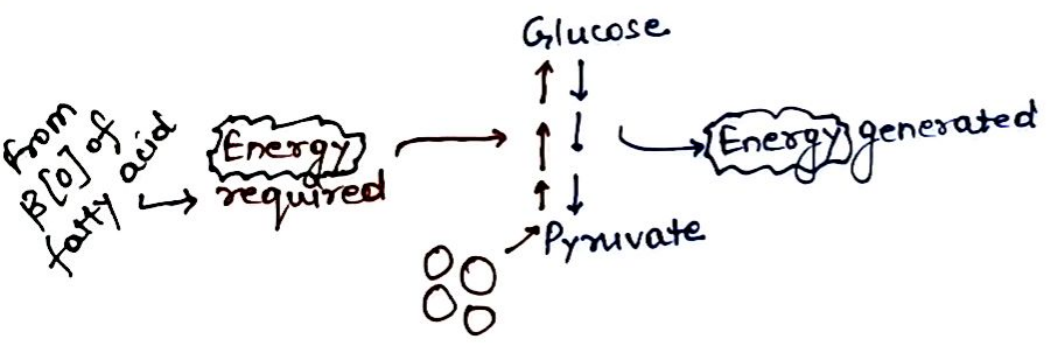
# Definition :- Process by which glucose is synthesised from non-carbohydrate substrate

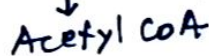
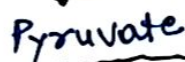
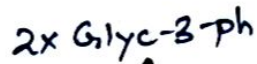
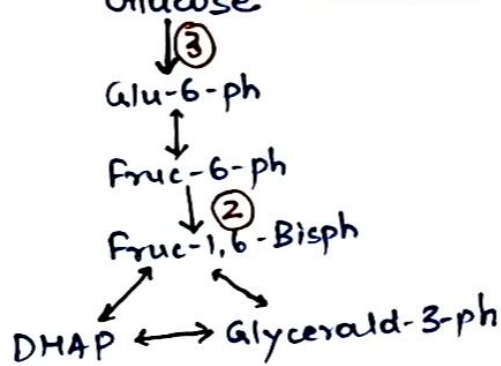
- ① Lactate
- ② Glucogenic amino acid [Alanine-m/c]
- ③ Glycerol [from fat]
- ④ Propionyl CoA [odd chain FA]

# Site :- Liver ; Kidney  
(Cytoplasm & mitochondria)

\* Occurs in fasting state !  
↳ Early fasting (4-16 hrs) = Hepatic glycogenolysis  
↳ Fasting (16-48 hrs) = "Gluconeogenesis"

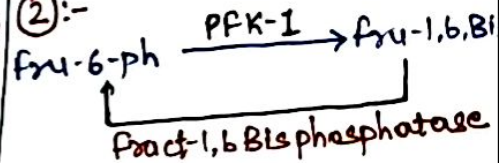
\* Is a energy requiring process !



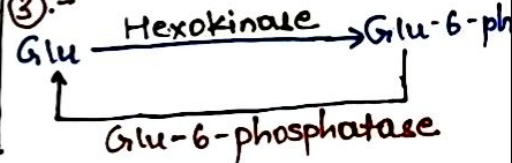


We have to circumvent these ③ irreversible steps. Rest all are reversible, so carried out by same enzyme.

