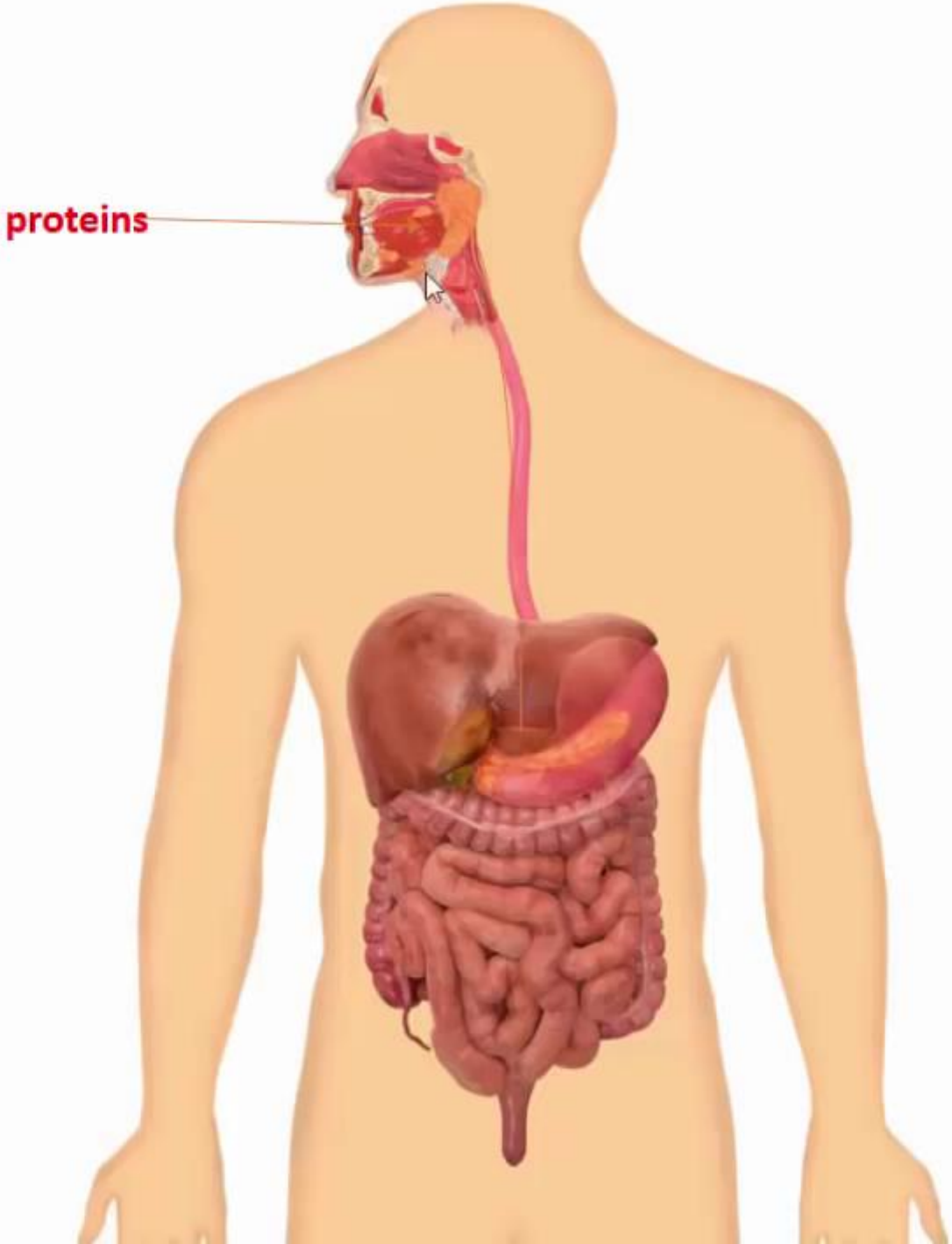
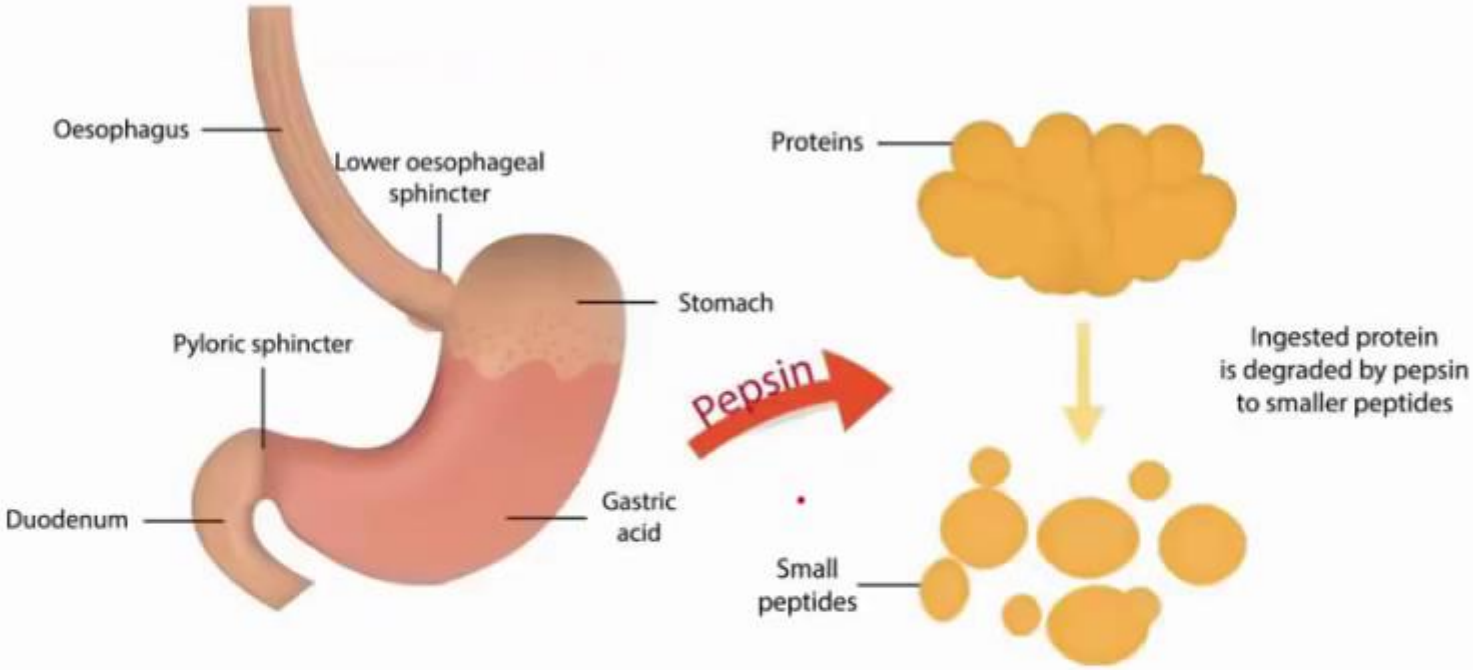
ايض البروتين

