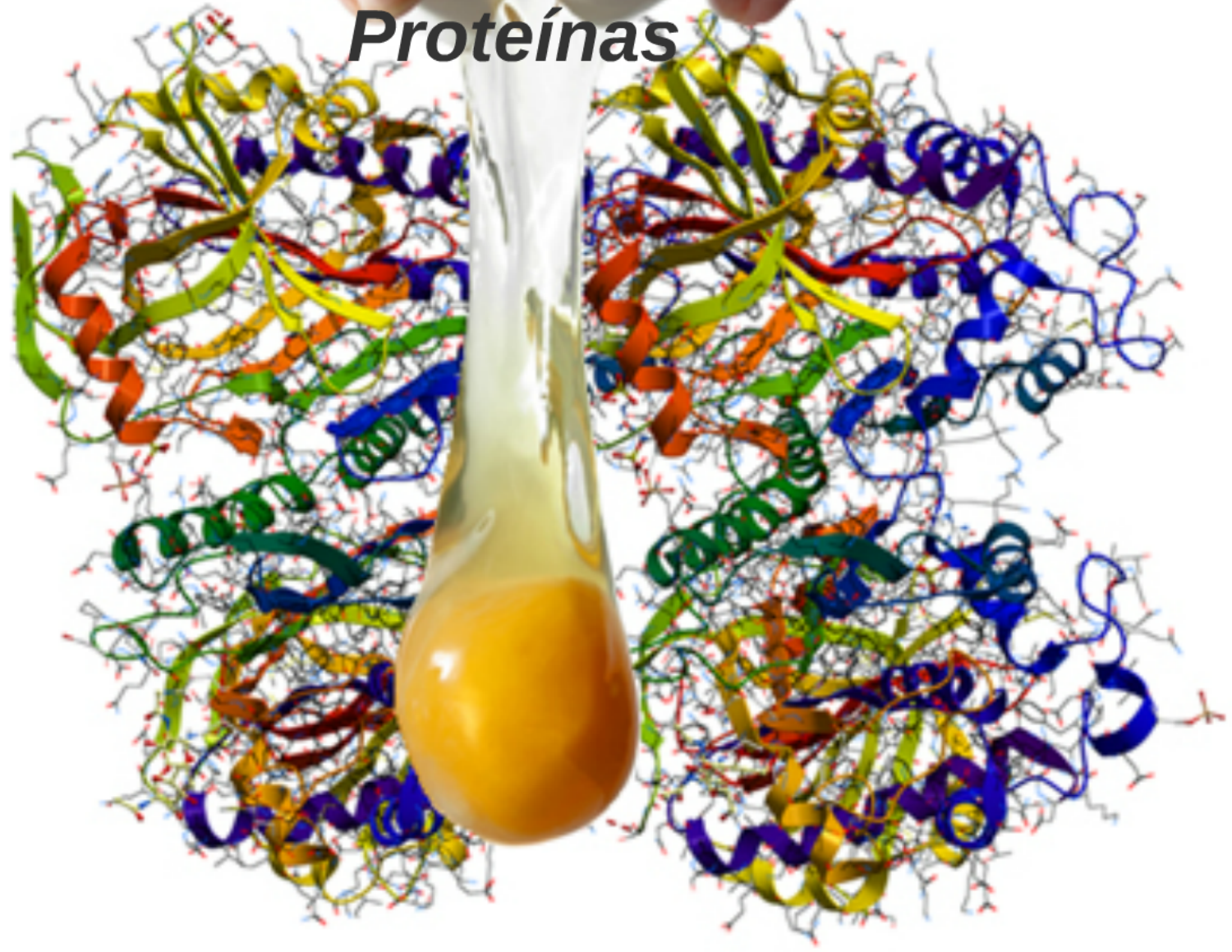
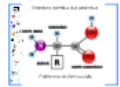


O que é?
Macromolécula formada a partir de
ligações entre aminoácidos.

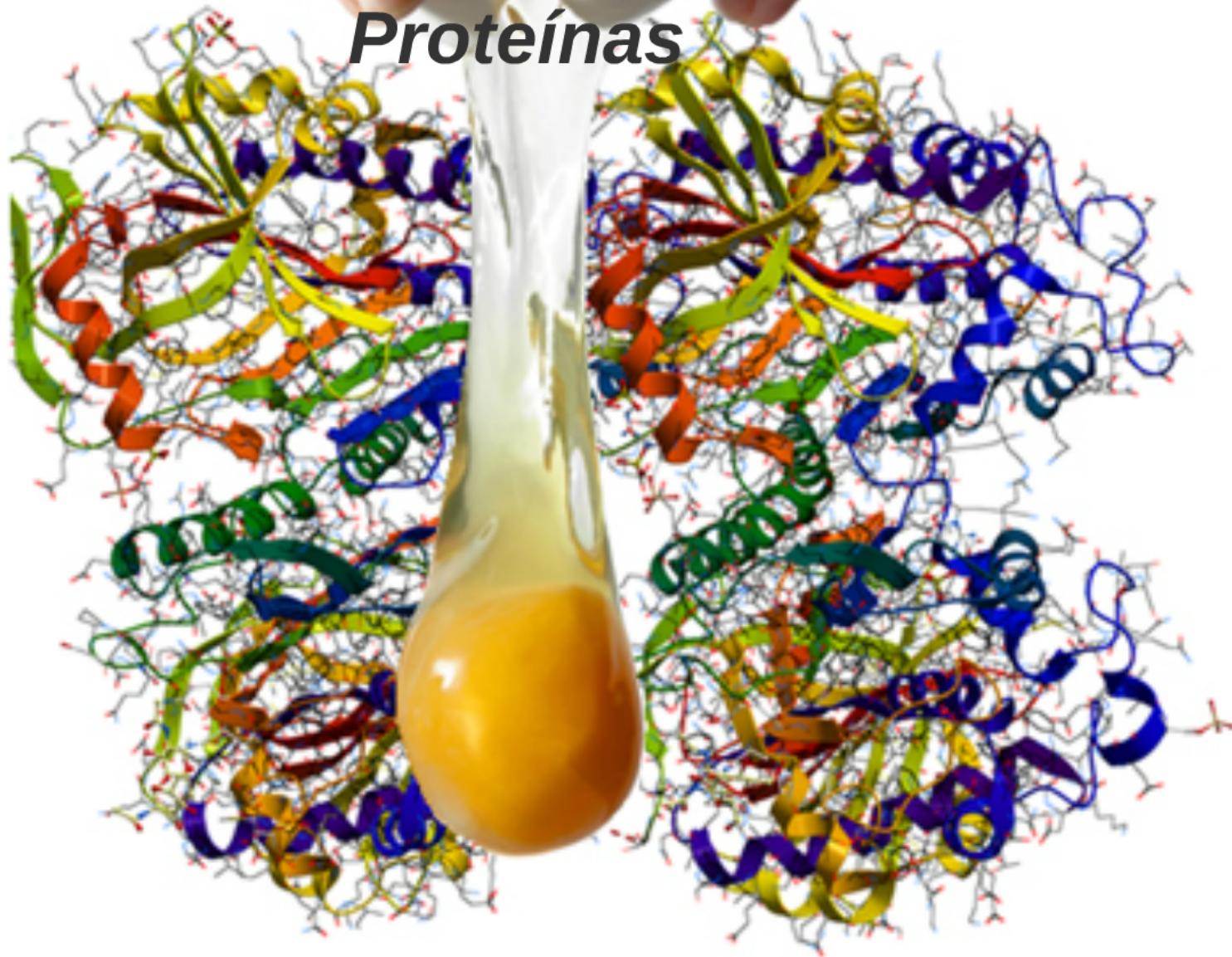
A diagram showing a protein chain structure. It consists of a central backbone of amino acids connected by peptide bonds, with various side chains branching off. The structure is shown in a simplified, schematic manner.

Proteínas





Proteínas



A close-up photograph of a hand cracking a white egg into a white bowl. The egg is being held by several fingers, and a small amount of egg yolk is visible as it falls into the bowl. The background is a colorful, semi-transparent 3D molecular model of a protein structure, showing various colored ribbons (yellow, green, blue, red, orange) and spheres (red, blue, white) representing atoms. The word "Proteínas" is written in a large, bold, black, italicized font across the center of the image.

Proteínas

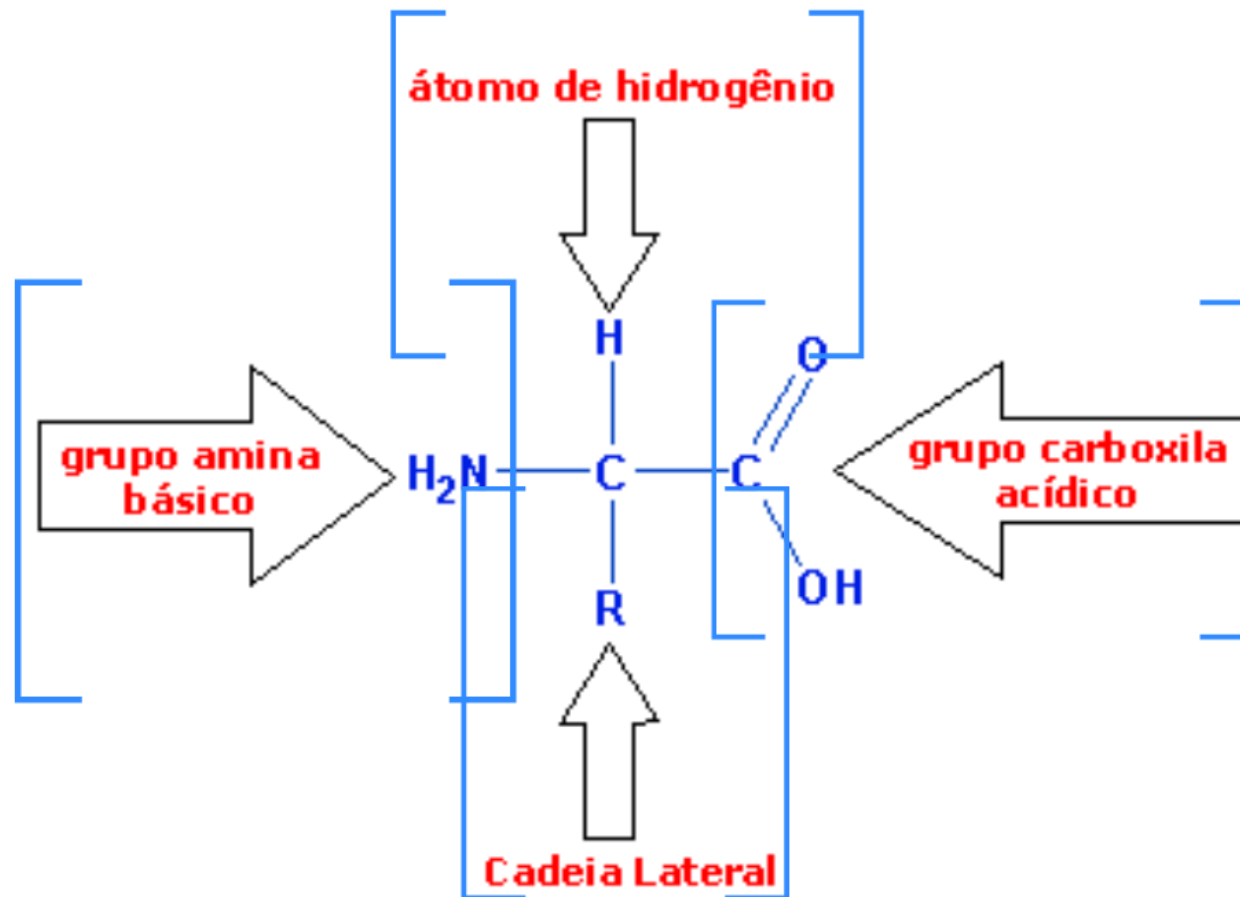


**INSTITUTO FEDERAL DE
EDUCAÇÃO, CIÊNCIA E TECNOLOGIA**
RIO GRANDE DO NORTE

Fabão

O que é?

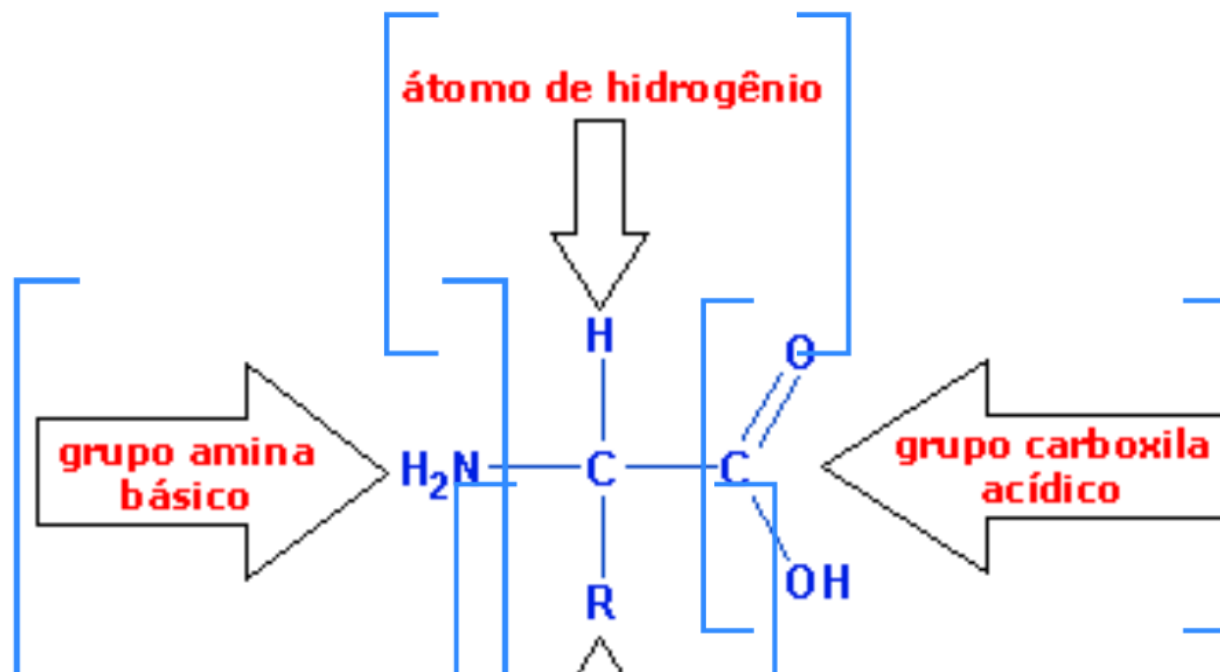
Macromoléculas formadas a partir de ligações entre **aminoácidos**.

