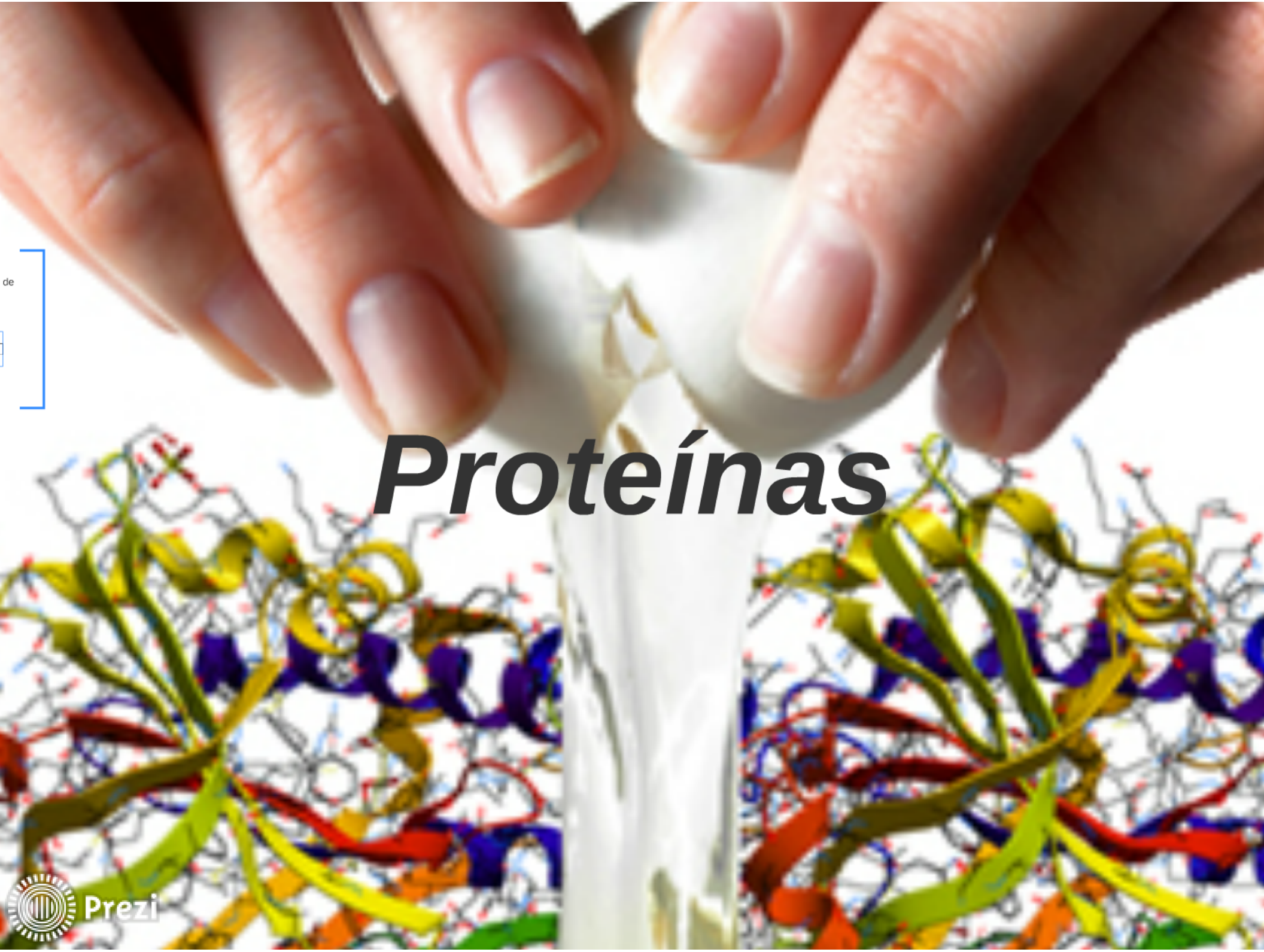
Proteínas

Proteínas

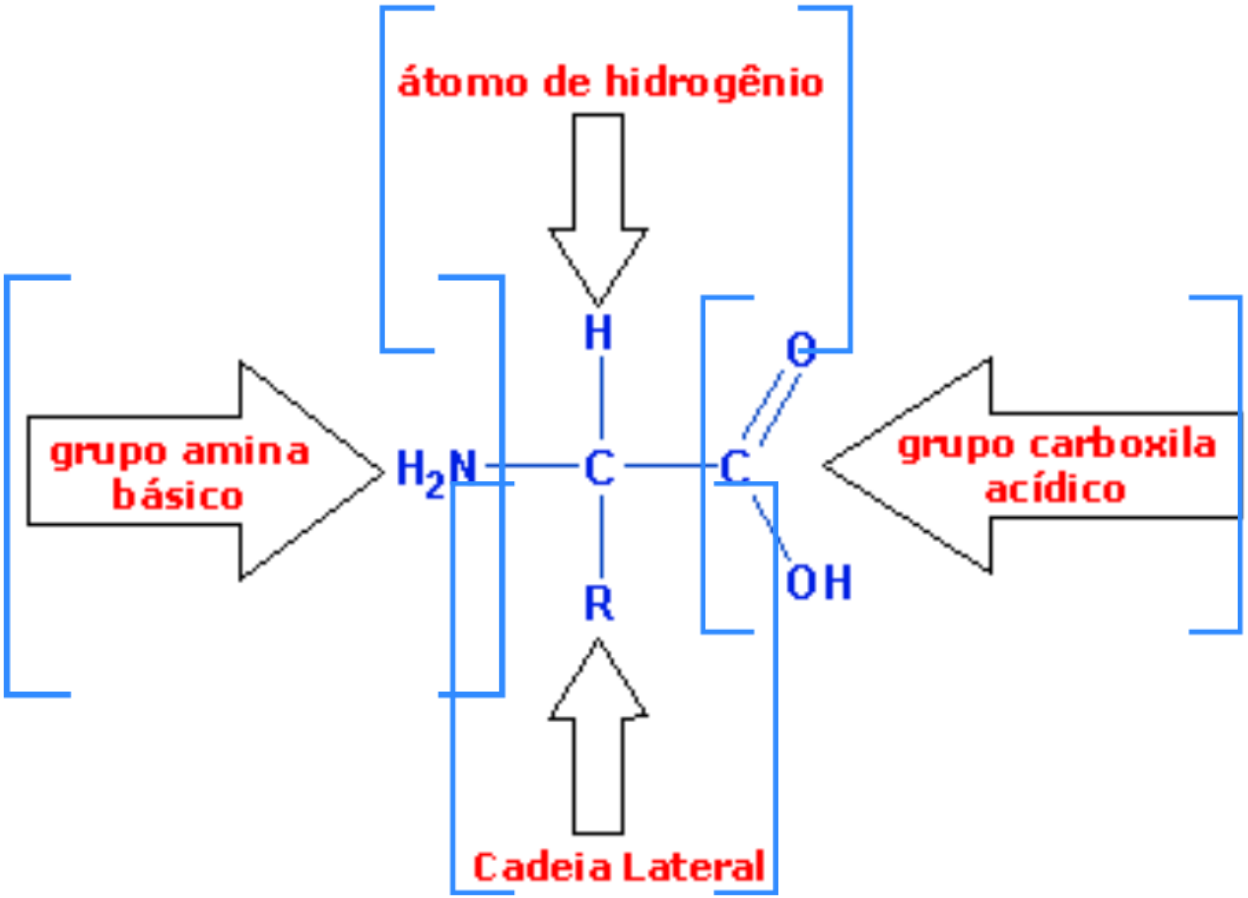

Proteínas
Prezi

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?

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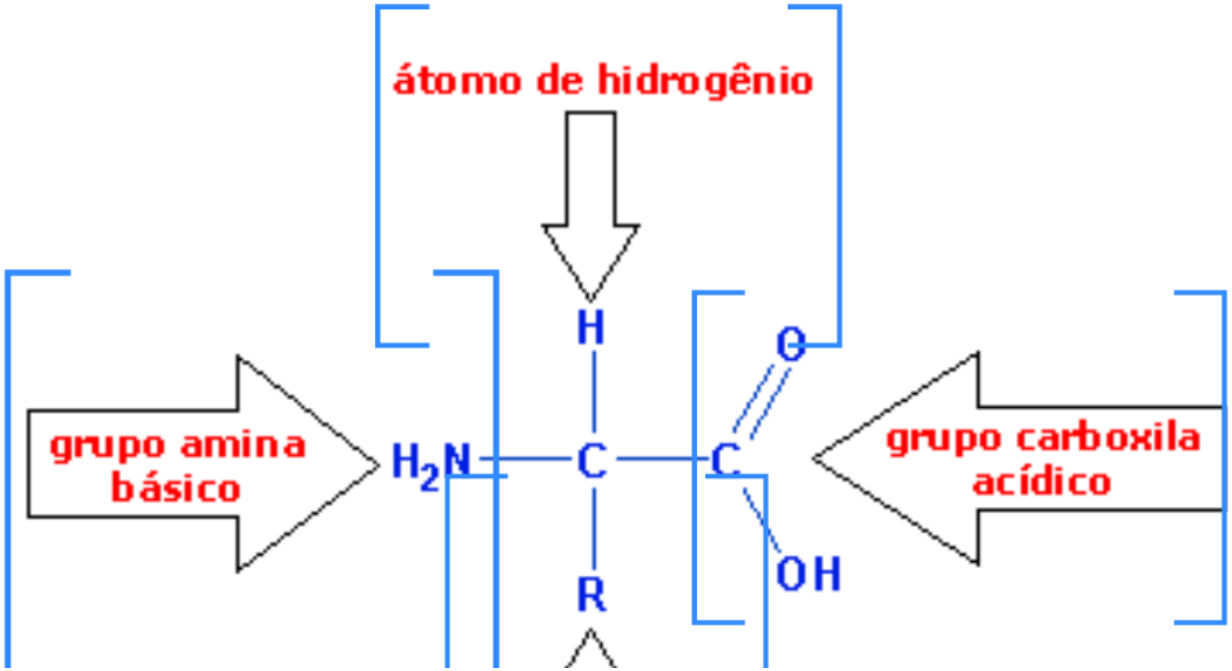
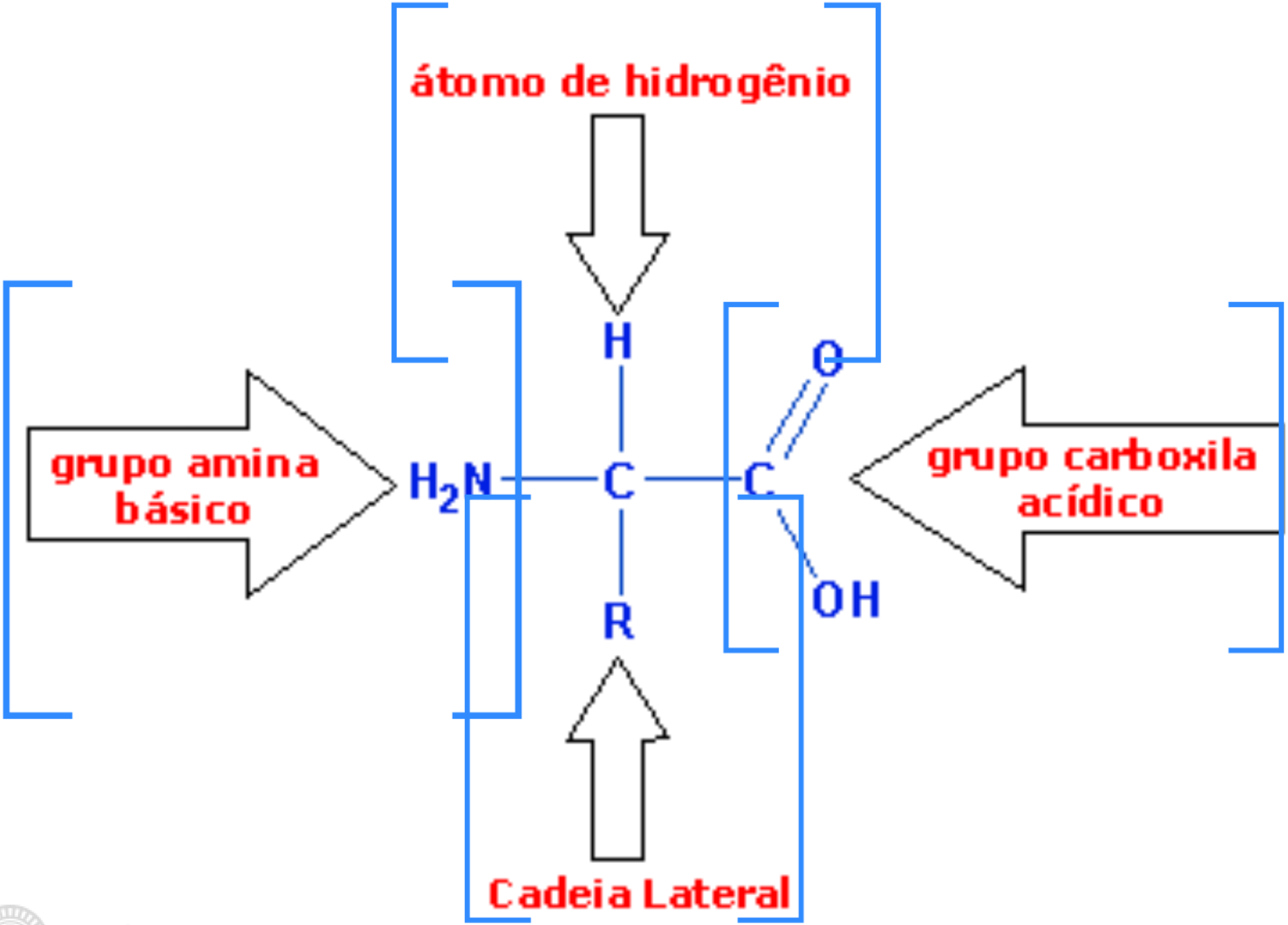
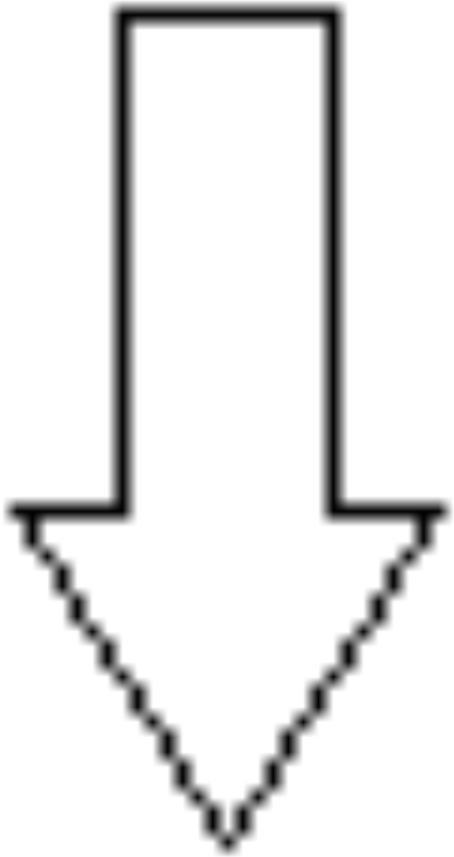
Macromoléculas formadas a partir de ligações entre aminoácidos.