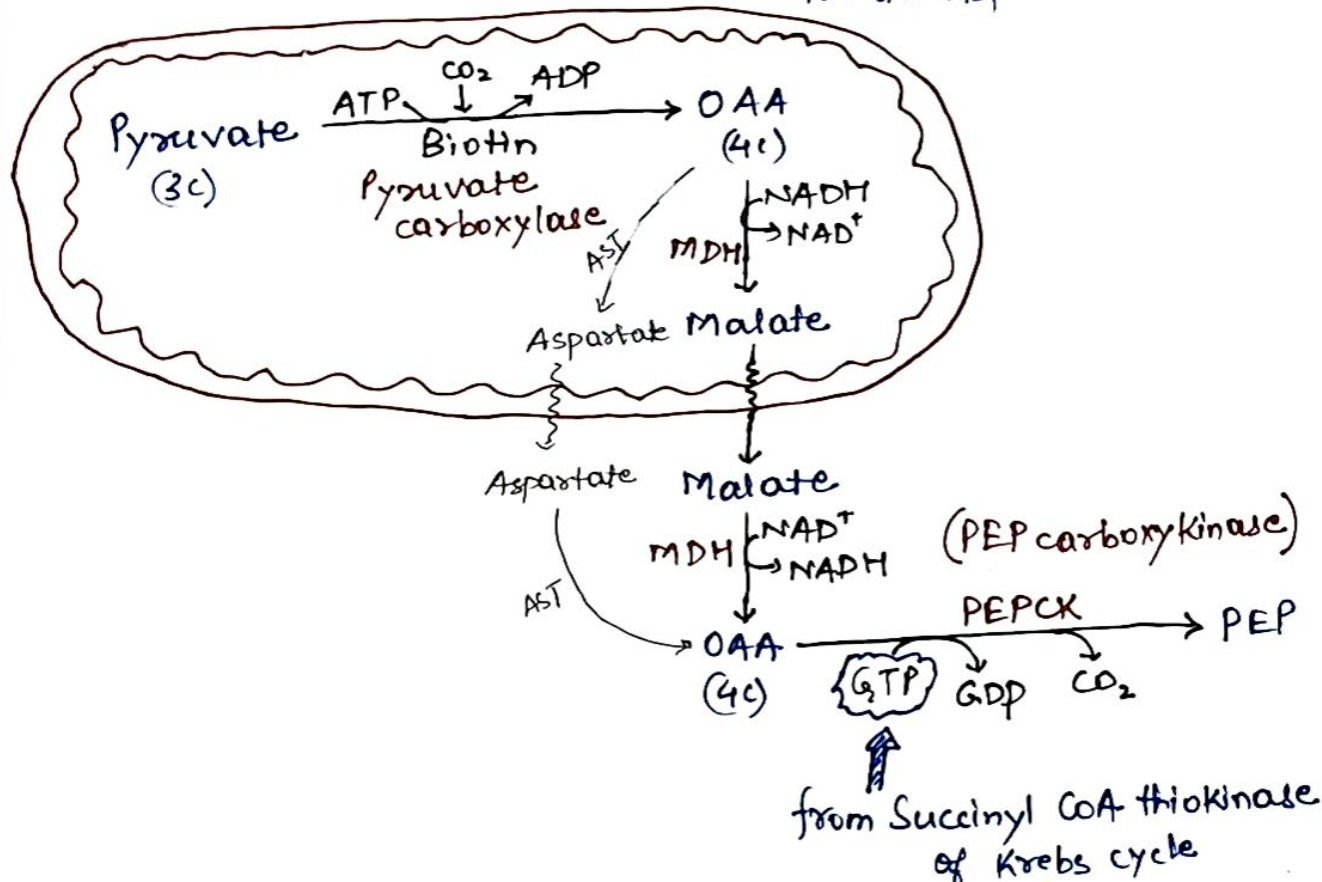
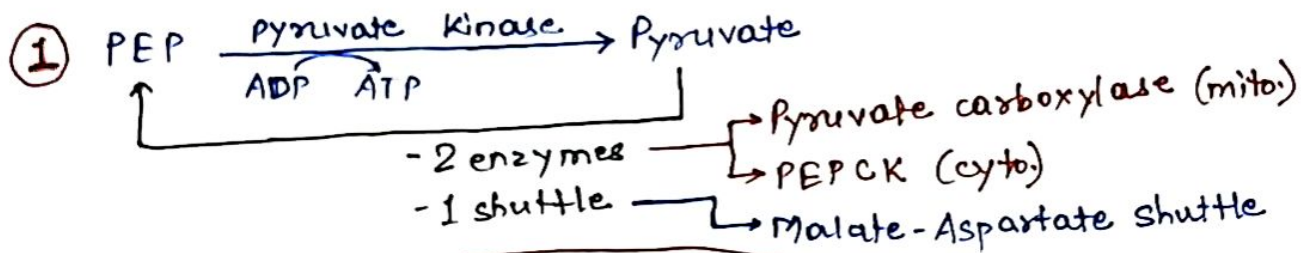
②:-