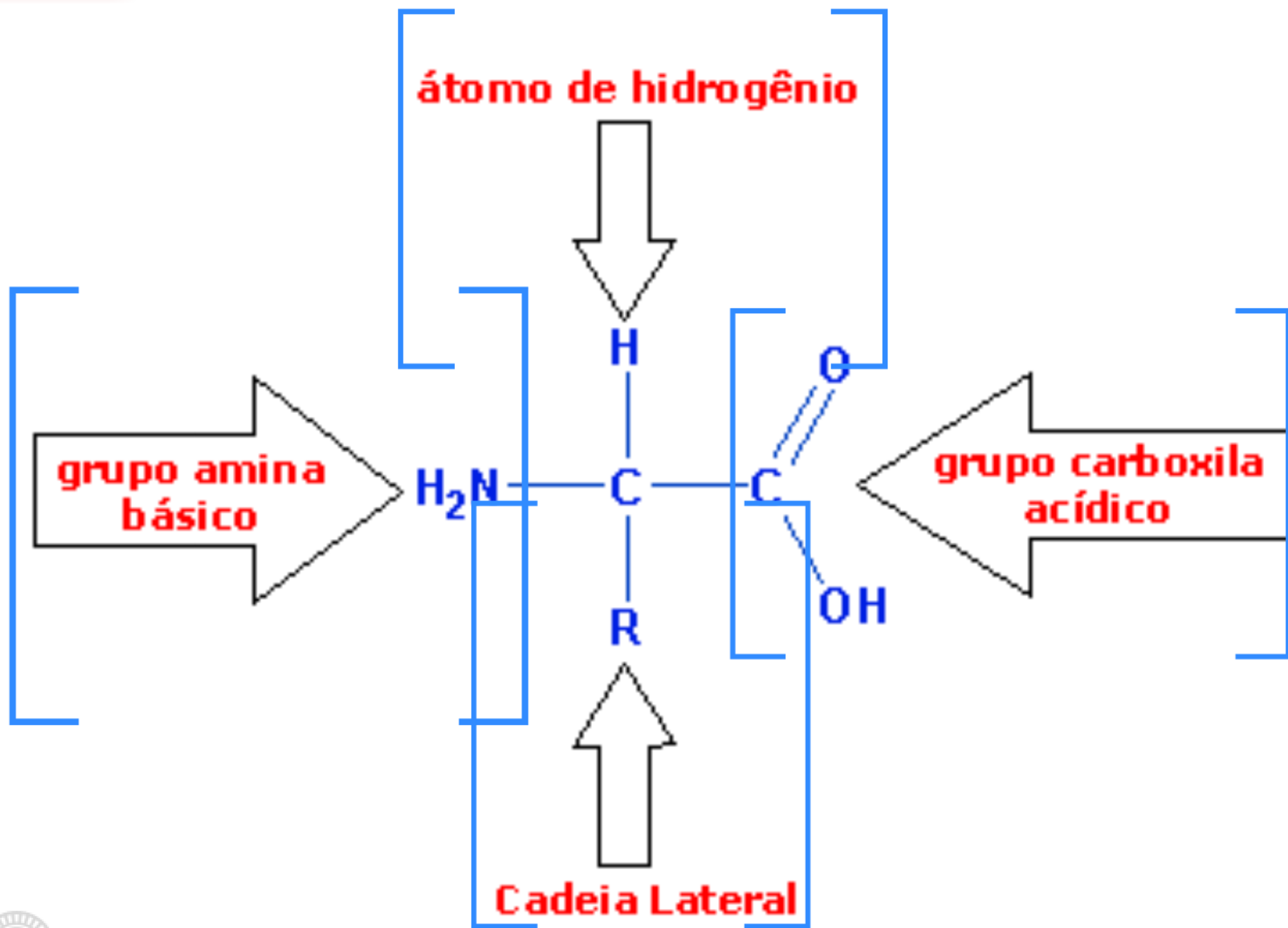


O que é?

O que é?

Macromoléculas formadas a partir de ligações entre **aminoácidos**.



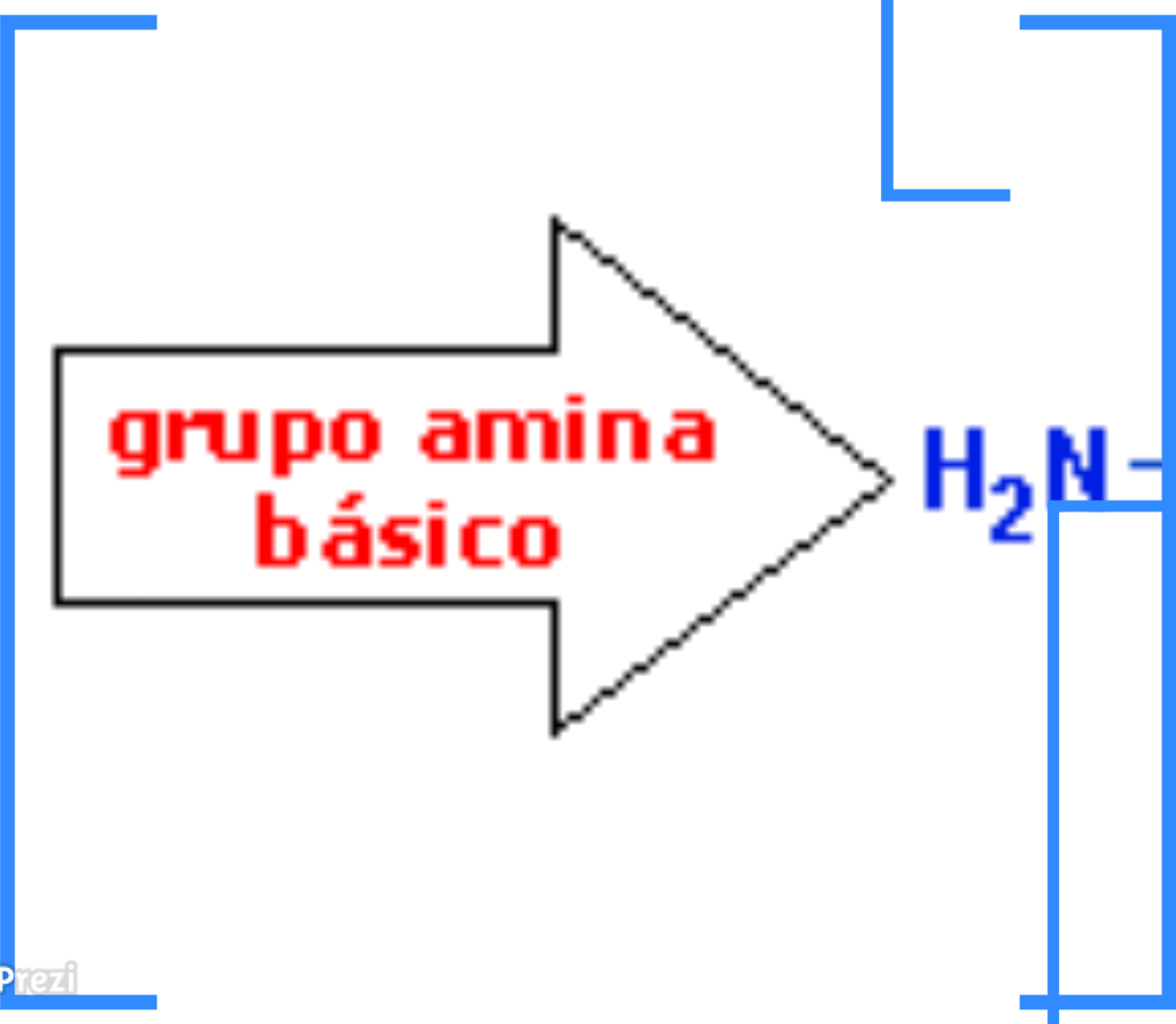


átomo de hidrogênio



H

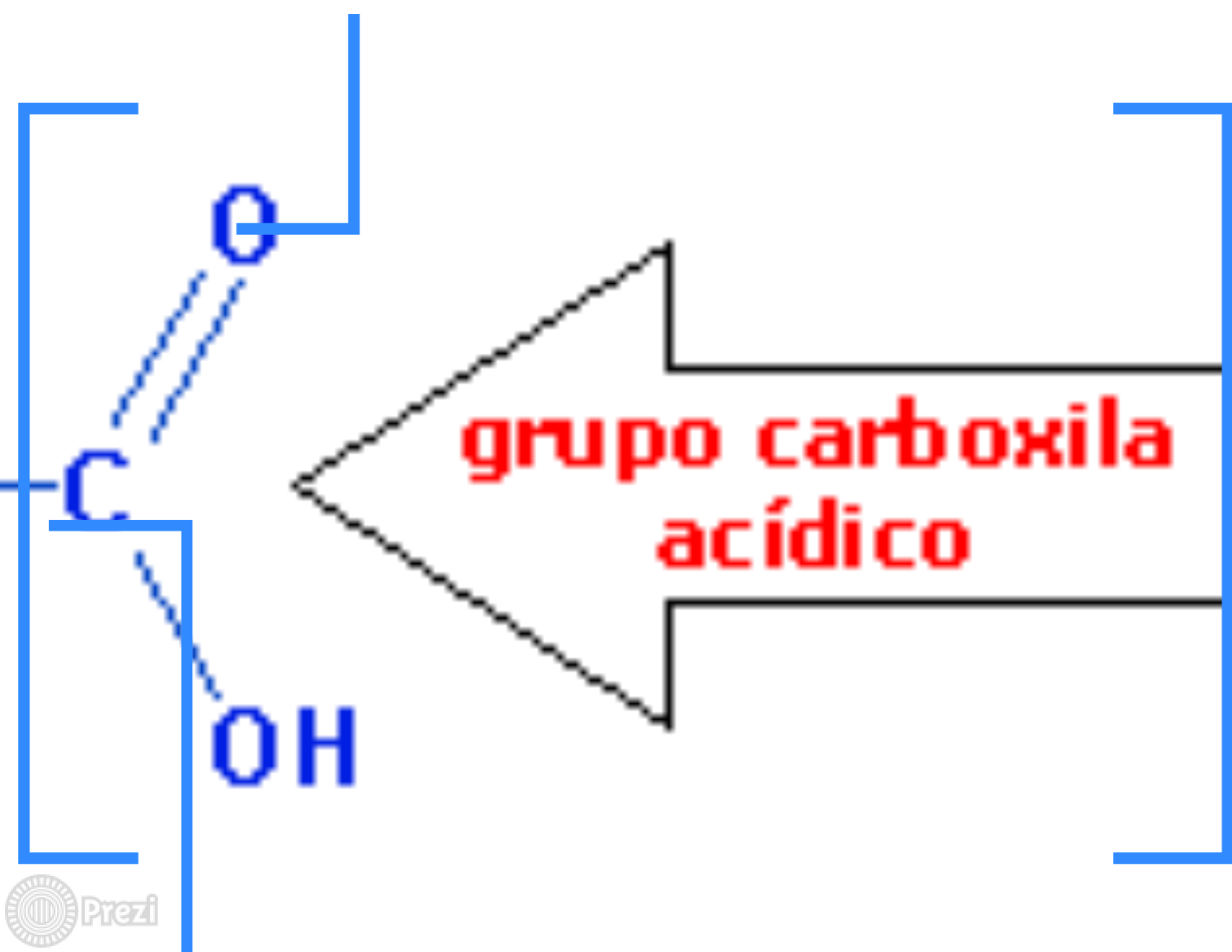
0



grupo amina
básico

H₂N

The diagram features a large blue bracket on the left side, spanning most of the vertical height. A large, hollow arrow with a black outline points from the center of the bracket towards the right. Inside the arrow, the text 'grupo amina básico' is written in red. To the right of the arrow's tip, the chemical formula 'H₂N' is written in blue. A vertical blue line extends downwards from the 'H₂N' text, and a horizontal blue line extends to the right from the 'N' atom. In the bottom-left corner, there is a small circular logo with the word 'Prezi' next to it.



112

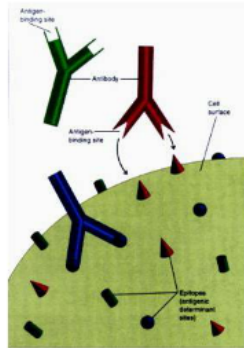
R

OH

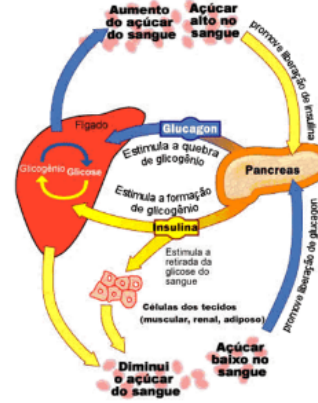


Cadeia Lateral

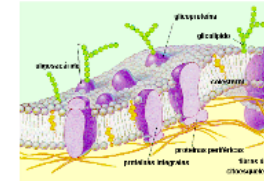
Anticorpos – proteínas de defesa que reconhecem corpos "estranhos" (antígenos)



Alguns **hormônios** são de origem protéica



Estrutural



Colágeno

Papel biológico das proteínas

Reserva

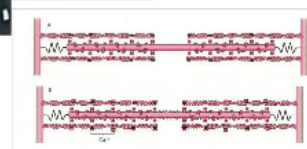


Ovoalbumina

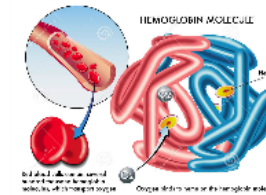
Caseína



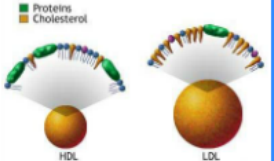
Contração muscular



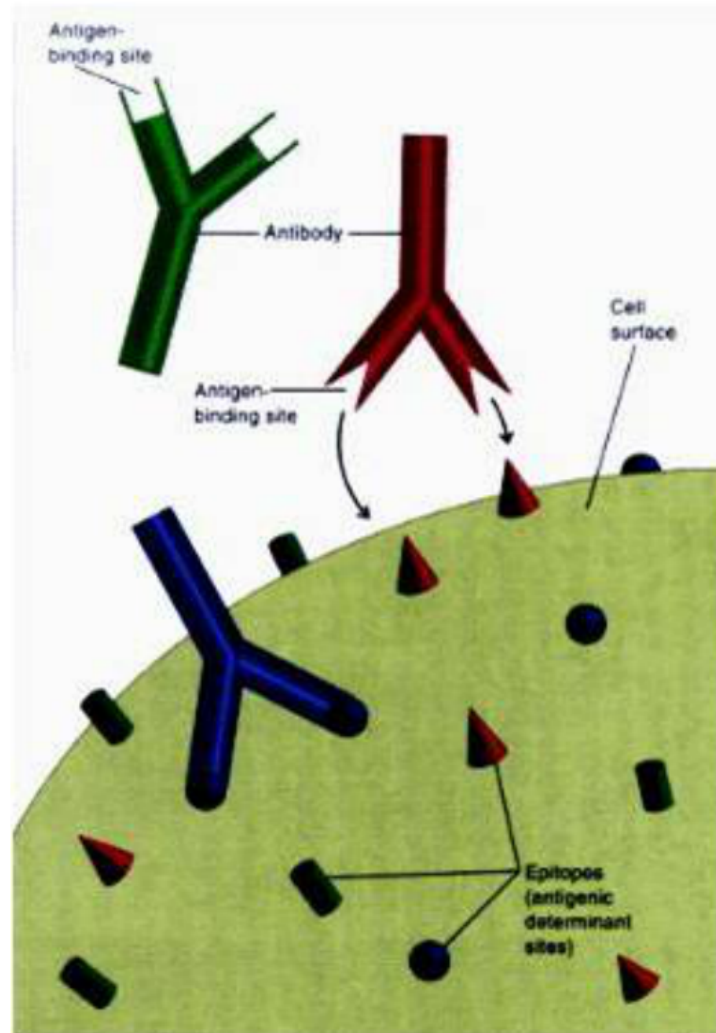
Transportadora:



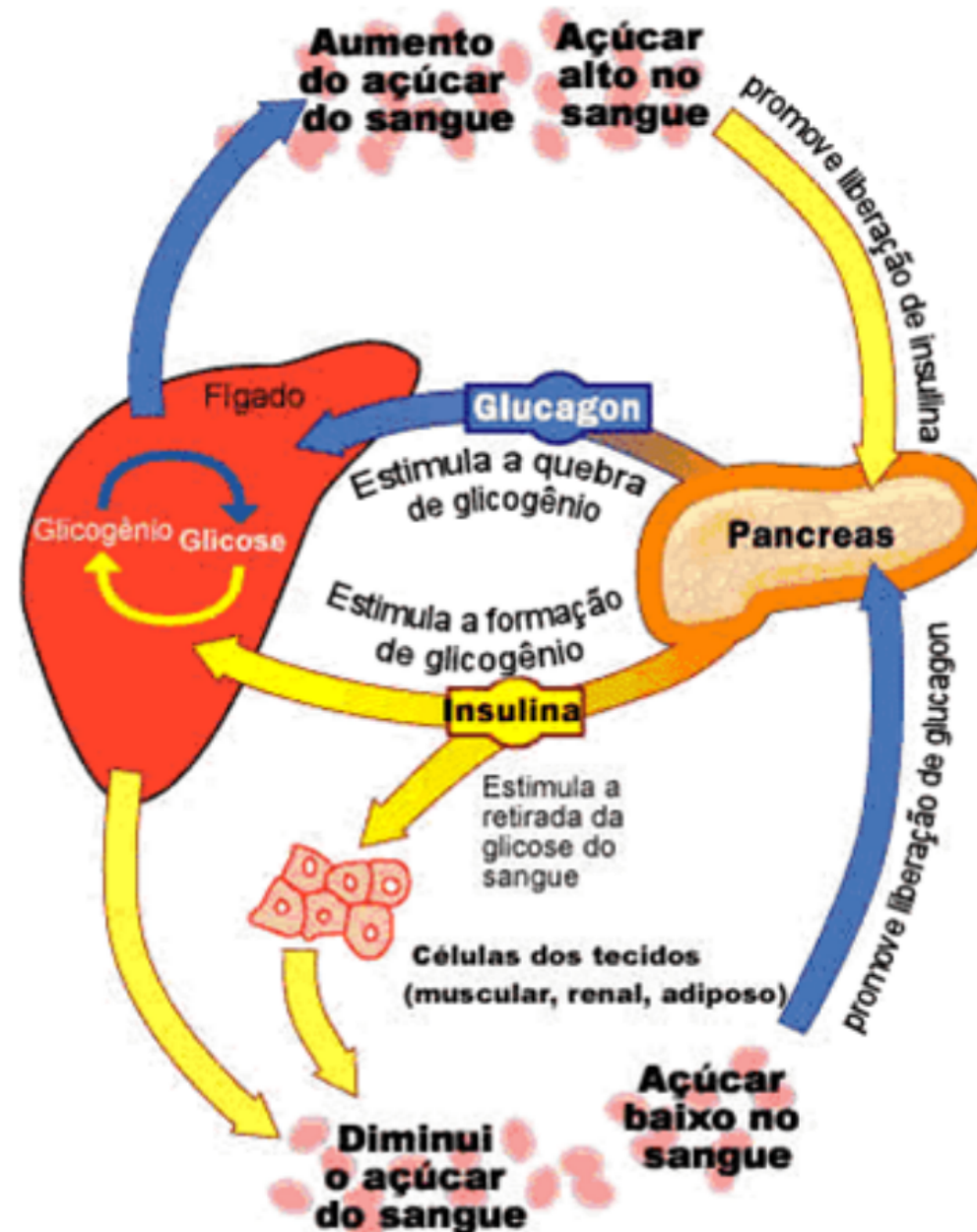
Lipoproteins vary in size and composition



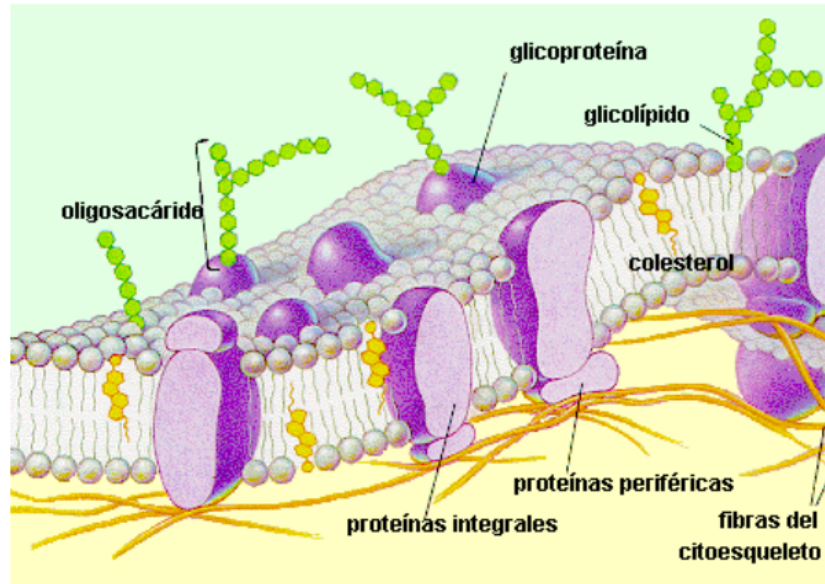
Anticorpos – proteínas de defesa que reconhecem corpos "estranhos" (antígenos)



Alguns **hormônios** são de origem protéica



Estructural



Colágeno

Reserva

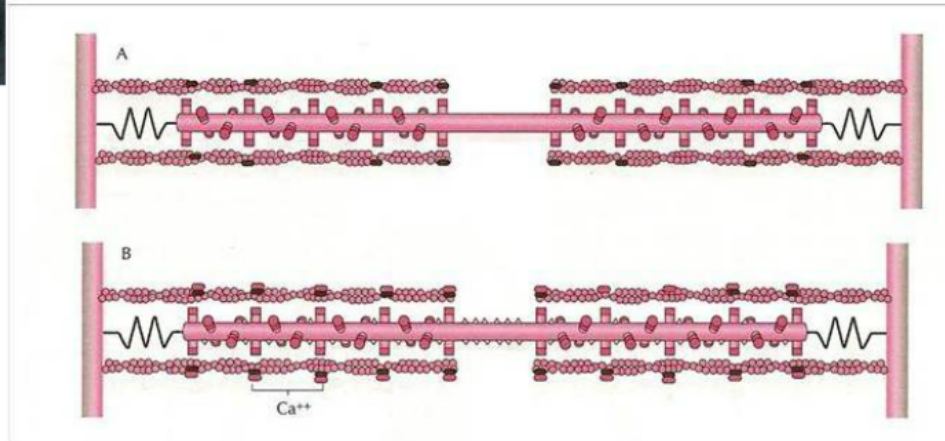


Ovoalbumina

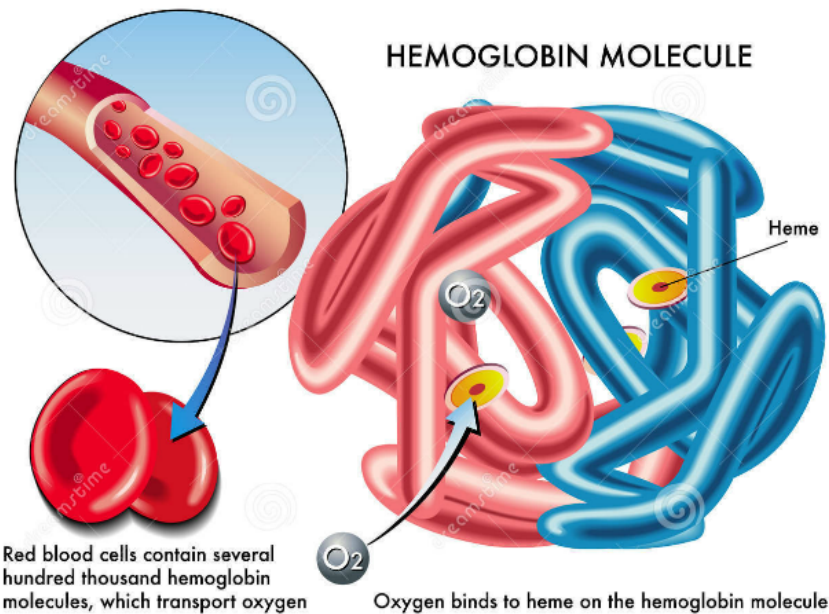
Caseína



Contração muscular

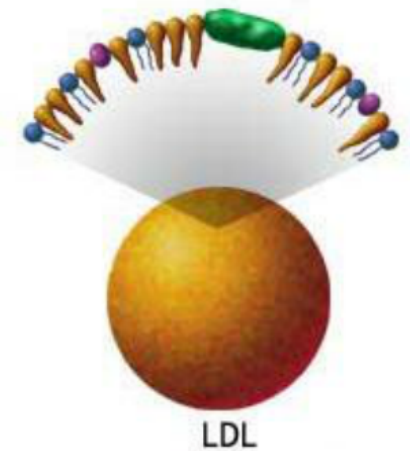
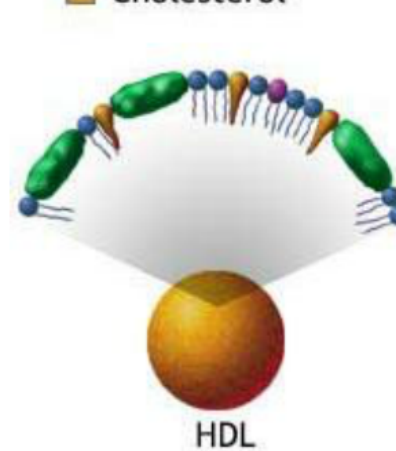


Transportadora:



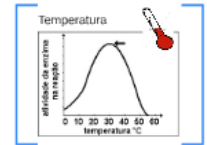
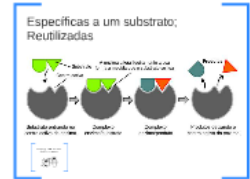
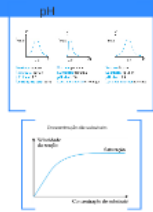
Lipoproteins vary in size and composition

- Proteins
- Cholesterol



Papel biológico das proteínas

enzimas – aceleram as reações químicas

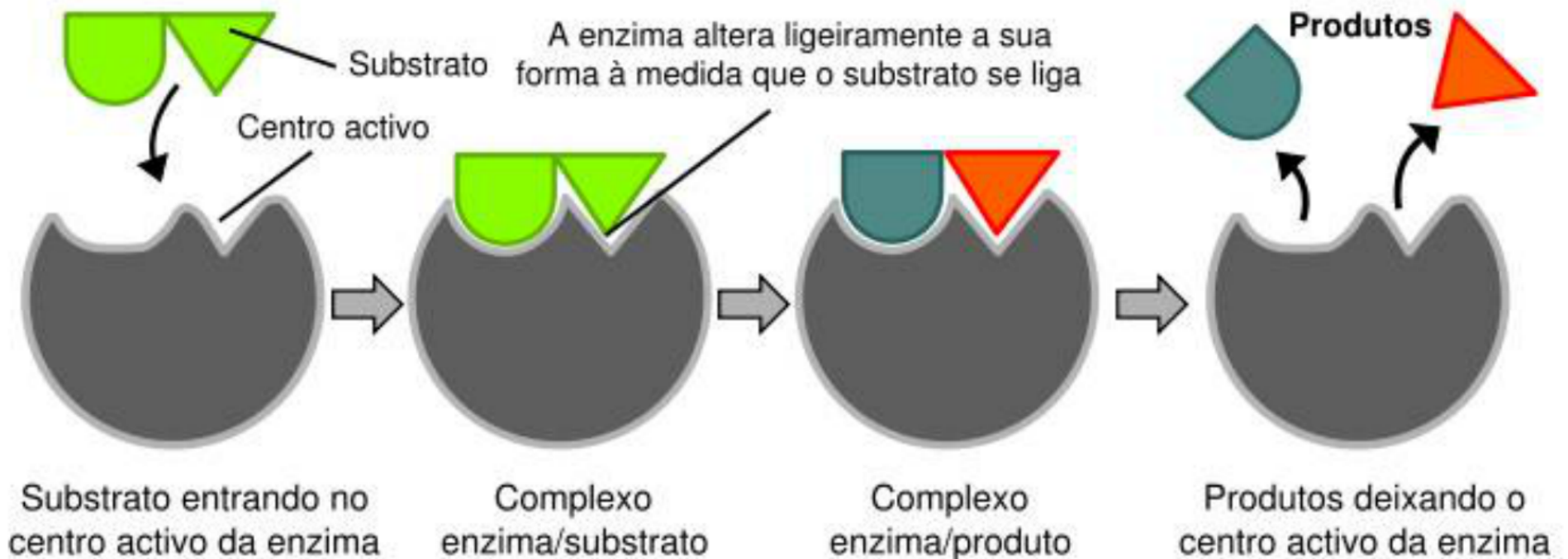


Pouca afinidade entre as moléculas (timidez?!)

A enzima presente faz a união entre elas.

Moléculas combinadas, enzimas livre.

