

Ankara University, Faculty of Agriculture , Department of Fisheries and  
Aquaculture, Programme of Fisheries and Aquaculture

# AQS104: Biochemistry

Reference: Nelson, D. L., Lehninger, A. L., & Cox, M. M.  
(2008). *Lehninger Principles of Biochemistry (5<sup>th</sup> edition)*. Macmillan.

AQS104 BIOCHEMISTRY: Weekly Programme	
<b>1. Week:</b> <ul style="list-style-type: none"><li>• The foundations of biochemistry</li><li>• Water</li></ul>	<b>8. Week:</b> <p>Principles of metabolic regulation The citric acid cycle</p>
<b>2. Week:</b> <ul style="list-style-type: none"><li>• Amino acids, peptides, and proteins</li><li>• The three-dimensional structure of proteins</li></ul>	<b>9. Week:</b> <p>Fatty acid catabolism Amino acid oxidation and the production of urea</p>
<b>3. Week:</b> <ul style="list-style-type: none"><li>• Protein function</li><li>• Enzymes</li></ul>	<b>10. Week:</b> <p>Oxidative phosphorylation and photophosphorylation Carbohydrate biosynthesis in plants and bacteria</p>
<b>4. Week:</b> <ul style="list-style-type: none"><li>• Carbohydrates and Glycobiology</li><li>• Nucleotides and Nucleic Acids</li></ul>	<b>11. Week:</b> <p>Lipid biosynthesis Biosynthesis of amino acids, nucleotides, and related molecules</p>
<b>5. Week:</b> <ul style="list-style-type: none"><li>• DNA-based information technologies</li><li>• Lipids</li></ul>	<b>12. Week:</b> <p>Hormonal regulation and integration of mammalian metabolism Genes and chromosomes</p>
<b>6. Week:</b> <p>Biological membranes and transport Biosignaling</p>	<b>13. Week:</b> <p>DNA metabolism RNA metabolism</p>
<b>7. Week:</b> <p>Bioenergetics and biochemical reaction types Glycolysis, gluconeogenesis, and the pentose phosphate pathway</p>	<b>14. Week:</b> <p>Protein metabolism Regulation of gene expression</p>

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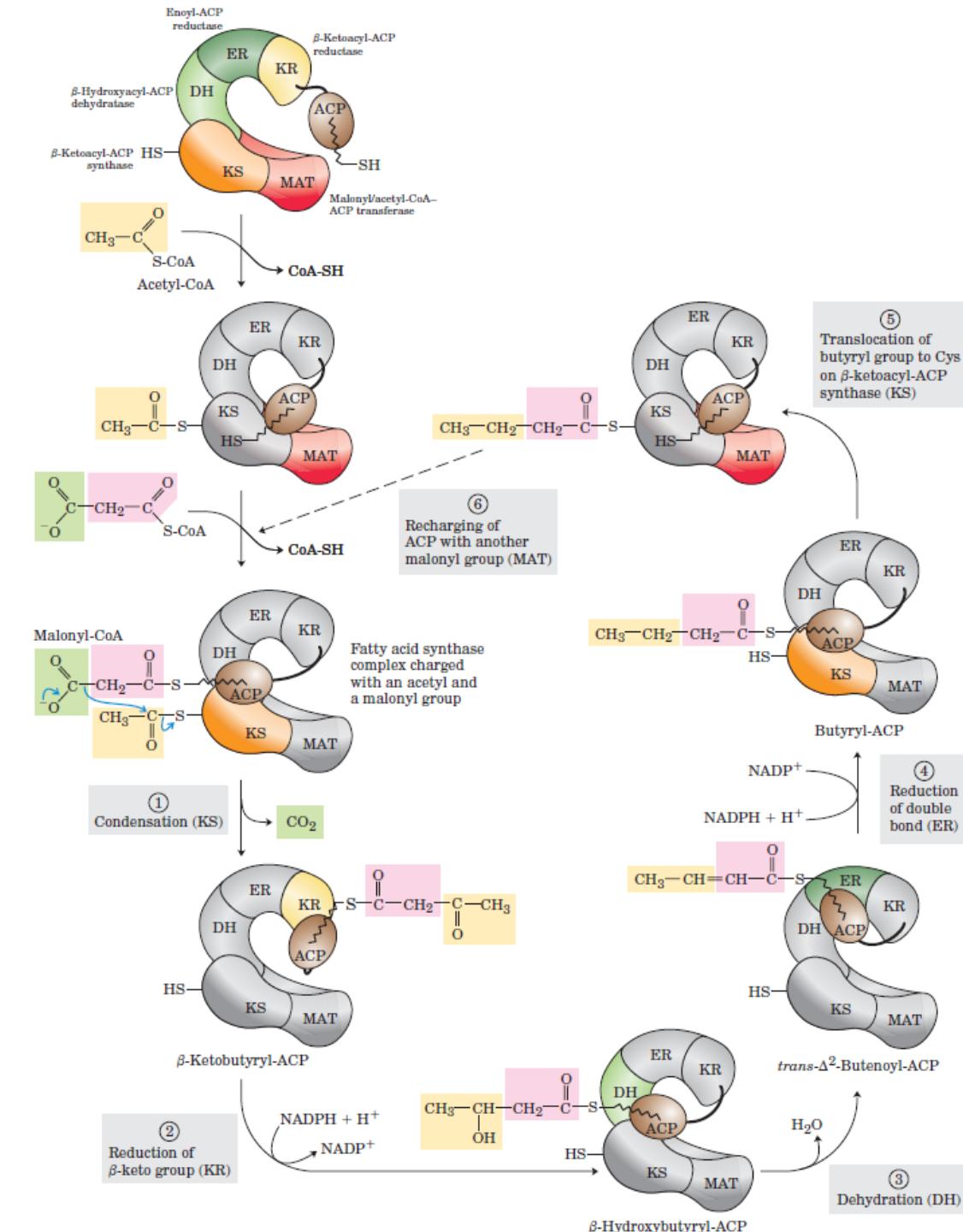
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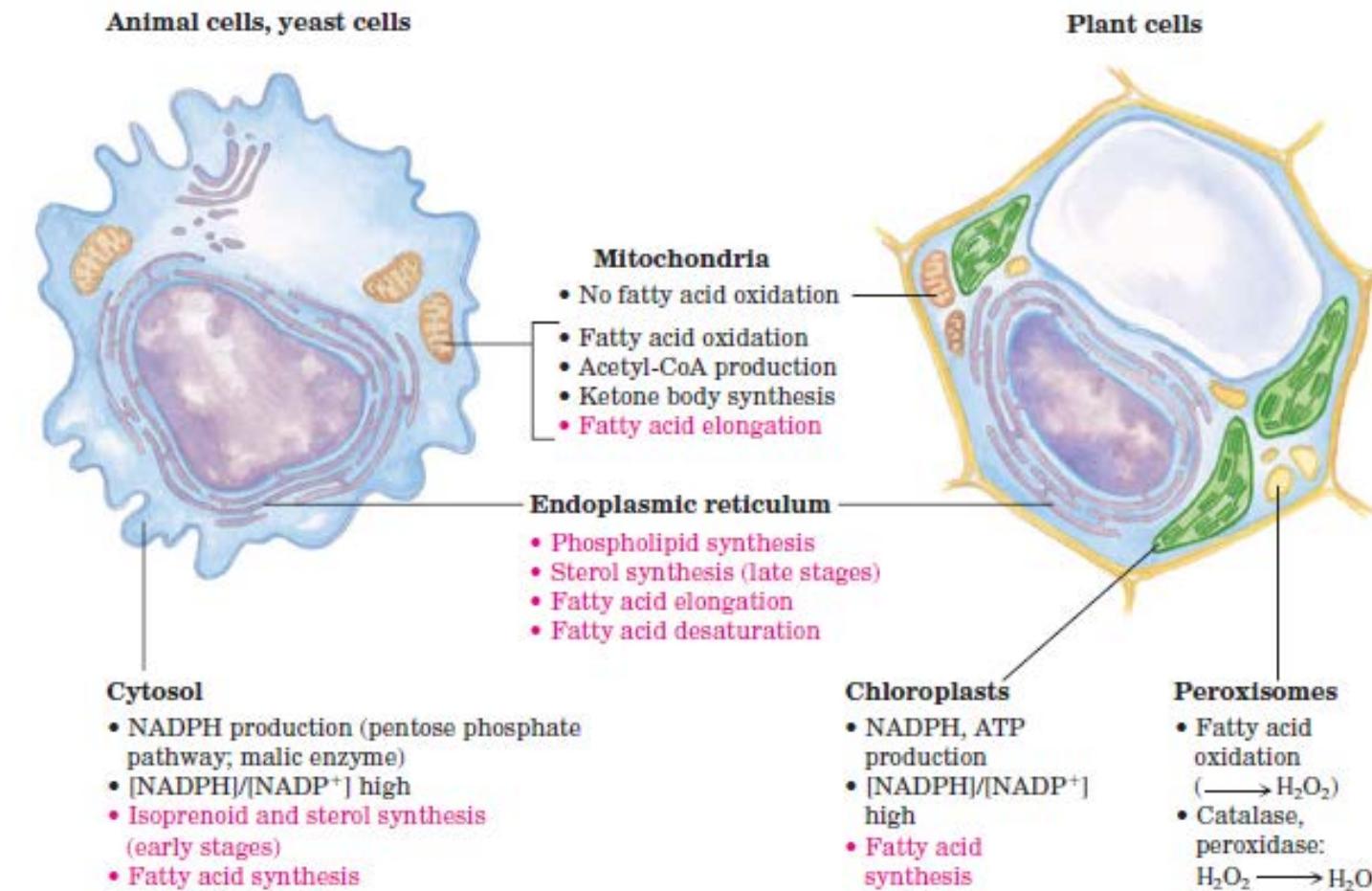
**11. Week:**

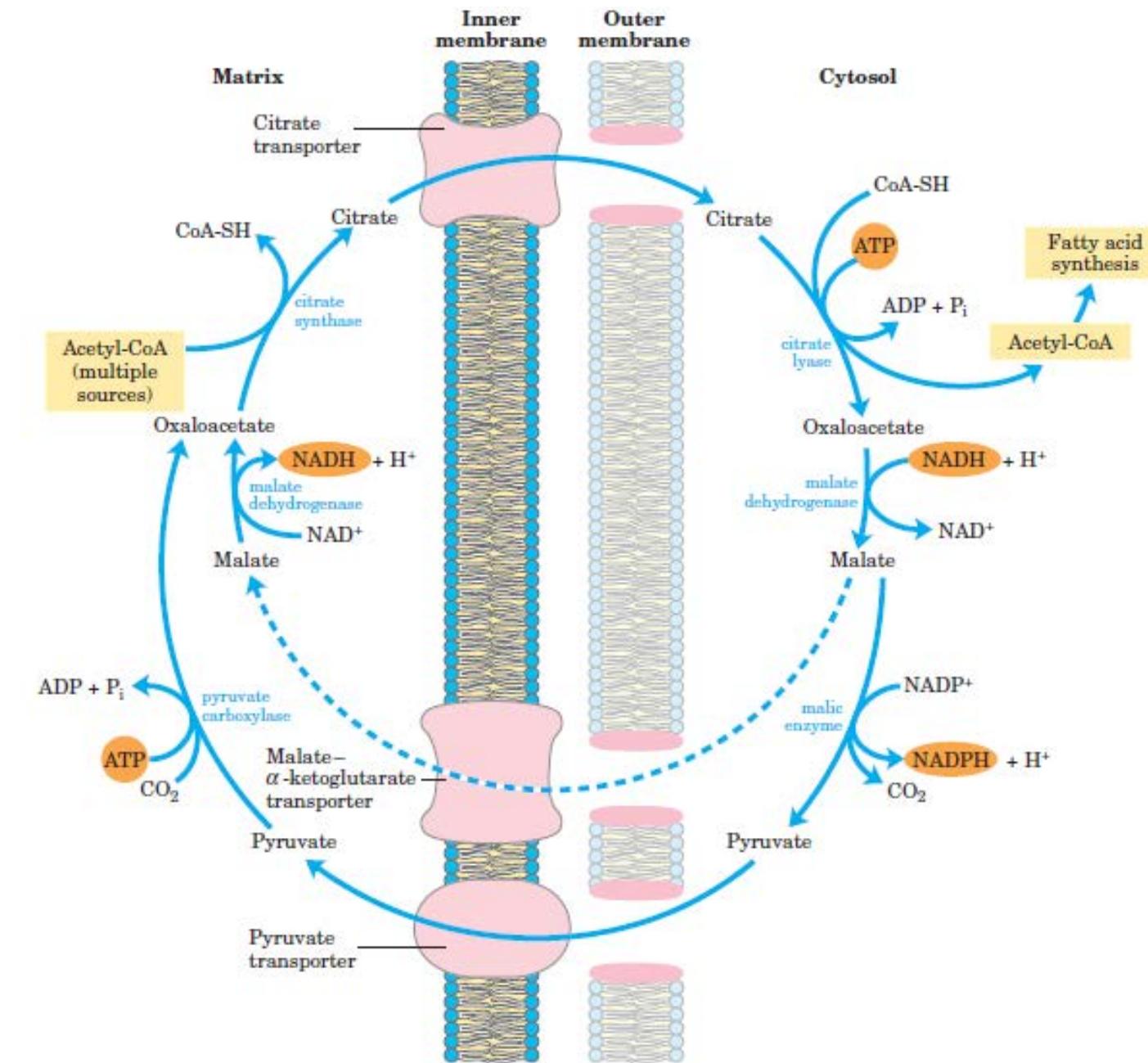
Lipid Biosynthesis

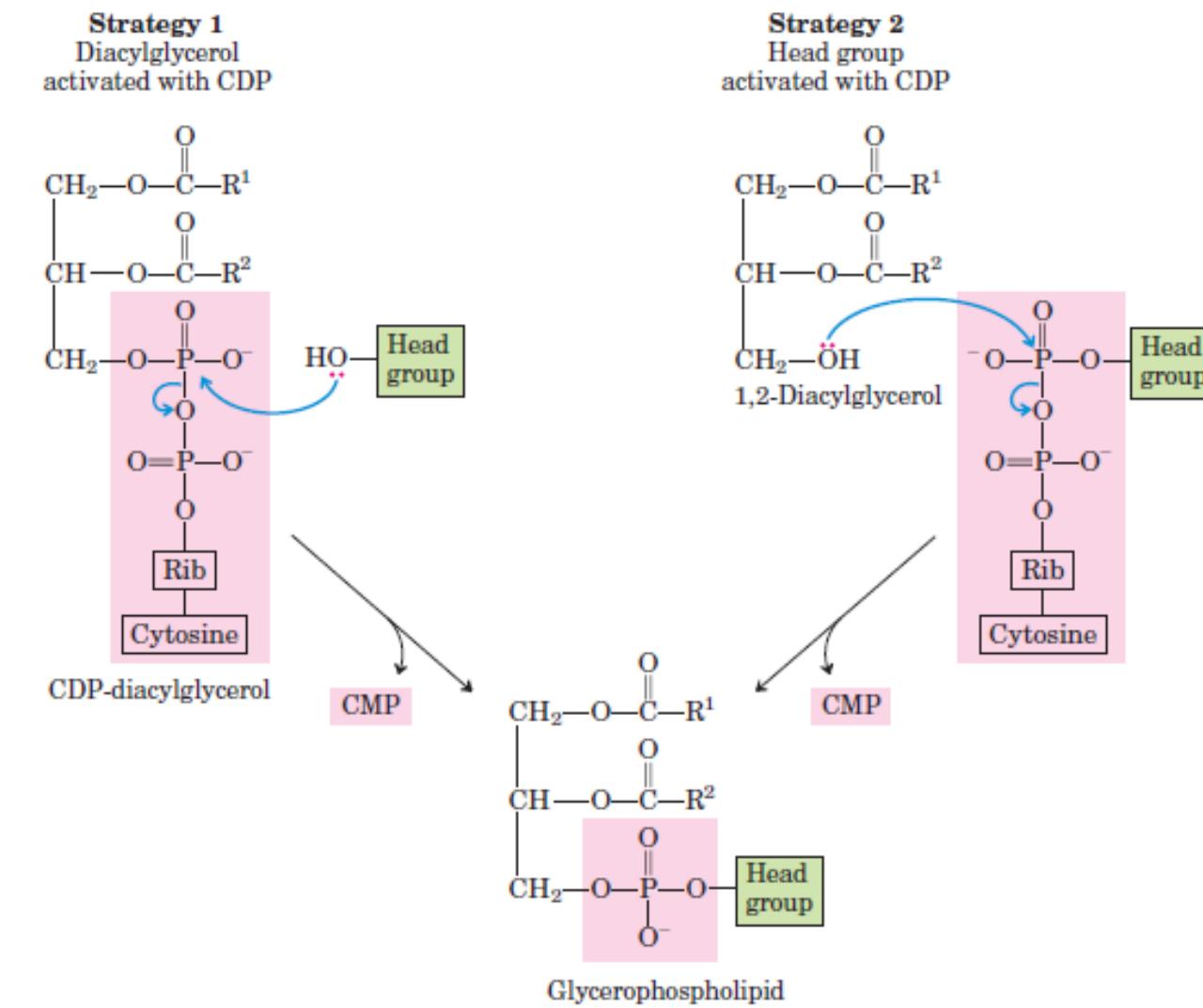
Biosynthesis of Amino Acids, Nucleotides, and Related  
Molecules