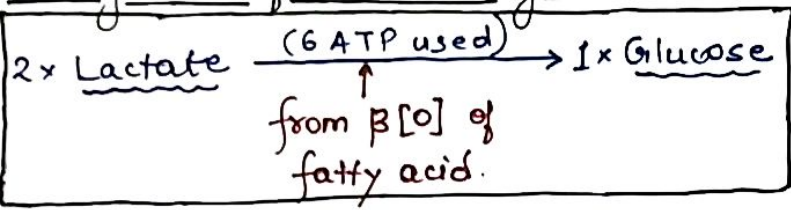
③:-



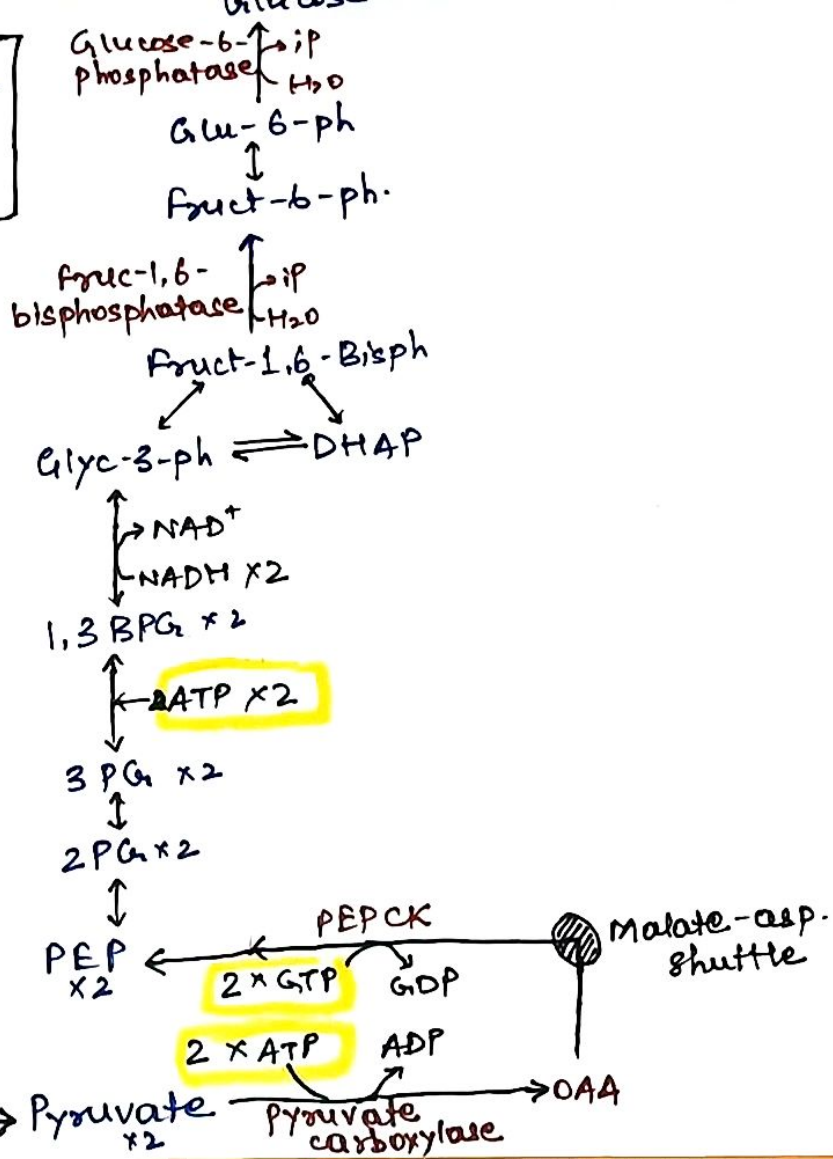
# # Reversal of Irreversible Steps



energetics of gluconeogenesis



Hence; 6ATP is used to produce glucose from Lactate through gluconeogenesis.



LIVER

BLOOD

MUSCLE