Específicas a um substrato; Reutilizadas



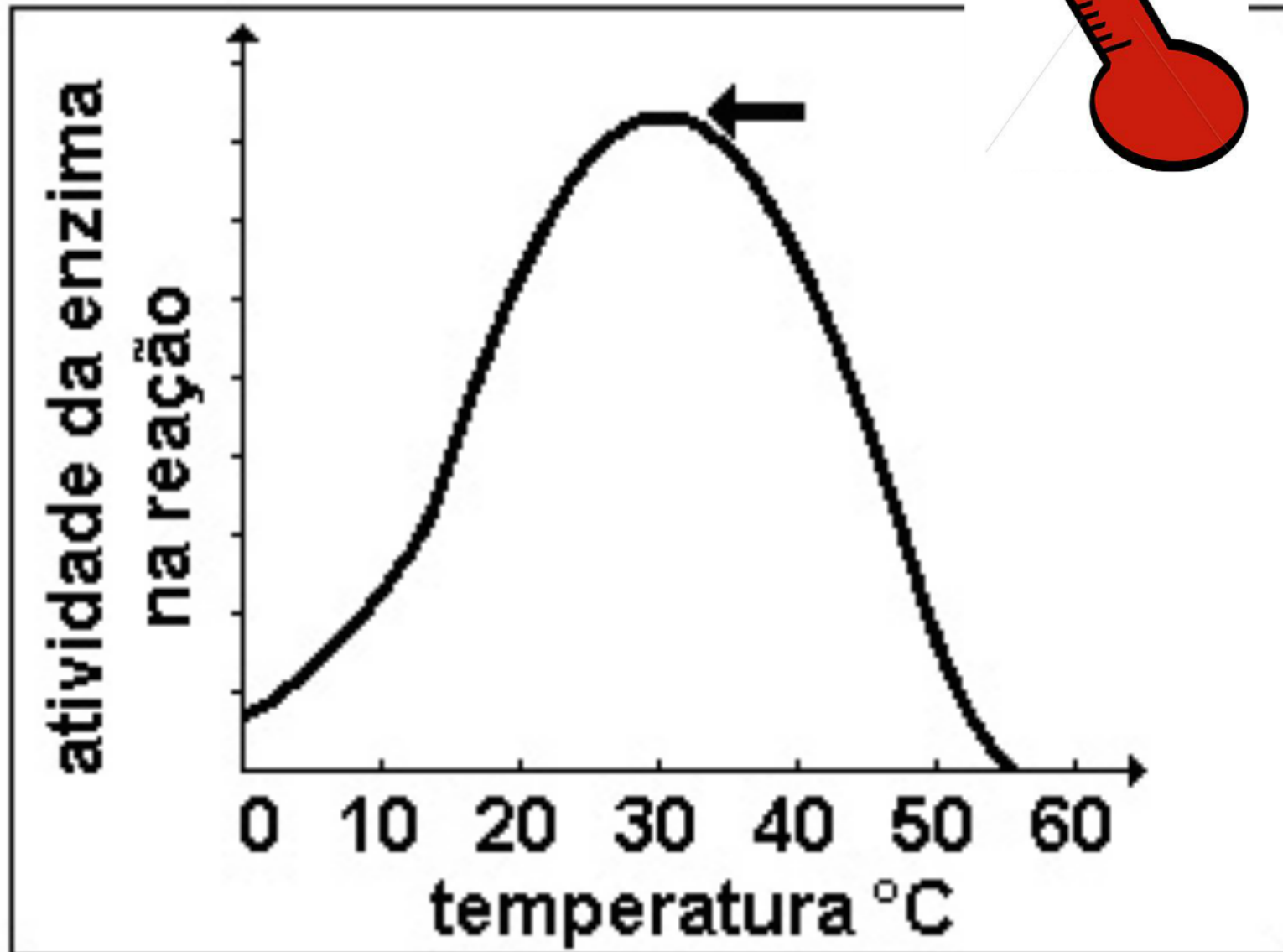
Fatores que influenciam a atividade enzimática



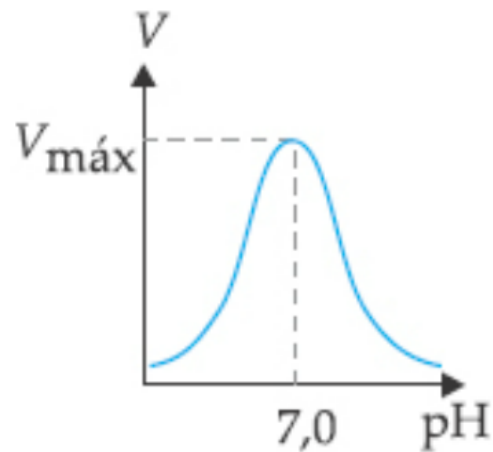
Fatores que influenciam a atividade enzimática