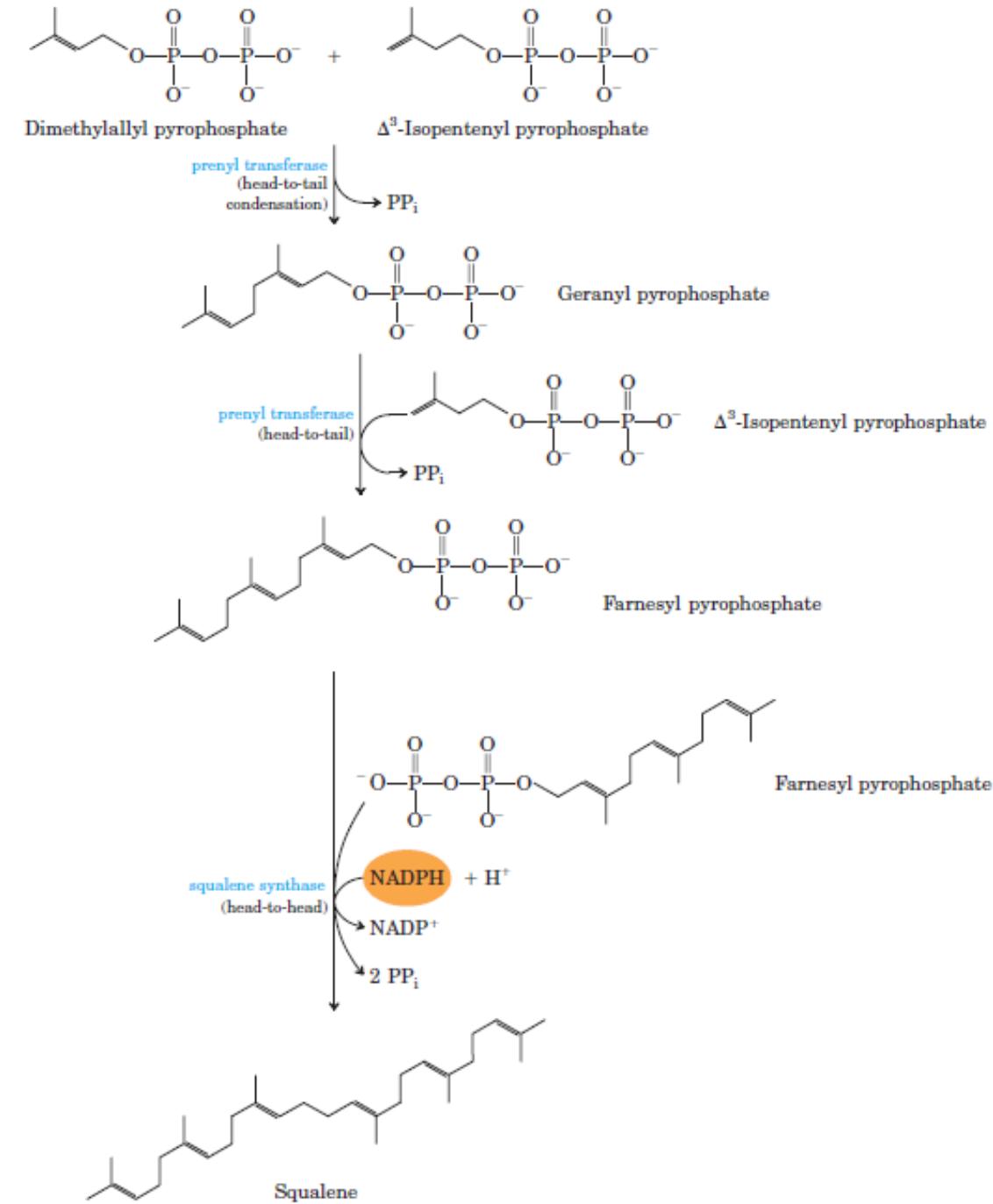
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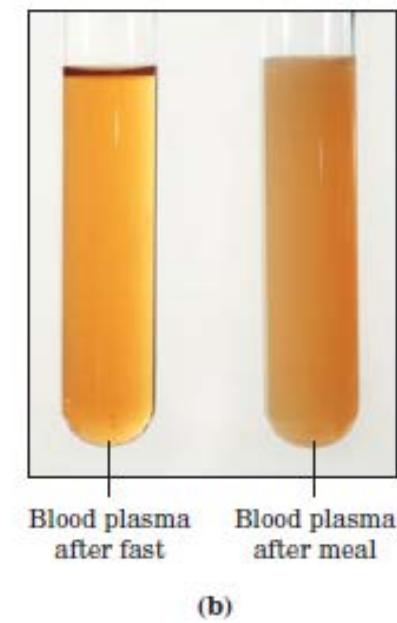
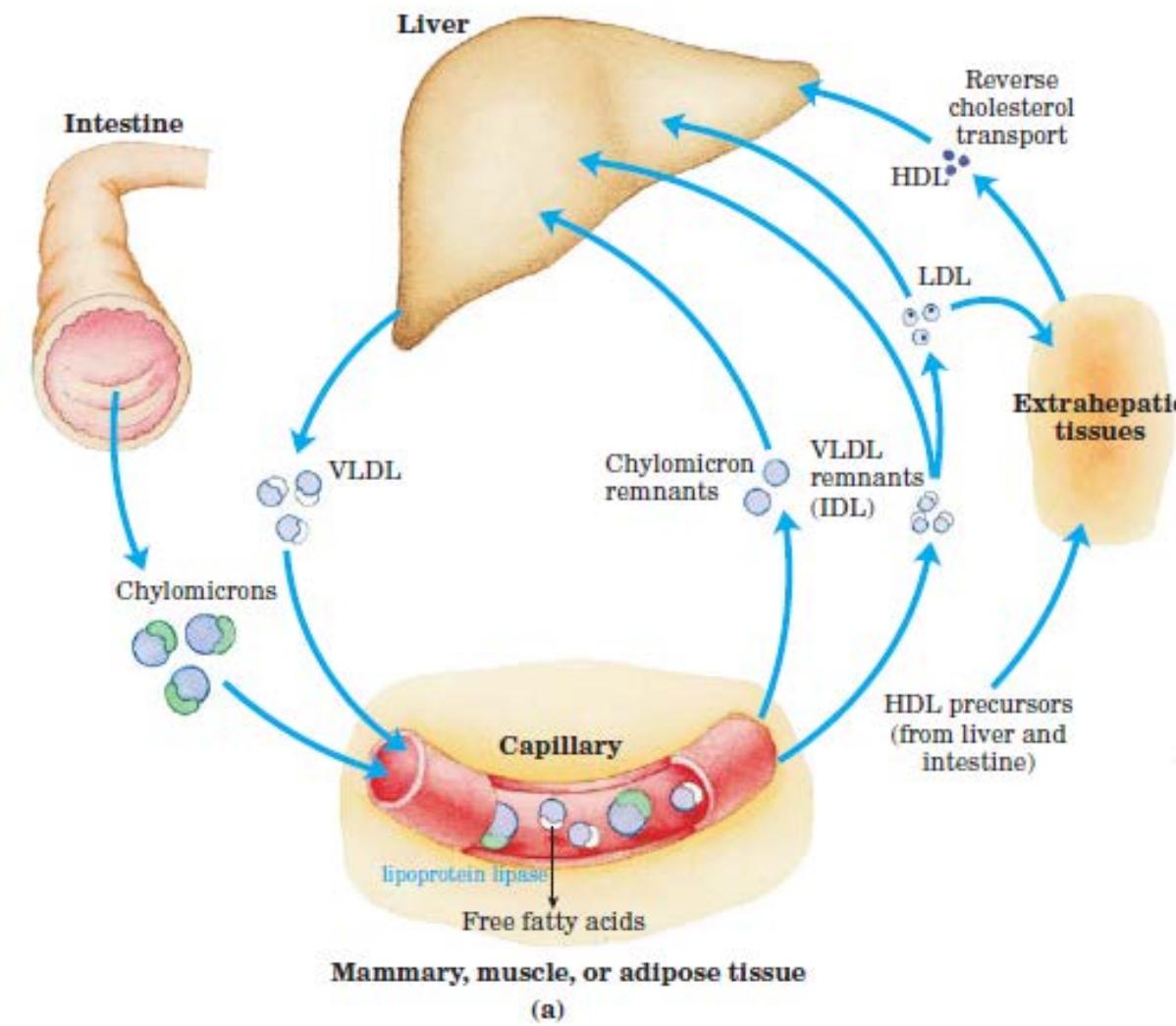


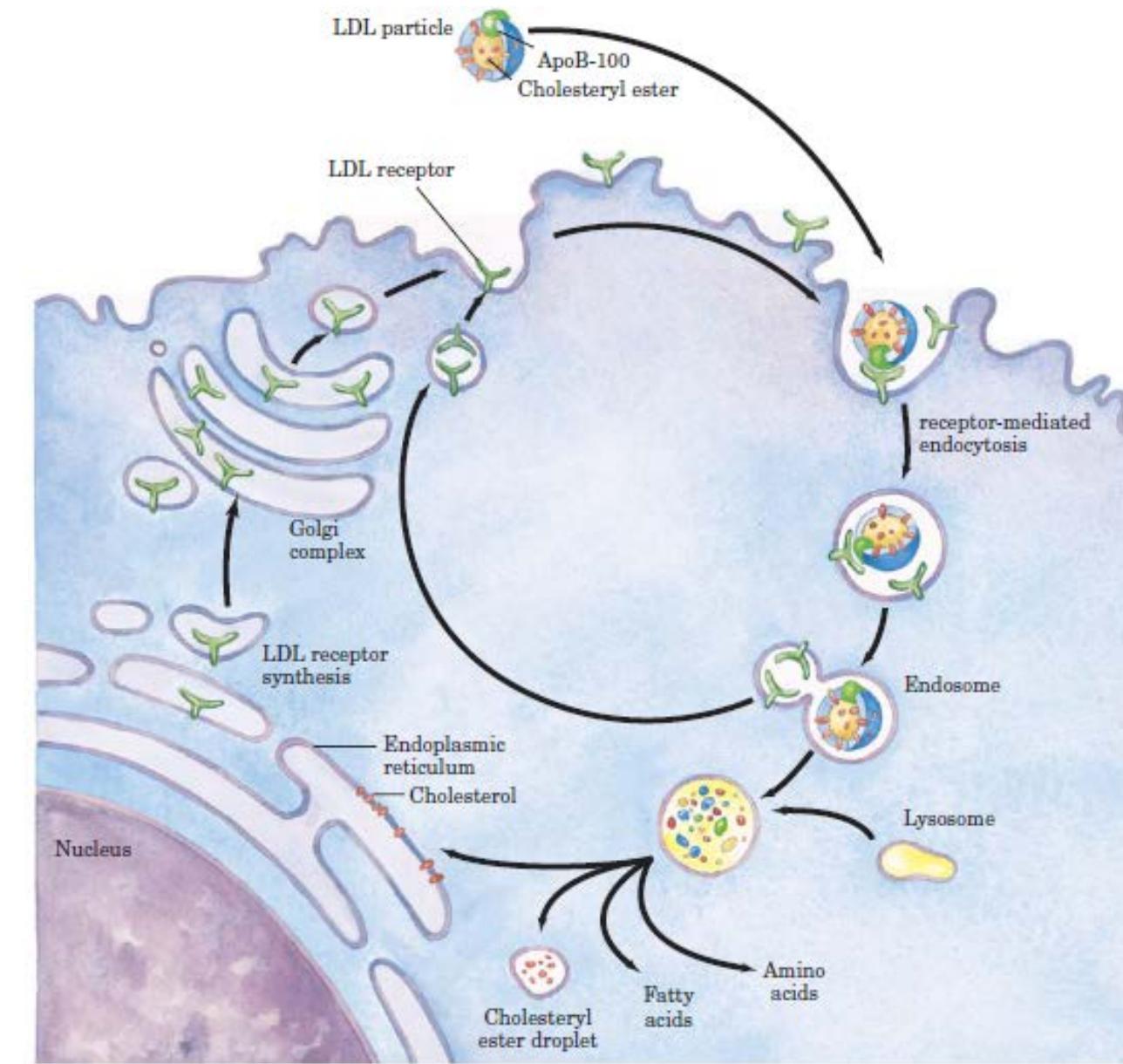


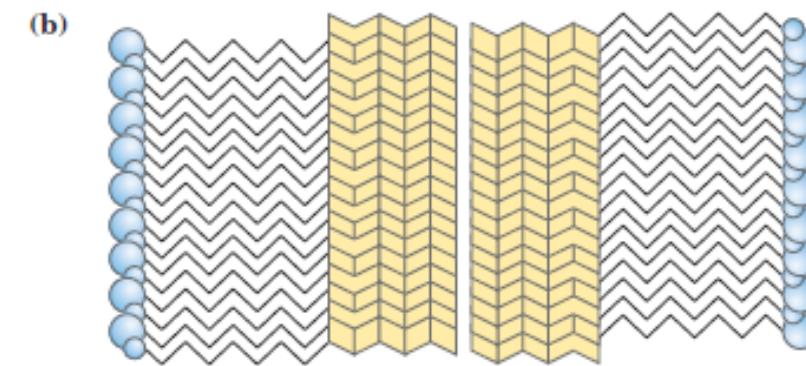
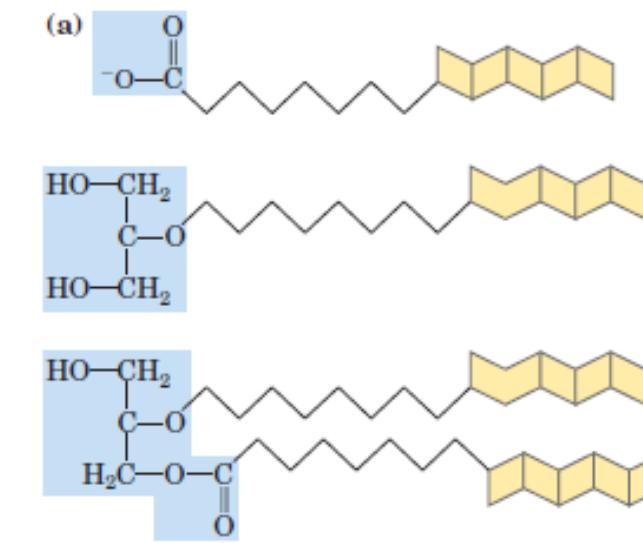


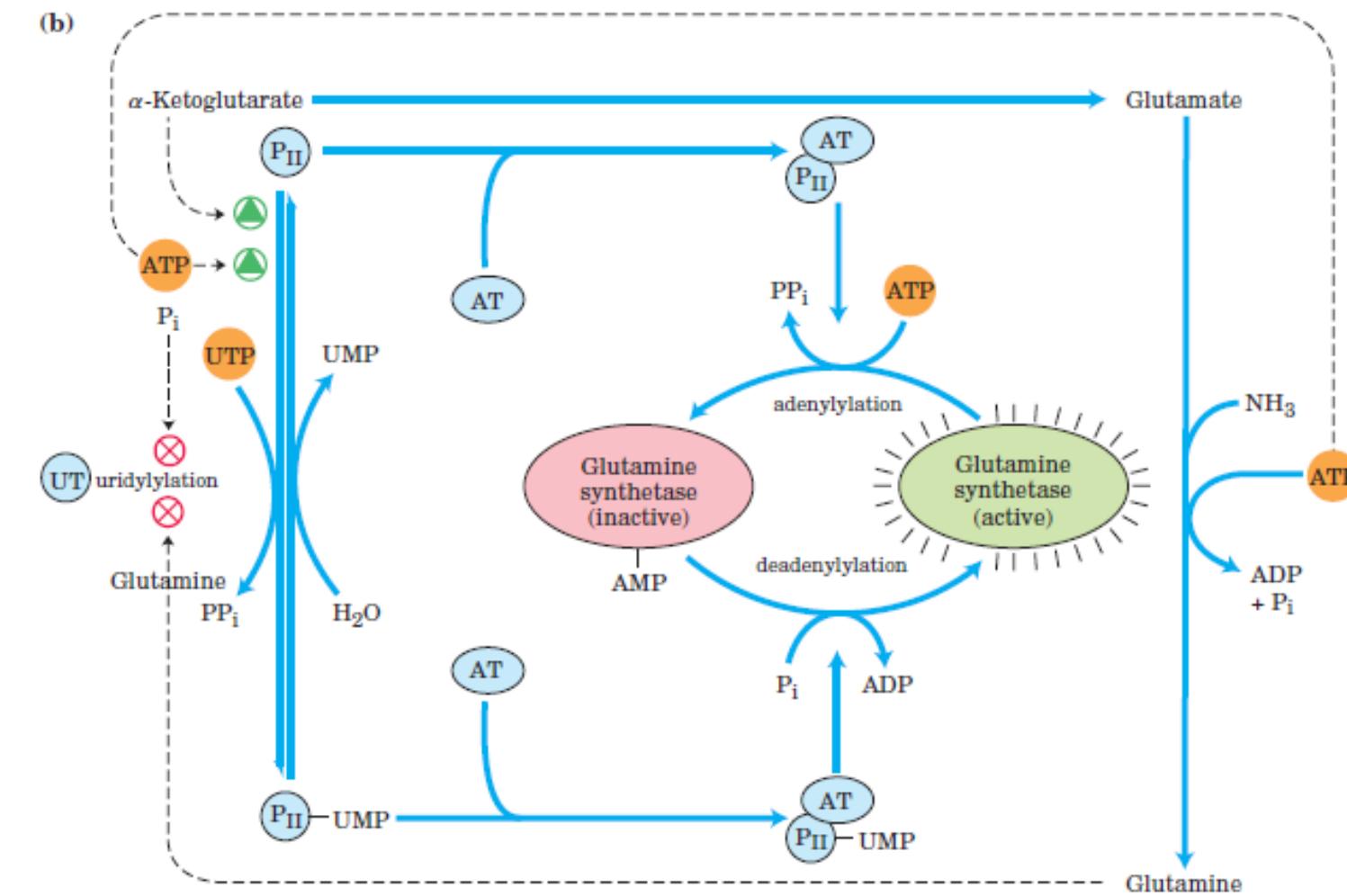


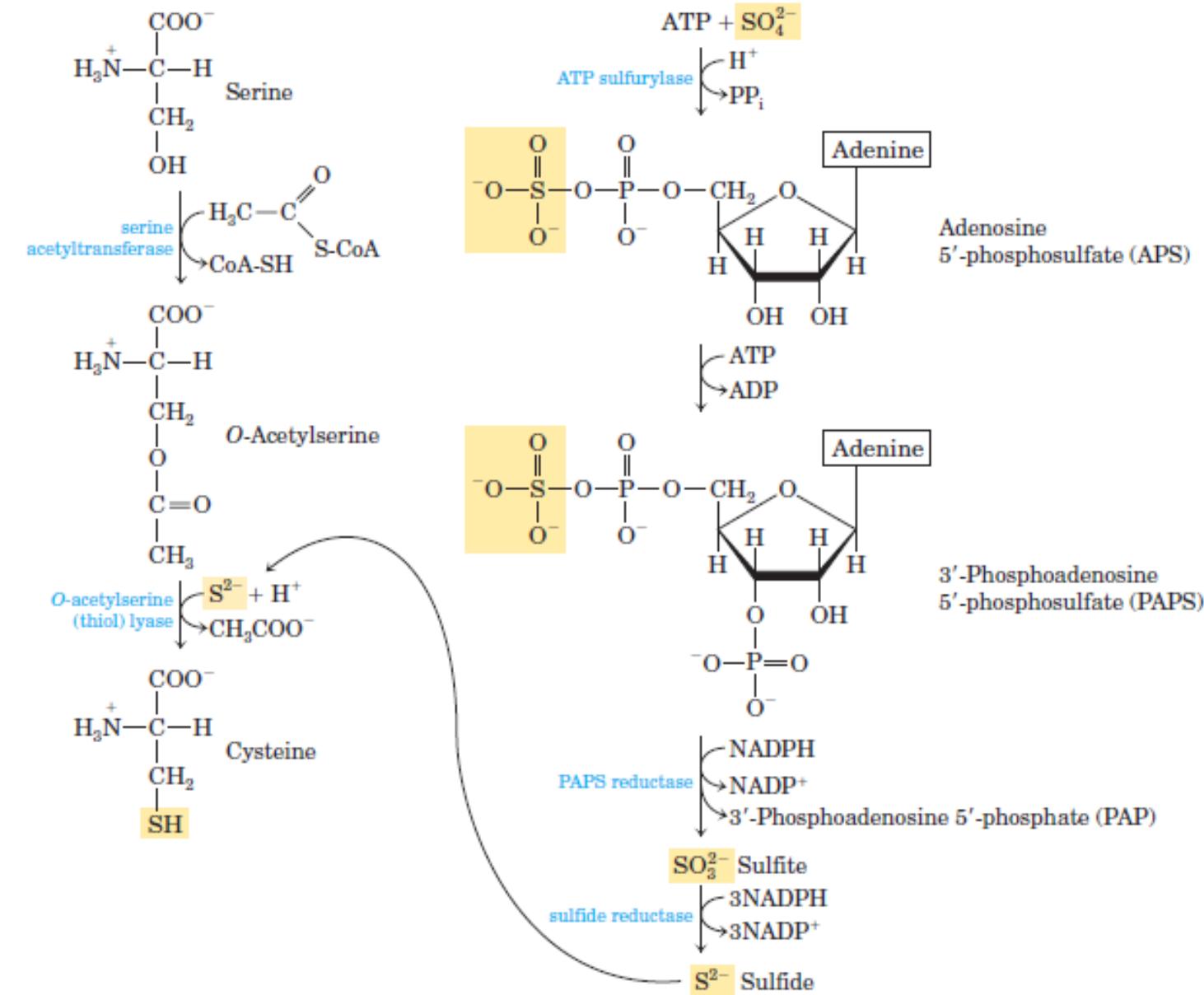


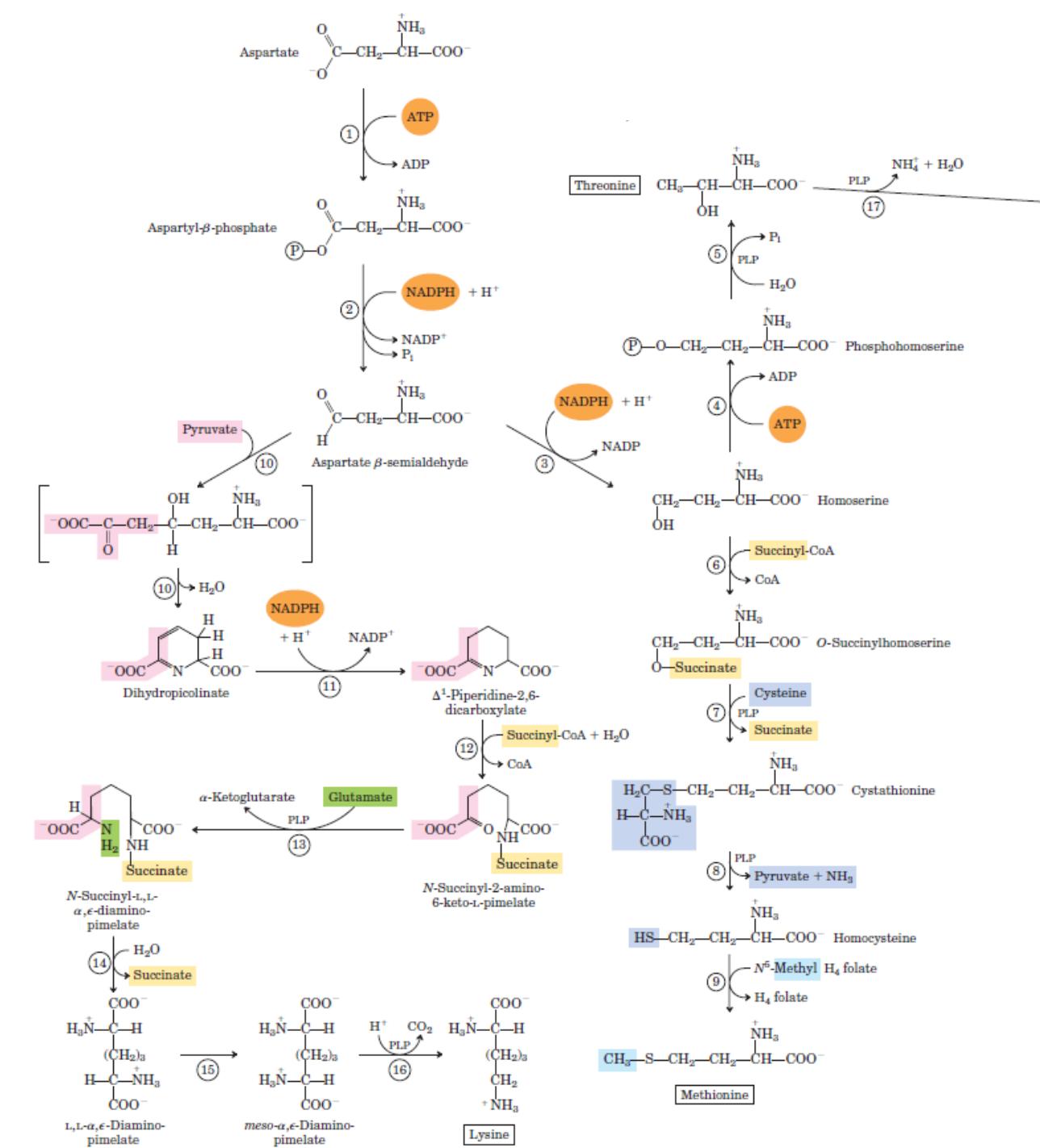


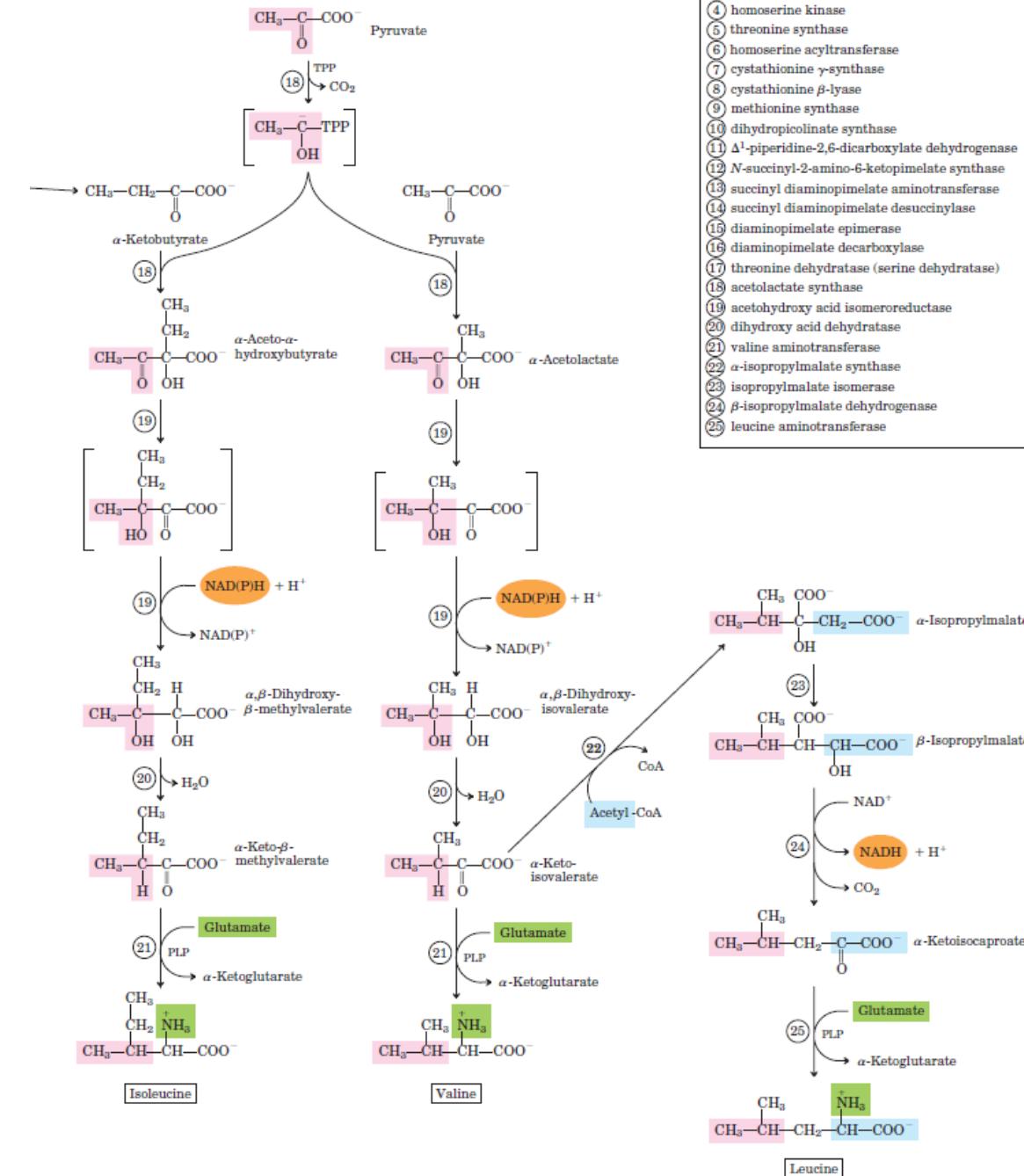












- (1) aspartokinase
- (2) aspartate  $\beta$ -semialdehyde dehydrogenase
- (3) homoserine dehydrogenase
- (4) homoserine kinase
- (5) threonine synthase
- (6) homoserine acyltransferase
- (7) cystathionine  $\gamma$ -synthase
- (8) cystathionine  $\beta$ -lyase
- (9) methionine synthase
- (10) dihydropicolinic synthase
- (11)  $\Delta^1$ -piperidine-2,6-dicarboxylate dehydrogenase
- (12) *N*-succinyl-2-amino-6-ketopimelate synthase
- (13) succinyl diaminopimelate aminotransferase
- (14) succinyl diaminopimelate desuccinylase
- (15) diaminopimelate epimerase
- (16) diaminopimelate decarboxylase
- (17) threonine dehydratase (serine dehydratase)
- (18) acetolactate synthase
- (19) acetohydroxy acid isomeroreductase
- (20) dihydroxy acid dehydratase
- (21) valine aminotransferase
- (22)  $\alpha$ -isopropylmalate synthase
- (23) isopropylmalate isomerase
- (24)  $\beta$ -isopropylmalate dehydrogenase
- (25) leucine aminotransferase