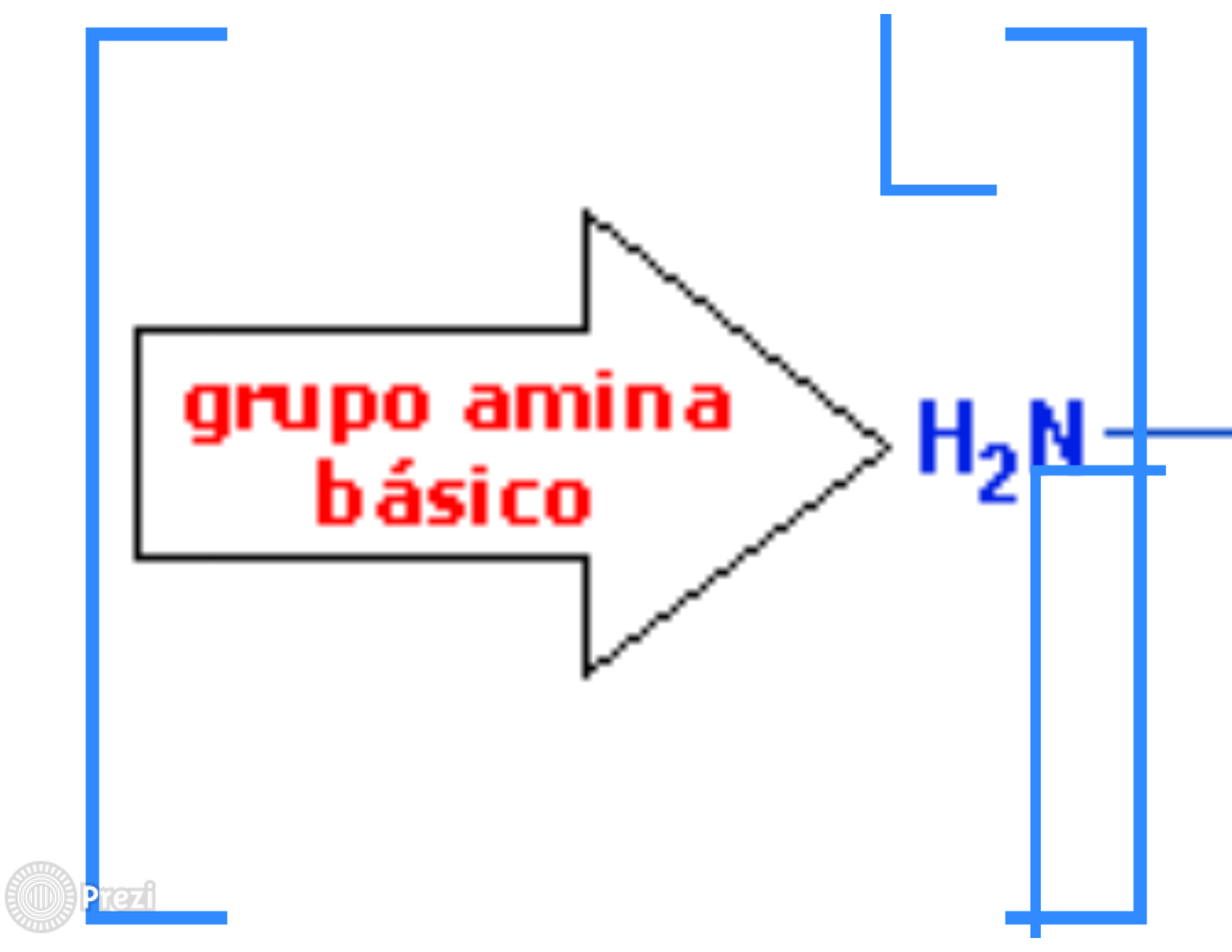


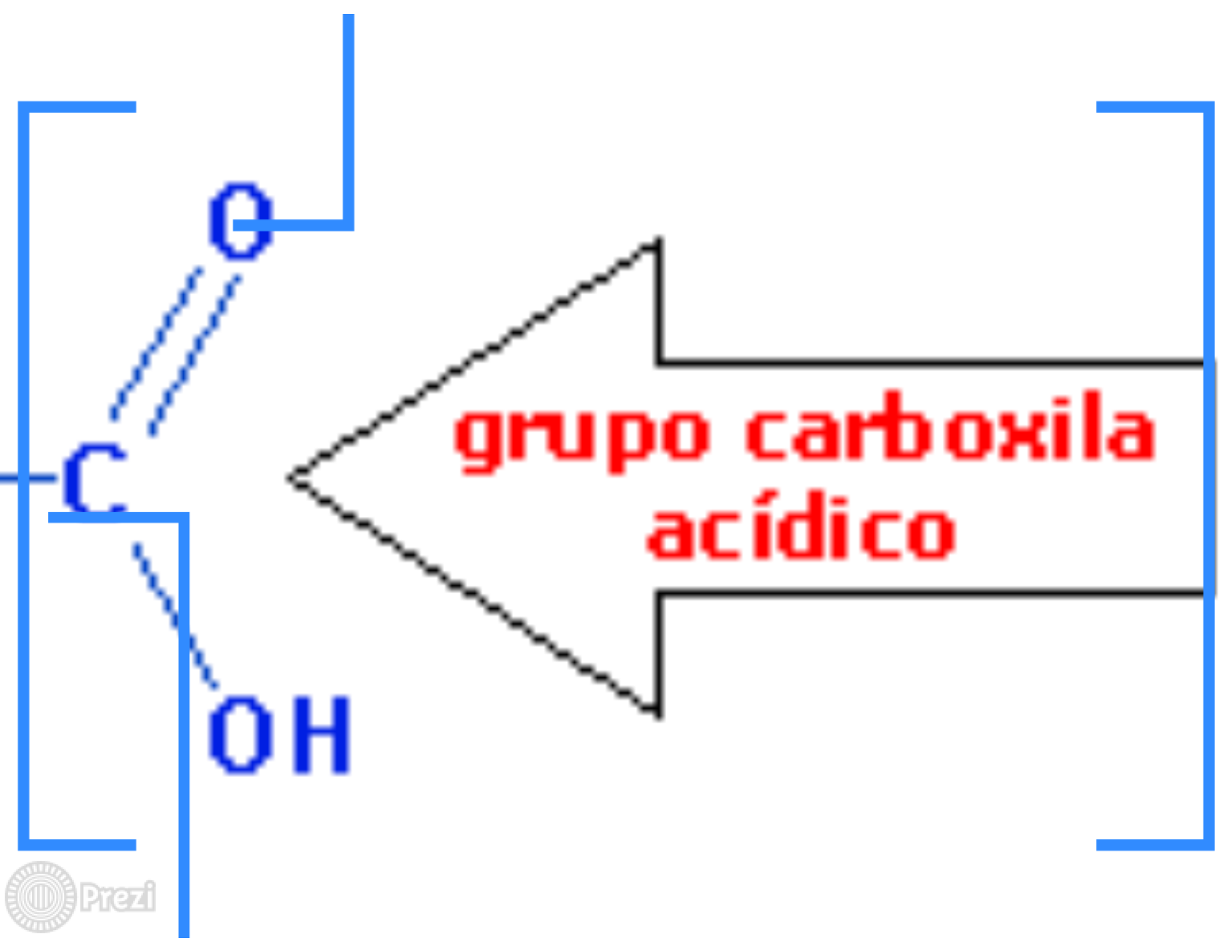

átomo de hidrogênio
grupo amina básico
H_2N
H
C
R
C
O
OH
grupo carboxila acídico
Cadeia Lateral

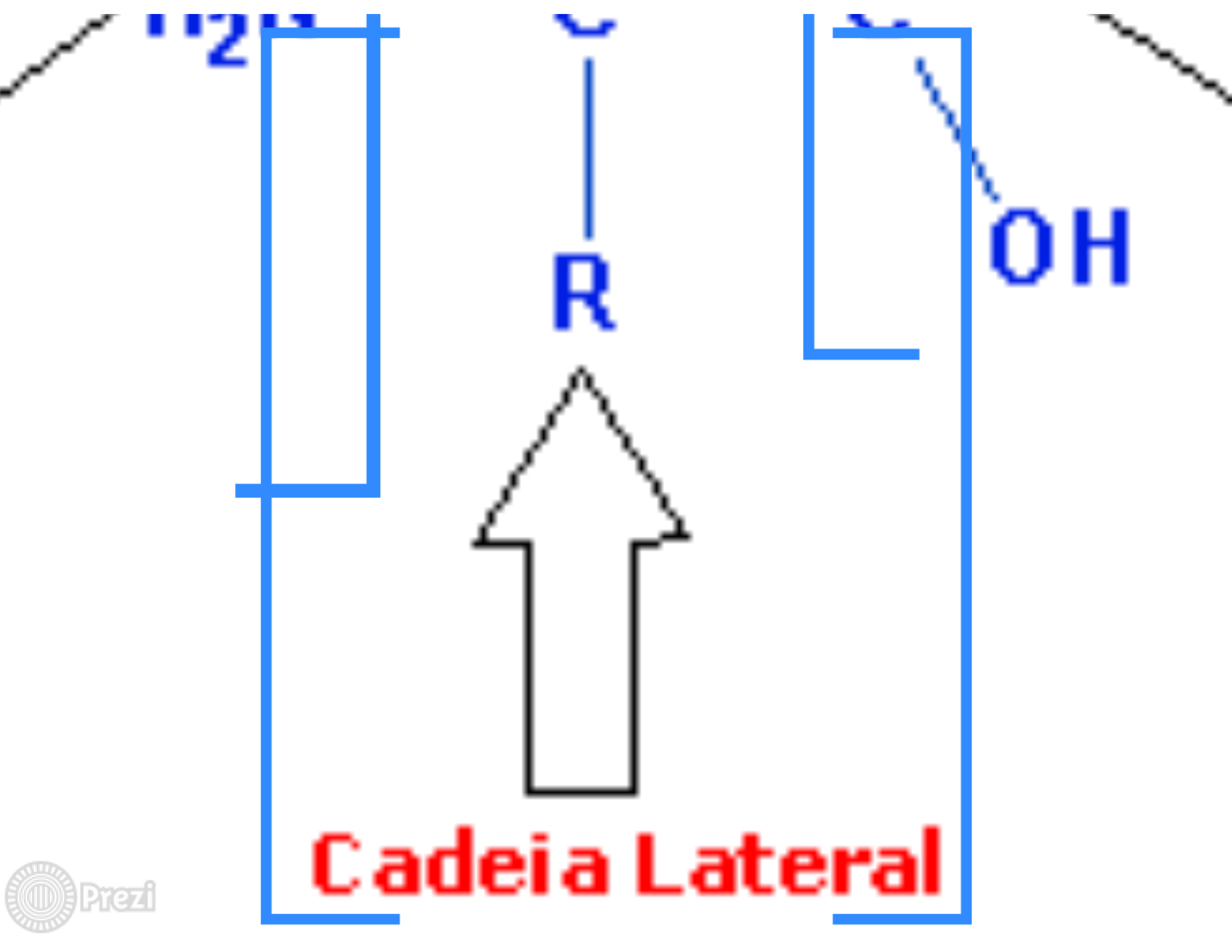
átomo de hidrogênio



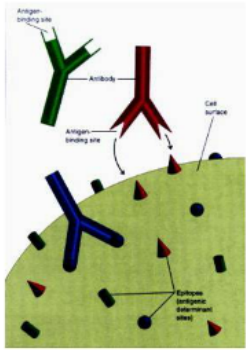
H


grupo amina
básico
H_2N

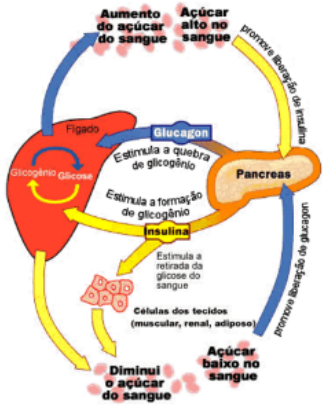

O
C
OH
grupo carboxila
acídico


R
OH
Cadeia Lateral

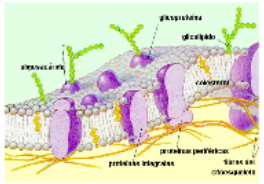
Anticorpos – proteínas de defesa que reconhecem corpos "estranhos" (antígenos)