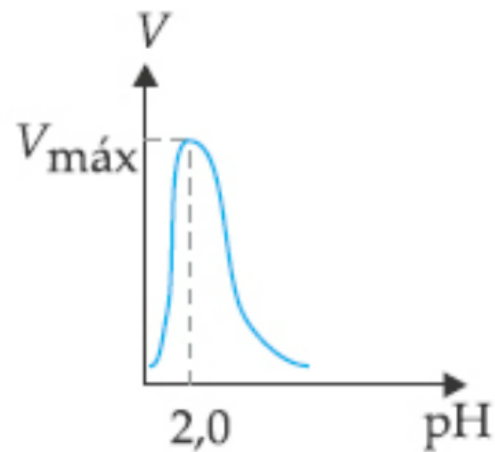
Temperatura



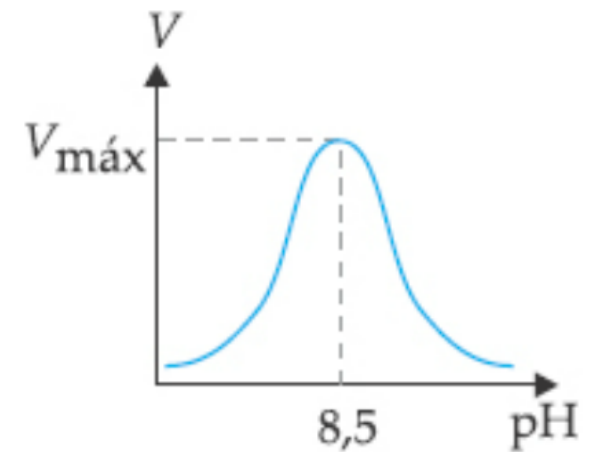
pH



Enzima: ptialina
Substrato: amido
pH ideal: 7,0
Local de atuação: boca

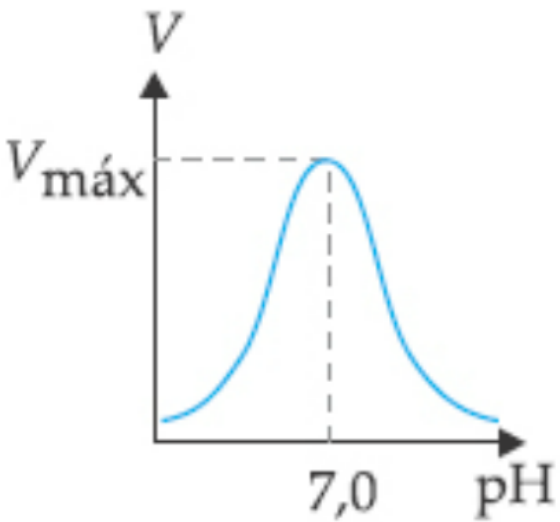


Enzima: pepsina
Substrato: proteína
pH ideal: 2,0
Local de atuação: estômago

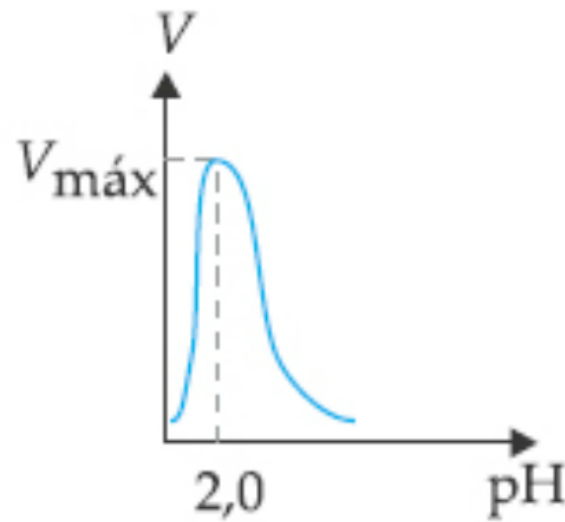


Enzima: lipase
Substrato: lipídios
pH ideal: 8,5
Local de atuação: intestino

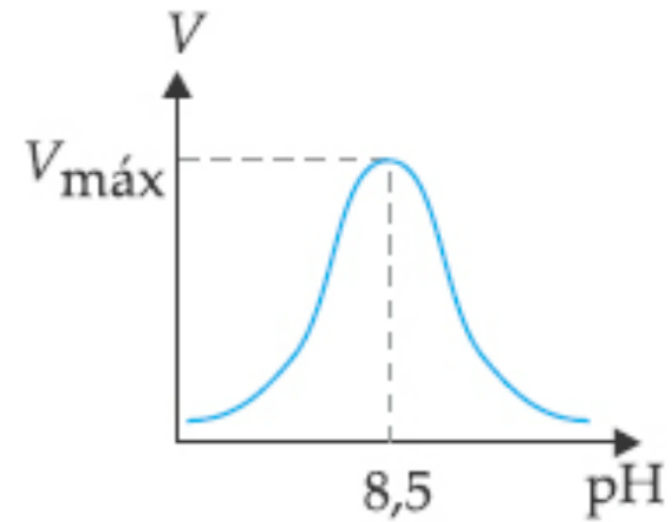
pH



Enzima: ptyalina
Substrato: amido
pH ideal: 7,0
Local de atuação: boca

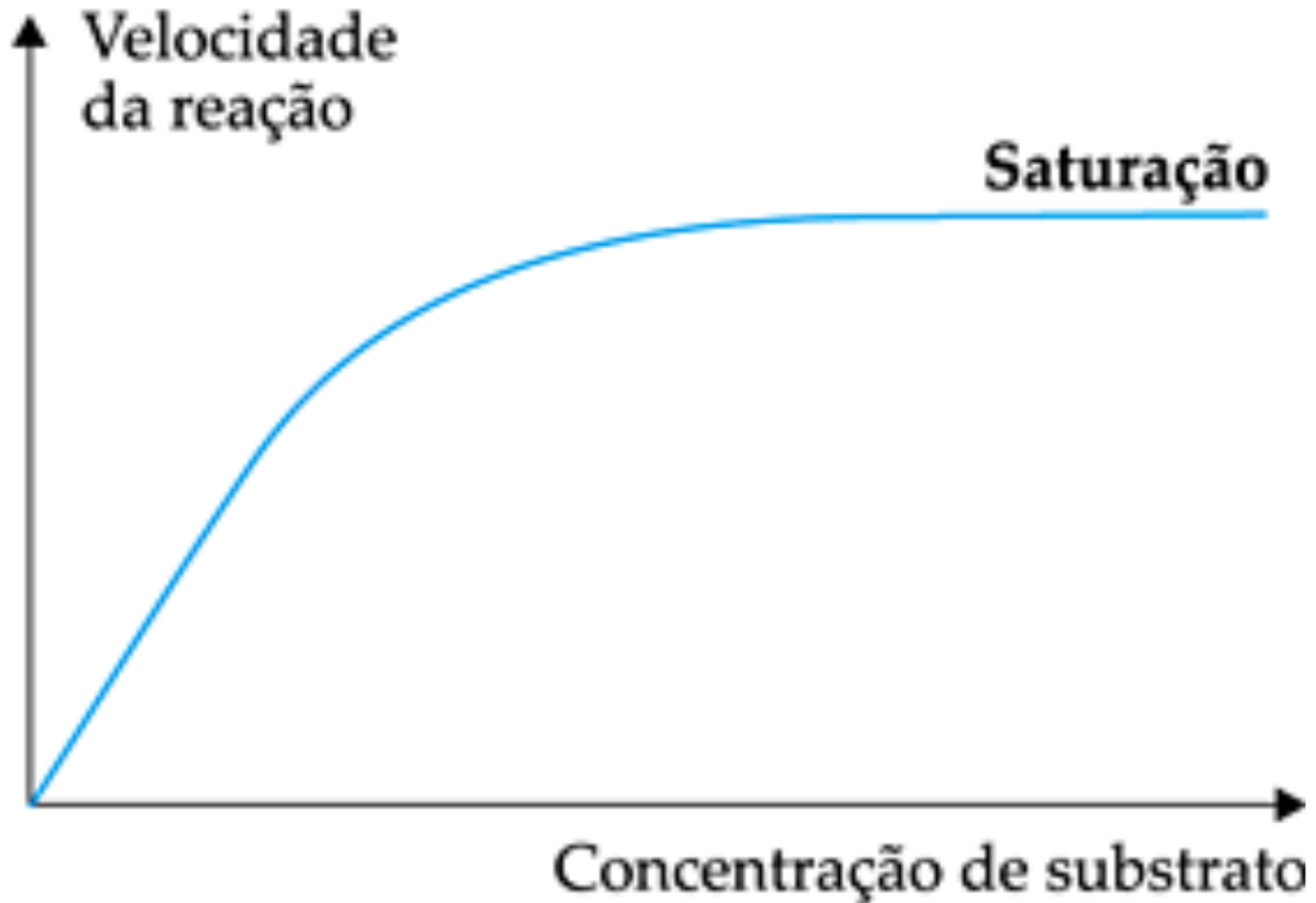


Enzima: pepsina
Substrato: proteína
pH ideal: 2,0
Local de atuação: estômago



Enzima: lipase
Substrato: lipídios
pH ideal: 8,5
Local de atuação: intestino

Concentração de substrato

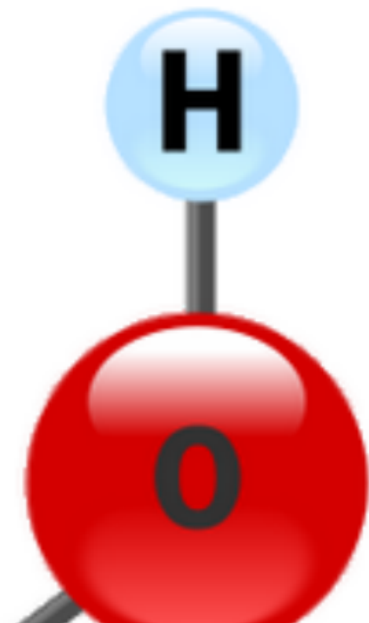


Estrutura química das proteínas

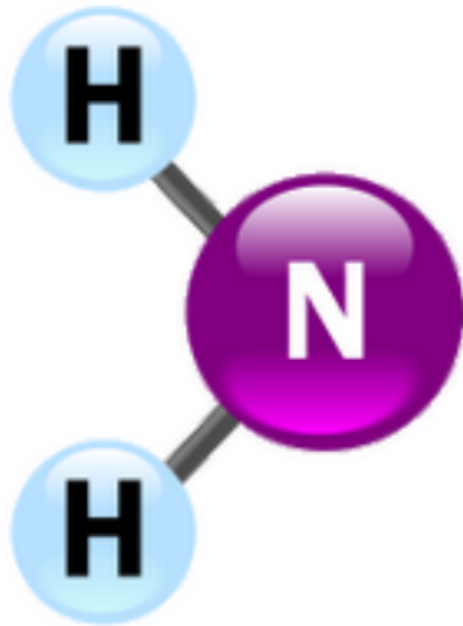
GRUPO AMINA



HIDROGÊNIO



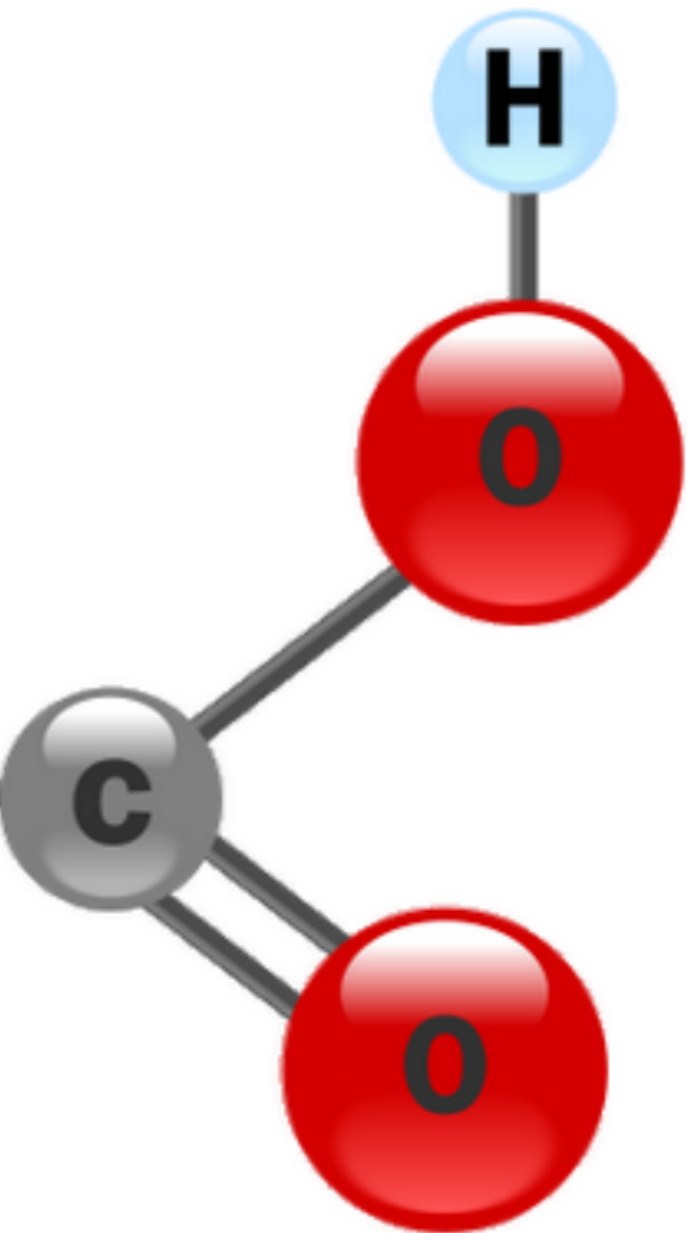
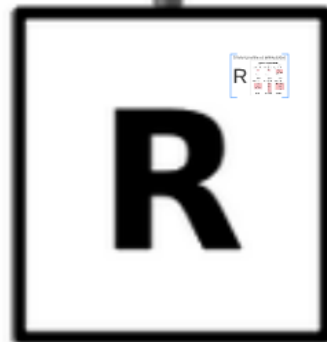
GRUPO AMINA



HIDROGÊNIO



RADICAL

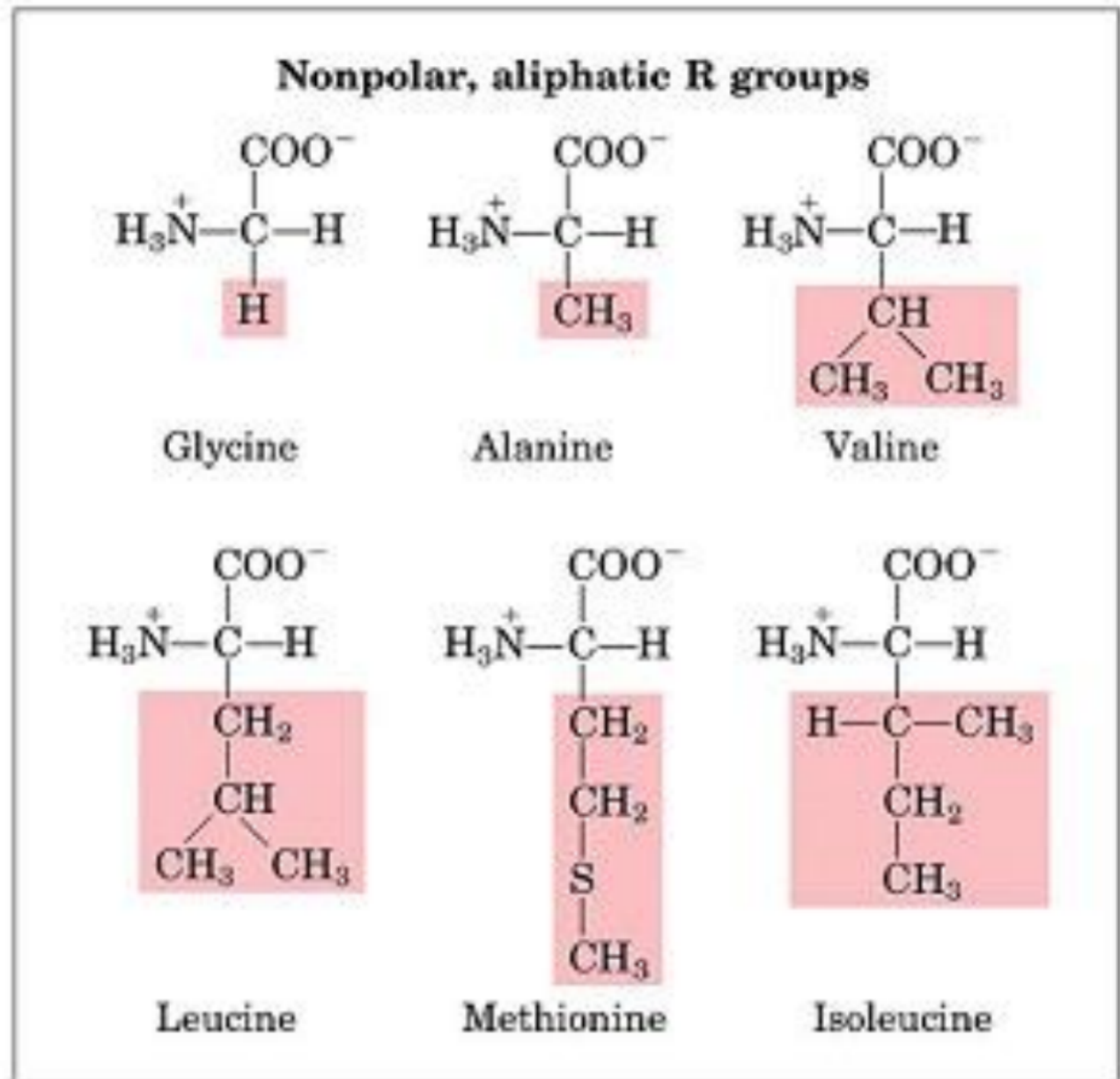


GRUPO CARBOXÍLICO

proteínas
proteínas

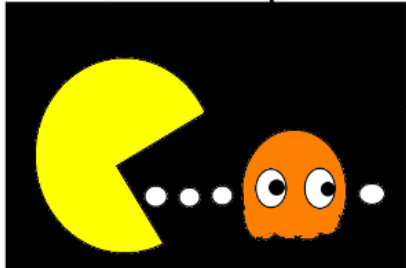
Diferença entre os aminoácidos

R



AMINOÁCIDOS

ESSENCIAIS	NÃO ESSENCIAIS
Arginina*	Alanina
Histidina*	Aspartato
Isoleusina	Asparagina
Leusina	Cisteína
Lisina	Glutamato
Meteonina	Glutamina
Fenilalanina	Glicina
Treonina	Prolina
Triptofano	Serina
Valina	Tirosina



- **naturais** – produzidos no organismo animal
- **essenciais** – não produzidos no organismo animal → devem ser ingeridos na alimentação (varia de acordo com a espécie)



- **naturais** – produzidos no organismo animal
- **essenciais** – não produzidos no organismo animal → devem ser ingeridos na alimentação (varia de acordo com a espécie)





ARROZ

- Triptofano
- Metionina

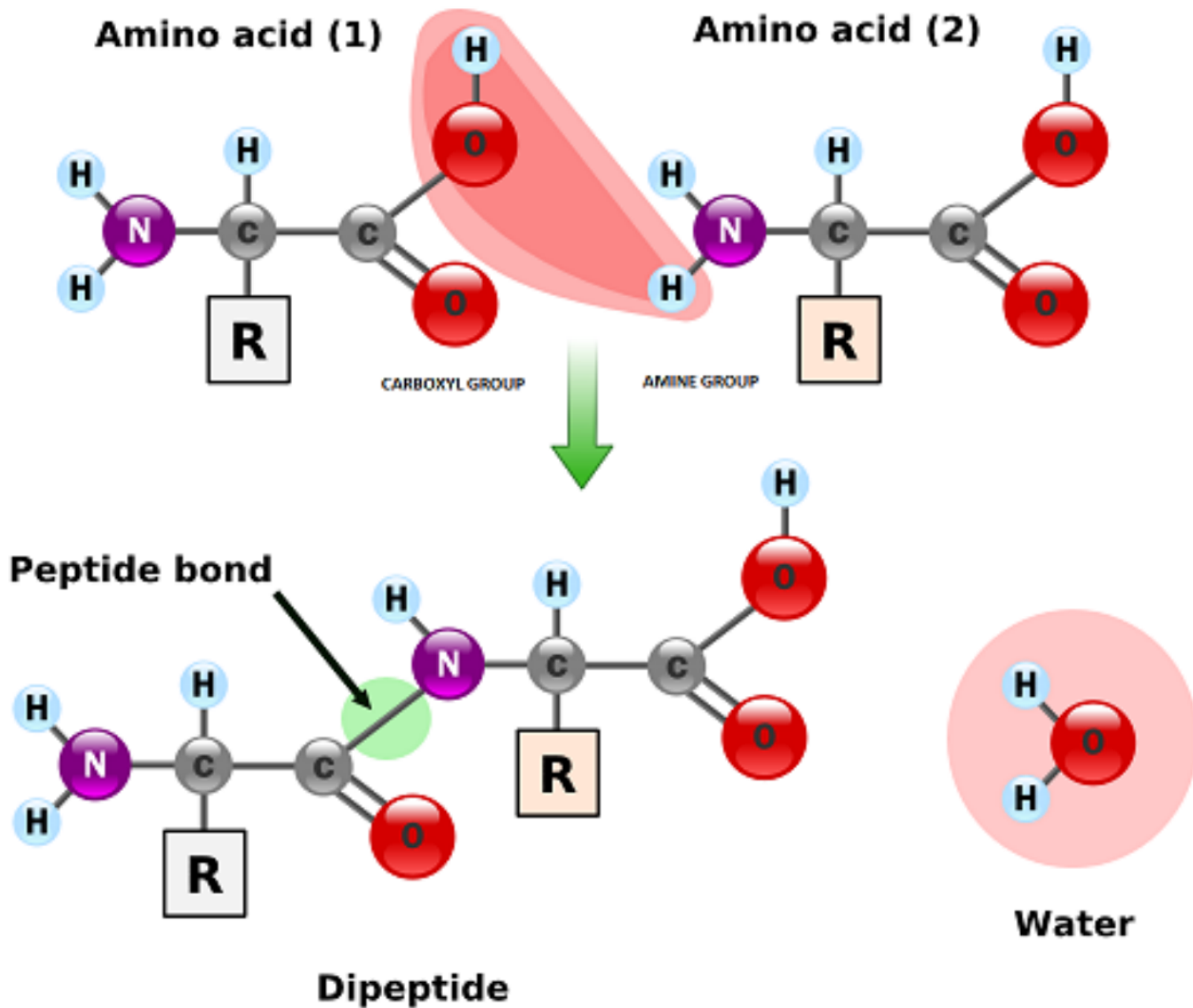
FEIJÃO

- Valina
- Leucina
- Treonina
- Fenilalanina
- Lisina
- Isoleucina

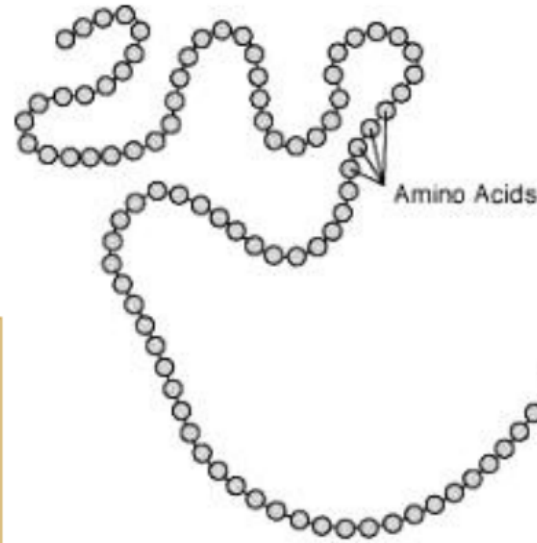
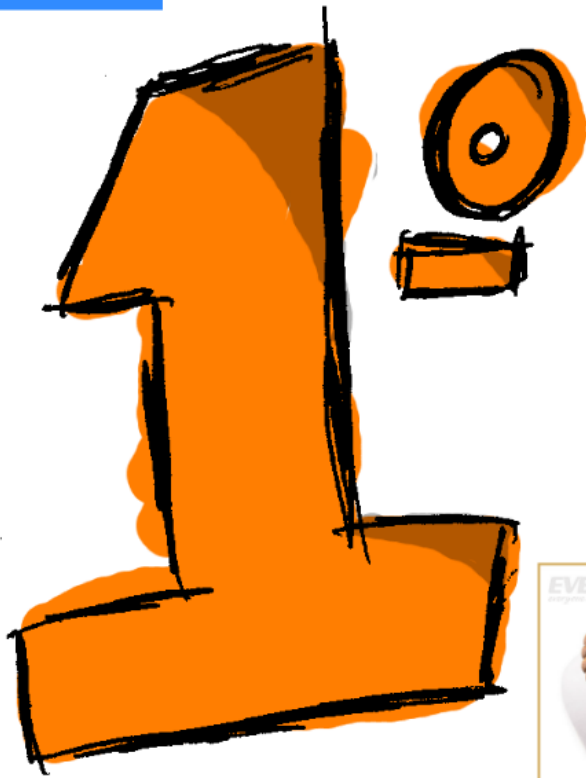
Grãos de feijão Vagem de feijão

The infographic is divided into three colored sections: a yellow section for rice (ARROZ) listing Tryptophan and Methionine; a green section for beans (FEIJÃO) listing Valine, Leucine, Threonine, and Phenylalanine; and a blue section listing Lysine and Isoleucine. It includes illustrations of rice stalks, rice grains, bean pods, and individual beans.

