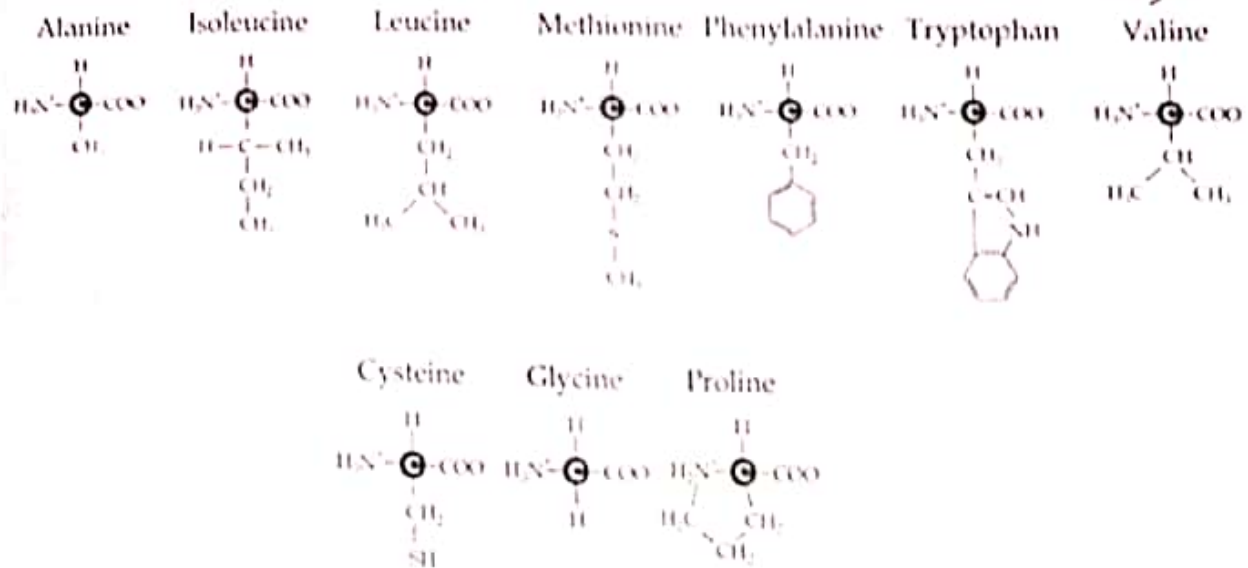


2. Physicochemical Properties of Amino Acids

Food Proteins

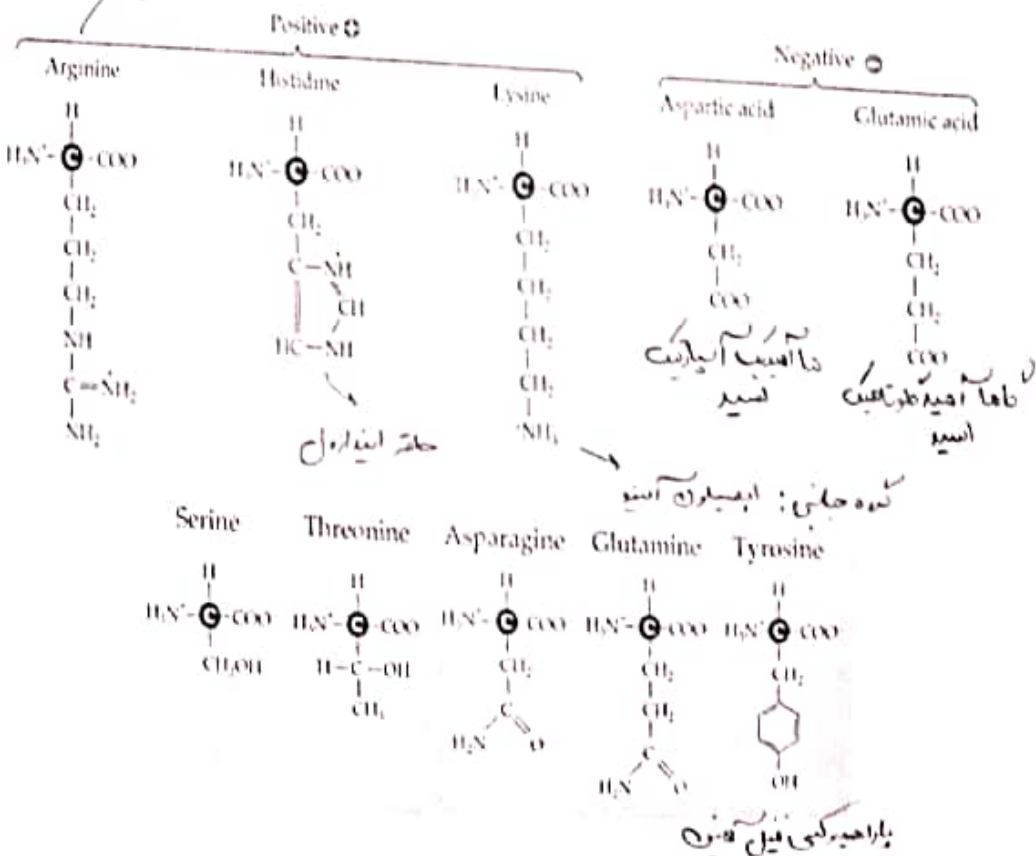
شروع کریں 3 Nov - Sun



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2. Physicochemical