Alguns hormônios são de origem protéica



Estrutural



Colágeno

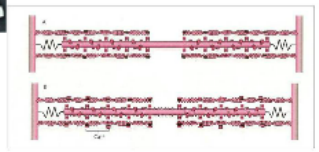
Papel biológico das proteínas

Reserva

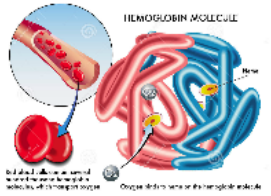
Ovoalbumina

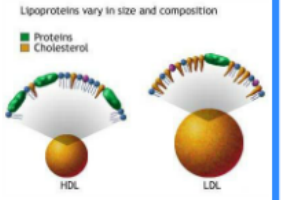
Caseína

Contração muscular

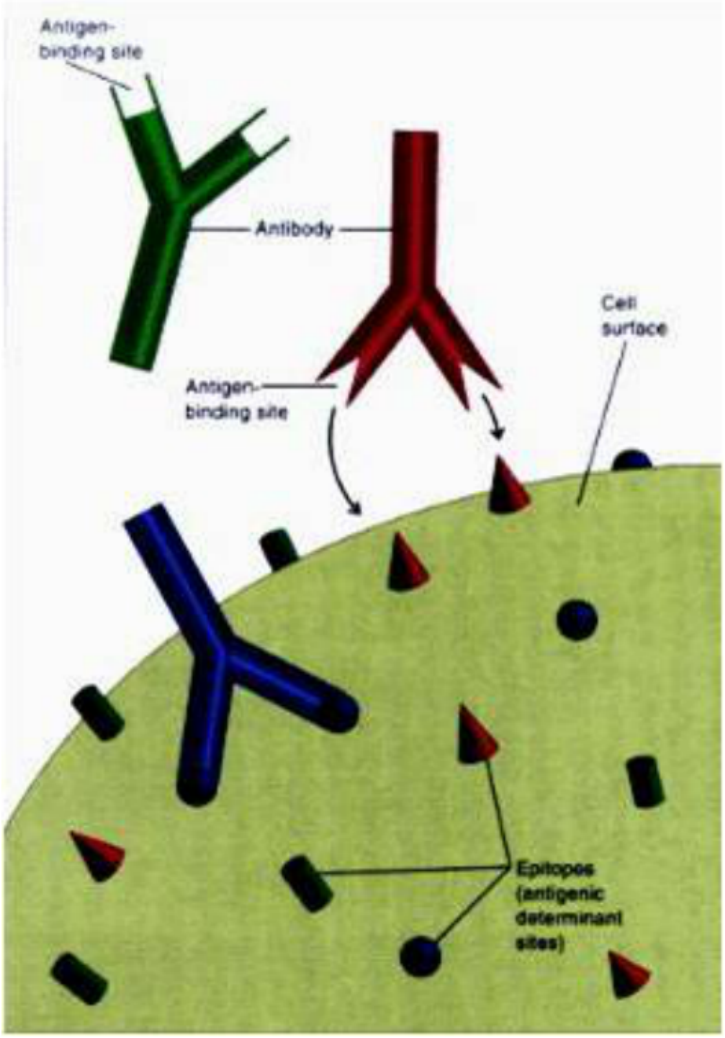


Transportadora:

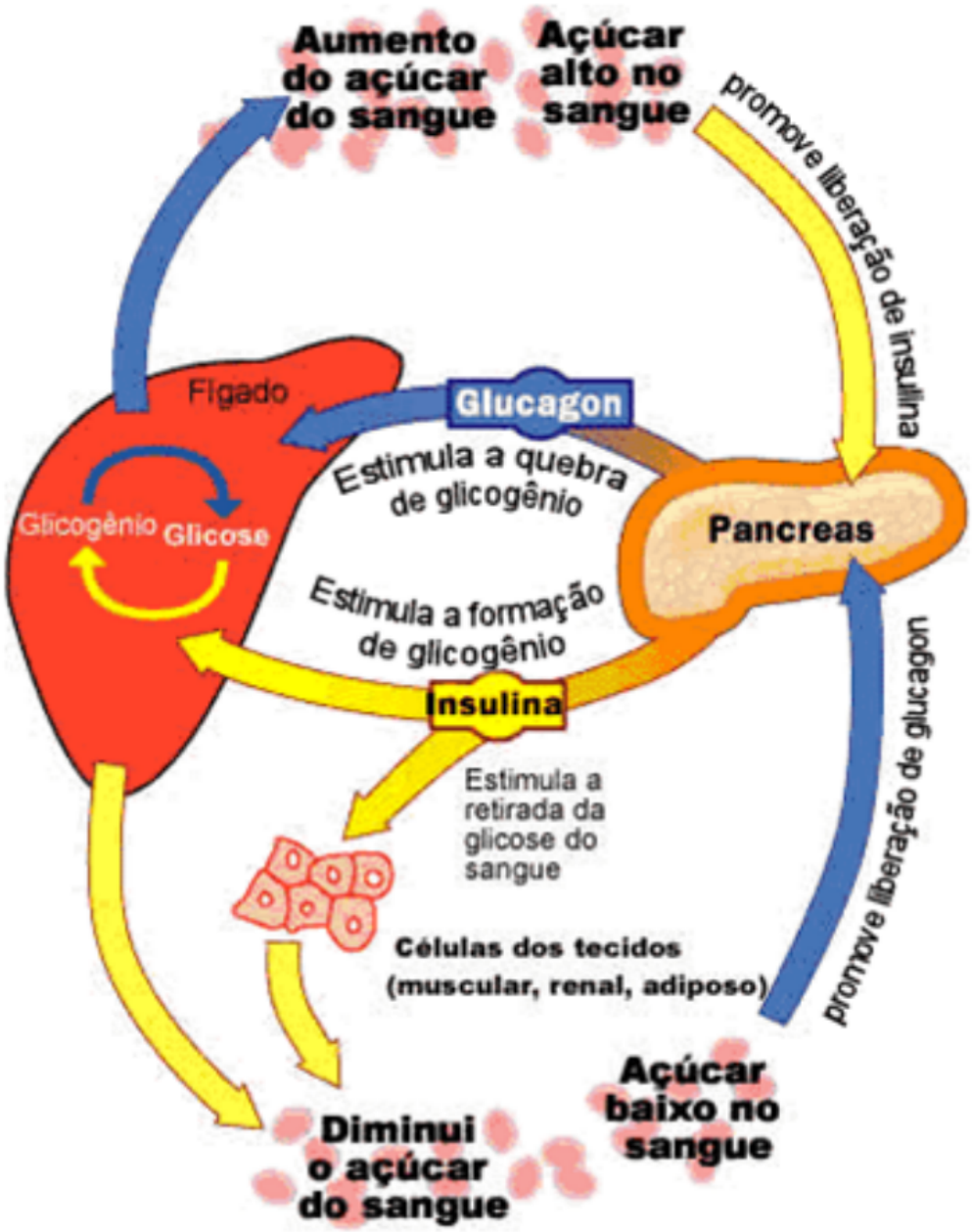




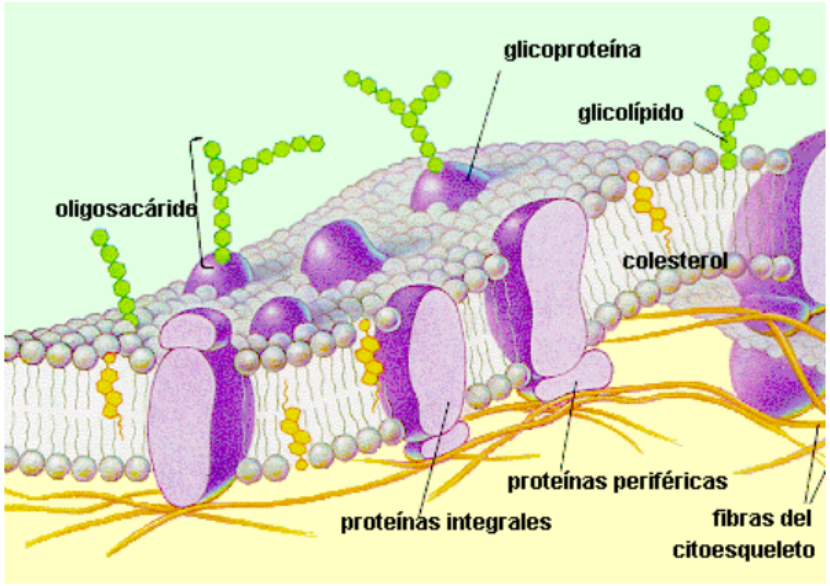
Anticorpos – proteínas de defesa que reconhecem corpos "estranhos" (antígenos)



Alguns hormônios são de origem protéica



Estrutural



Colágeno

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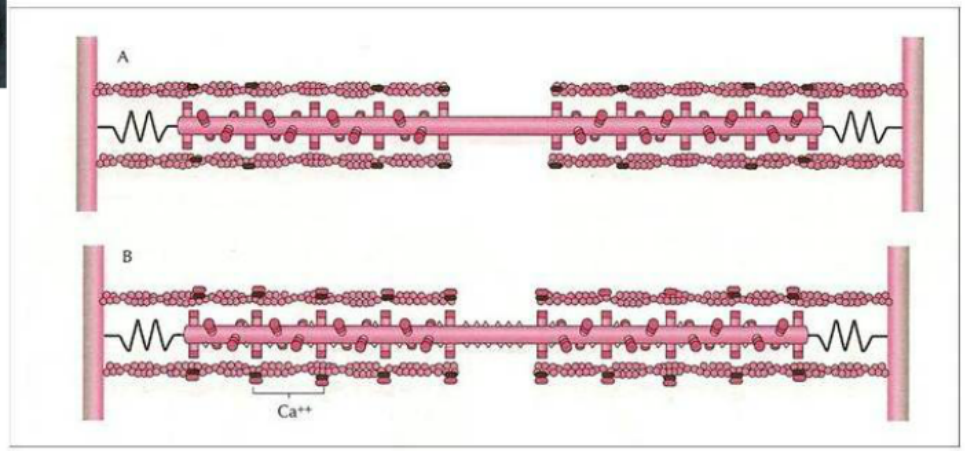
Caseína

Contração muscular



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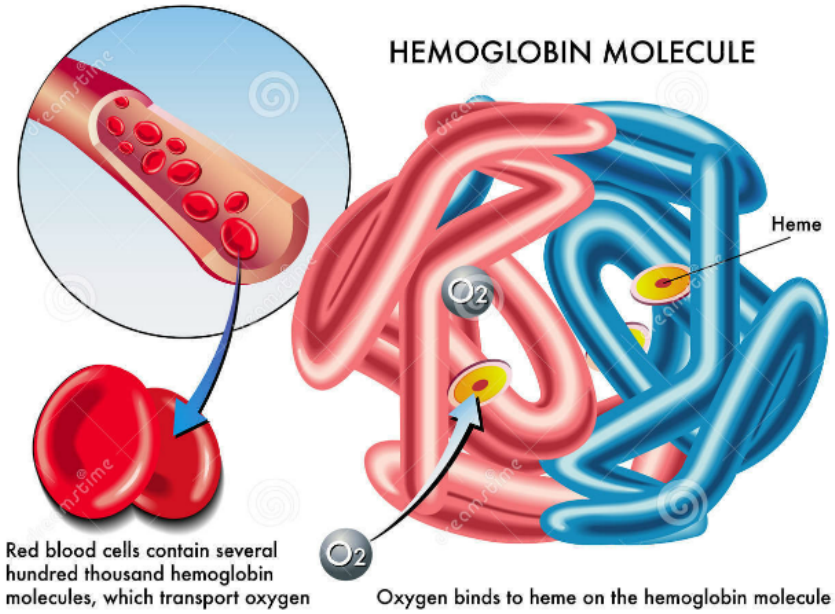
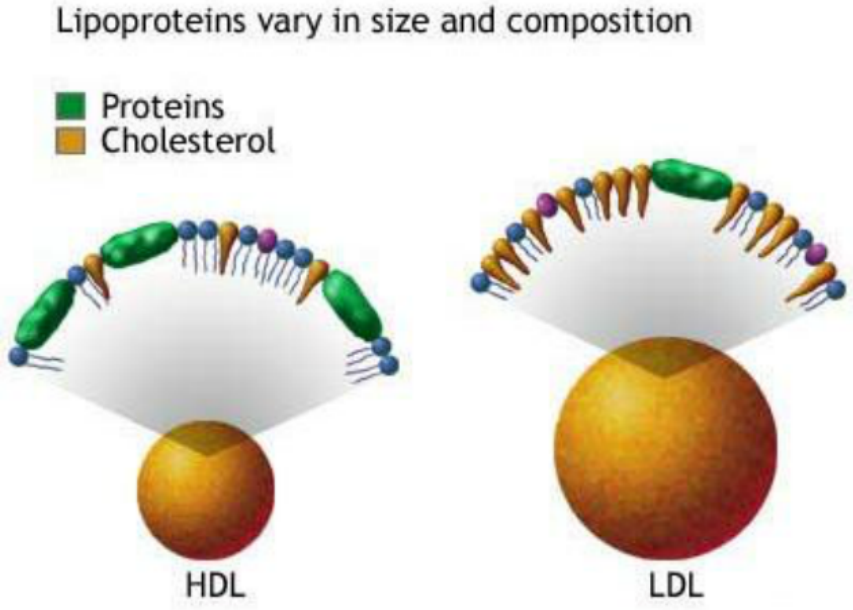
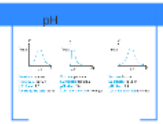
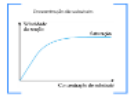
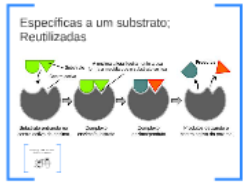