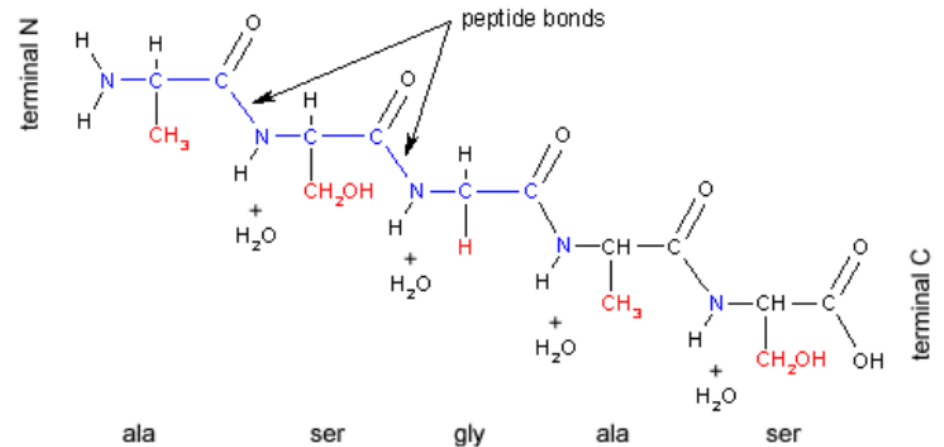
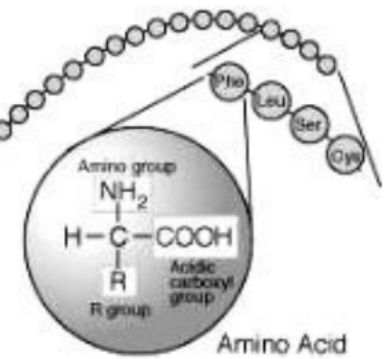
Ligação peptídica



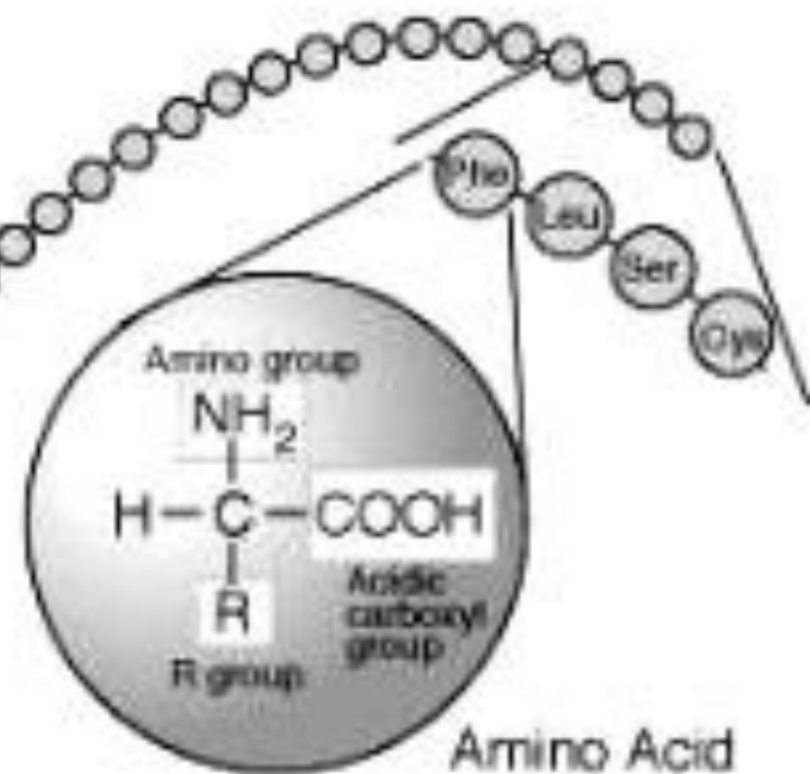
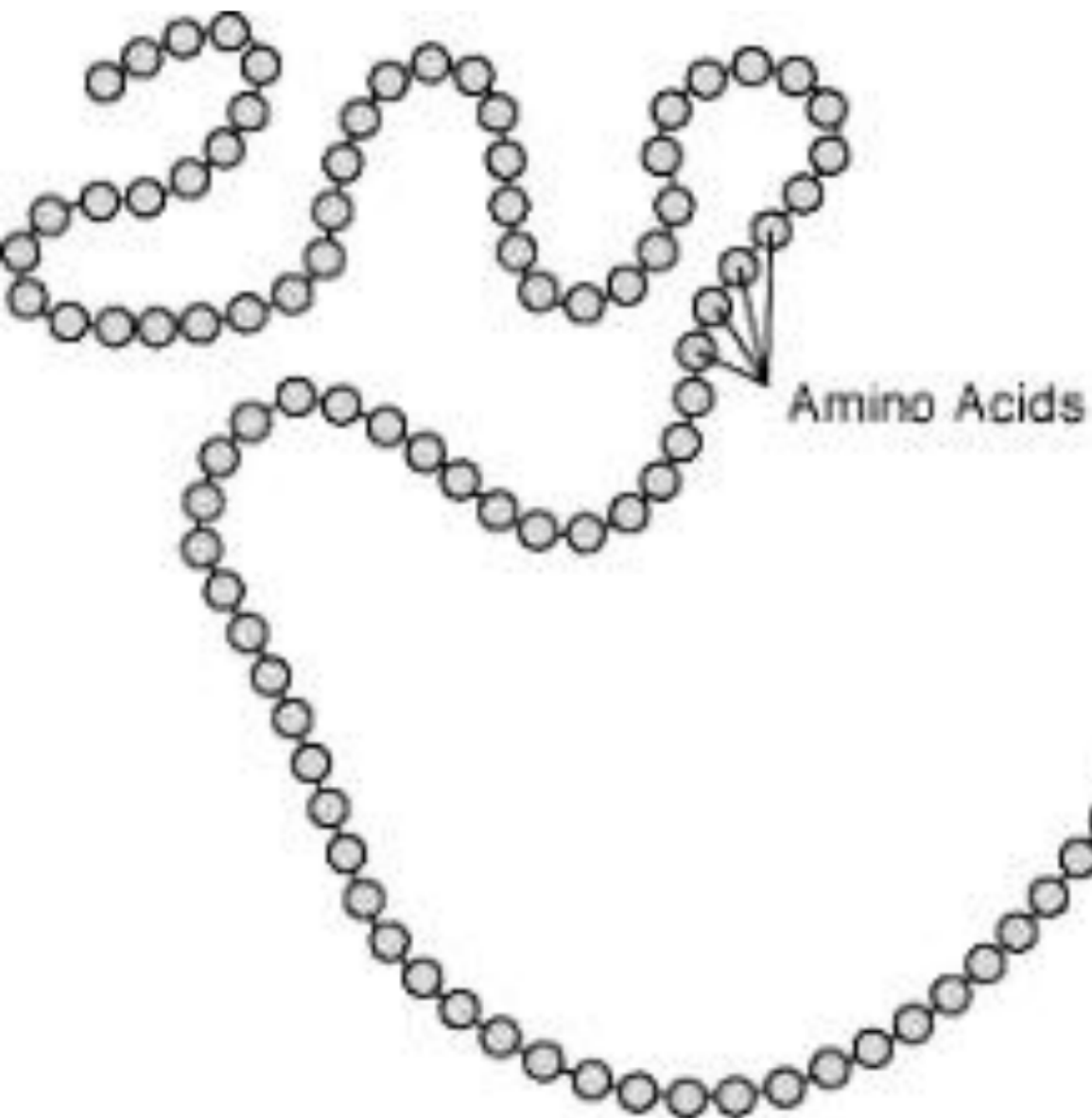
Estrutura primária das proteínas

