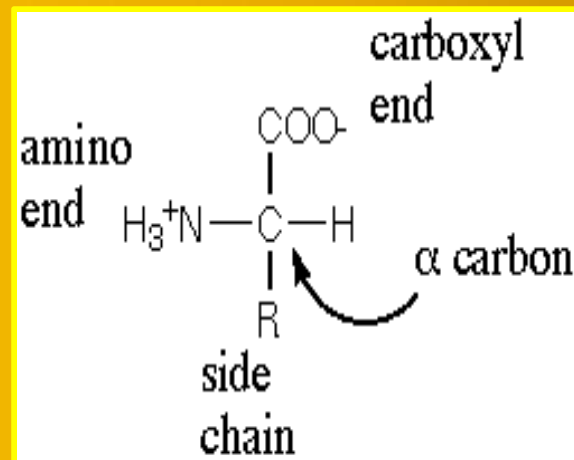


AMINO ACIDS (AA)

- Proteins - dehydration polymers of AA, with each AA **residue** joined to next AA by covalent bond (peptide bond)
- > 300 AA present in nature
- AA - present in proteins are called **standard AA (20)**



Standard AA

- 20 AA of proteins called **standard amino acids**
- Distinguish from less common AA that are residues modified after a protein has been synthesized & from the many other kinds of AA present in living organisms but not in proteins

Non - Standard AA

1. Modification of standard residues already incorporated into a polypeptide. (example: 4-Hydroxyproline, 5-Hydroxylysine)
2. Non protein AA. (example: Ornithine, Citrulline)

Aromatic R groups

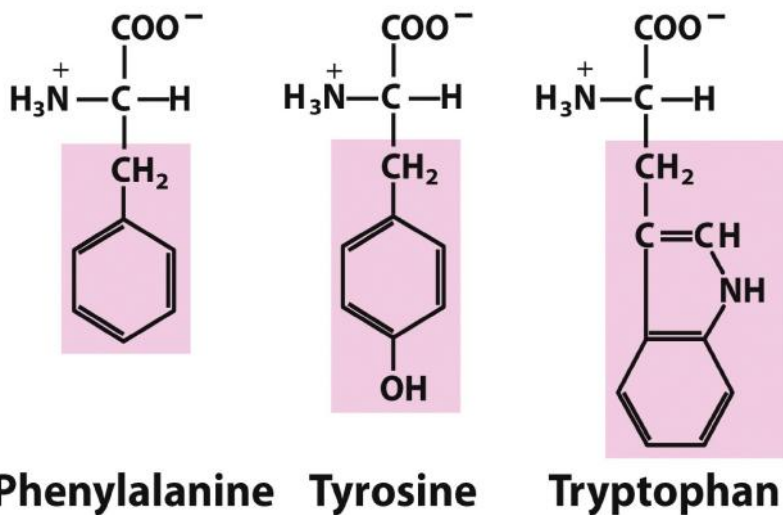


Figure 3-5 part 2
Lehninger Principles of Biochemistry, Fifth Edition
© 2008 W. H. Freeman and Company

Nonpolar, aliphatic R groups

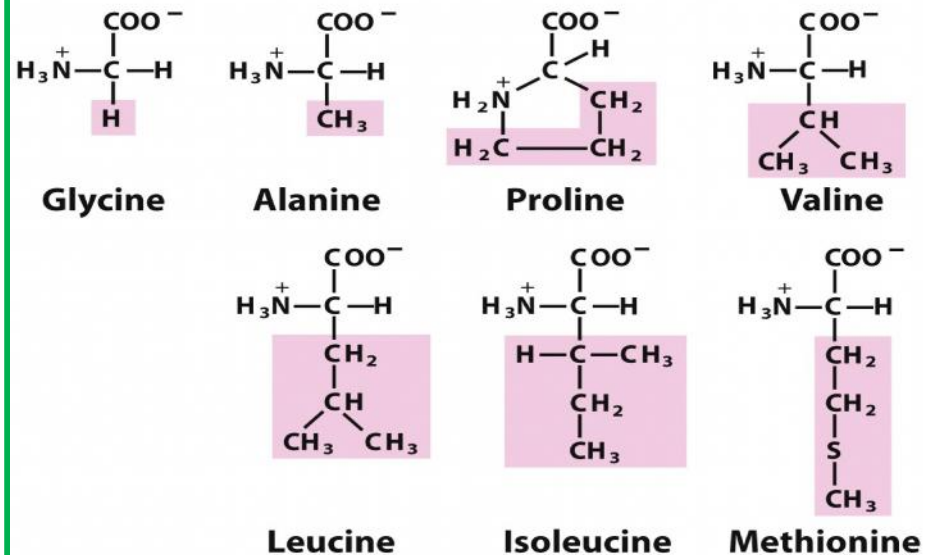


Figure 3-5 part 1
Lehninger Principles of Biochemistry, Fifth Edition
© 2008 W. H. Freeman and Company