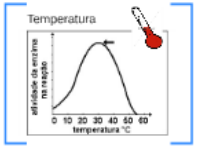


Papel biológico das proteínas









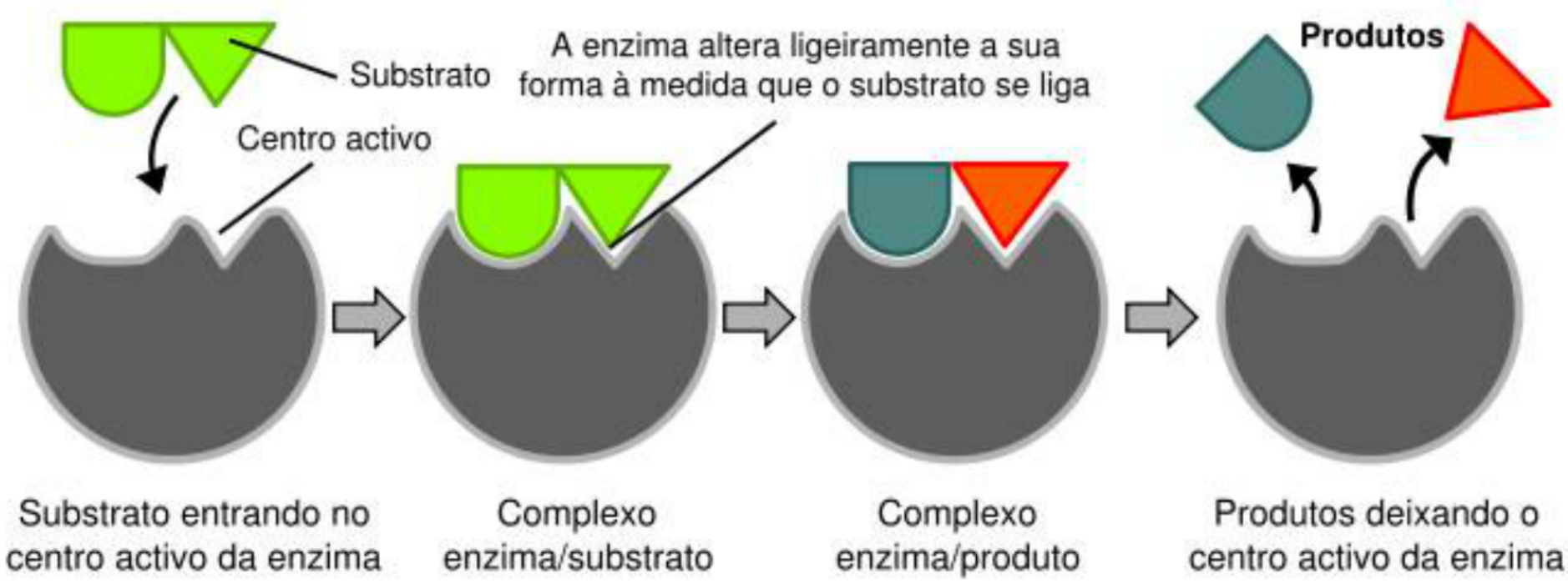
enzimas – aceleram as reações químicas

Pouca afinidade entre as moléculas (timidez?!)

A enzima presente faz a união entre elas.

Moléculas combinadas, enzimas livre.

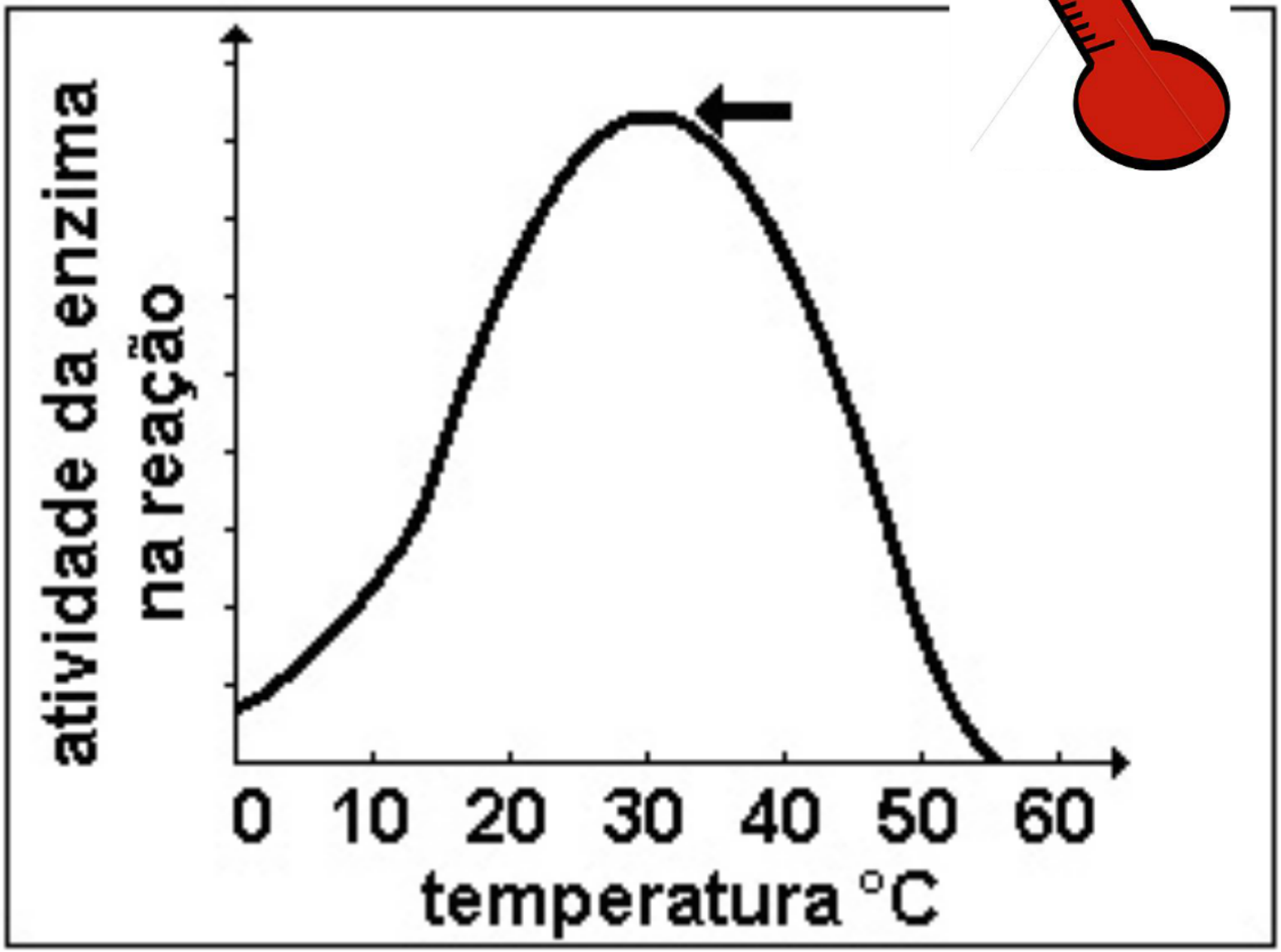
Específicas a um substrato; Reutilizadas



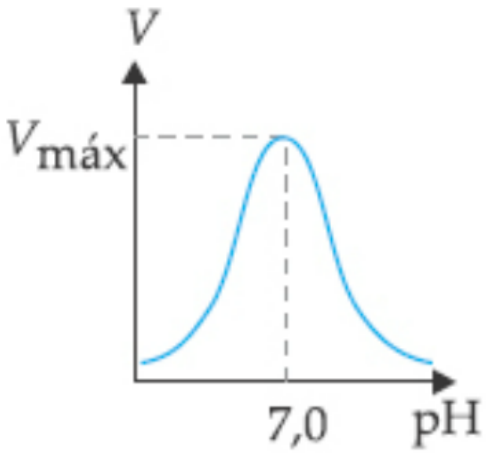
Fatores que influenciam a atividade enzimática