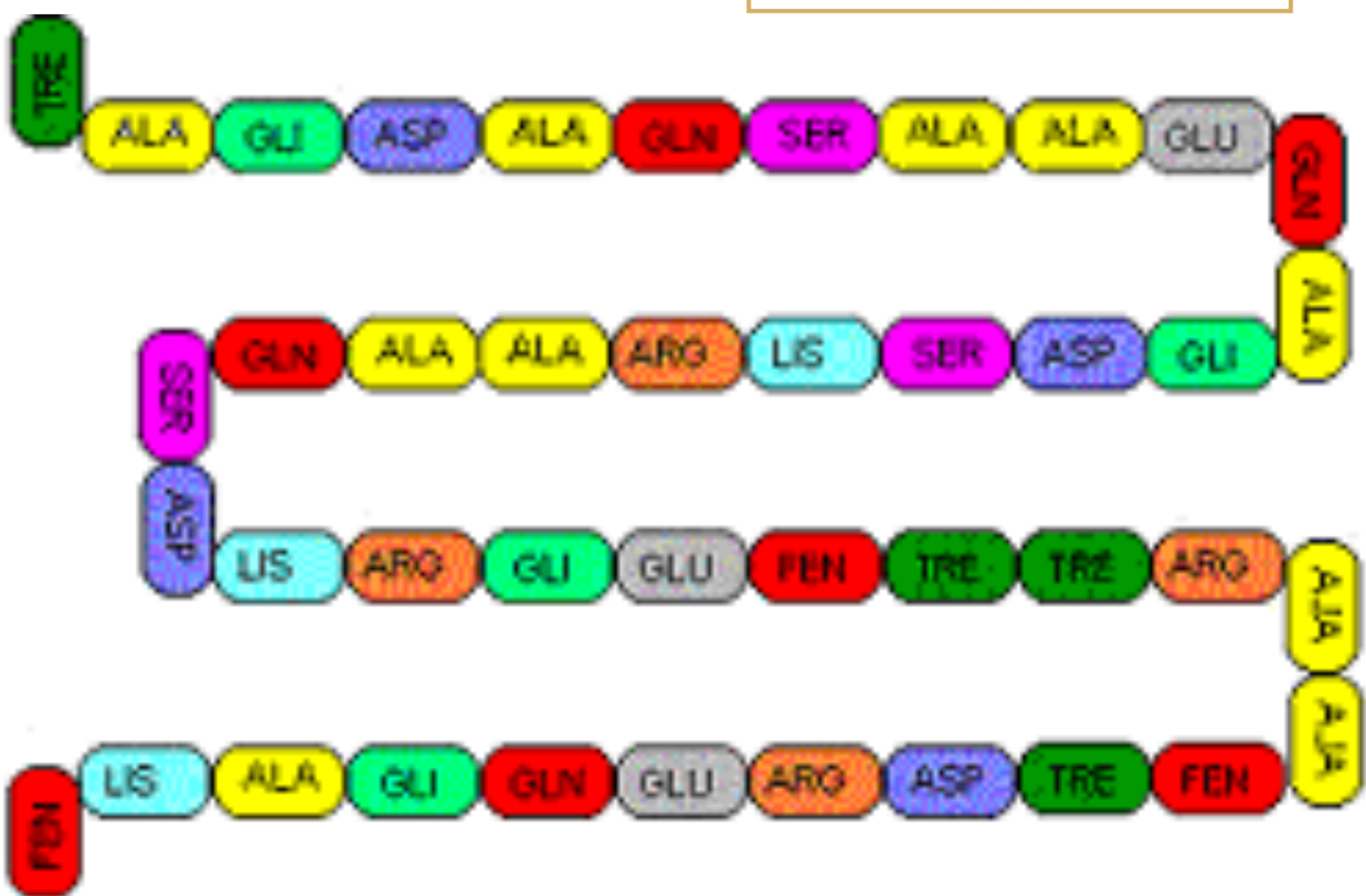


Primary protein structure is sequence of a chain of amino acids

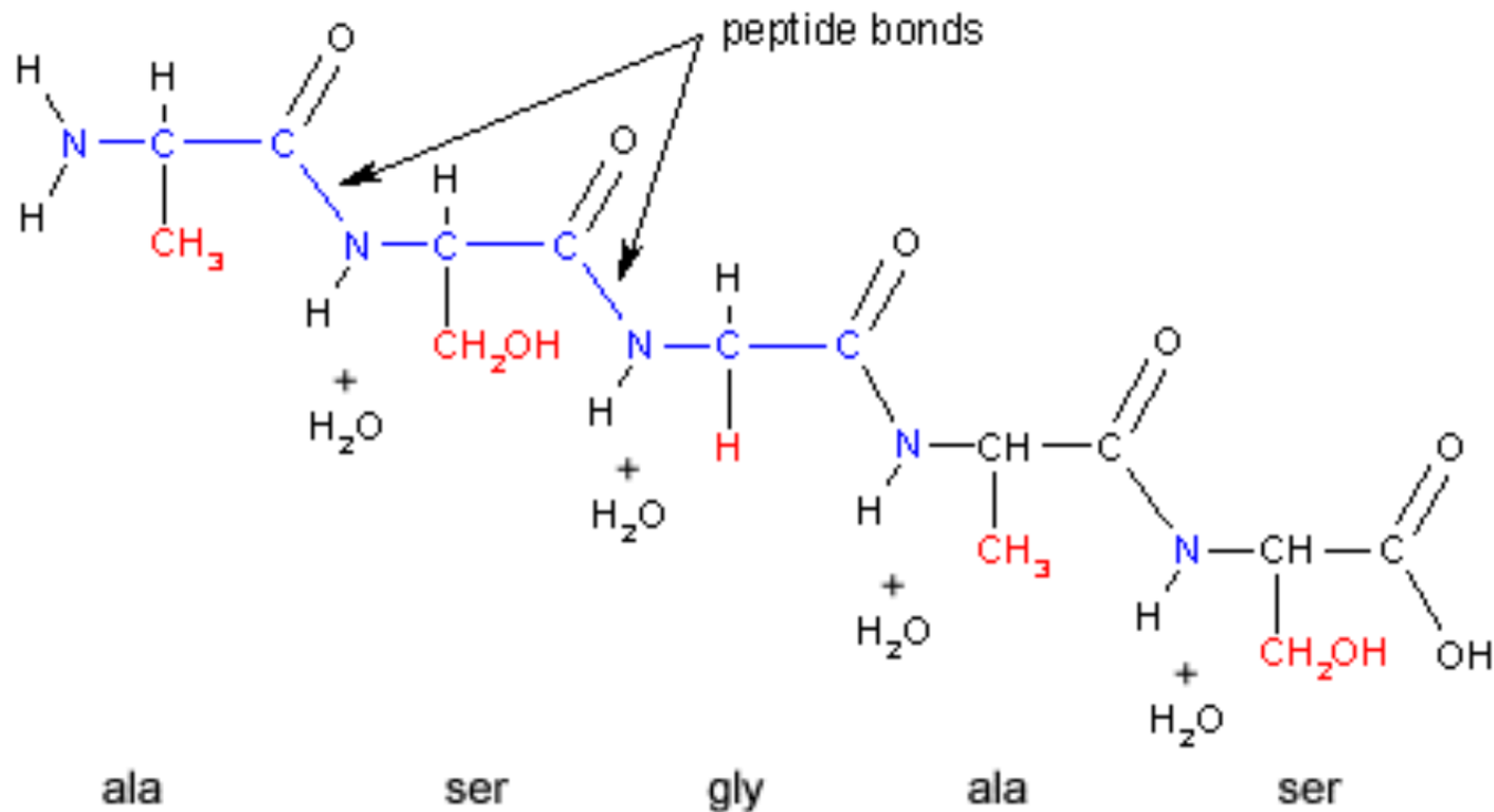


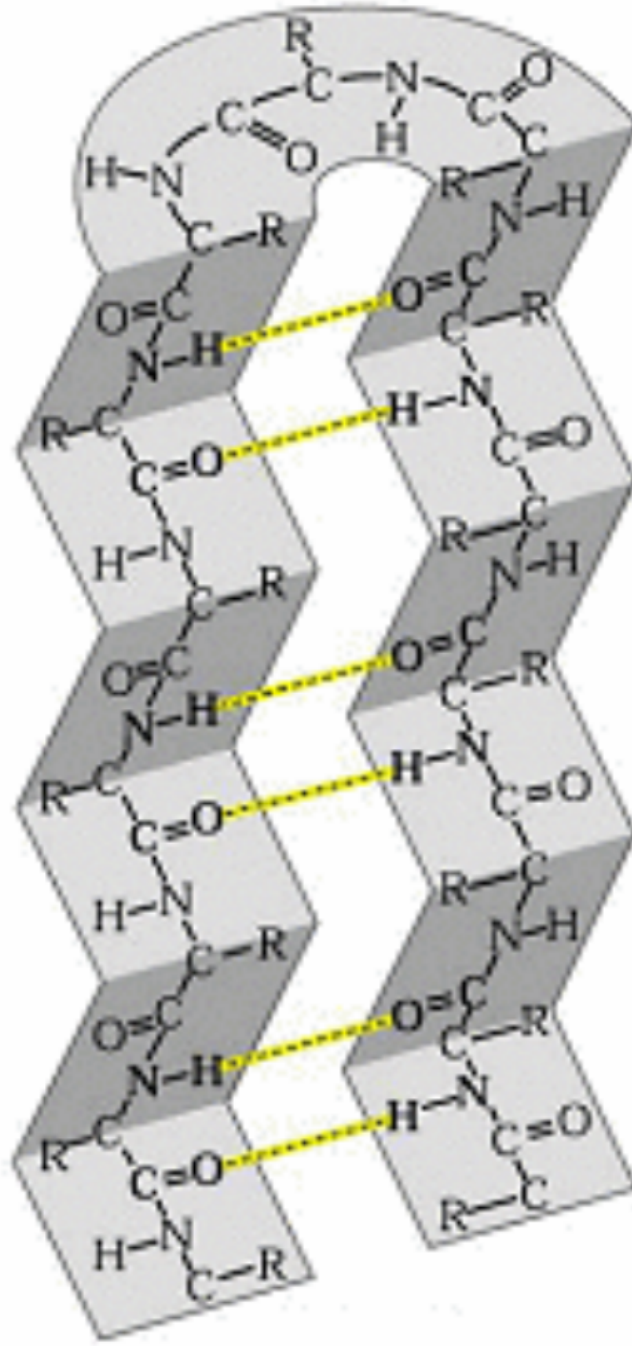
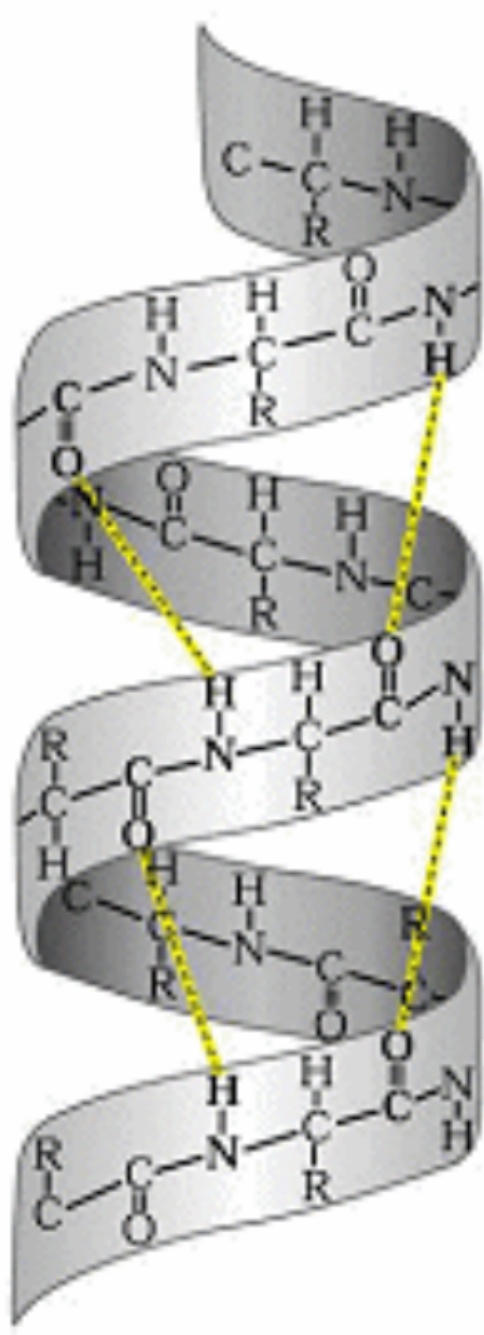
Primary protein structure is sequence of a chain of amino acids





