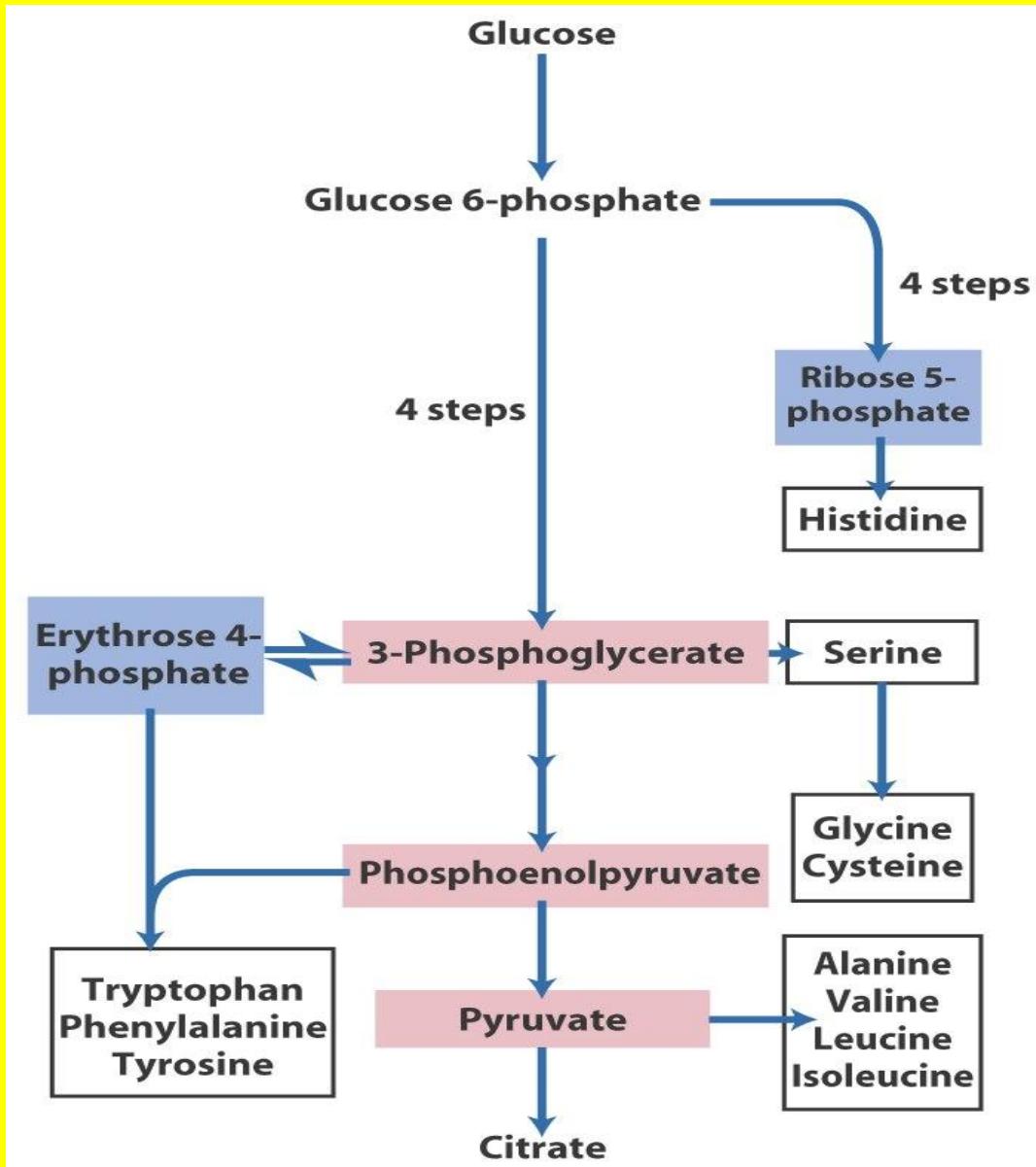
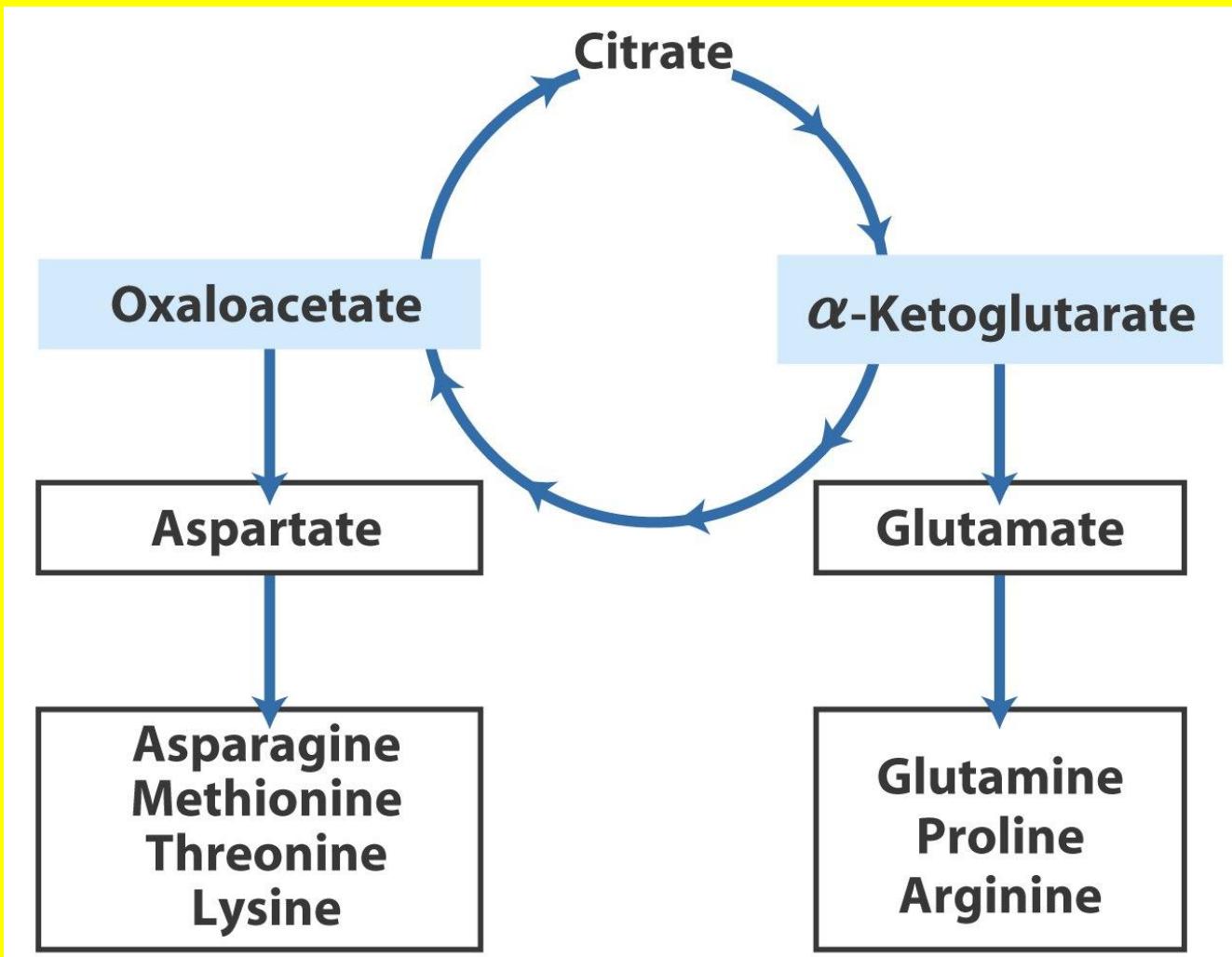