Properties of Amino Acids

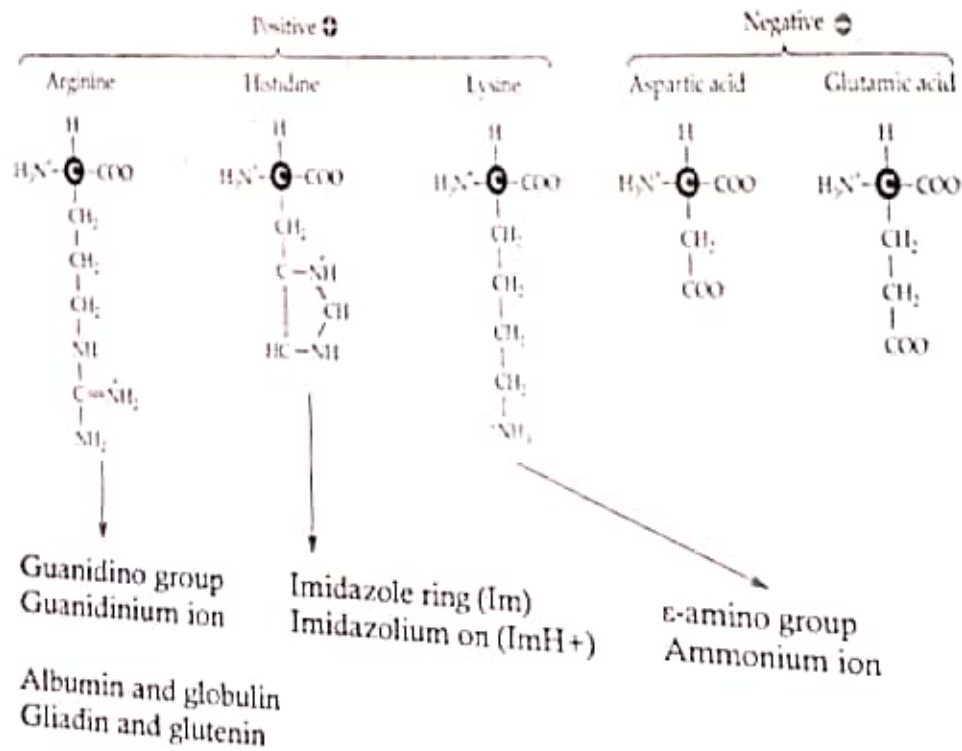
Food Proteins



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2. Physicochemical Properties of Amino Acids

Food Proteins

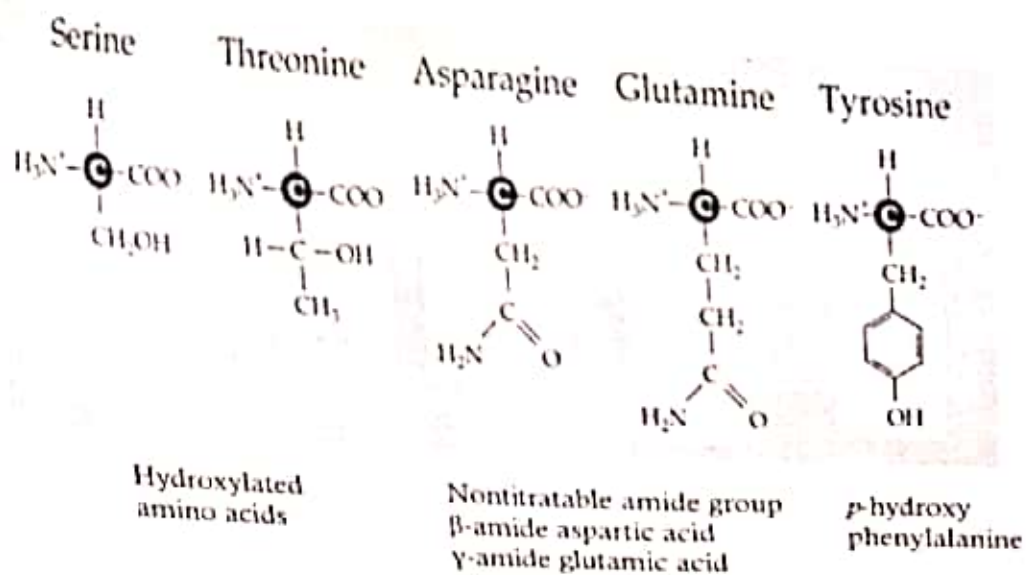


Asparagine, proline

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2. Physicochemical Properties of Amino Acids

Food Proteins



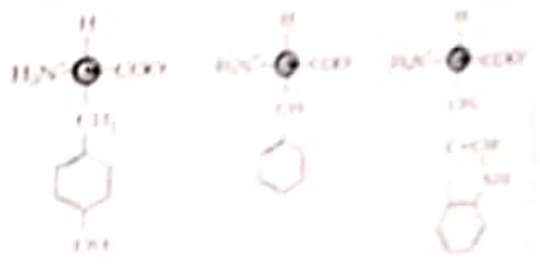
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2. Physicochemical Properties of Amino Acids

Food Proteins

Tyrosine Phenylalanine Tryptophan



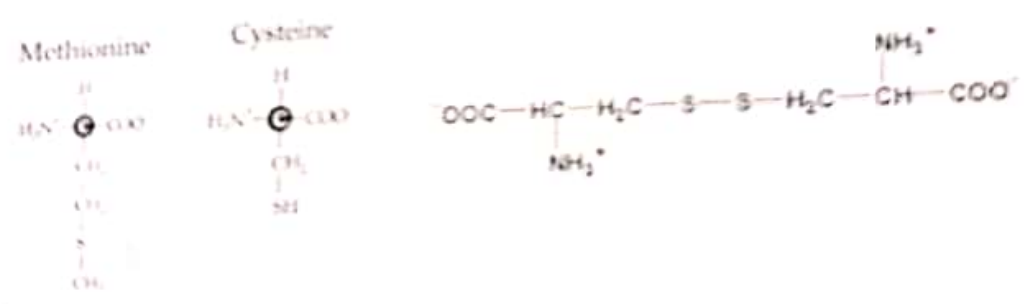
Aromatic amino acids :

Trp & Tyr $\lambda_m = 275 - 280 \text{ nm}$
 Phe $\lambda_m = 260 \text{ nm}$



2. Physicochemical Properties of Amino Acids

Food Proteins



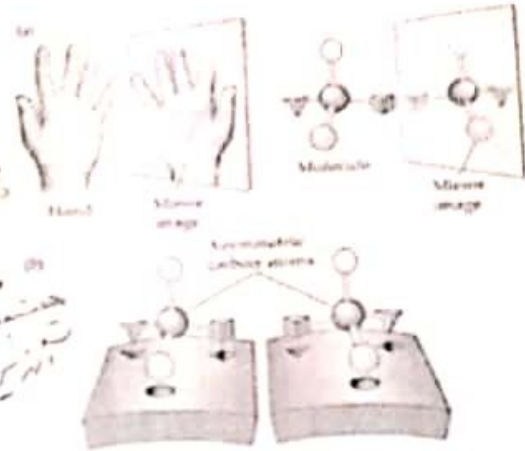
Sulfur-containing amino acids :

Met : methyl thioester group
 Sys : Cystine (disulfide bond)

2. Physicochemical Properties of Amino Acids

Food Proteins

- ☐ Gly
- ☐ Thr, Ile (D, D-allo, L, L-allo)
- ☐ Essential (8) —————
- ☐ Nonessential (8) : Val, Leu, —————
- Ile, Thr, Met, lys, Phe, Trp
- ☐ Semessential —————
- ☐ Perfect protein
- ☐ Imperfect protein (limiting amino acid)
- ☐ Active site : His, Ser, Thr, Tyr, Cys
- ☐ Acid-base properties —————

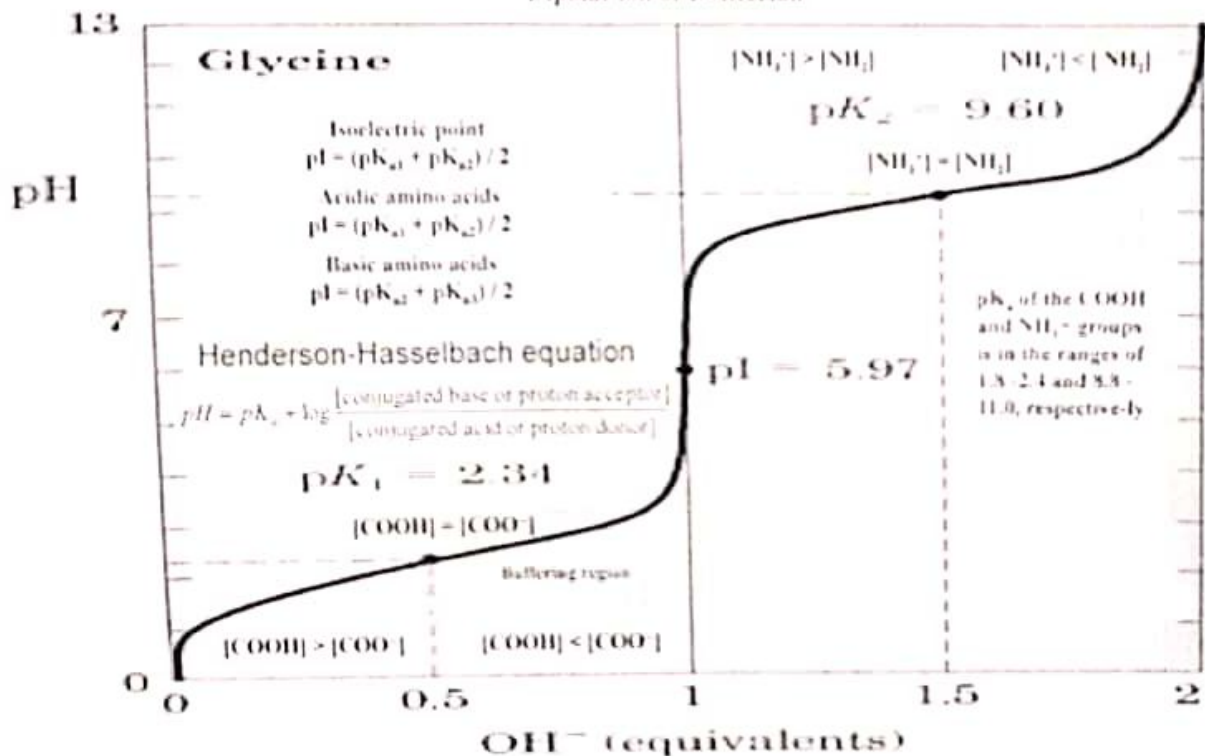


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این قطار برای تمرین هست و اگر توی شبیه مواد این سوال بفرید



Dipolar ion or zwitterion



3. Protein Structure

Food Proteins

□ Structural Hierarchy (Structure Levels) in Proteins

- Primary
- Secondary
- Tertiary
- Quaternary

①
②
③
④

ساختار اولی که با پیوندهای
کمیونی - هم تشکیل
شده است
ساختار اولی تعیین
کننده ساختار فضایی
تجزیه است

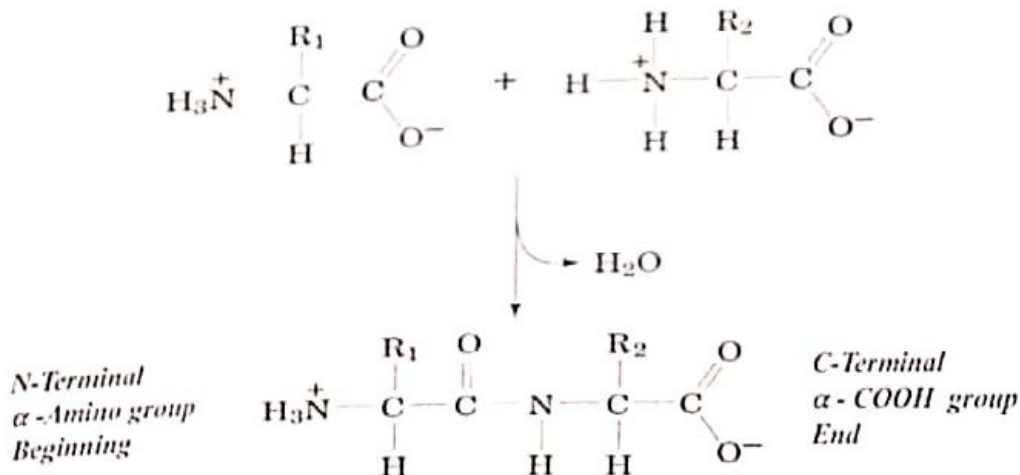
17

3. Protein Structure

Food Proteins

Primary structure

- The linear sequence in which the constituent amino acids are covalently linked through amide or peptide bonds.



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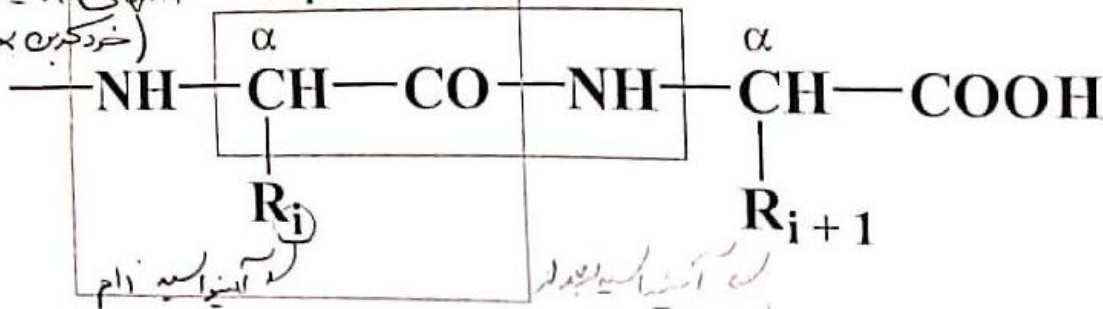
3. Protein Structure

Food Protein

اسلاید مهم در کتاب فاضل
همین یک کسین
(در کتاب نیست)

Amino acid residue

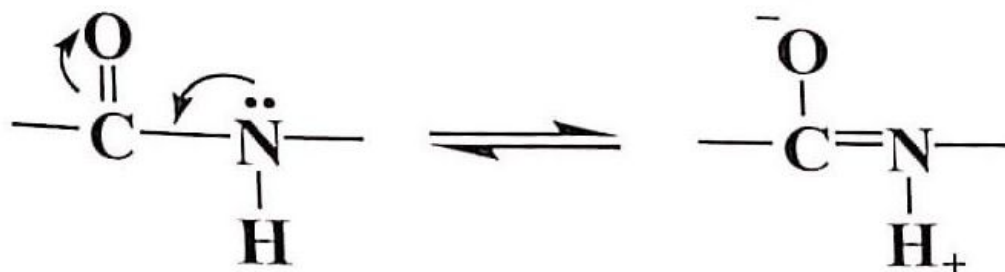
Peptide unit



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3. Protein Structure

Food Proteins



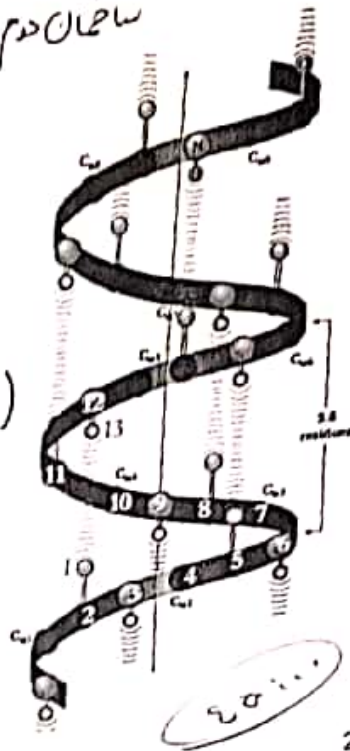
تفاوت / تغییر در شش دهانفر میس
تغییر شش دهانفر میس / تغییر در شش دهانفر میس
20
تغییر شش دهانفر میس / تغییر در شش دهانفر میس
تغییر شش دهانفر میس / تغییر در شش دهانفر میس

3. Protein Structure

Food Proteins

α - Helix

- Carbonyl oxygen of the i^{th} residue forms H-bond with amide proton of the $(i+4)^{\text{th}}$ residue.
- 13 backbone atoms are in this hydrogen-bonded loop (3.6₁₃-helix, 3.6: residues per turn or pitch).



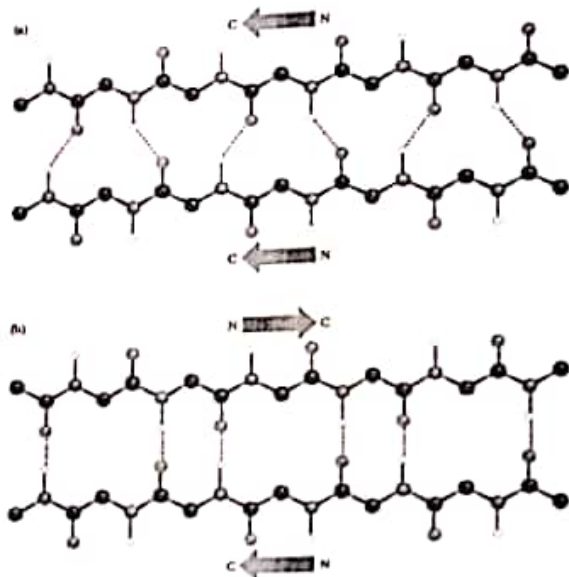
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3. Protein Structure

Food Proteins

β - Pleated Sheet

- An extended structure comprising β -strands.
- Depending on the N \rightarrow C directional orientations of the strands:
 - Parallel β -strands (0.325 nm between two residues)
 - Antiparallel β -strands (0.347 nm between two residues)



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