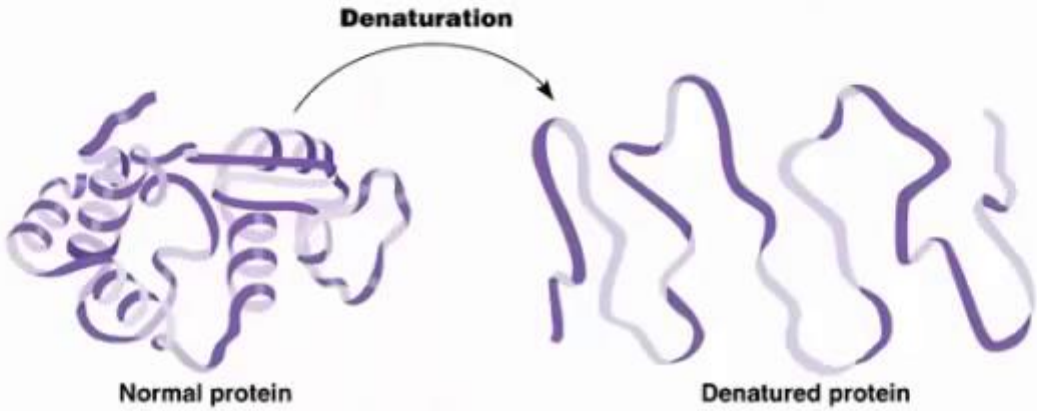
الاستاذ الدكتور
ظافر ثابت محمد

Protein Metabolism

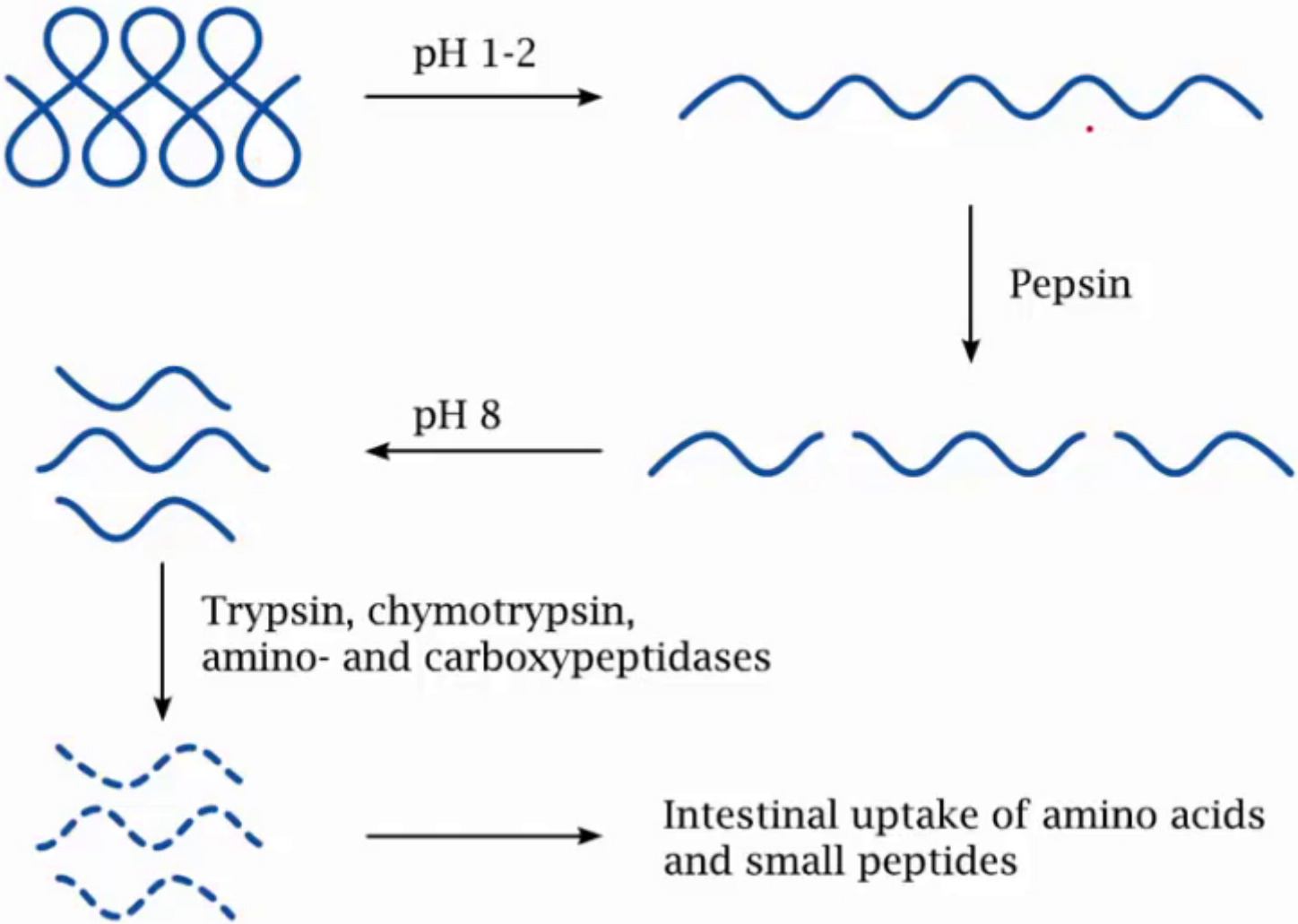

proteins

Digestion in stomach



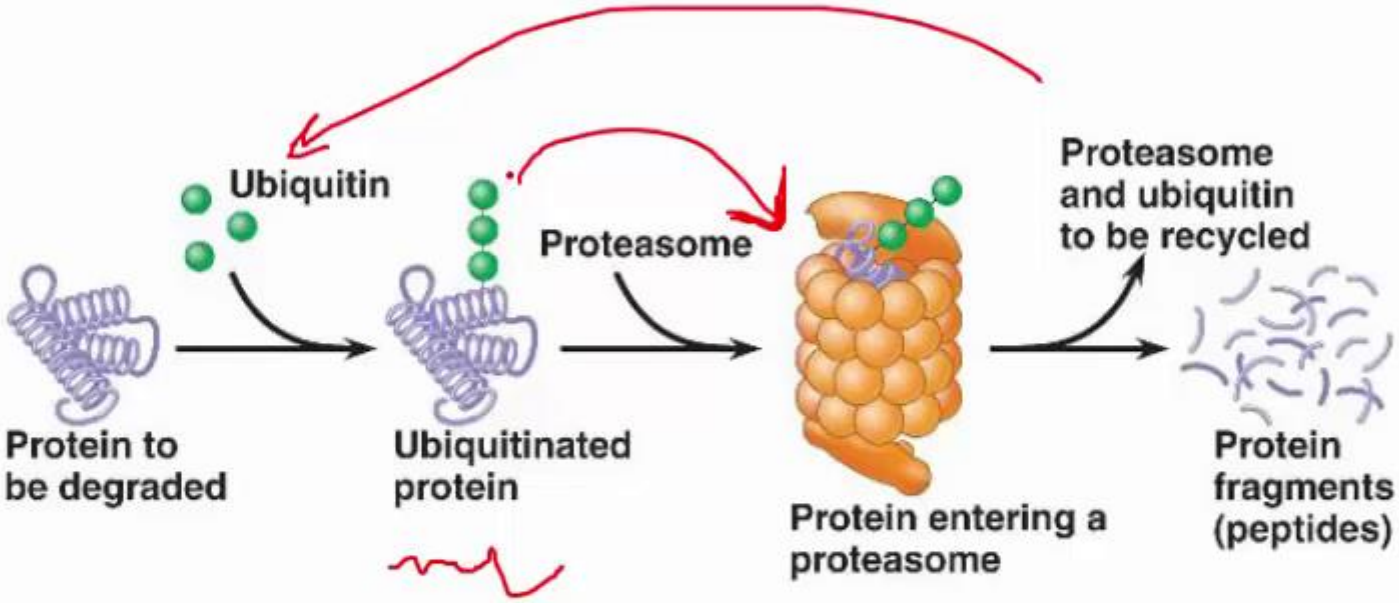