terminal N

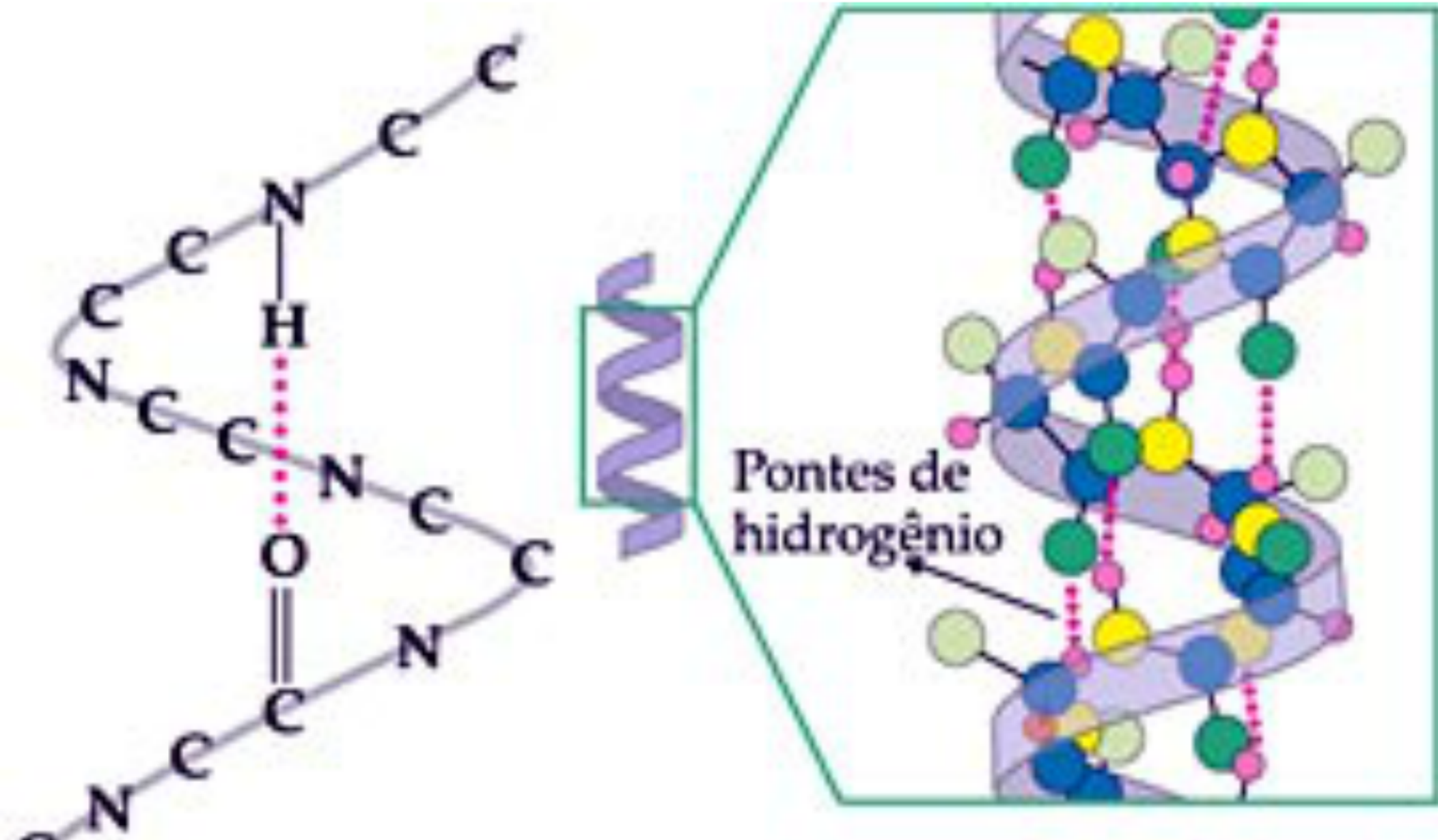




N

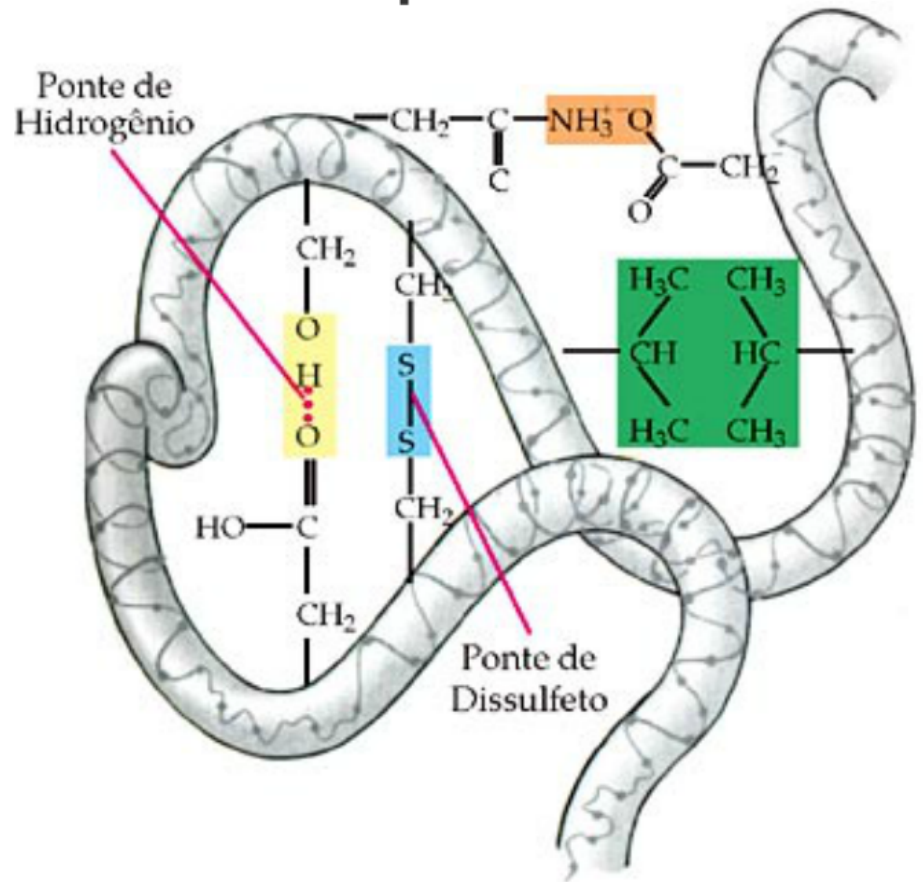


Secundária das proteínas



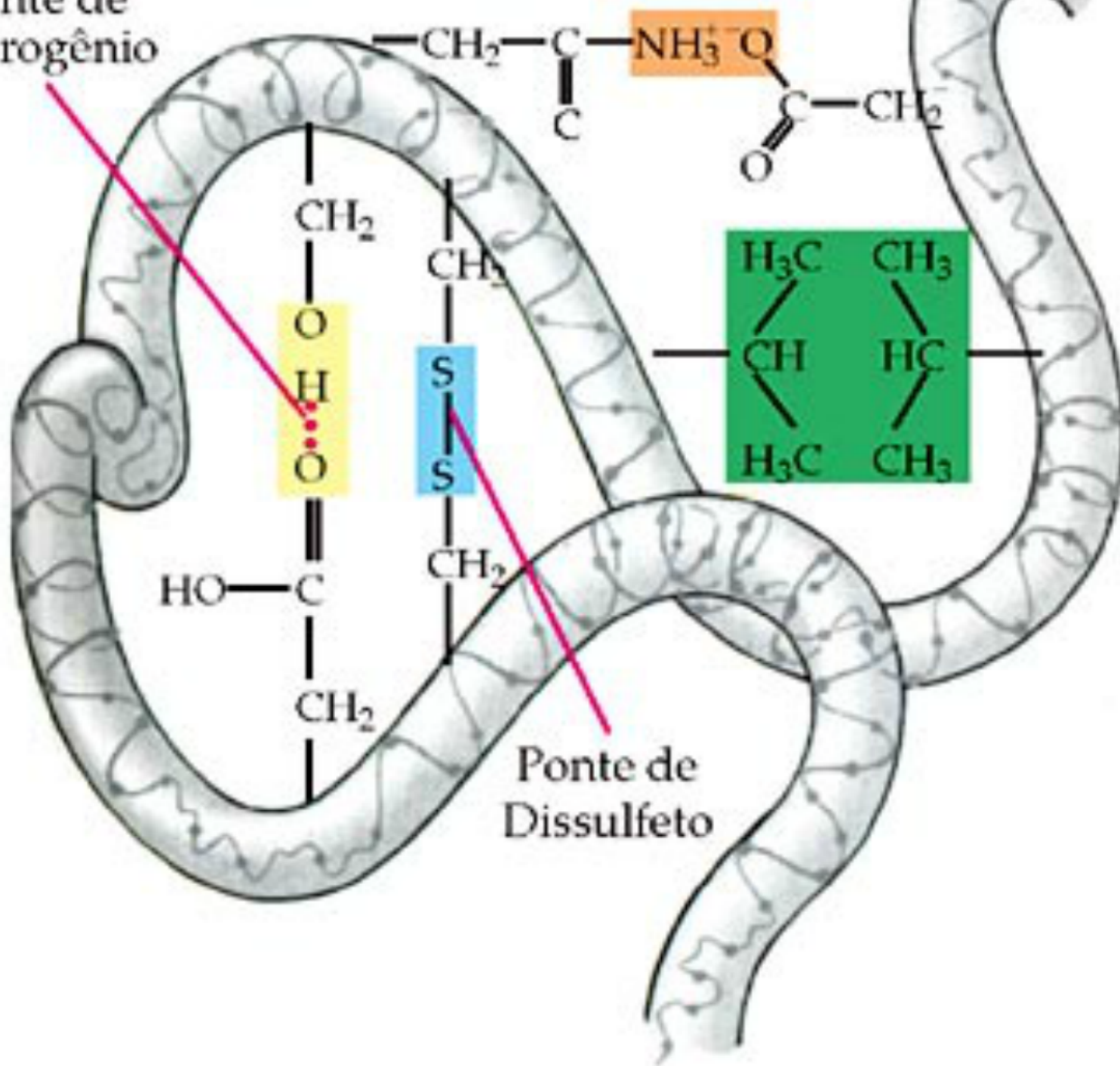
30

Estrutura terciária das proteínas

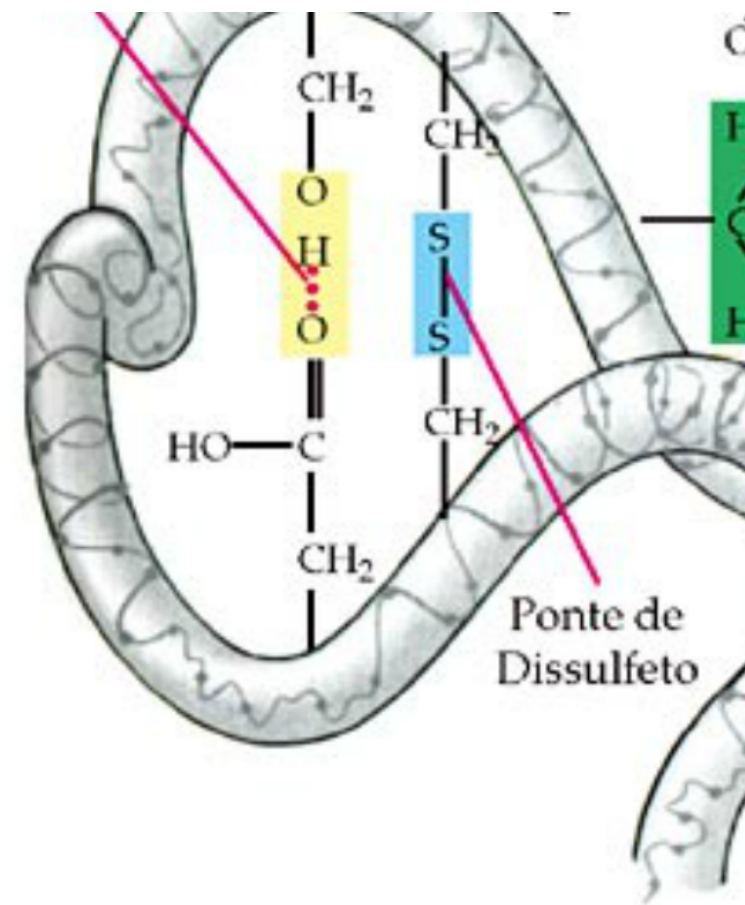


tertiary structure
(folded individual peptide)

Ponte de Hidrogênio



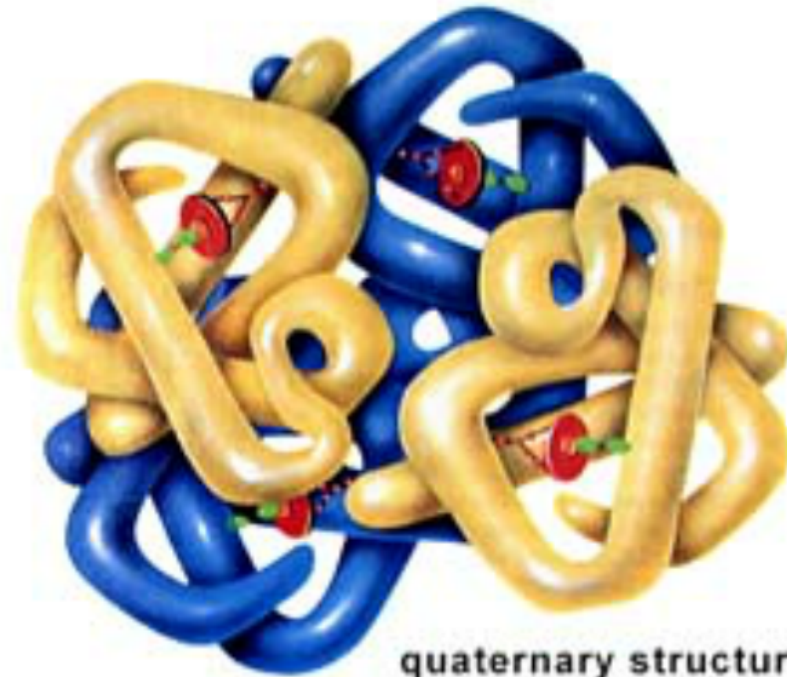
Ponte de Dissulfeto



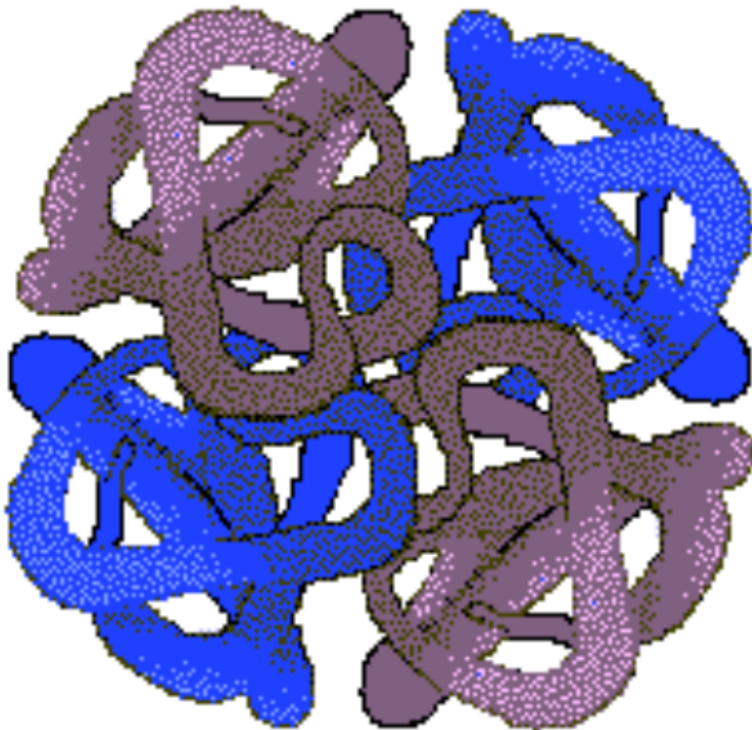
**tertiary structure
(folded individual peptide)**

4

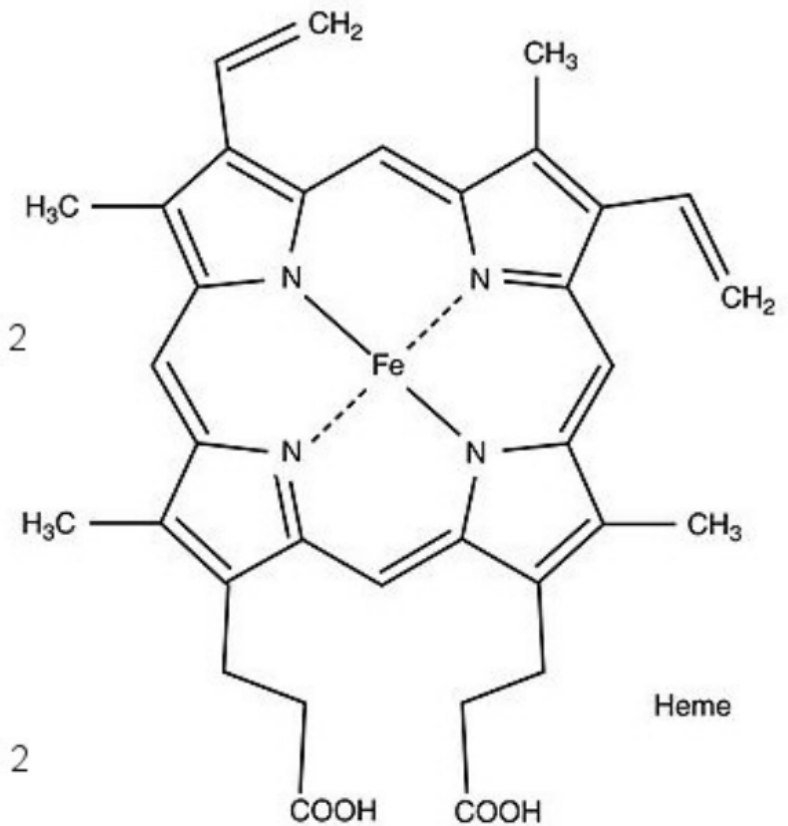
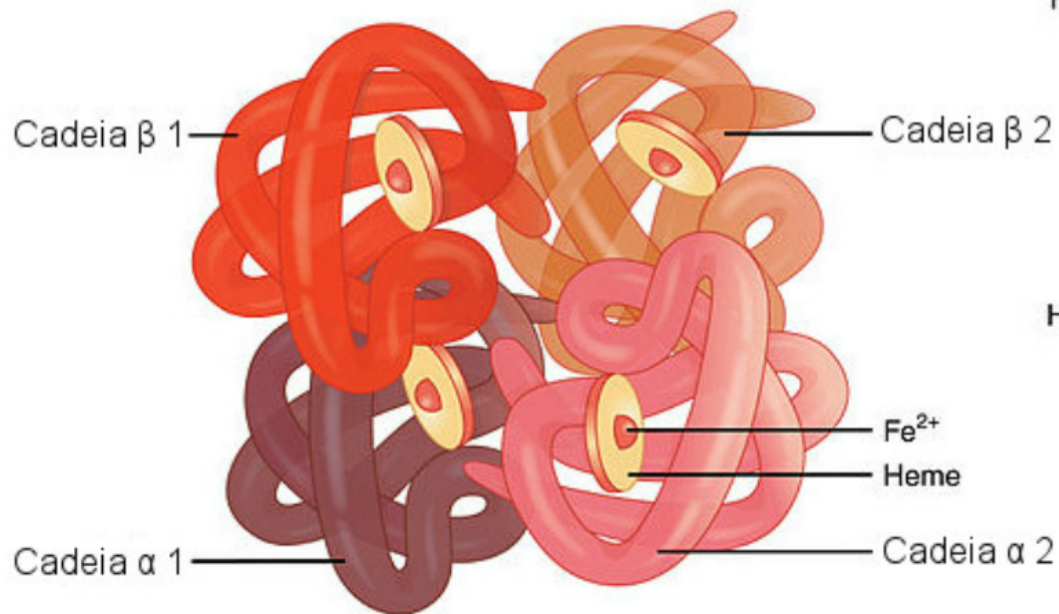
Estrutura quaternária das proteínas



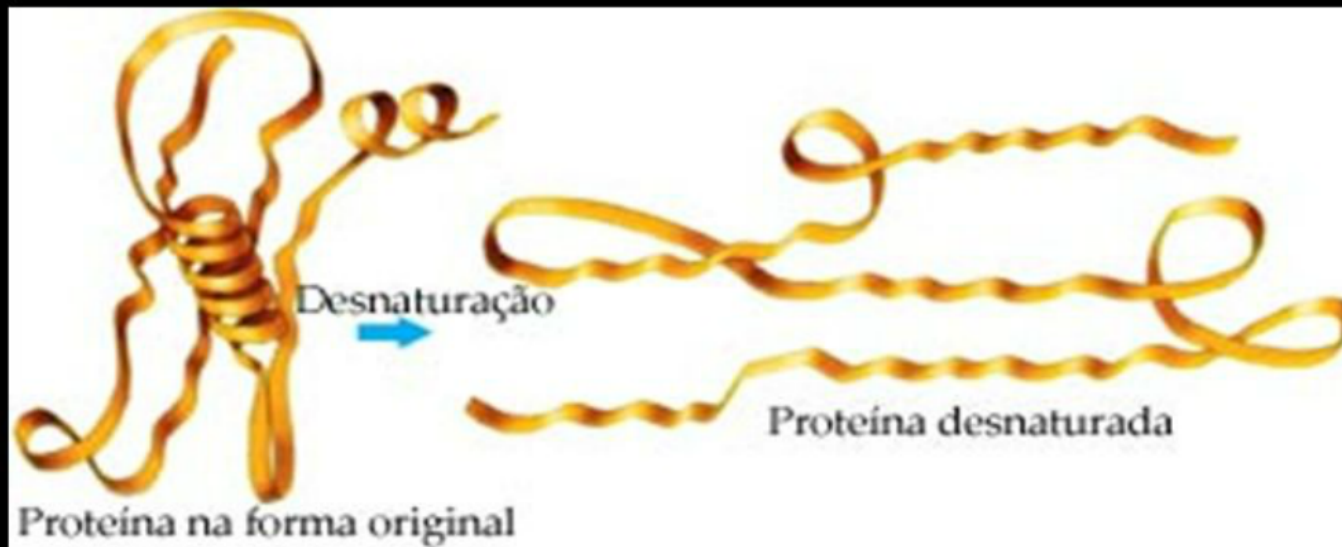
quaternary structure
(aggregation of two or more peptides)



Grupos prostéticos



Desnaturação Protéica



Ex.:

