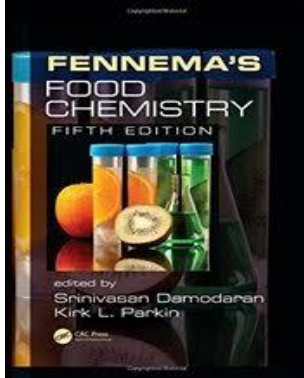


Food Chemistry I

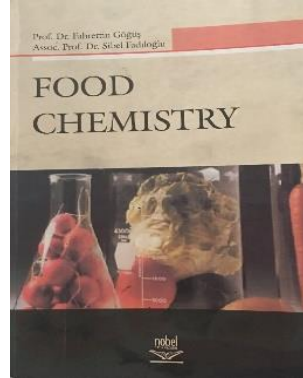


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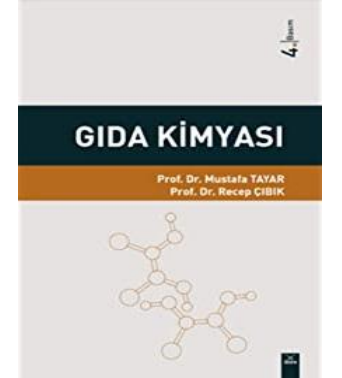
1.



2.



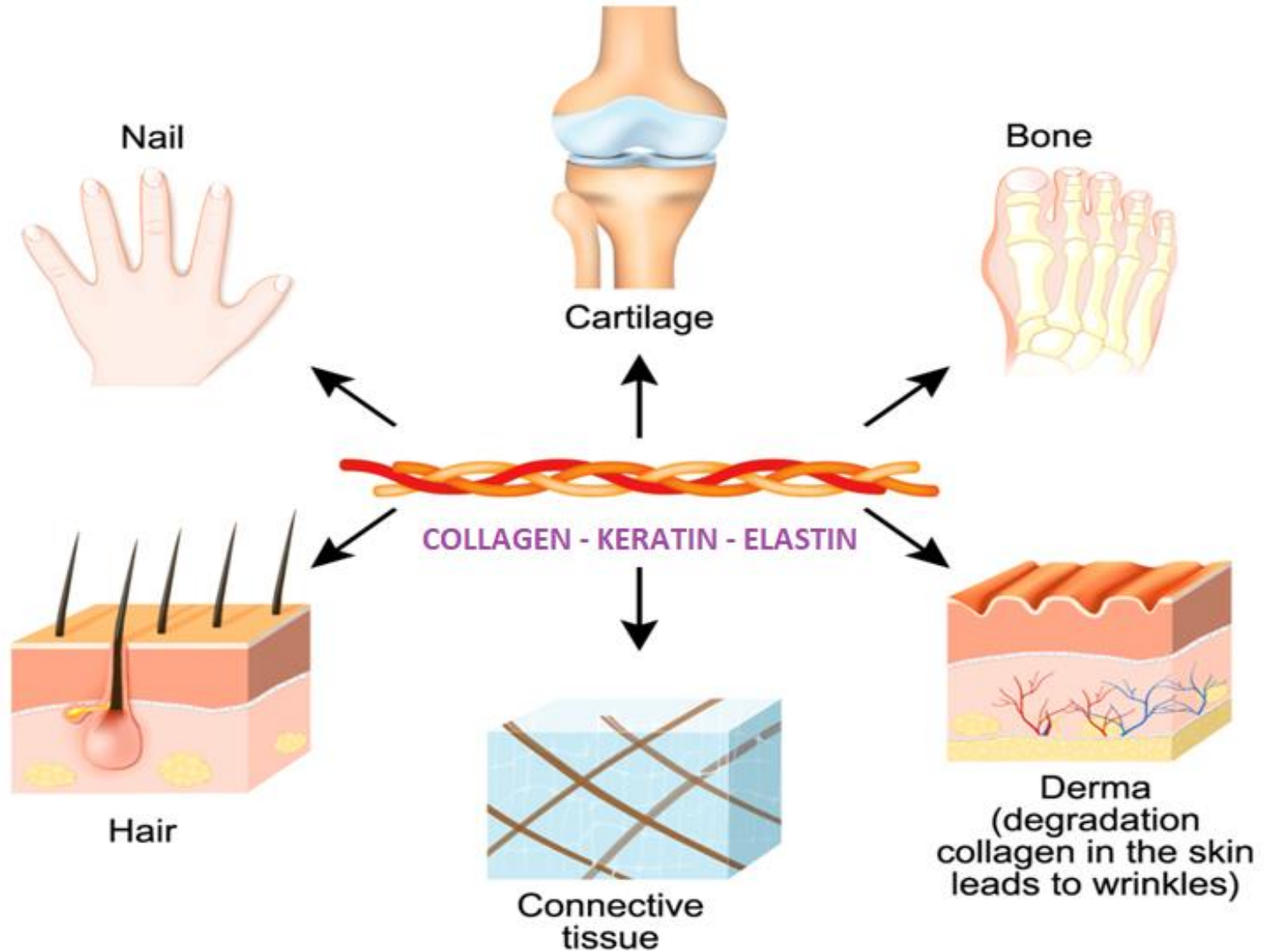
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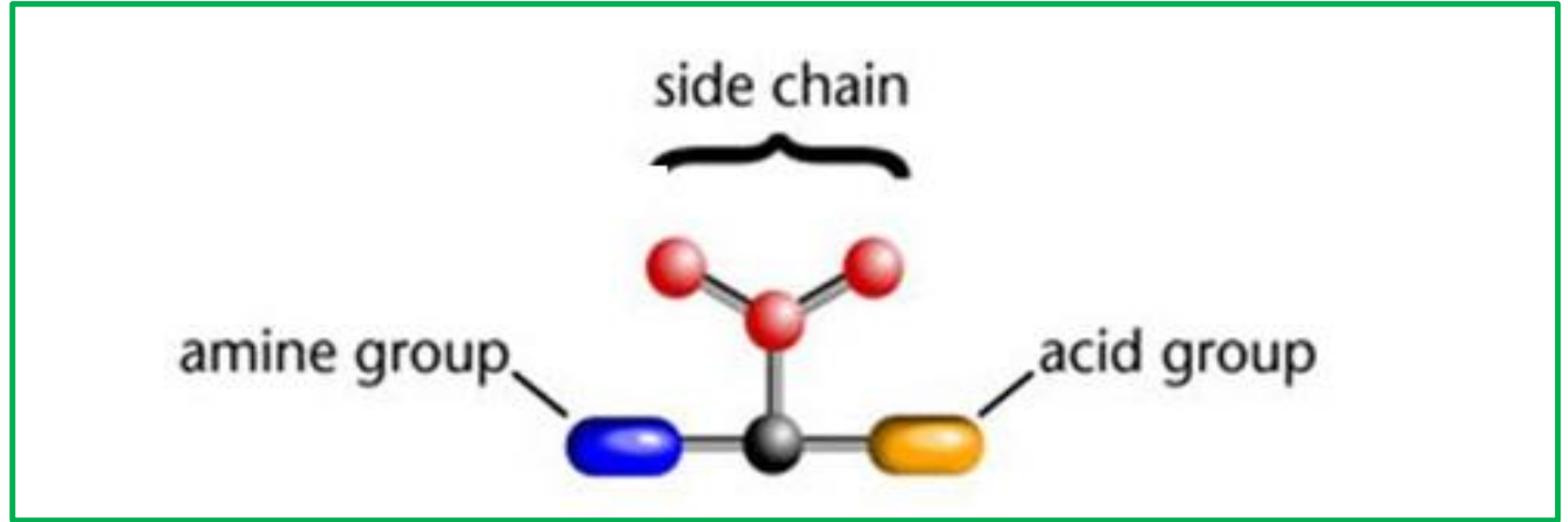
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2. Göğüş F. and Fadiloğlu S. 2006. *Food Chemistry*, Nobel Akademik Yayıncılık, Ankara.
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AMINO ACIDS, PEPTIDES and PROTEINS

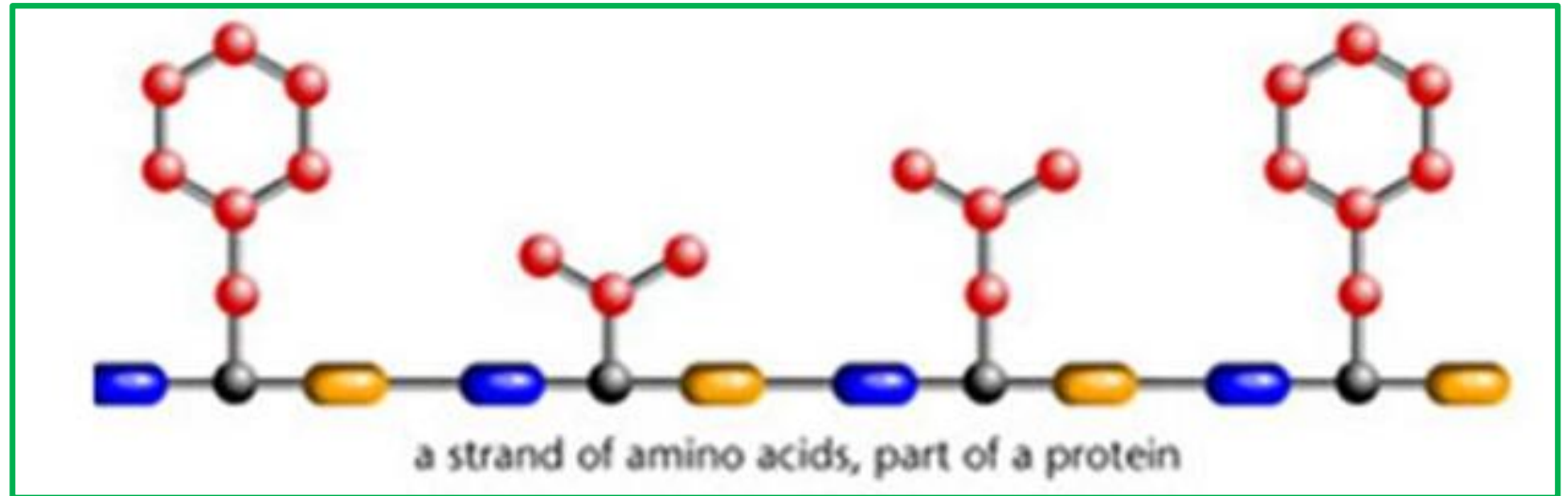
Proteins play a central role in biological systems



Amino Acid



Protein



Proteins contain:

50%–55% carbon

6%–7% hydrogen

20%–23% oxygen

12%–19% nitrogen

0.2%–3.0% sulfur

on w/w basis.

PROTEINS

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graph TD; A[PROTEINS] --> B[Homoproteins]; A --> C[Heteroproteins (conjugated proteins)];
```

Homoproteins

are not enzymatically modified in cells

Heteroproteins (conjugated proteins)

are covalently modified or complexed with nonprotein components

- * *nucleoproteins* (e.g., ribosomes),
- * *glycoproteins* (e.g., ovalbumin, κ -casein)
- * *phosphoproteins* (e.g., α - and β -caseins, kinases, phosphorylases)
- * *lipoproteins* (e.g., proteins of egg yolk, several plasma proteins)
- * *metalloproteins* (e.g., hemoglobin, myoglobin, cytochromes, several enzymes)

Proteins also can be classified according to their three-dimensional structural organization. ***Globular proteins*** ***Fibrous proteins***

The diverse biological functions of proteins can be categorized as

- * *enzyme catalysts*
- * *structural proteins*
- * *contractile proteins* (myosin, actin, tubulin)
- * *electron transporters* (cytochromes)
- * *ion pumps*
- * *hormones* (insulin, growth hormone)
- * *transfer proteins* (serum albumin, transferrin, hemoglobin)
- * *antibodies* (immunoglobulins [Ig's])
- * *storage proteins* (egg albumen, seed proteins)
- * *toxins*

FOOD PROTEINS

- * easily digestible
- * nontoxic
- * nutritionally adequate
- * functionally usable in
food products
- * available in abundance
- * agriculturally sustainable