Digestion in small intestine

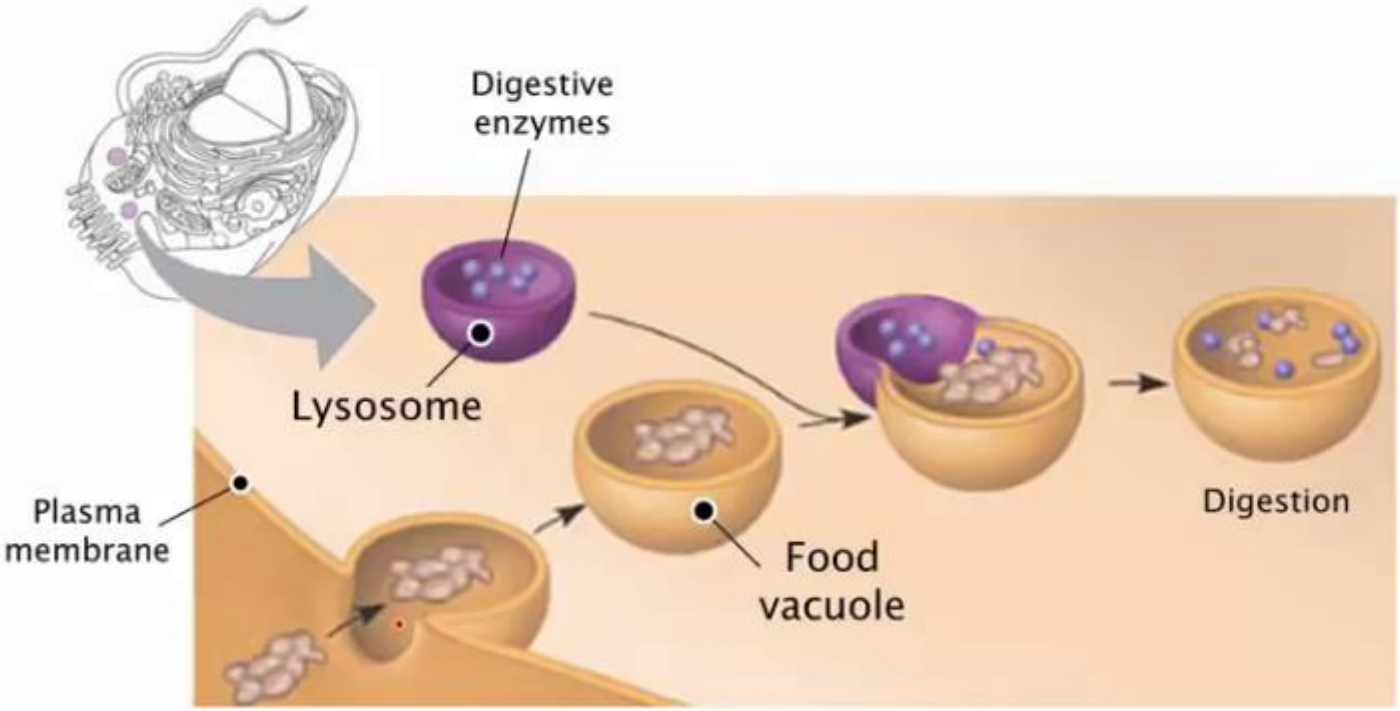


Protein degredation

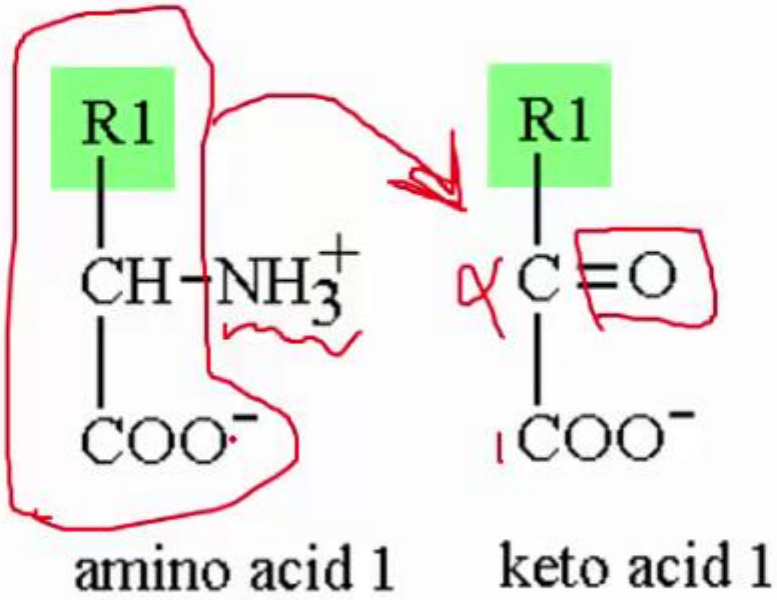
Inner proteins



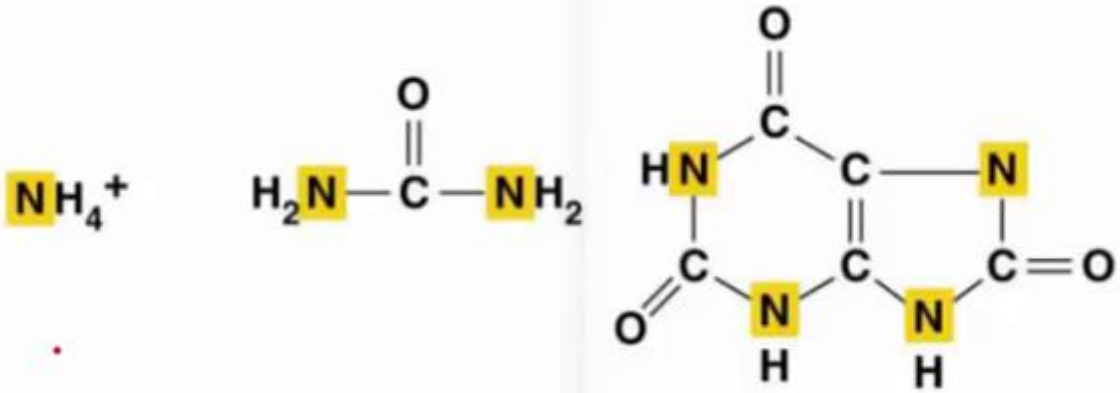
Outer proteins



Amino acids degradation !!