Fatores que influenciam a atividade enzimática

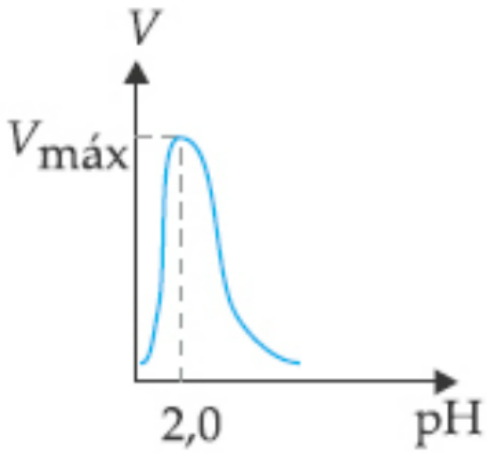
Temperatura



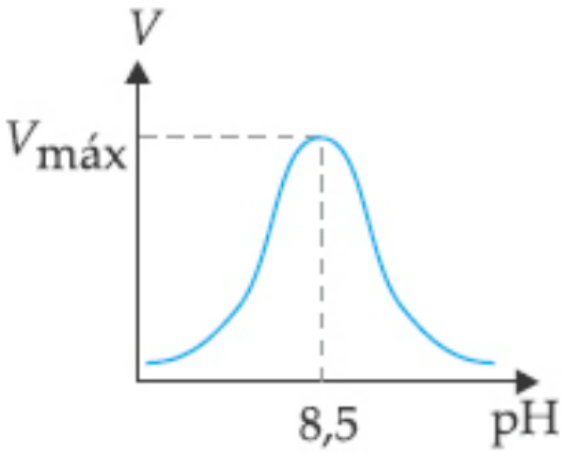
pH



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

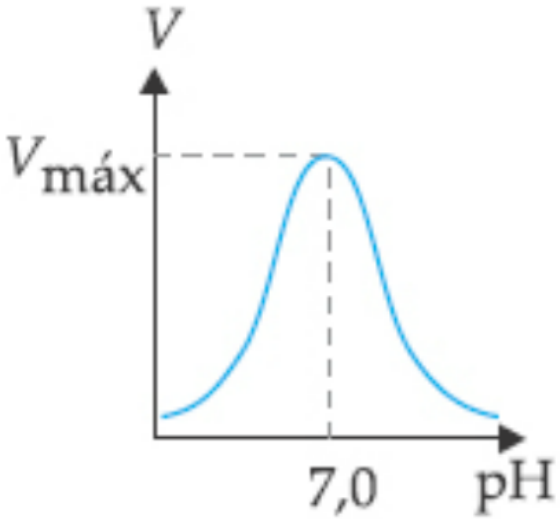


Enzima: pepsina
Substrato: proteína
pH ideal: 2,0
Local de atuação: estômago

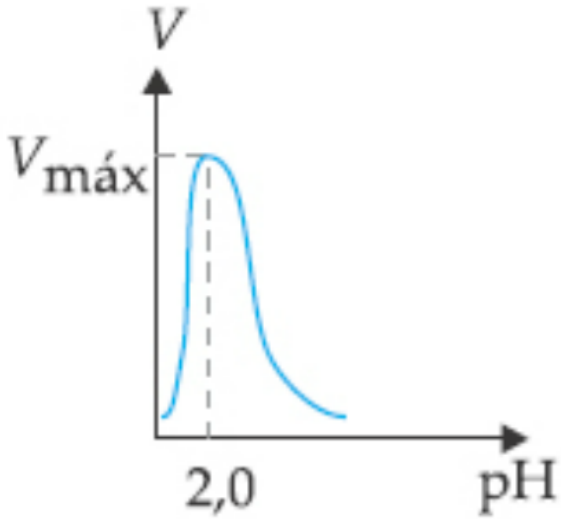


Enzima: lipase
Substrato: lipídios
pH ideal: 8,5
Local de atuação: intestino

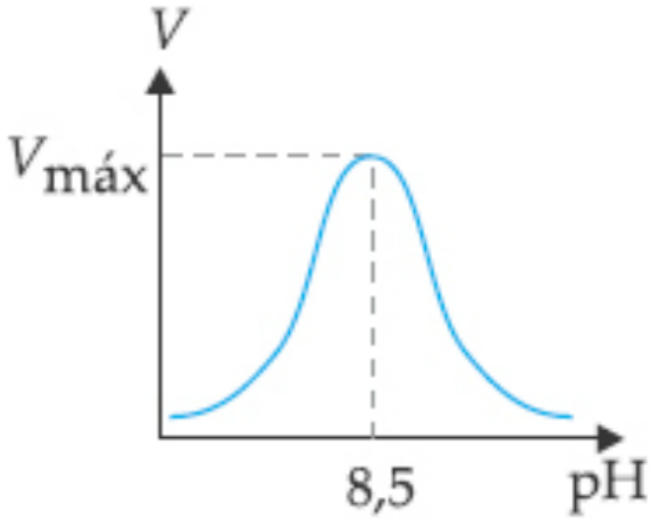
pH



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

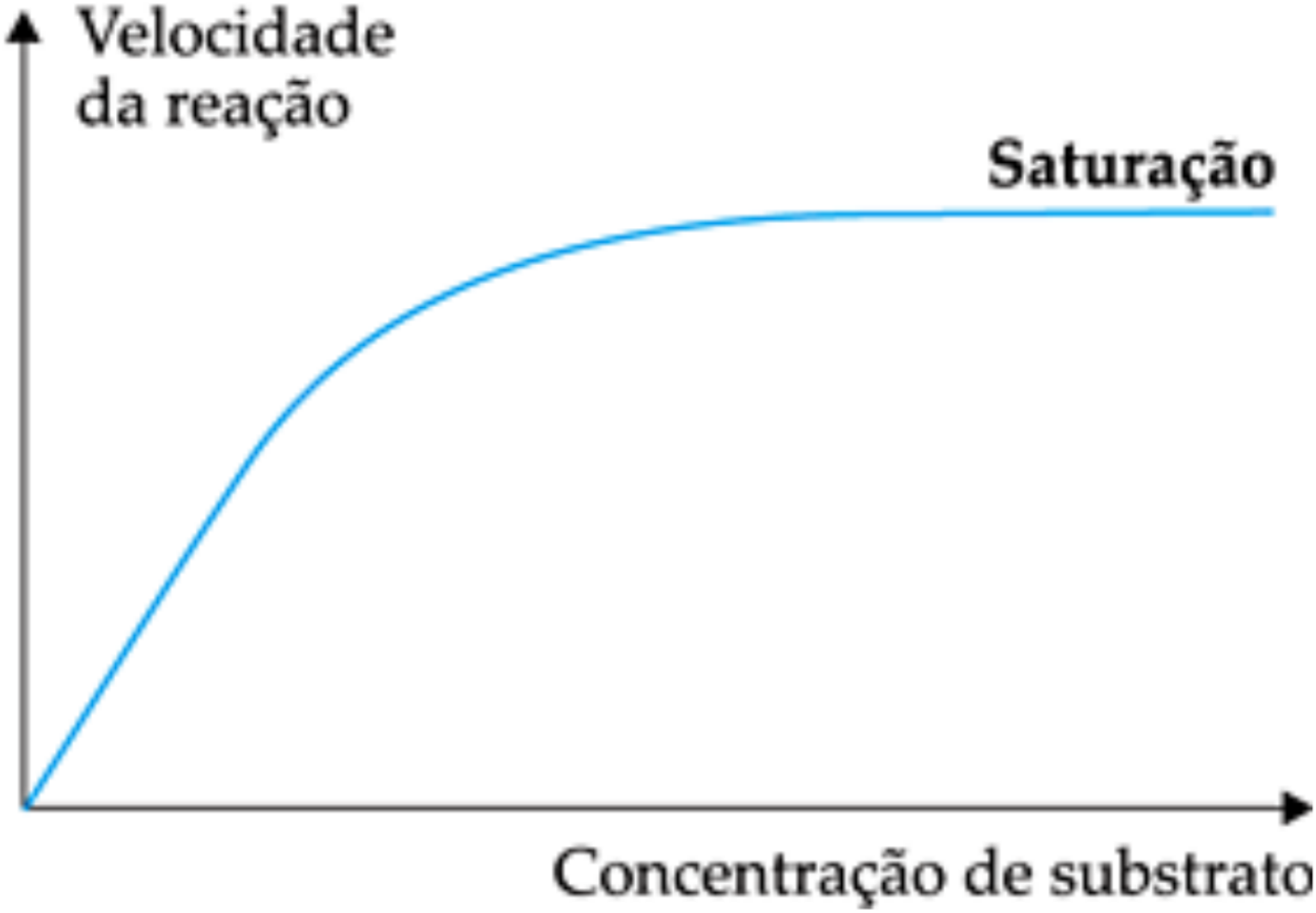


Enzima: pepsina
Substrato: proteína
pH ideal: 2,0
Local de atuação: estômago

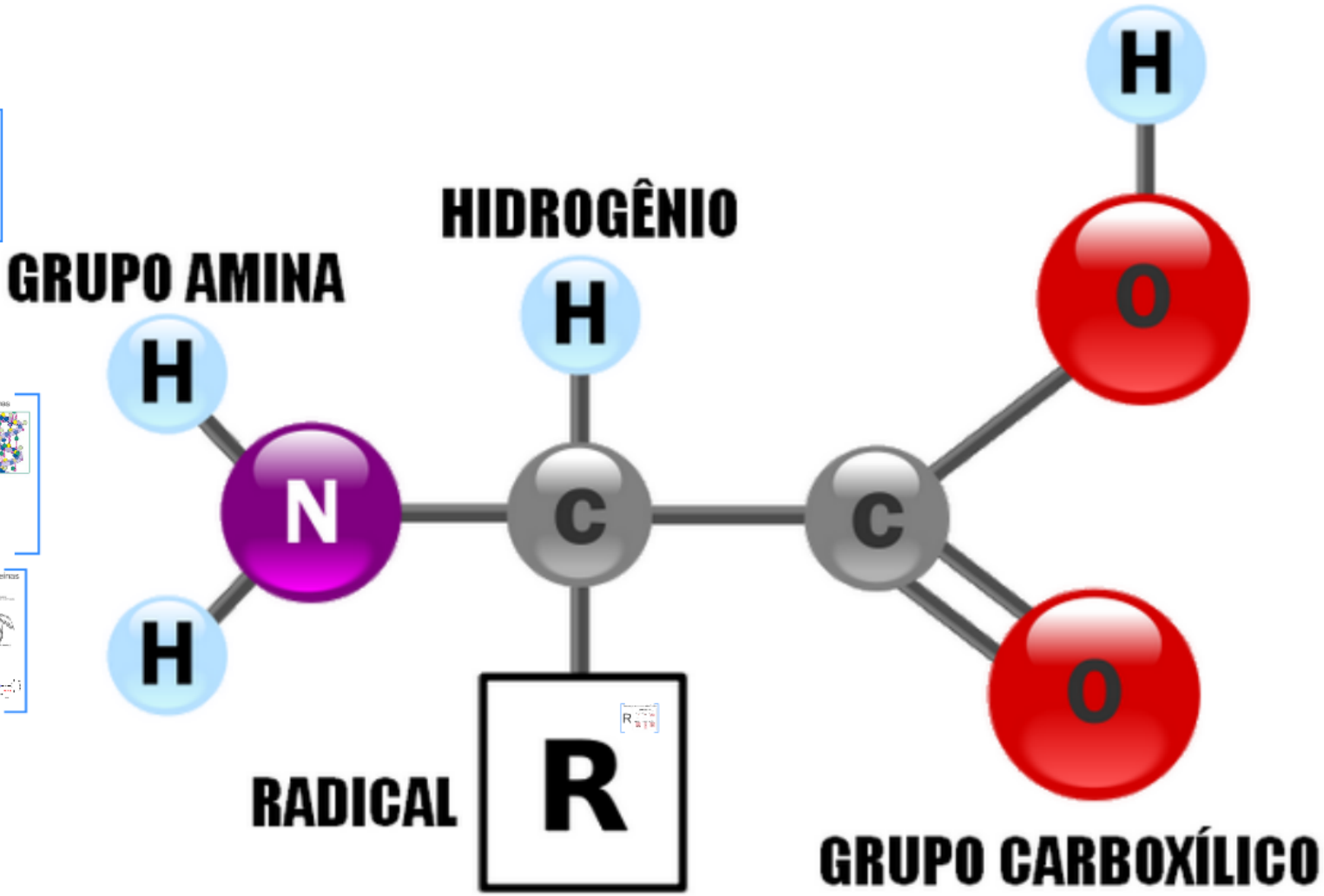


Enzima: lipase
Substrato: lipídios
pH ideal: 8,5
Local de atuação: intestino

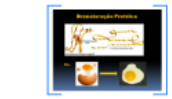
Concentração de substrato

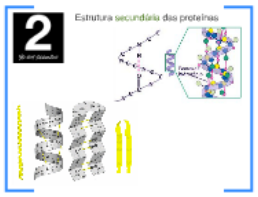


Estrutura química das proteínas

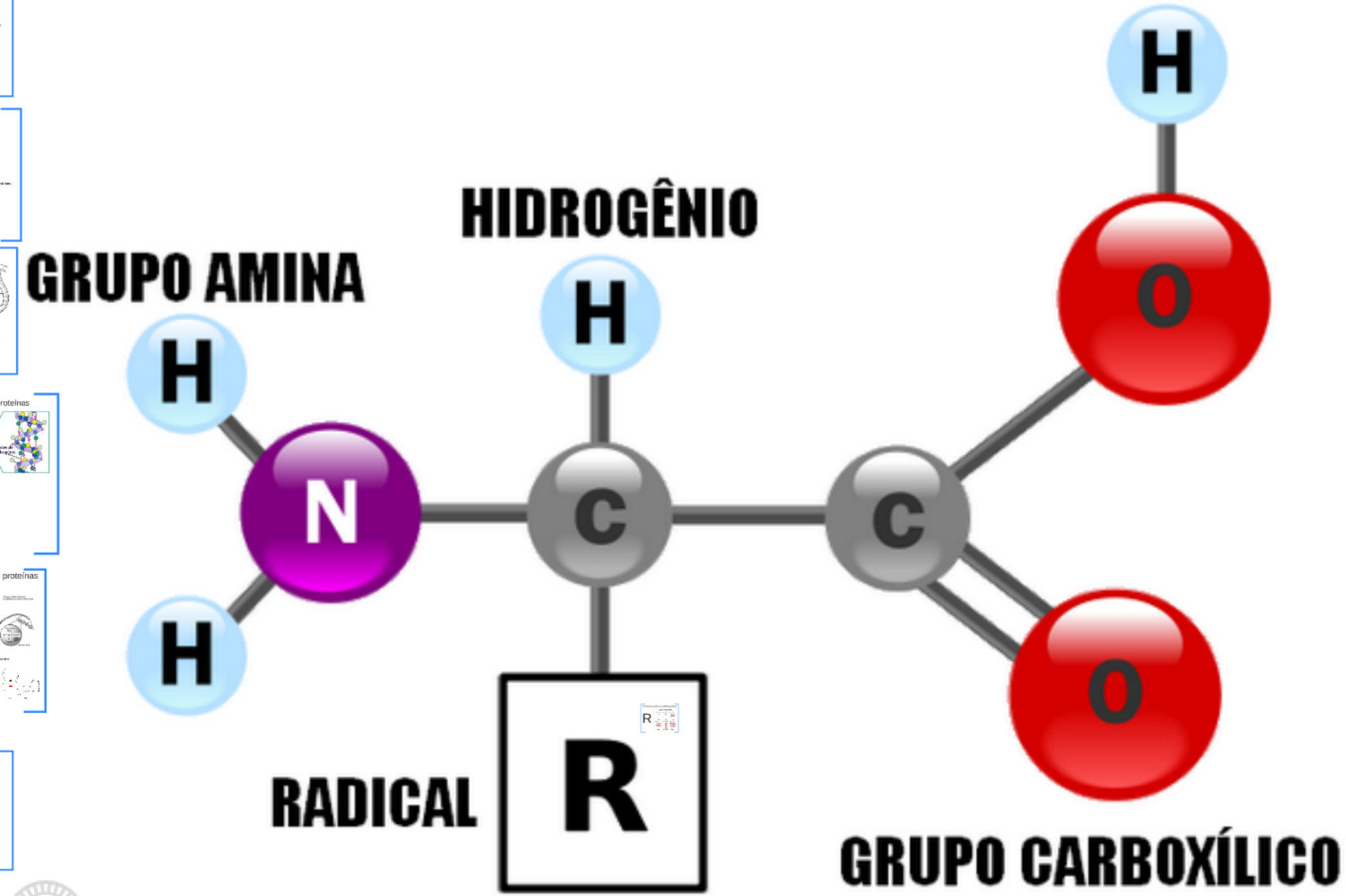


Polímeros de Aminoácido