Negatively charged R groups

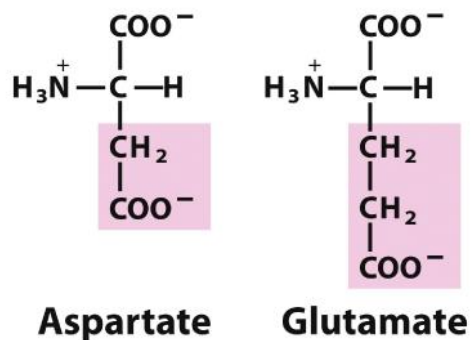


Figure 3-5 part 5
Lehninger Principles of Biochemistry, Fifth Edition
© 2008 W. H. Freeman and Company

Positively charged R groups

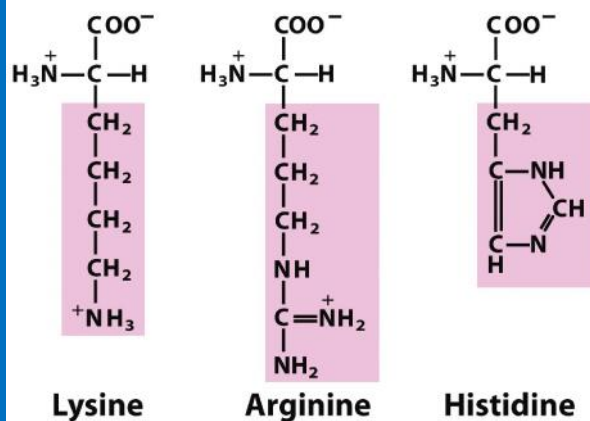


Figure 3-5 part 4
Lehninger Principles of Biochemistry, Fifth Edition
© 2008 W. H. Freeman and Company

Polar, uncharged R groups

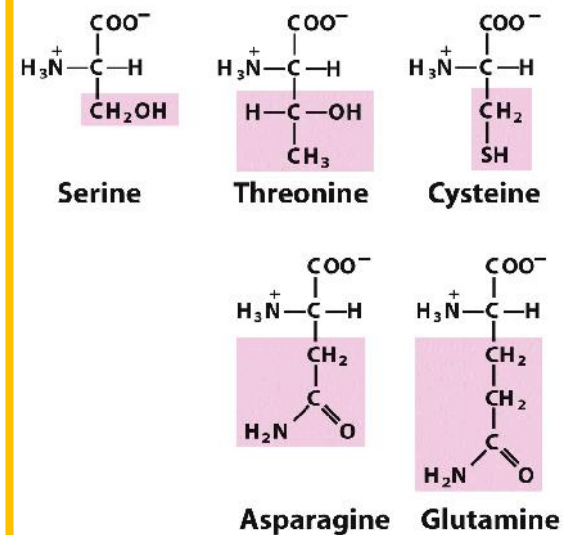
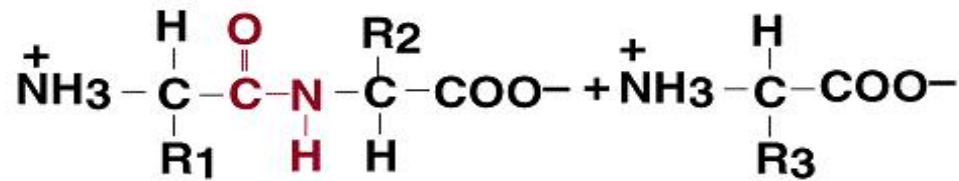
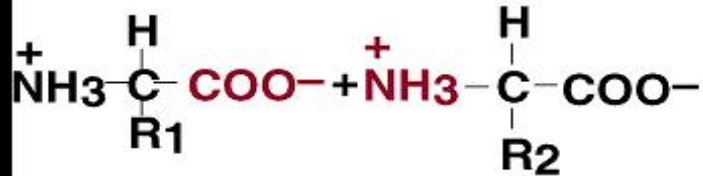
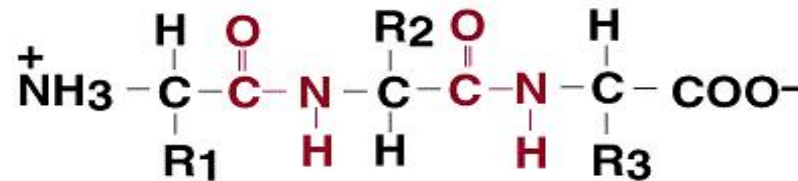


Figure 3-5 part 3
Lehninger Principles of Biochemistry, Fifth Edition
© 2008 W. H. Freeman and Company

PEPTIDE BOND



Dipeptide



Tripeptide

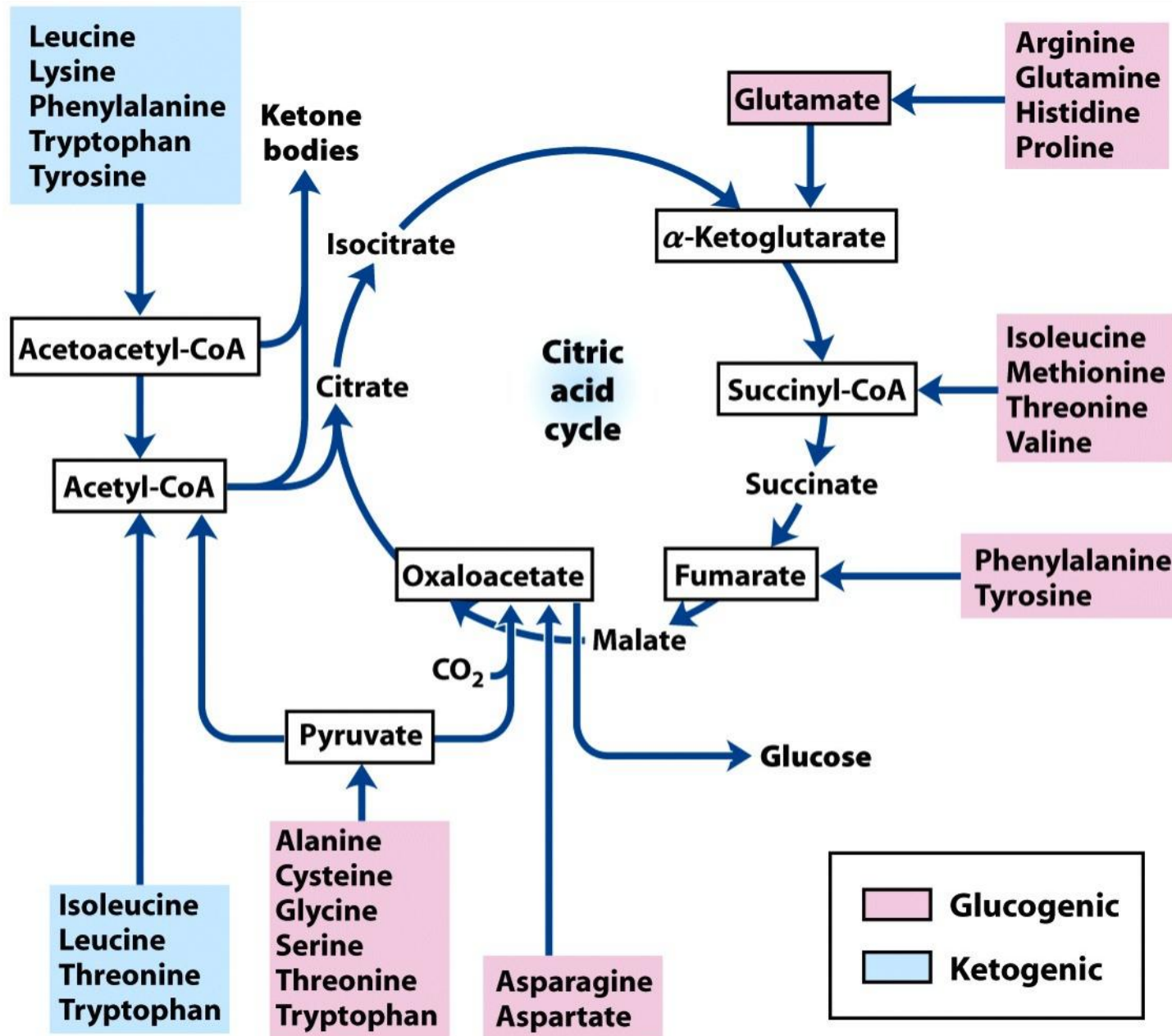


Figure 18-15
Lehninger Principles of Biochemistry, Fifth Edition
 © 2008 W. H. Freeman and Company

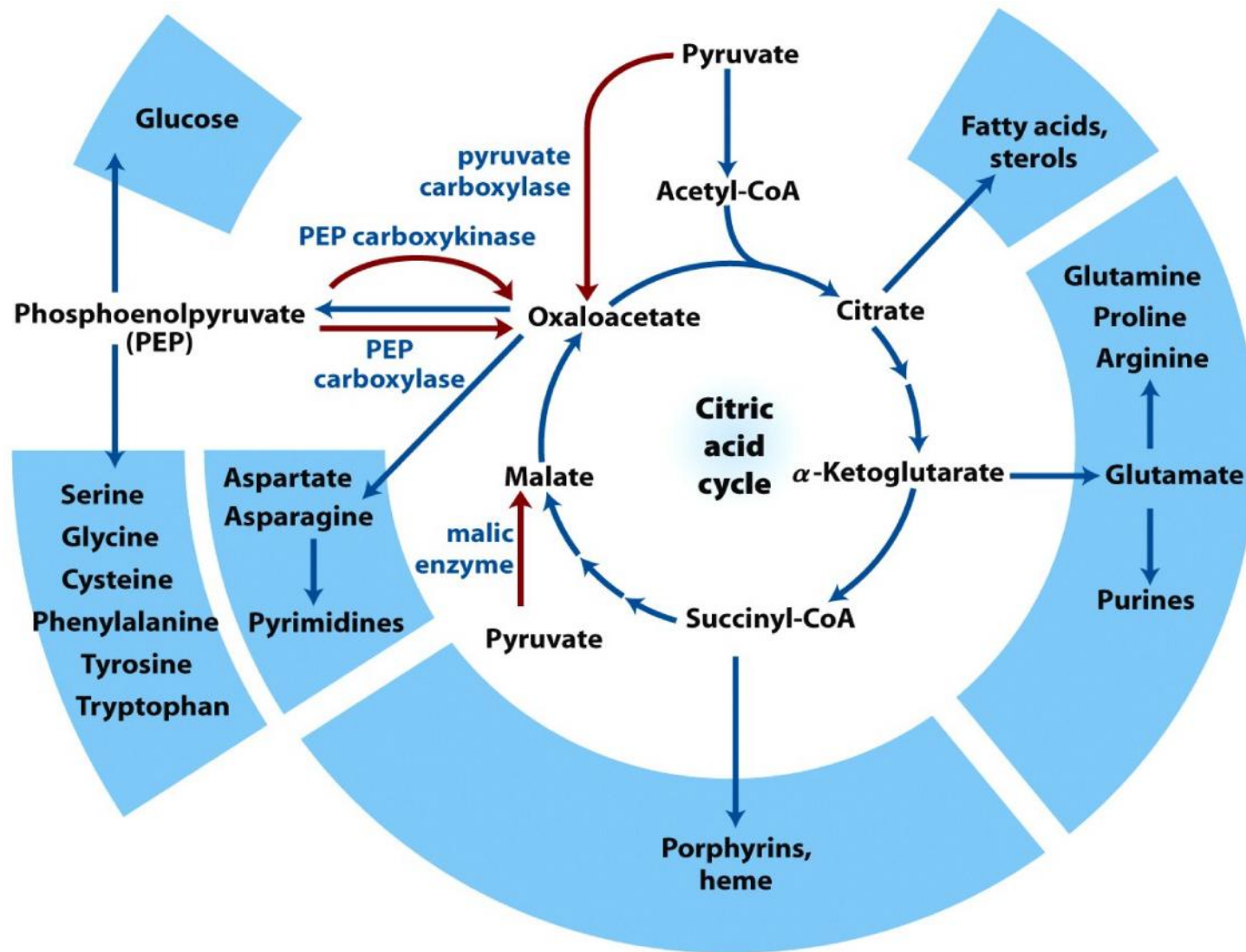


Figure 16-15
Lehninger Principles of Biochemistry, Fifth Edition
 © 2008 W. H. Freeman and Company