Ammonia and uric acid and urea

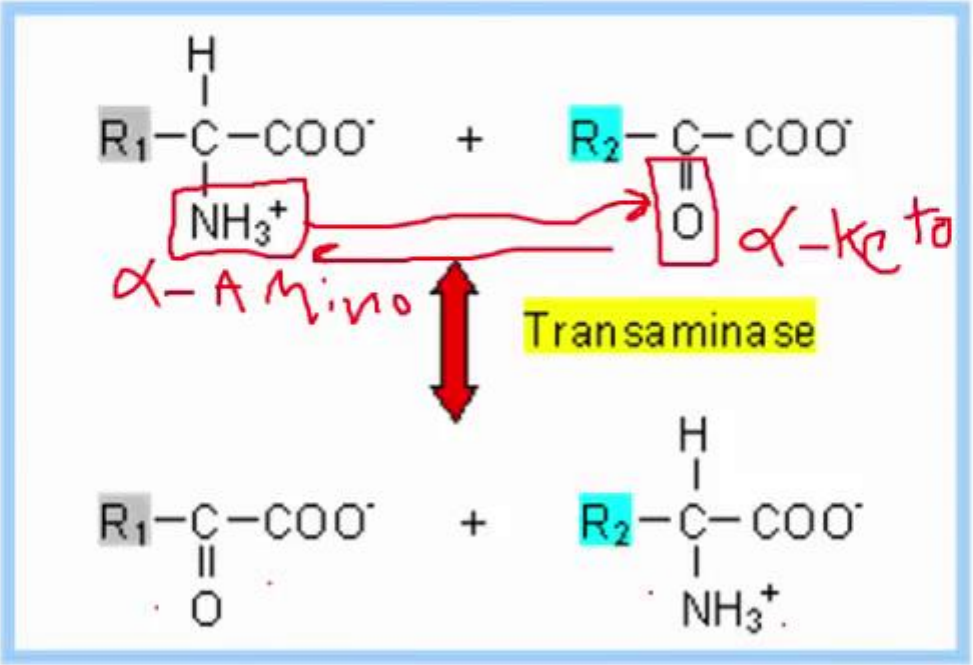


Ammonium Urea Uric acid

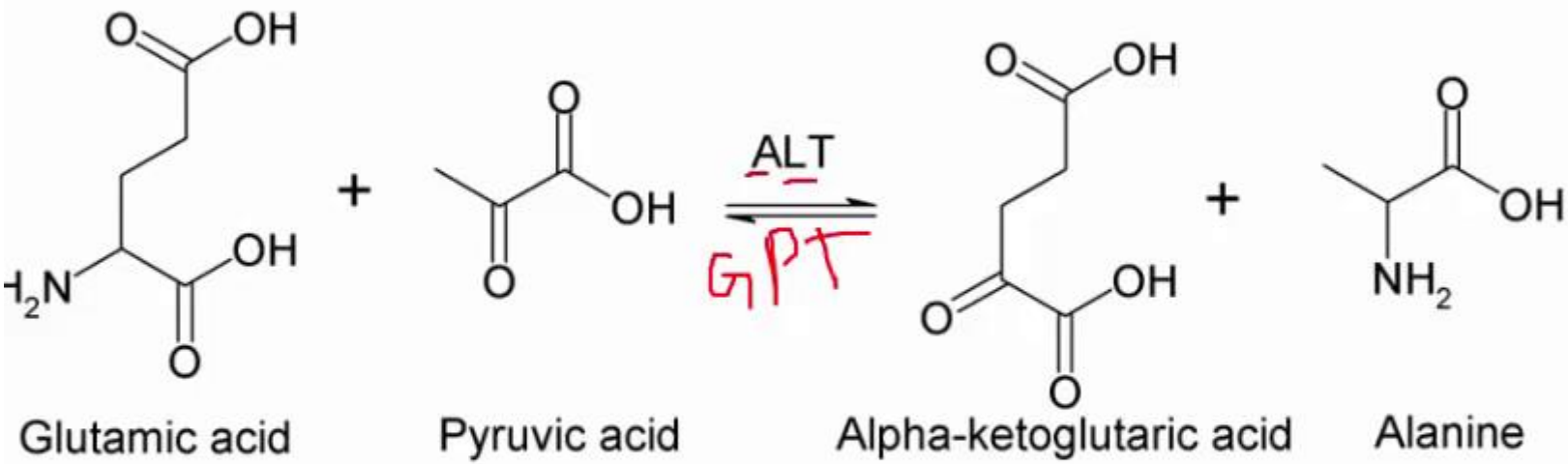
Removal of Amino group

Transamination:

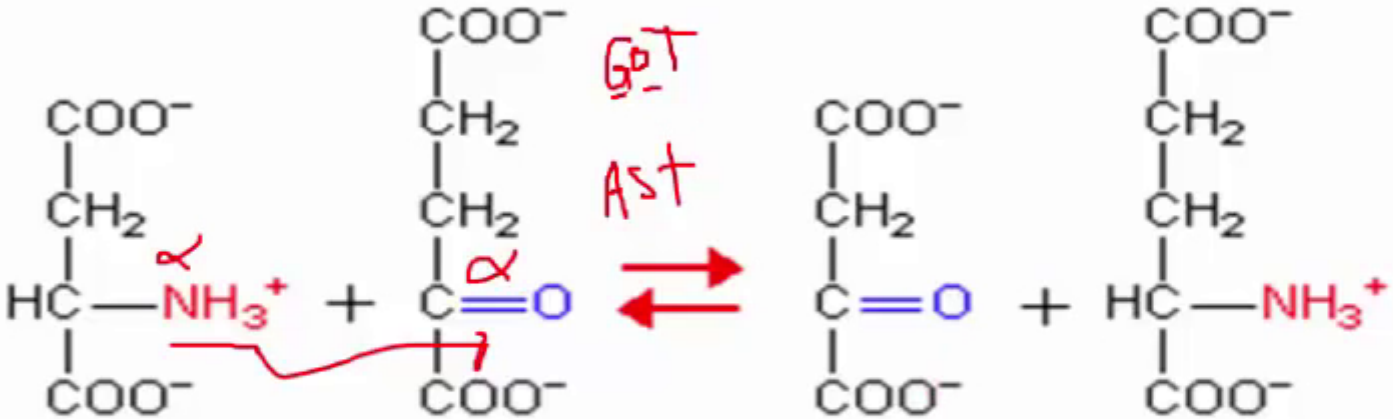
- In all tissues



transaminases:



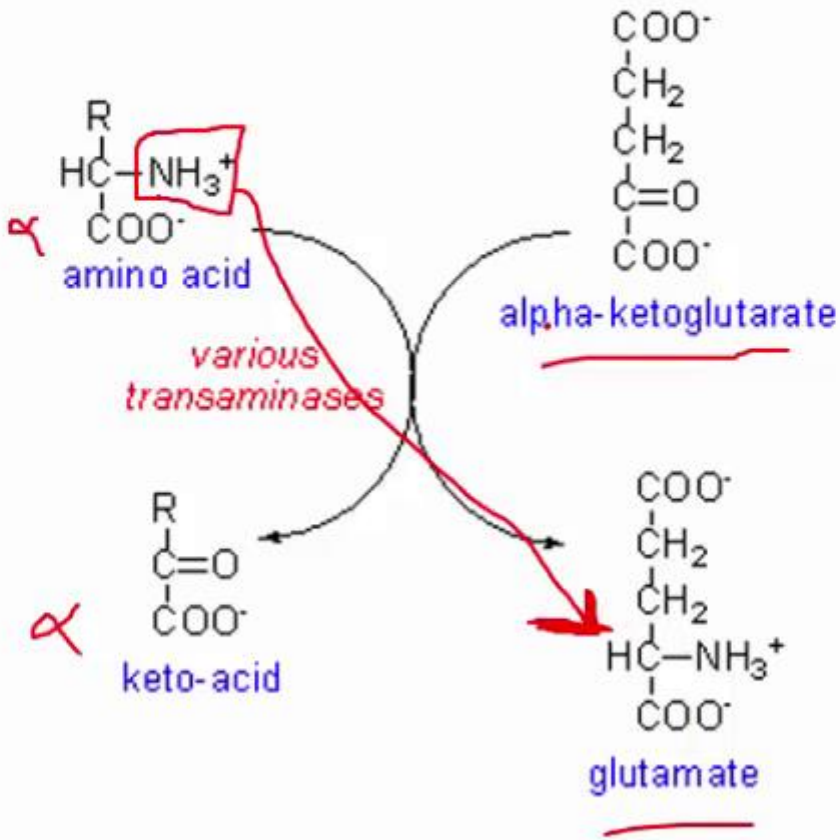
transaminases:



aspartate α-ketoglutarate oxaloacetate glutamate

Aminotransferase (Transaminase)

transaminases:

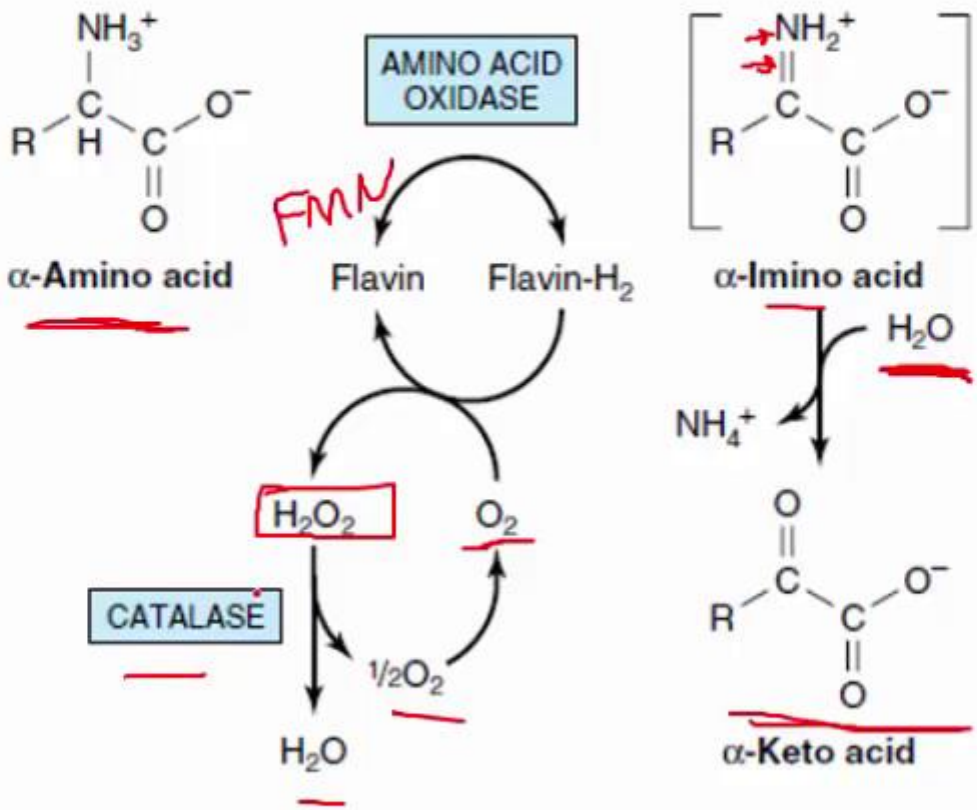


transaminases:

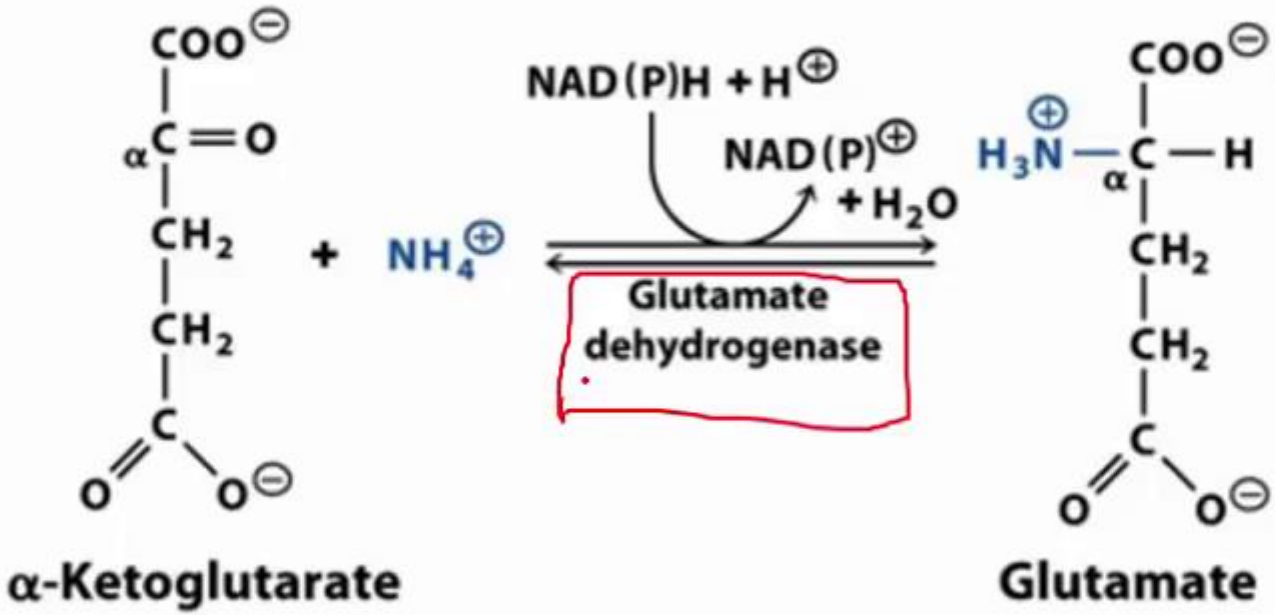
- In all tissues
- Rised by glucocorticoids, thyroxine and growth hormone
- Decreased by insulin

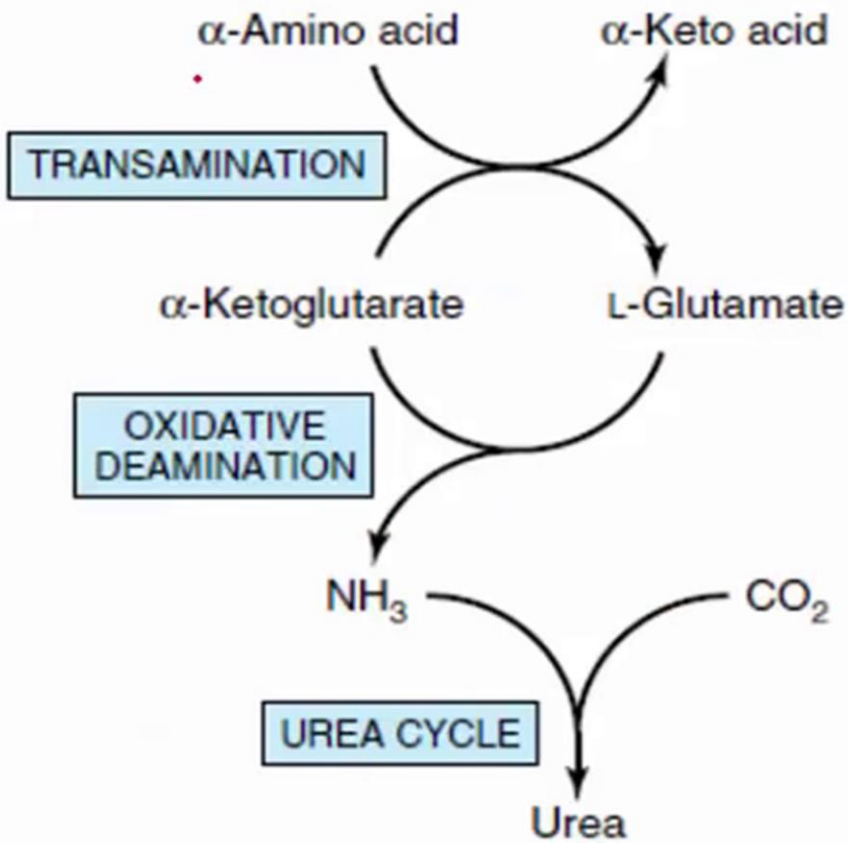
Oxidative deamination:

- Liver and kidneys only

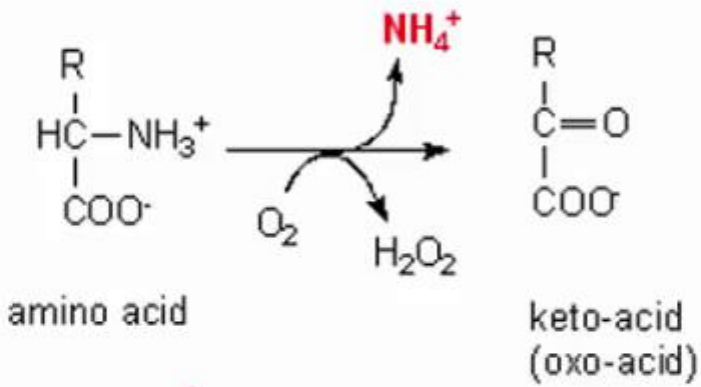


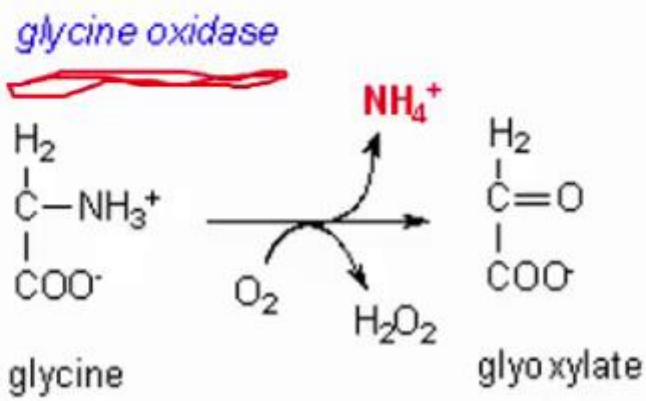
Oxidative deamination:



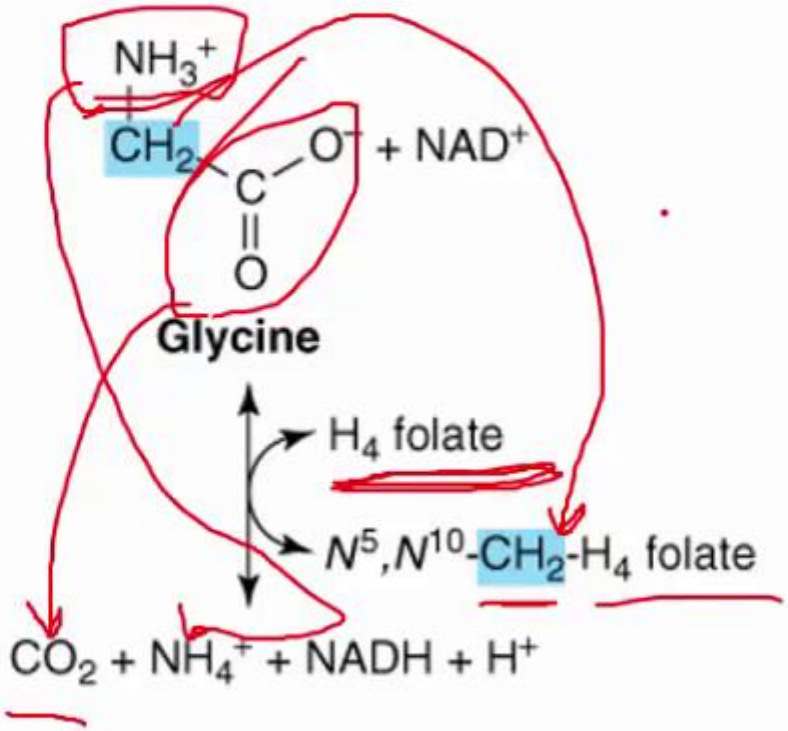

α-Amino acid
α-Keto acid
TRANSAMINATION
α-Ketoglutarate
L-Glutamate
OXIDATIVE DEAMINATION
NH_3
CO_2
UREA CYCLE
Urea

Special deaminations:

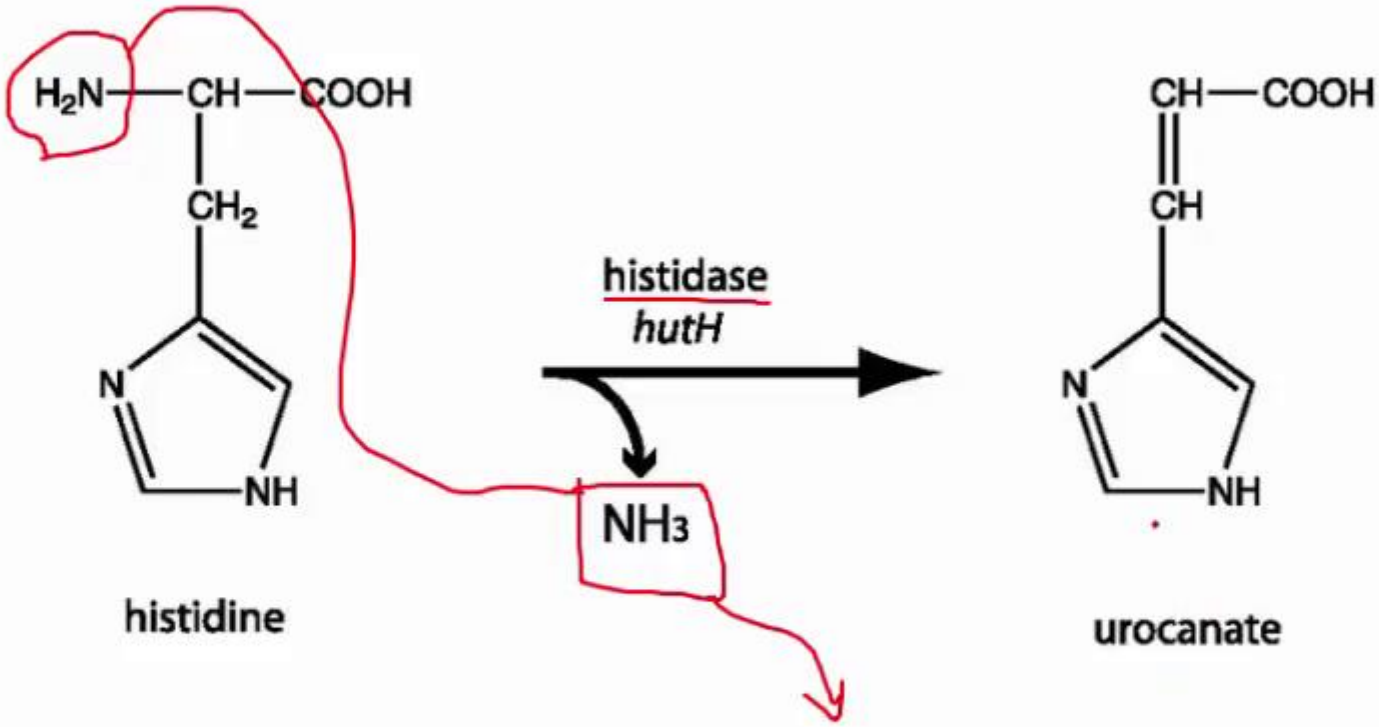




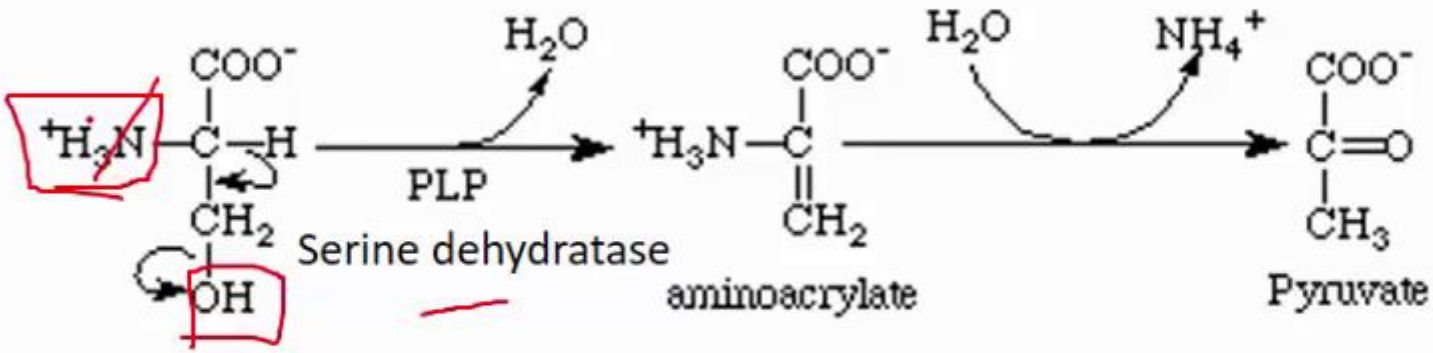
Special deaminations:



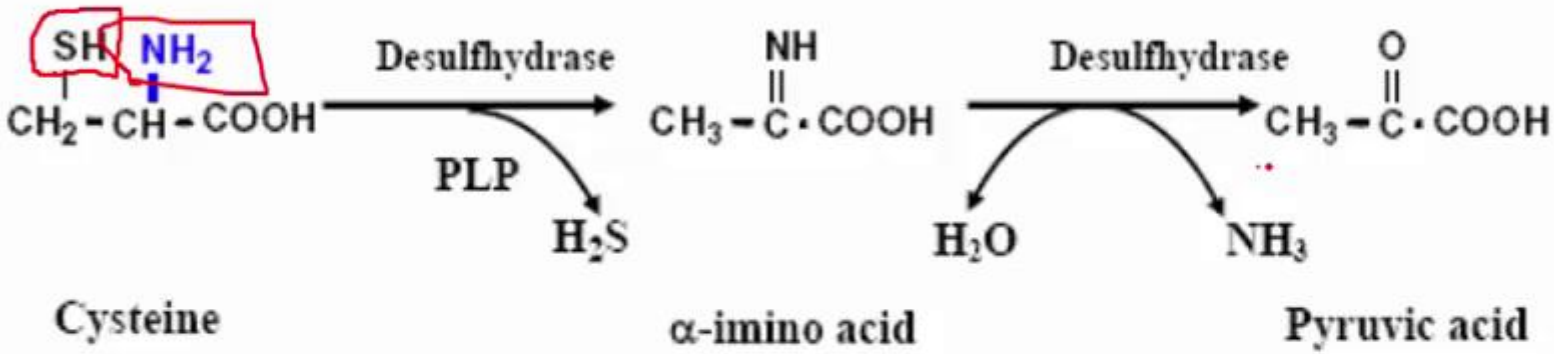
Special deaminations:



Special deaminations:

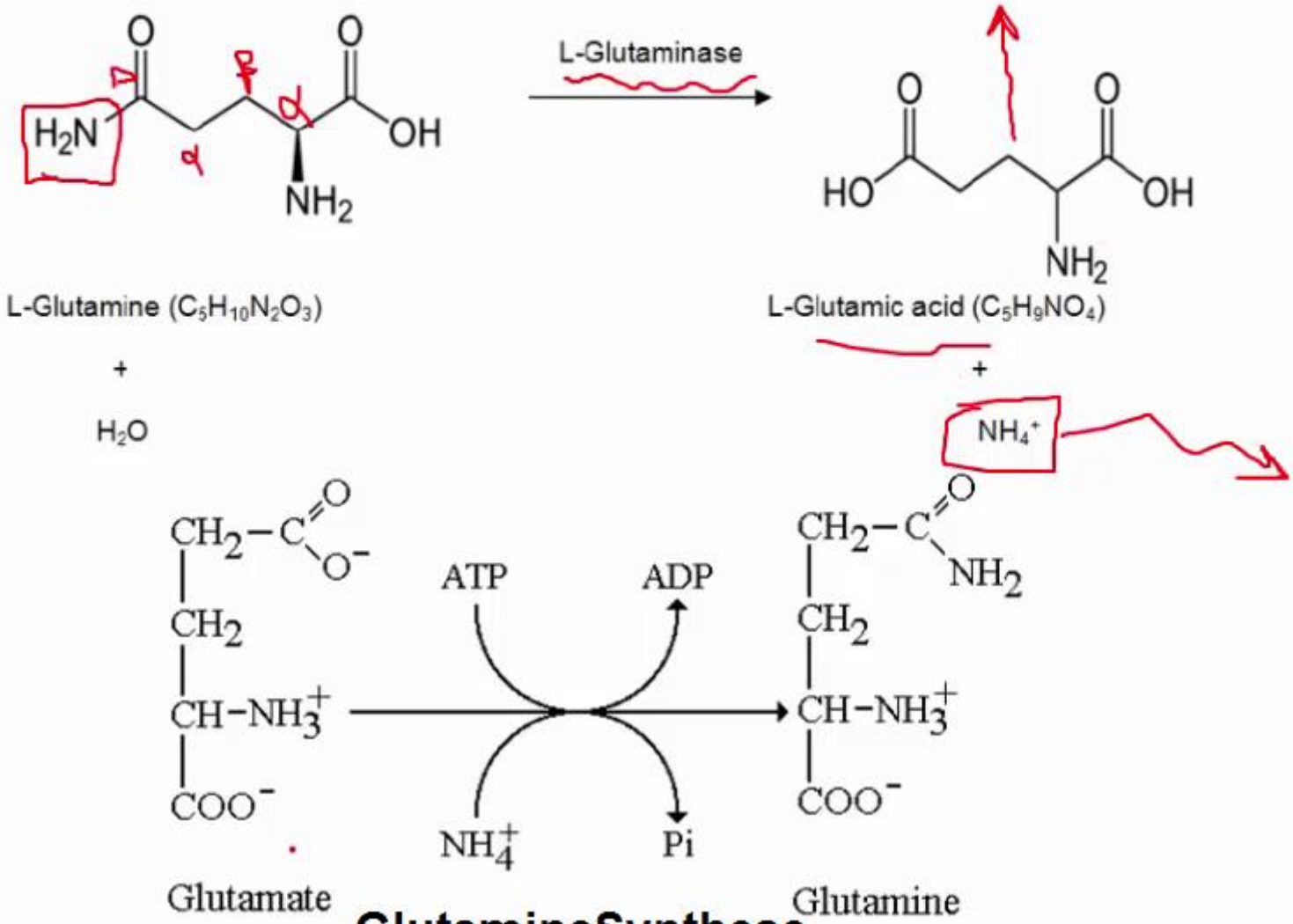


Special deaminations:

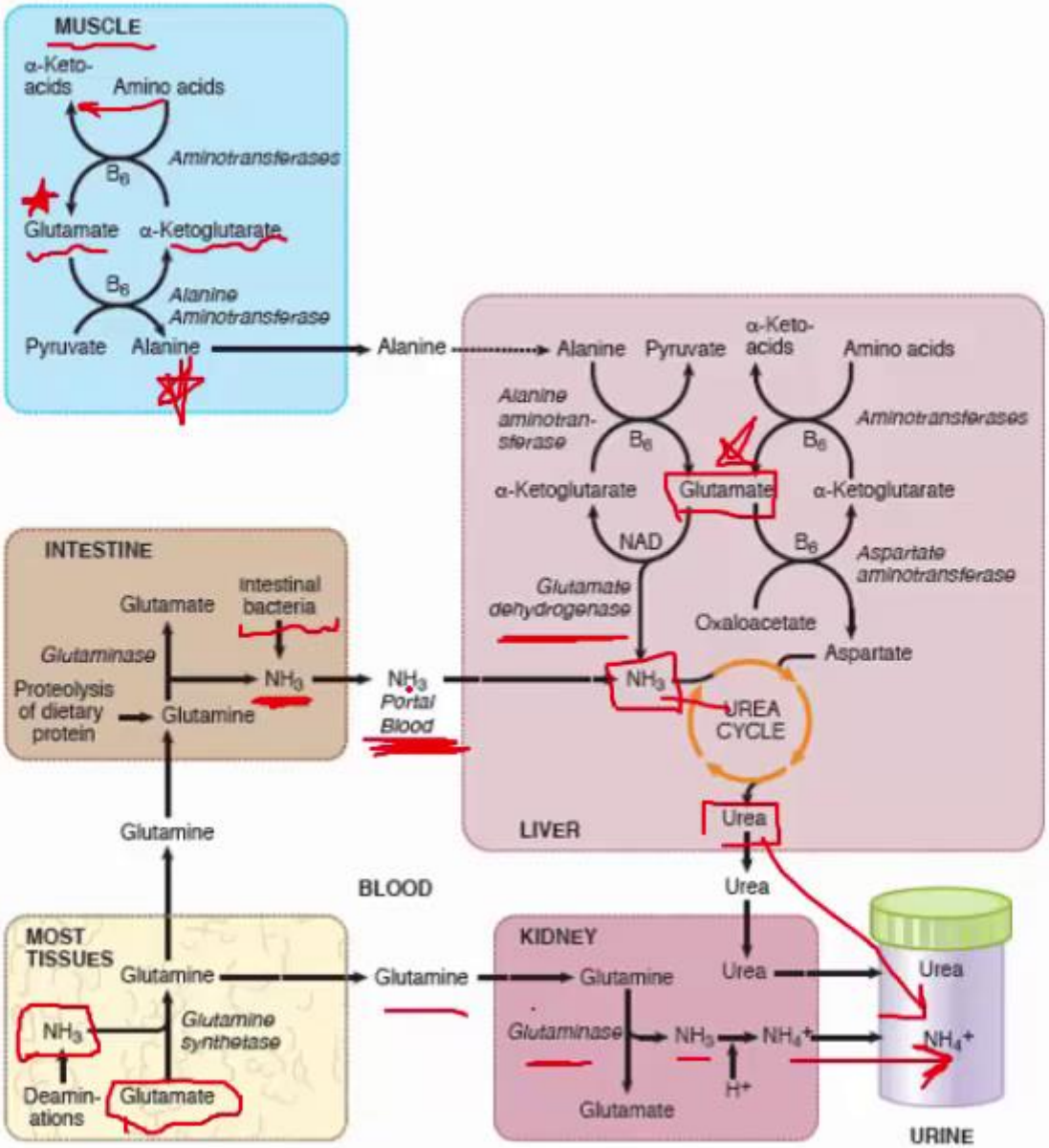


Special deaminations:

Important !!



GlutamineSynthese


MUSCLE
α-Keto-acids
Amino acids
Aminotransferases
B6
Glutamate
α-Ketoglutarate
B6
Alanine Aminotransferase
Pyruvate
Alanine
Alanine
Alanine
Pyruvate
α-Keto-acids
Amino acids
Alanine aminotran-sferase
B6
B6
Aminotransferases
α-Ketoglutarate
Glutamate
α-Ketoglutarate
NAD
B6
Aspartate aminotransferase
Glutamate dehydrogenase
Oxaloacetate
Aspartate
NH3
UREA CYCLE
LIVER
Urea
INTESTINE
Glutamate
Intestinal bacteria
Glutaminase
NH3
Proteolysis of dietary protein
Glutamine
NH3
Portal Blood
Glutamine
BLOOD
Urea
MOST TISSUES
Glutamine
Glutamine
Glutamine
Urea
Urea
NH3
Glutamine synthetase
Glutaminase
NH3
NH4+
NH4+
Deamin-ations
Glutamate
H+
Glutamate
KIDNEY
URINE