Biosynthesis of Amino Acids

Overview



Overview (cont)



Biosynthetic Families

Metabolic Precursors

α -ketoglutarate

3-Phophoglycerate

Amino Acids

Glutamate
Glutamine
Proline
Arginine

Serine
Glycine
Cysteine

Biosynthetic Families (cont)

<u>Metabolic Precursors</u>	<u>Amino Acids</u>
Oxaloacetate	Aspartate, Asparagine Methionine, Threonine, Lysine
Pyruvate	Alanine, Valine, Leucine Isoleucine

Biosynthetic Families (cont)

Metabolic Precursors

Phosphoenolpyruvate
and erythrose 4-phosphate

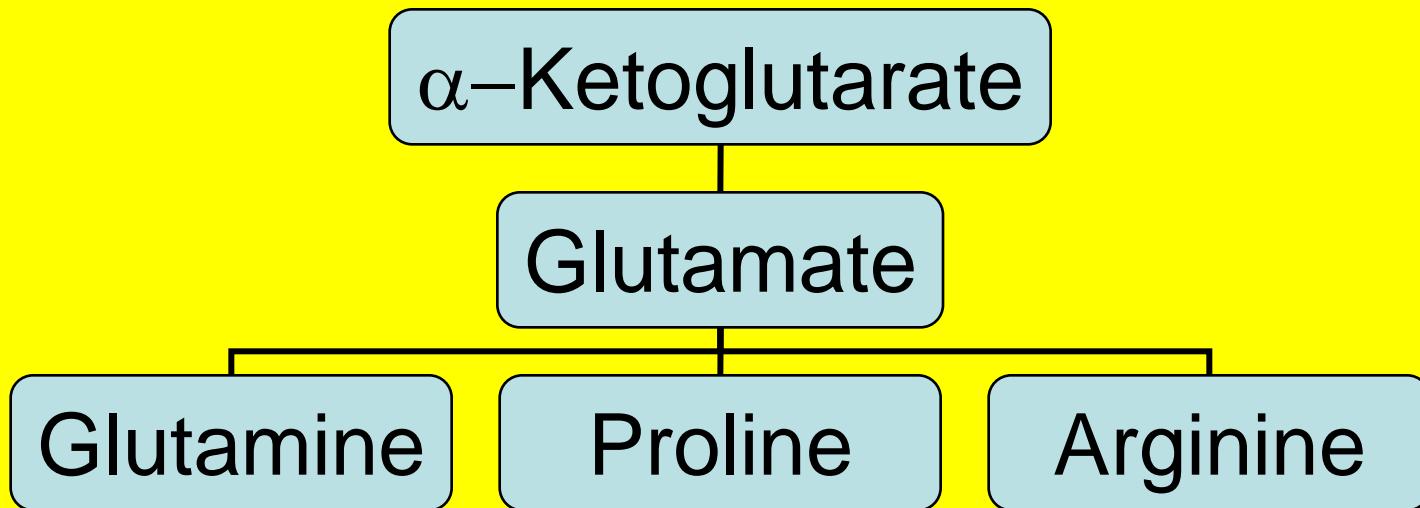
Ribose 5-phosphate

Amino Acids

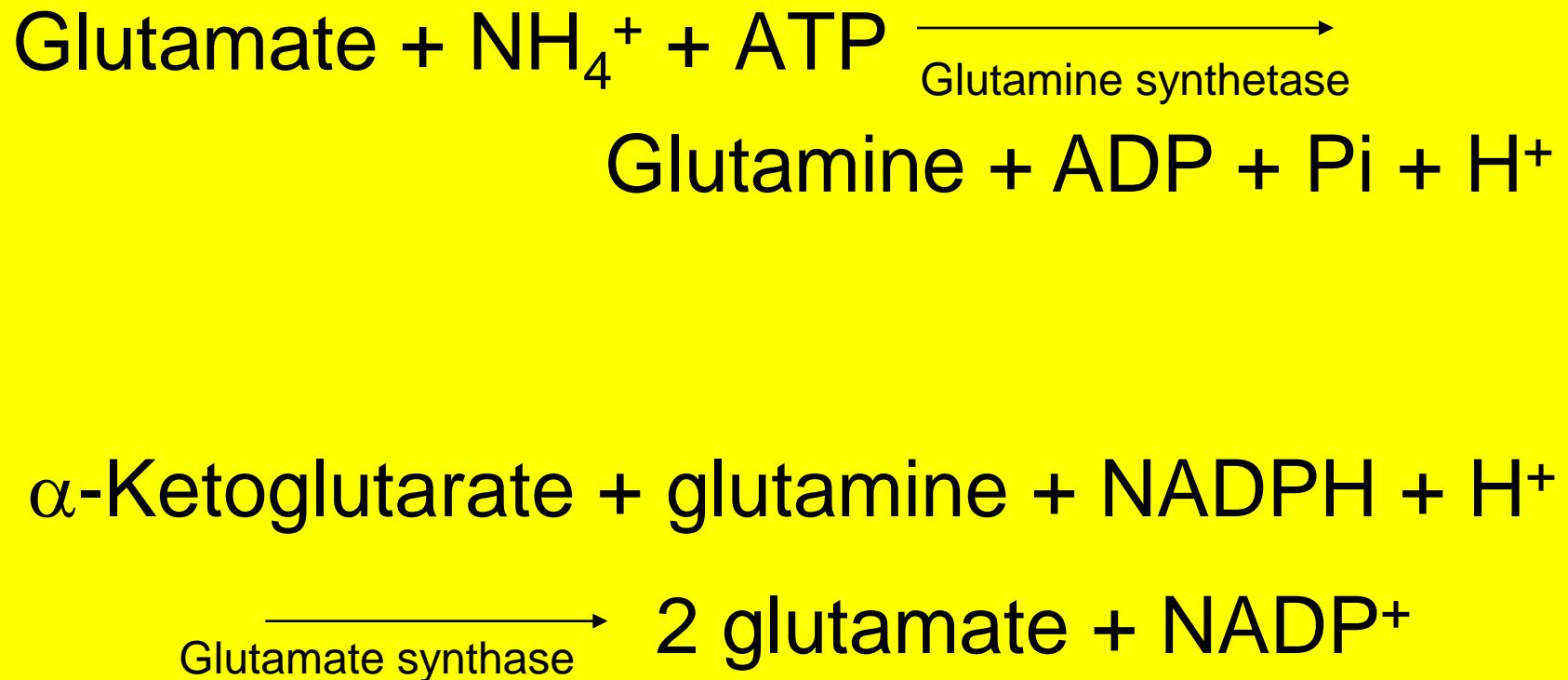
Tryptophan
Phenylalanine
Tyrosine

Histidine

α -Ketoglutarate Family



α -Ketoglutarate to glutamate/glutamine

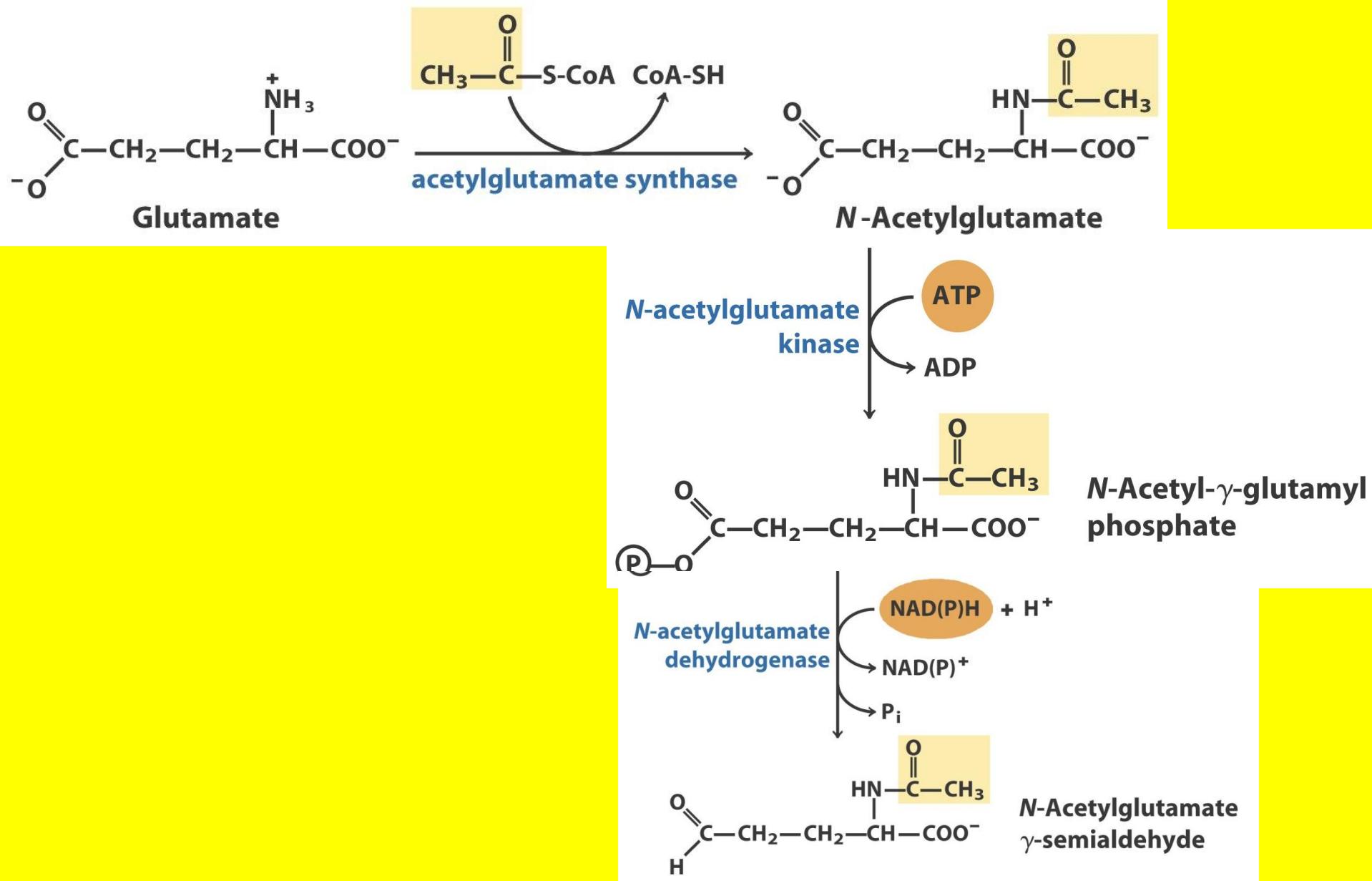


α -Ketoglutarate to glutamate/glutamine

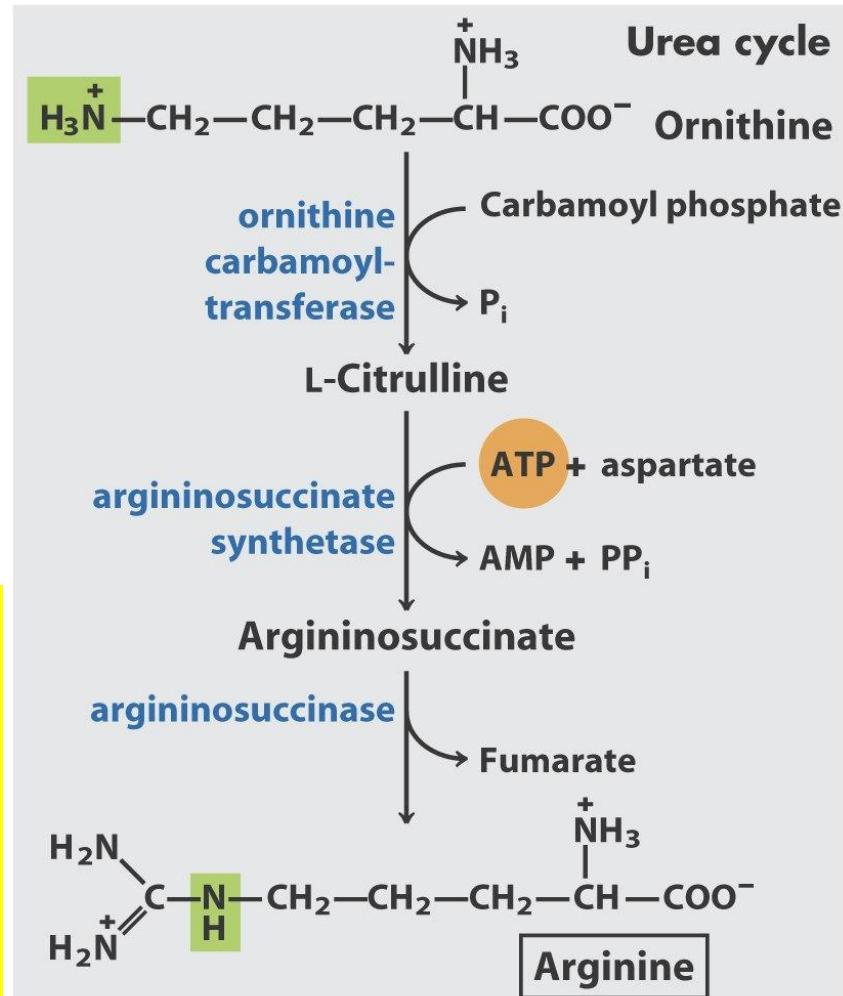
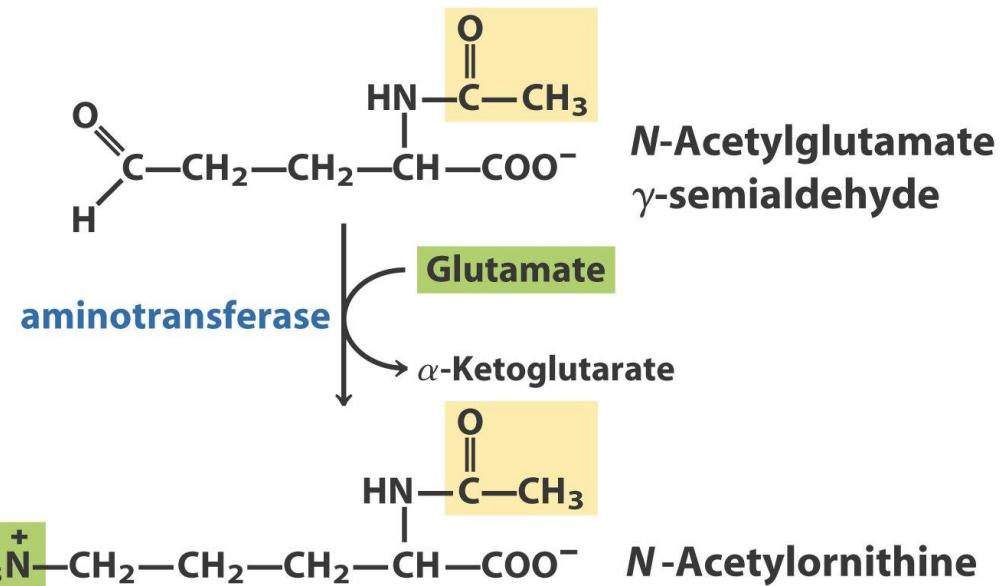
Net Reaction:

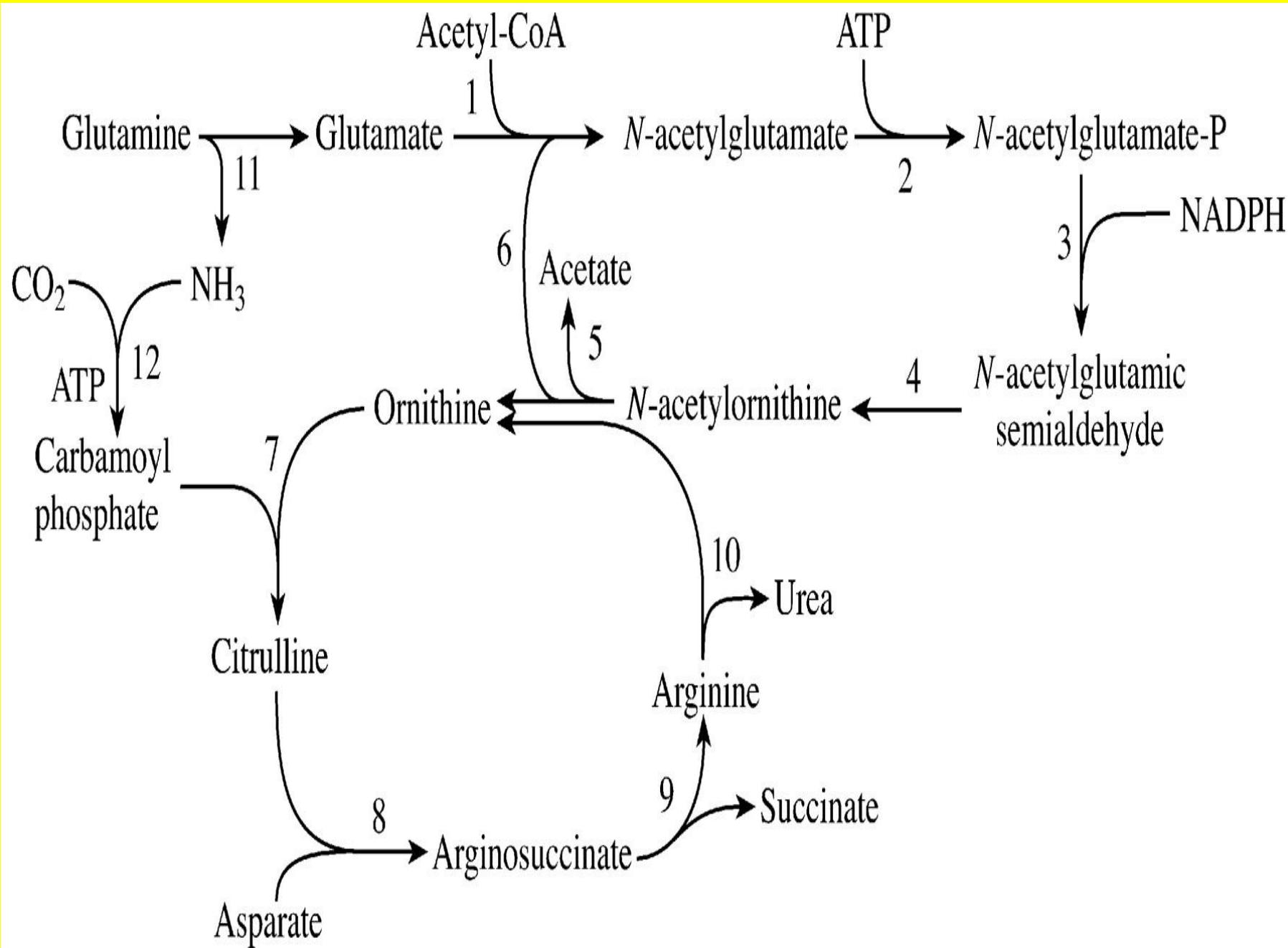


Synthesis of Arginine

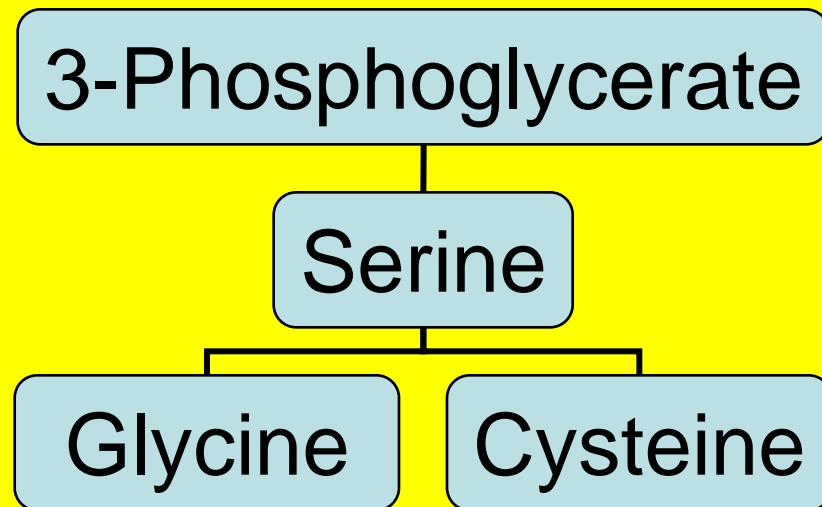


Synthesis of Arginine

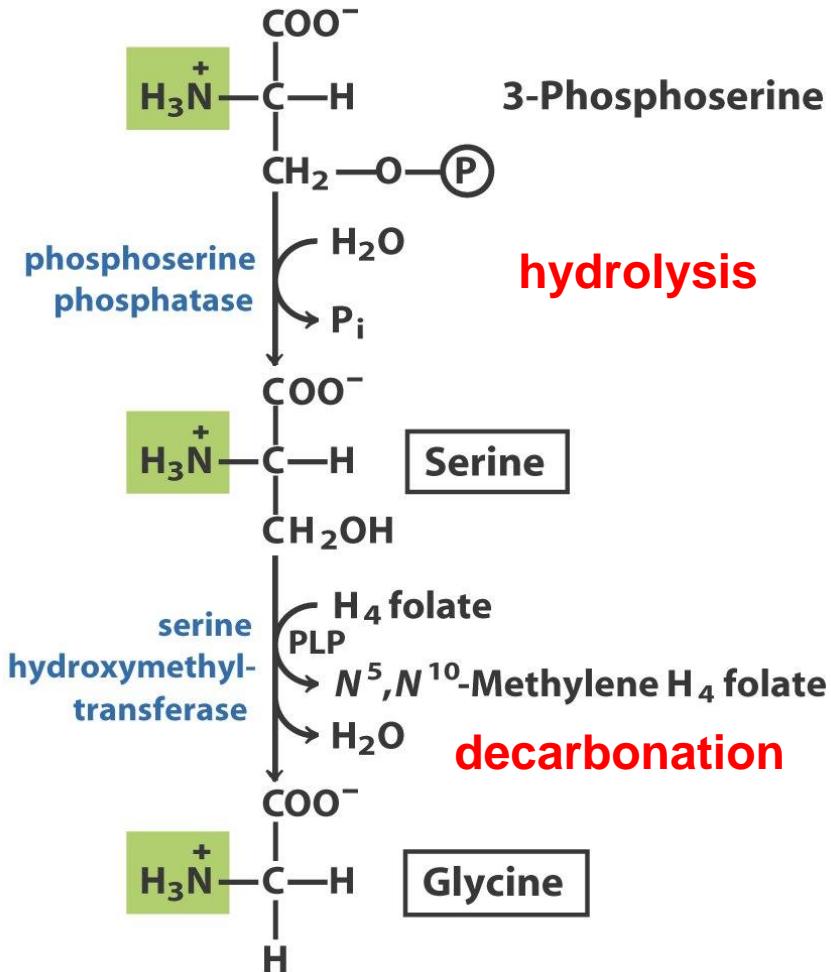
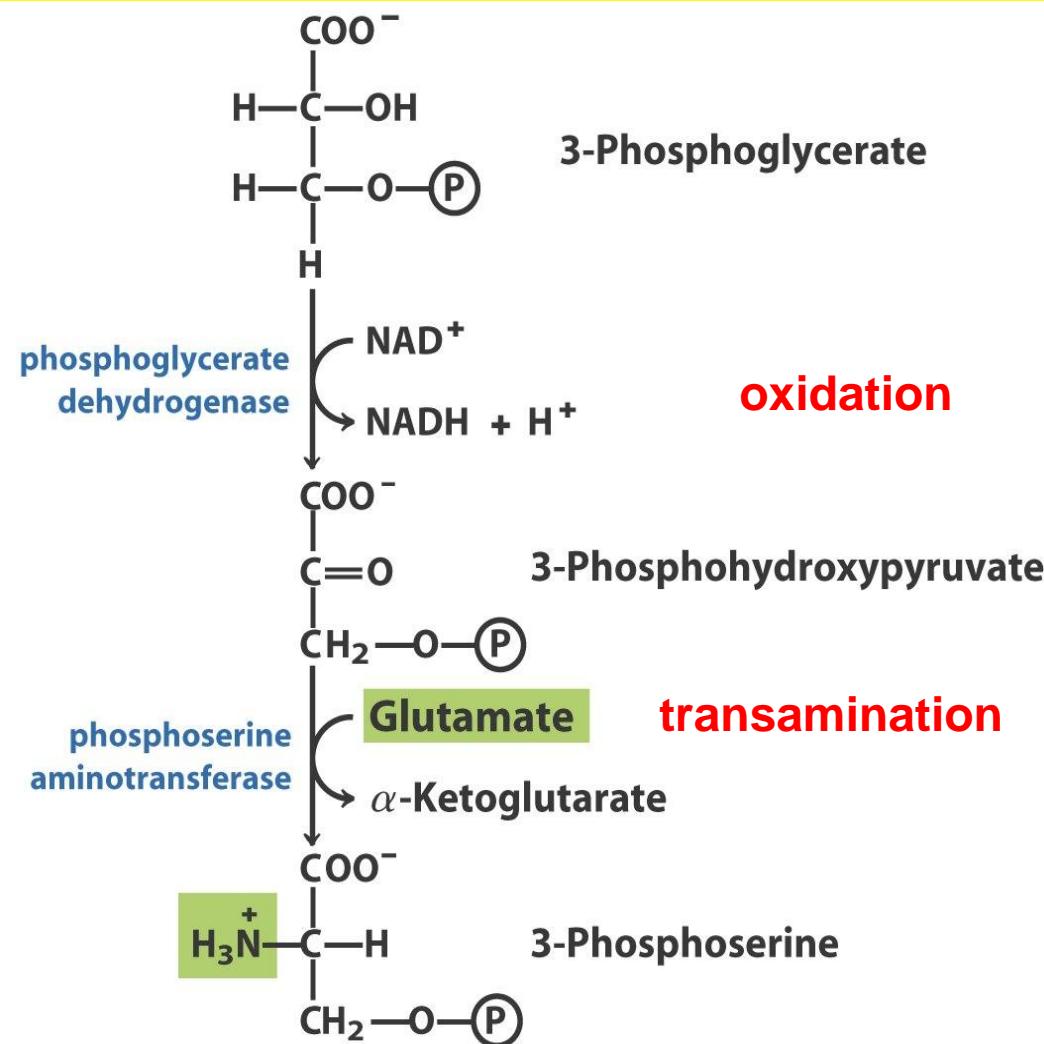




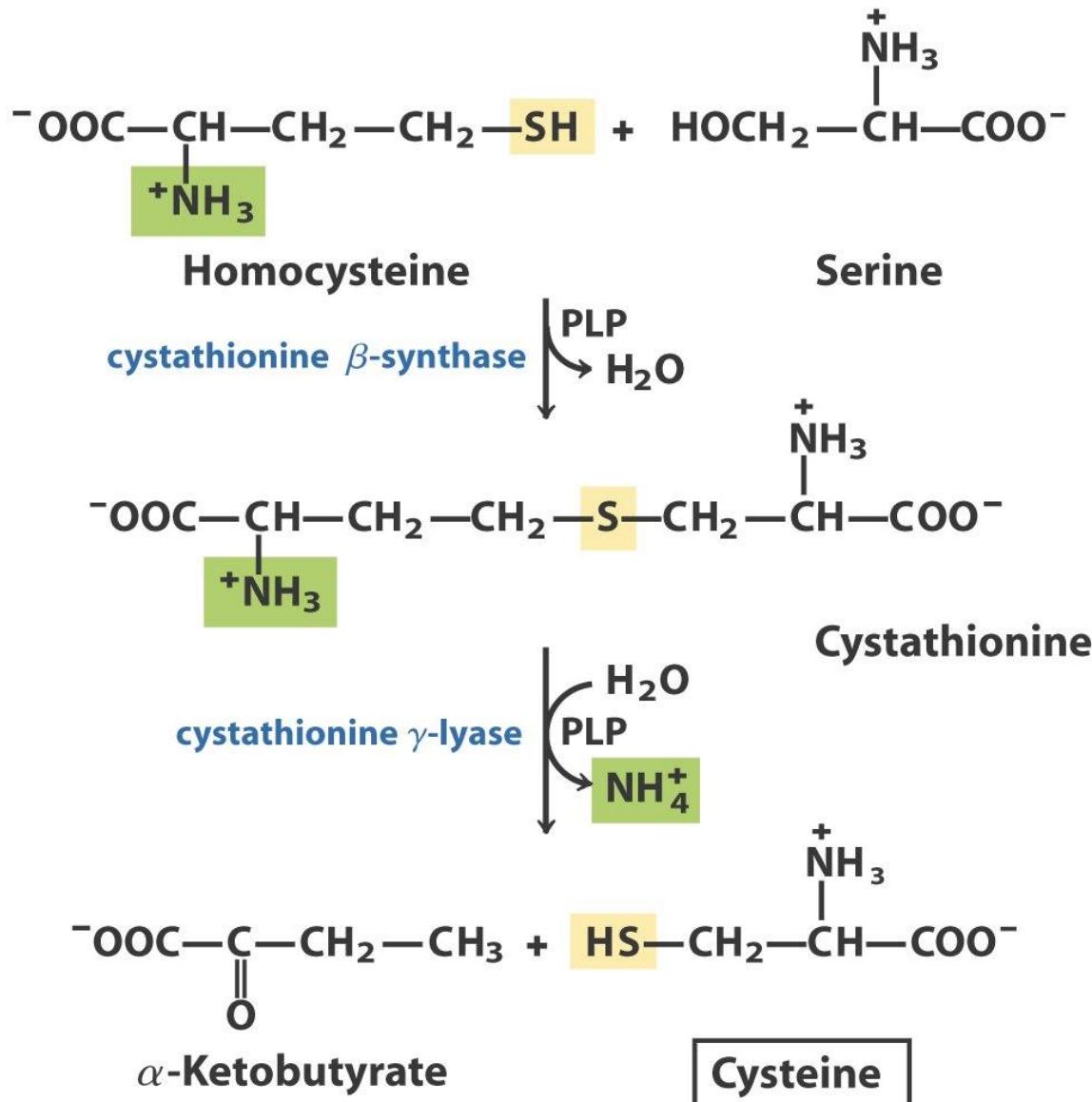
3-Phosphoglycerate Family



Synthesis of Serine and Glycine



Synthesis of Cysteine



Phosphoenolpyruvate and erythrose 4-phosphate Family

Phosphoenolpyruvate
+
erythrose 4-phosphate

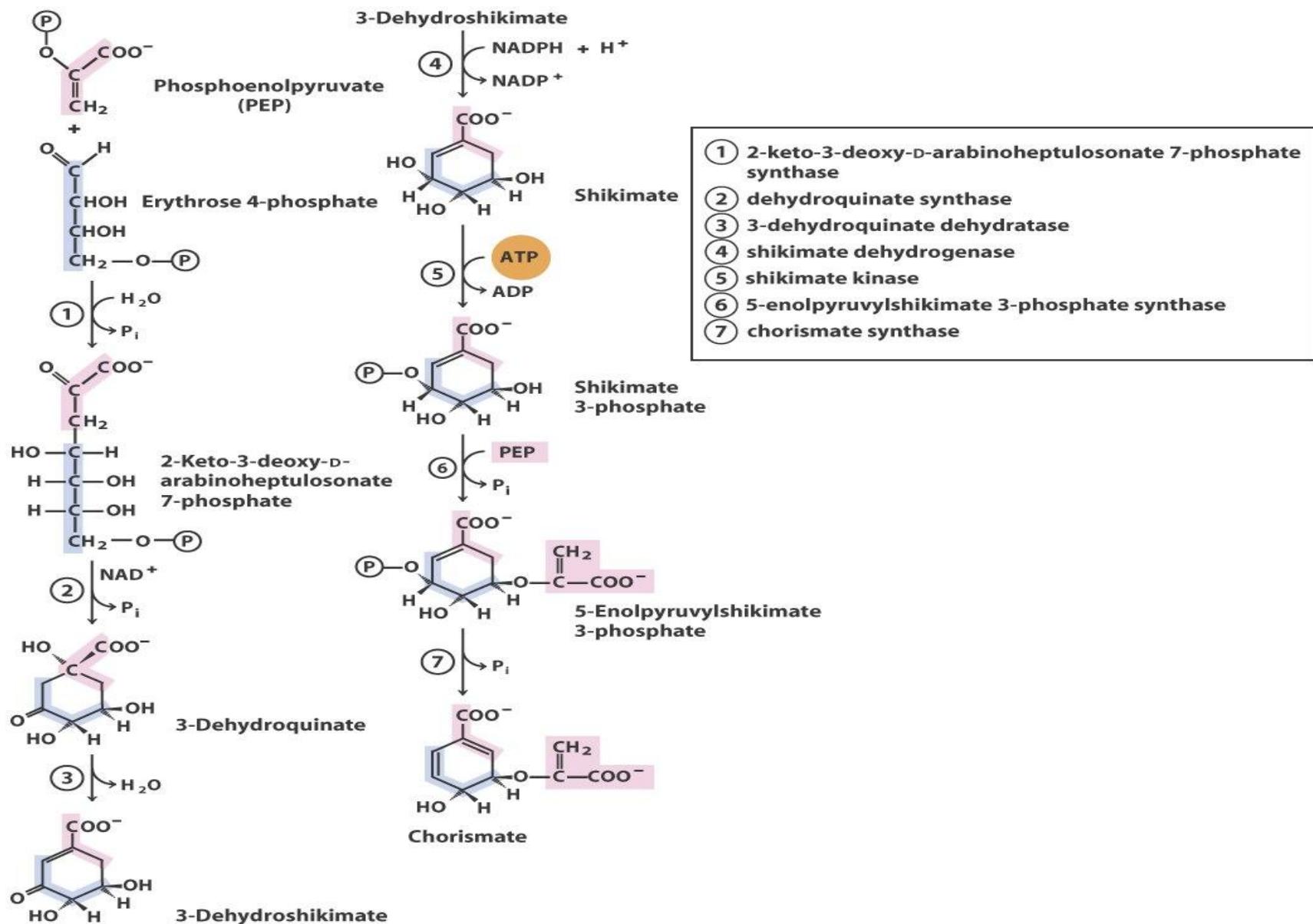
Chorismate

Tryptophan

Tyrosine

Phenylalanine

Synthesis of Chorismate



Synthesis of Tryptophan