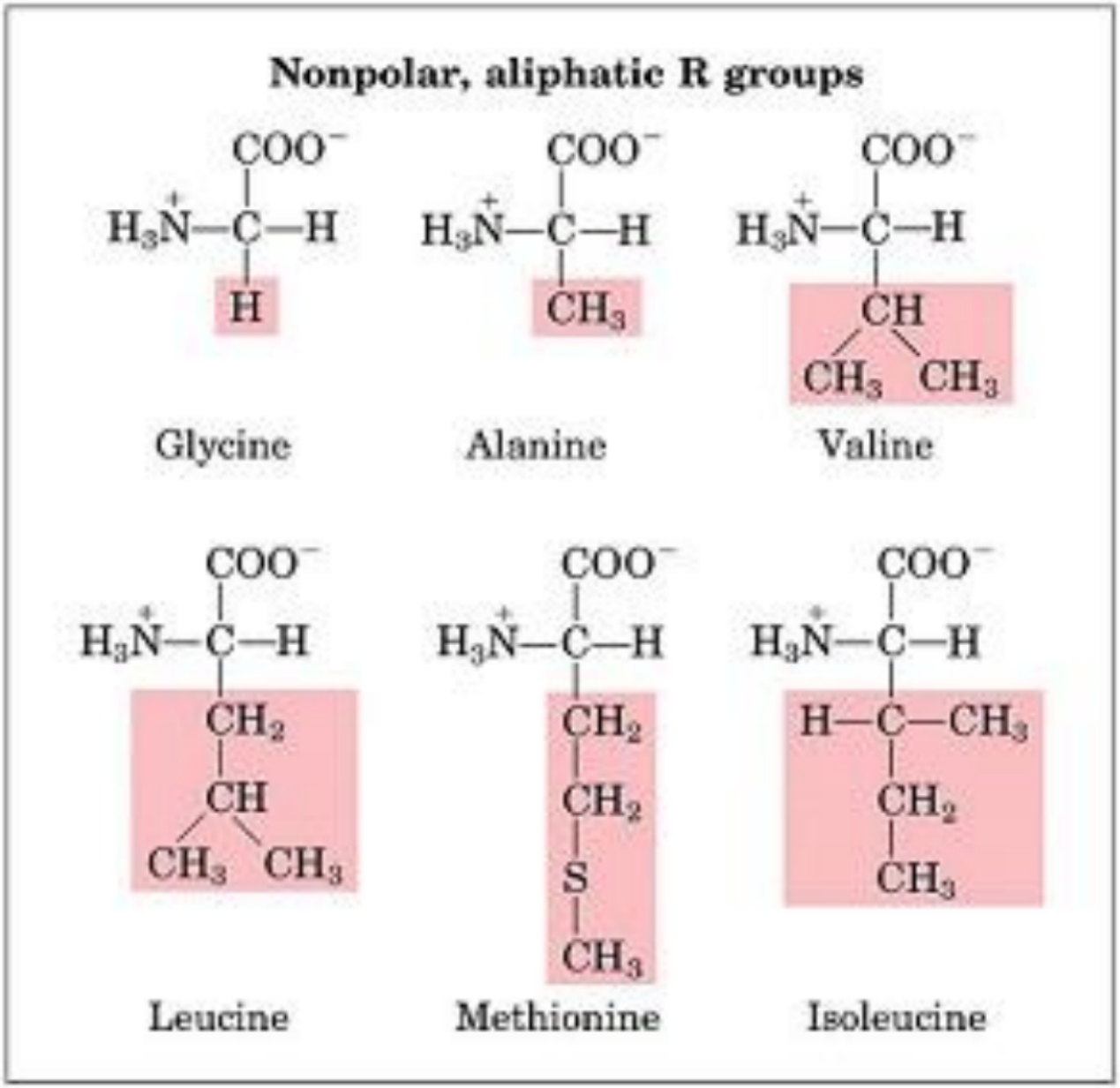


Estrutura química das proteínas


GRUPO AMINA
HIDROGÊNIO
H
H
H
N
C
C
O
H
O
RADICAL
R
GRUPO CARBOXÍLICO

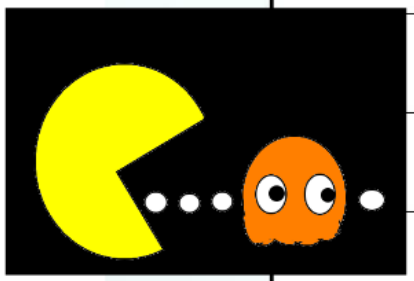
Diferença entre os aminoácidos

R



AMINOÁCIDOS

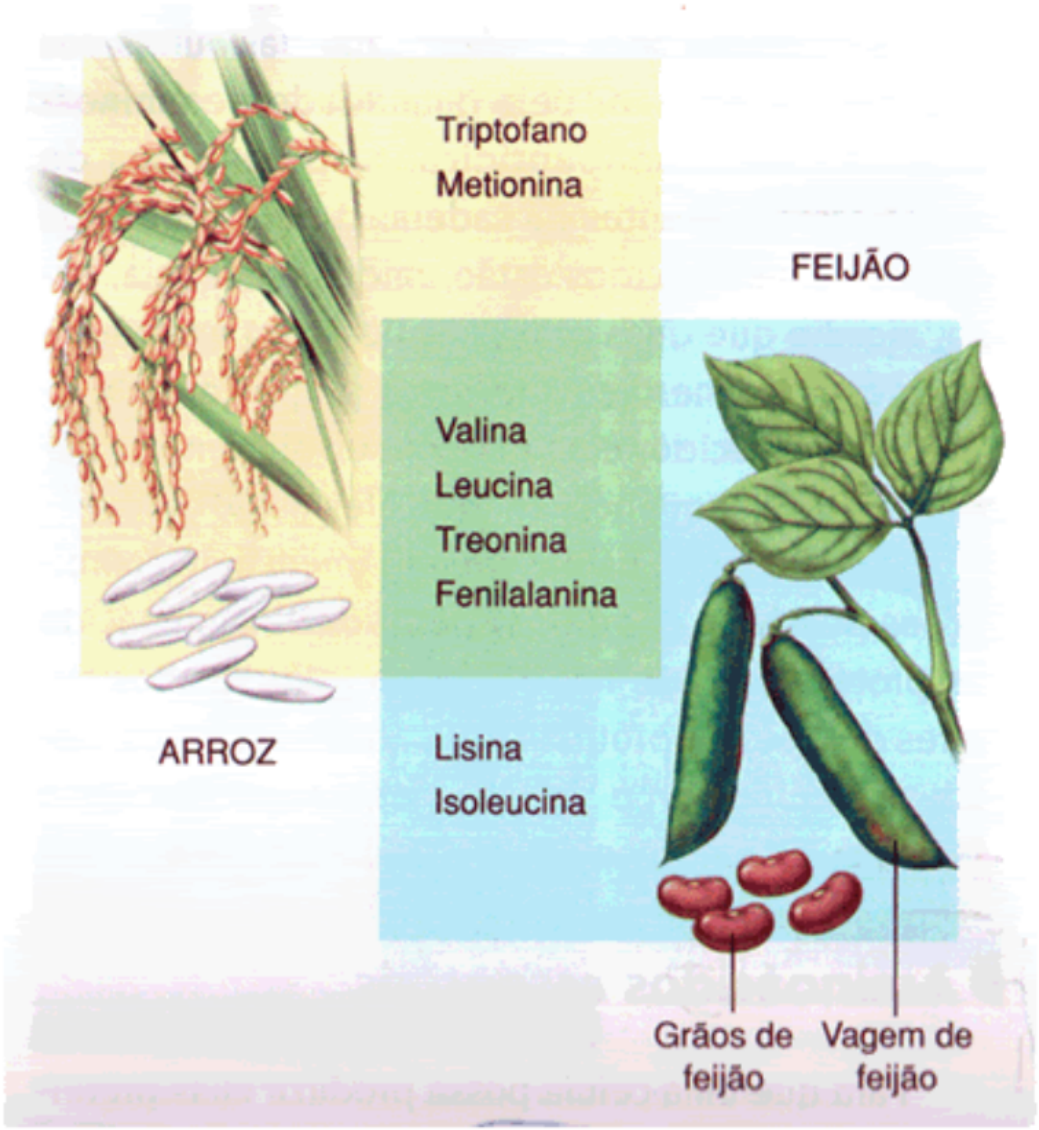
ESSENCIAIS	NÃO ESSENCIAIS
Arginina*	Alanina
Histidina*	Aspartato
Isoleusina	Asparagina
Leusina	Cisteína
Lisina	Glutamato
Meteonina	Glutamina
Fenilalanina	Glicina
Treonina	Prolina
Triptofano	Serina
Valina	Tirosina



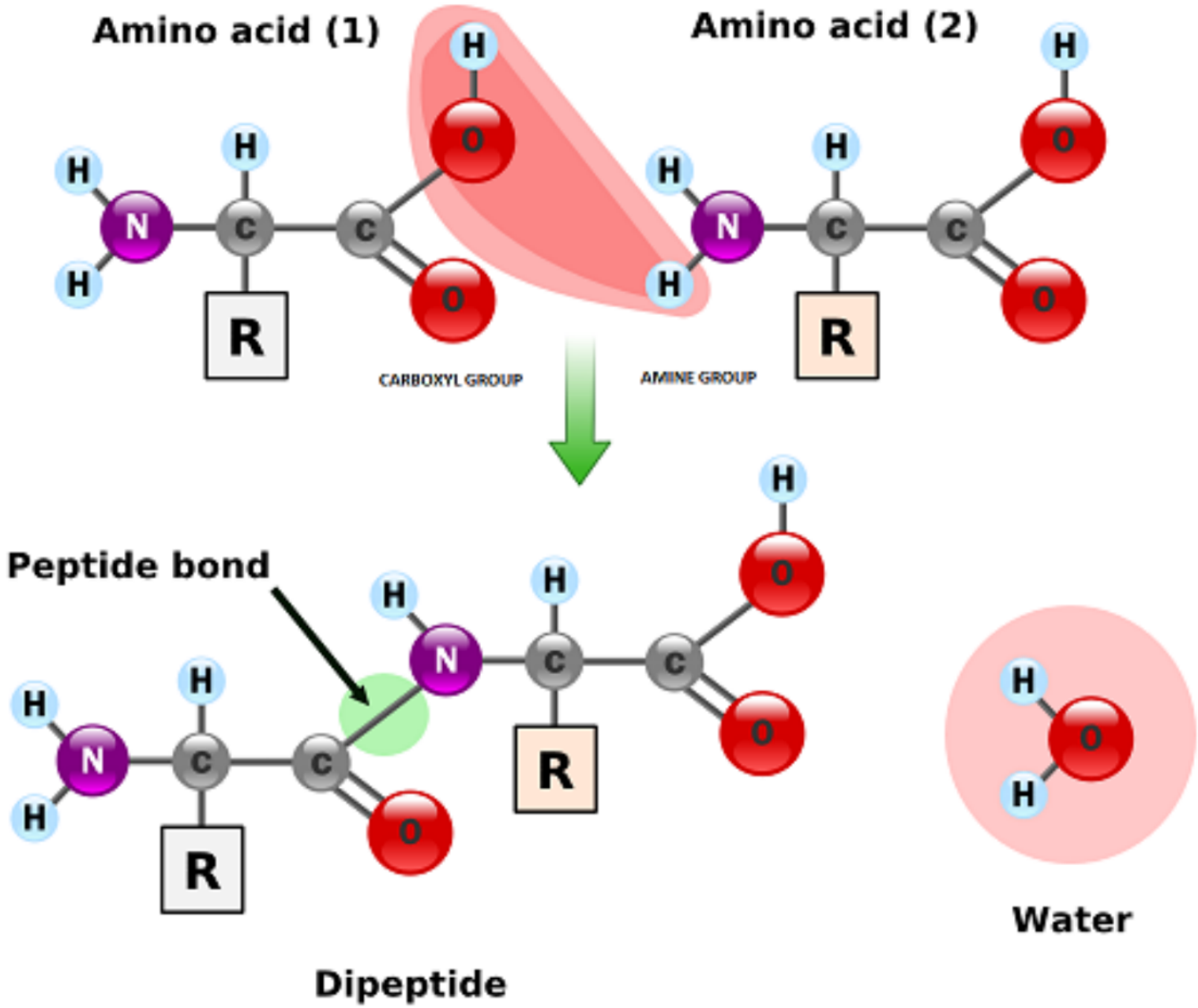
- naturais – produzidos no organismo animal
- essenciais – não produzidos no organismo animal → devem ser ingeridos na alimentação (varia de acordo com a espécie)

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

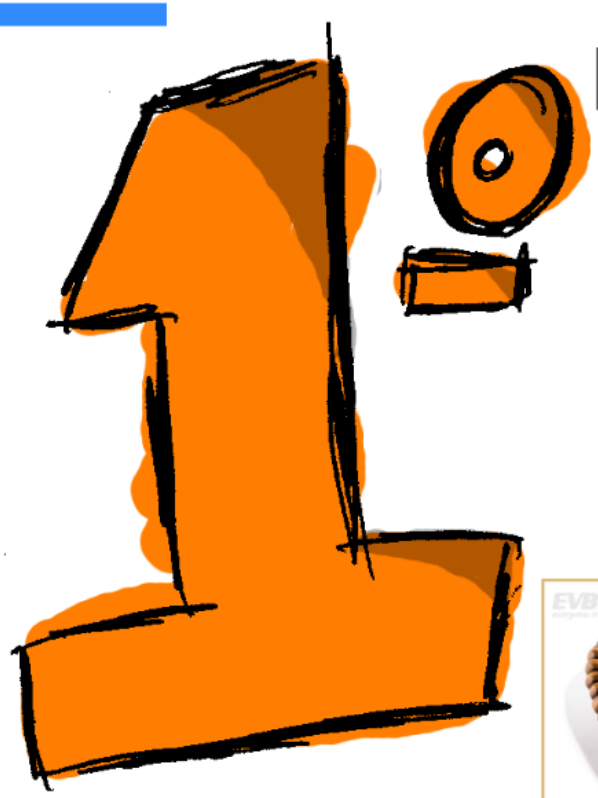

ORDEM E PROGRESSO

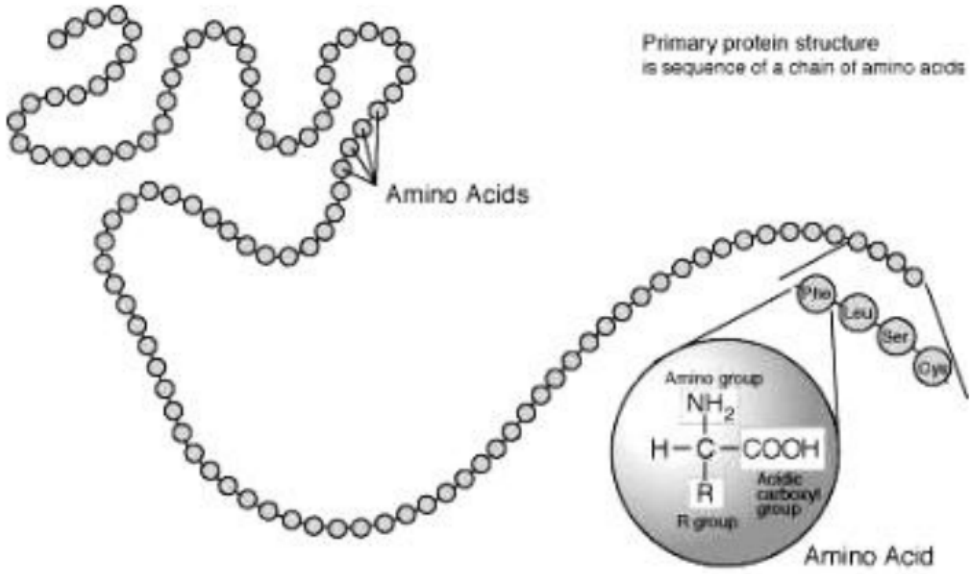

Triptofano
Metionina
FEIJÃO
Valina
Leucina
Treonina
Fenilalanina
ARROZ
Lisina
Isoleucina
Grãos de feijão
Vagem de feijão

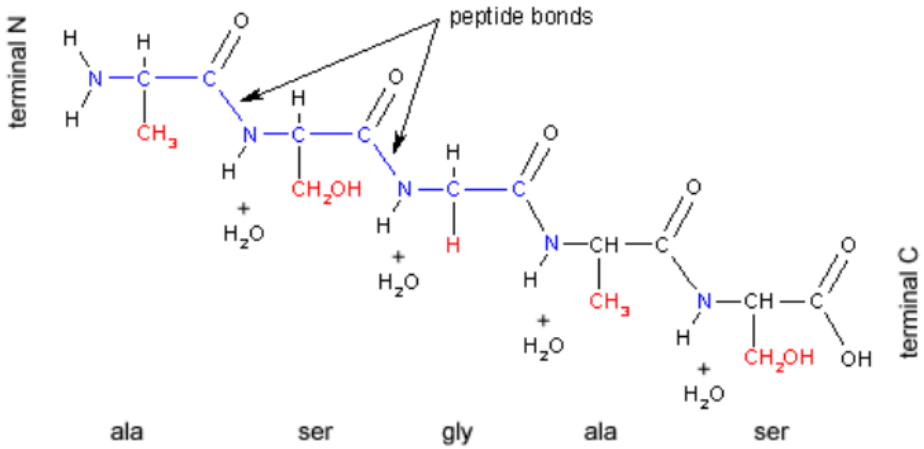
Ligação peptídica



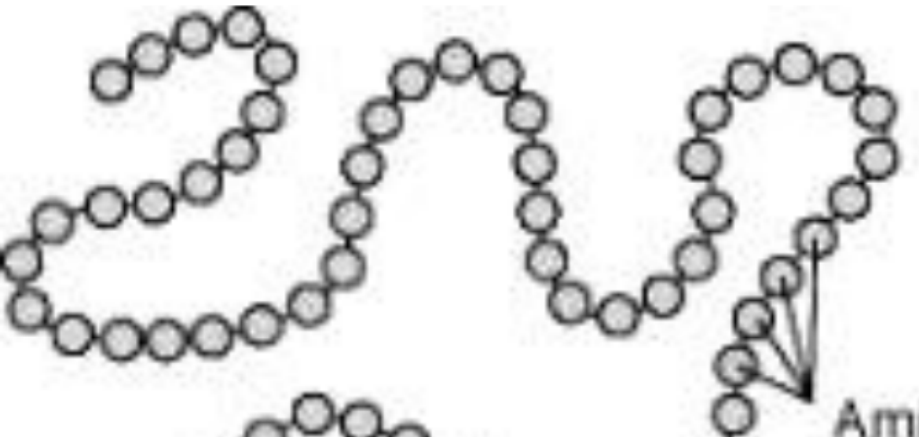
Estrutura primária das proteínas



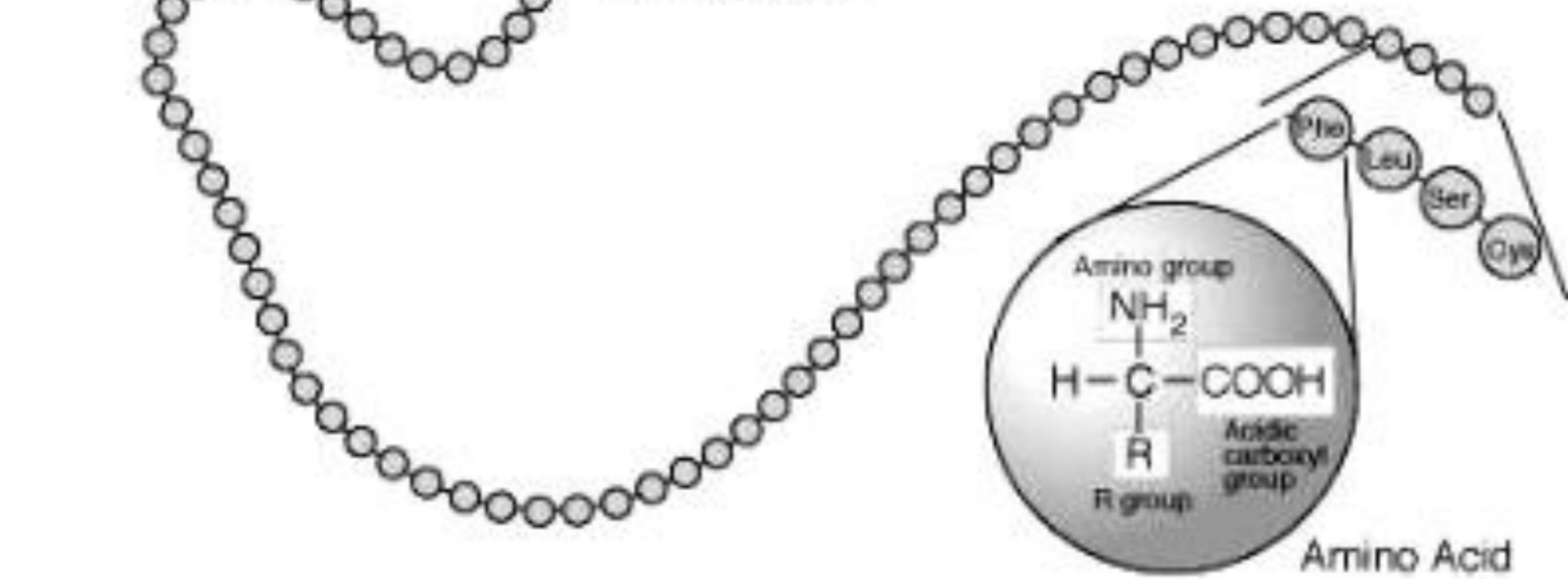




Primary protein structure
is sequence of a chain of amino acids

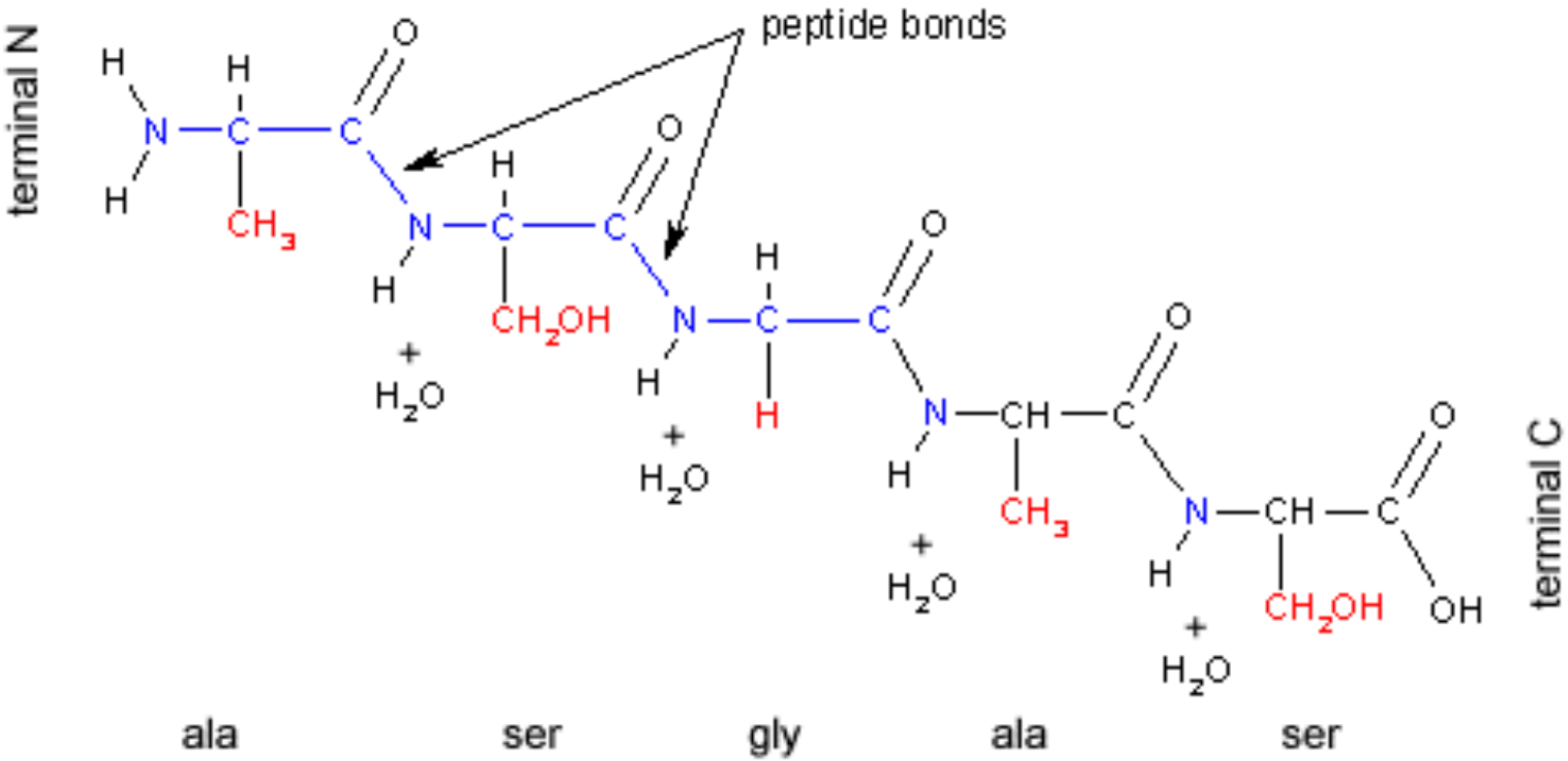


Amino Acids

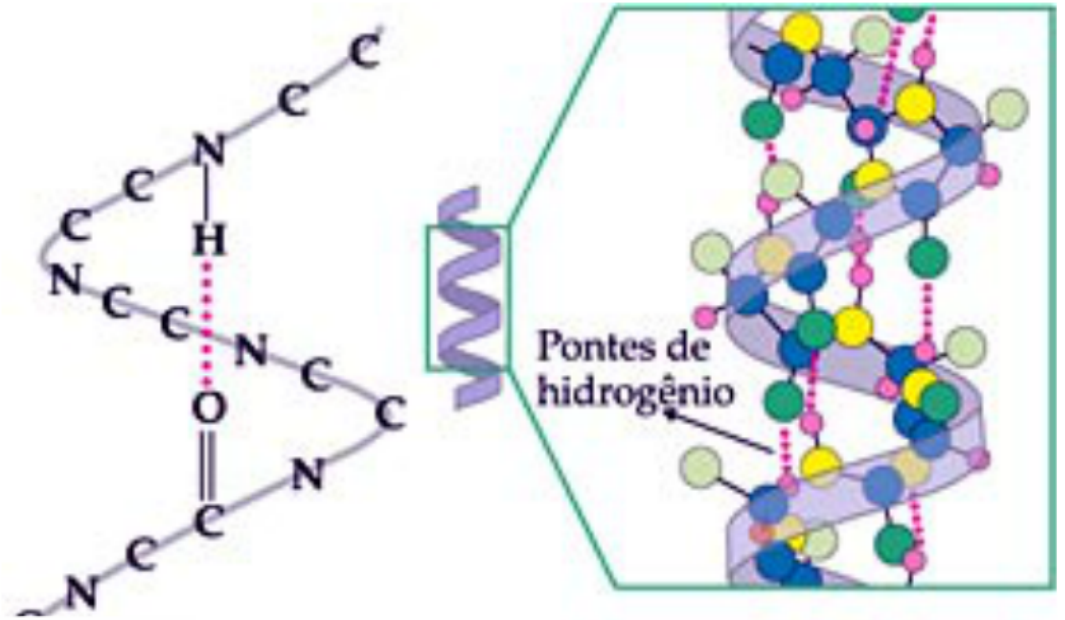


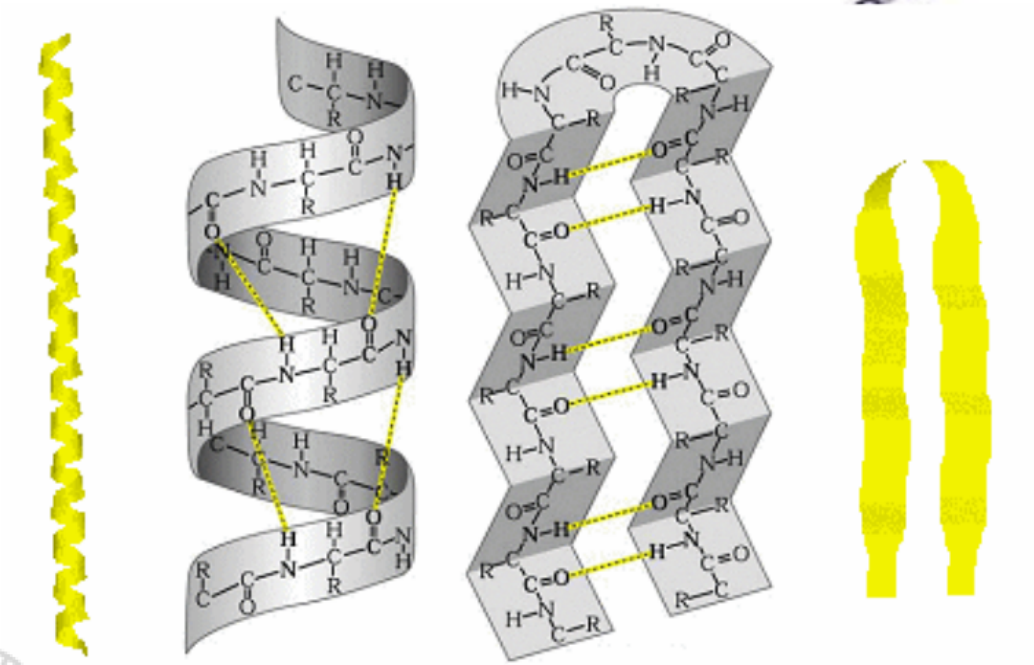
Amino Acid

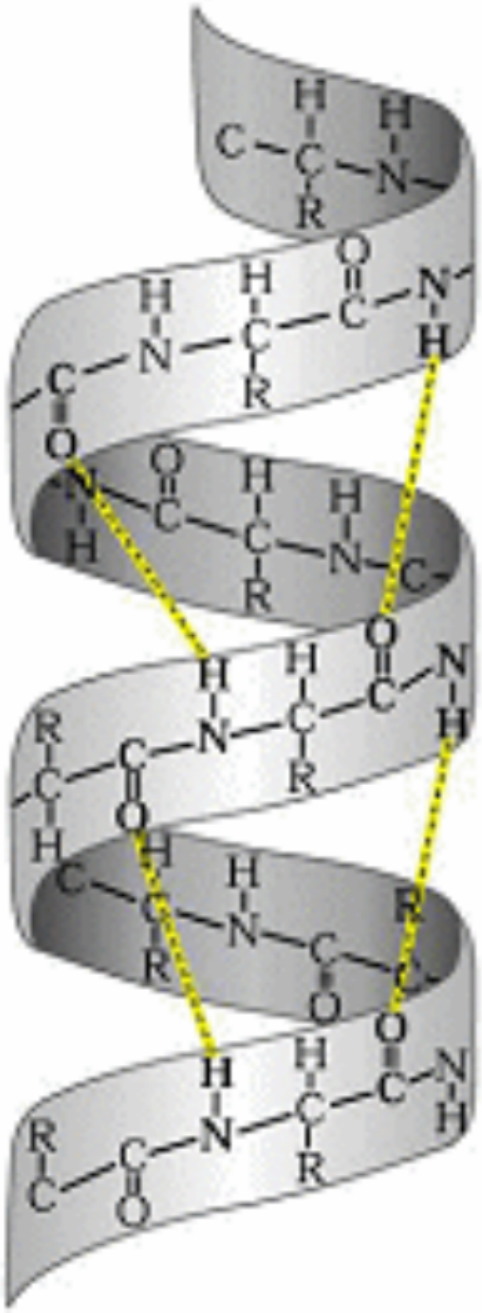

TRE
ALA
GLI
ASP
ALA
GLN
SER
ALA
ALA
GLU
GLN
ALA
SER
GLN
ALA
ALA
ARG
LIS
SER
ASP
GLI
ASP
LIS
ARG
GLI
GLU
FEN
TRE
TRE
ARG
ALA
ALA
FEN
LIS
ALA
GLI
GLN
GLU
ARG
ASP
TRE
FEN

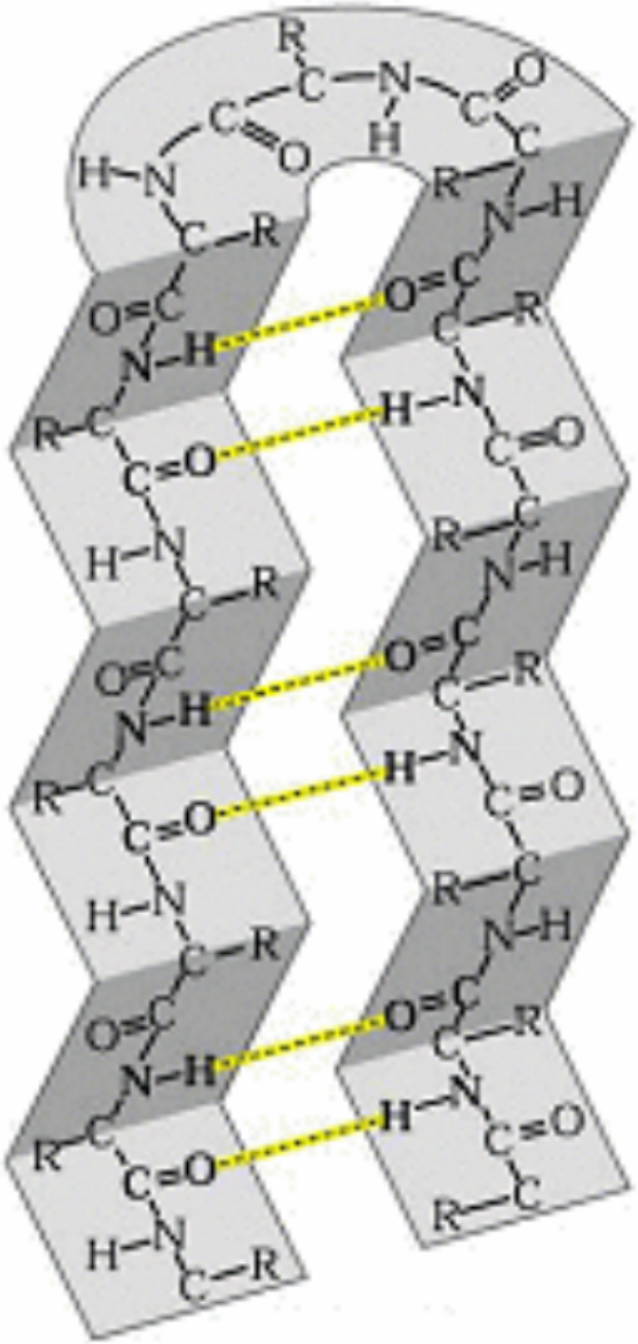

terminal N
peptide bonds
terminal C
ala
ser
gly
ala
ser

Estrutura secundária das proteínas

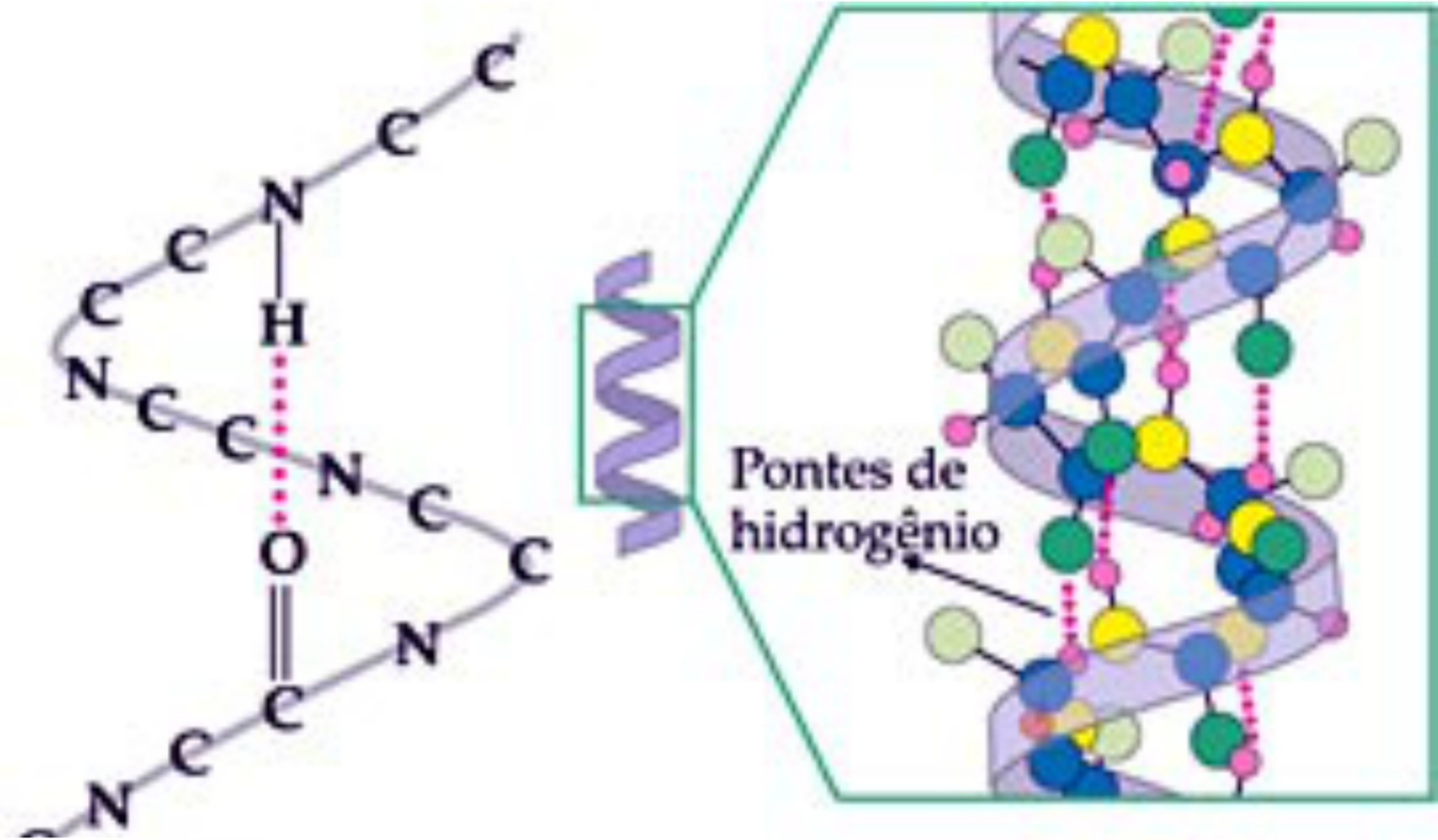




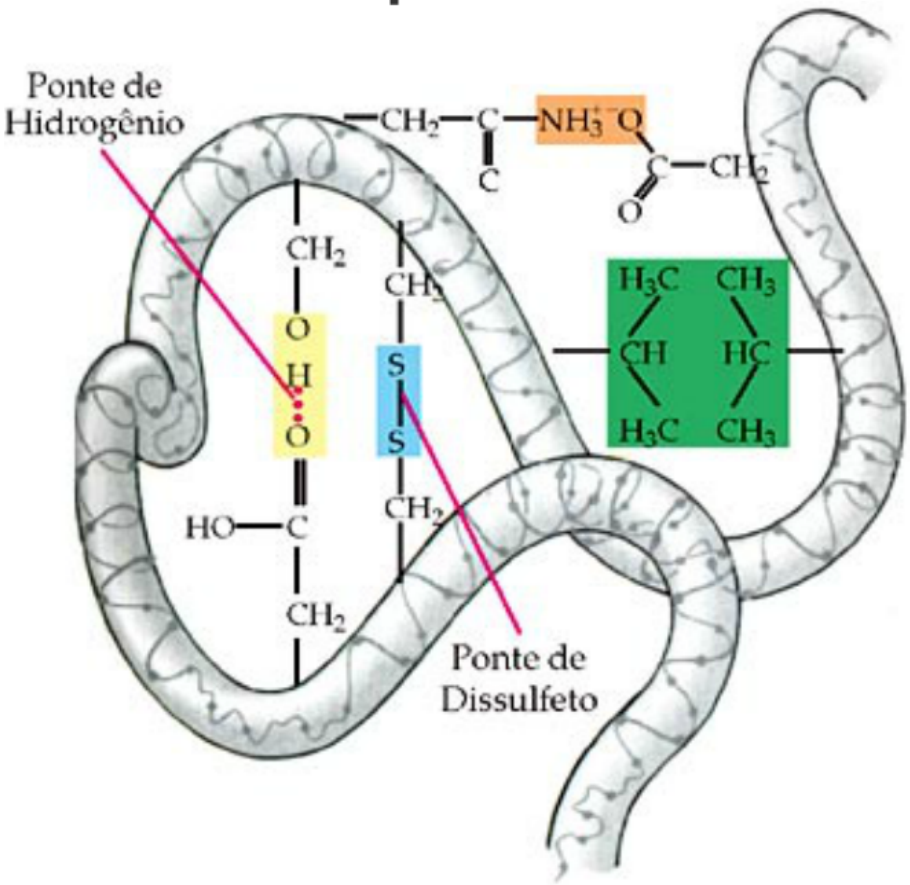




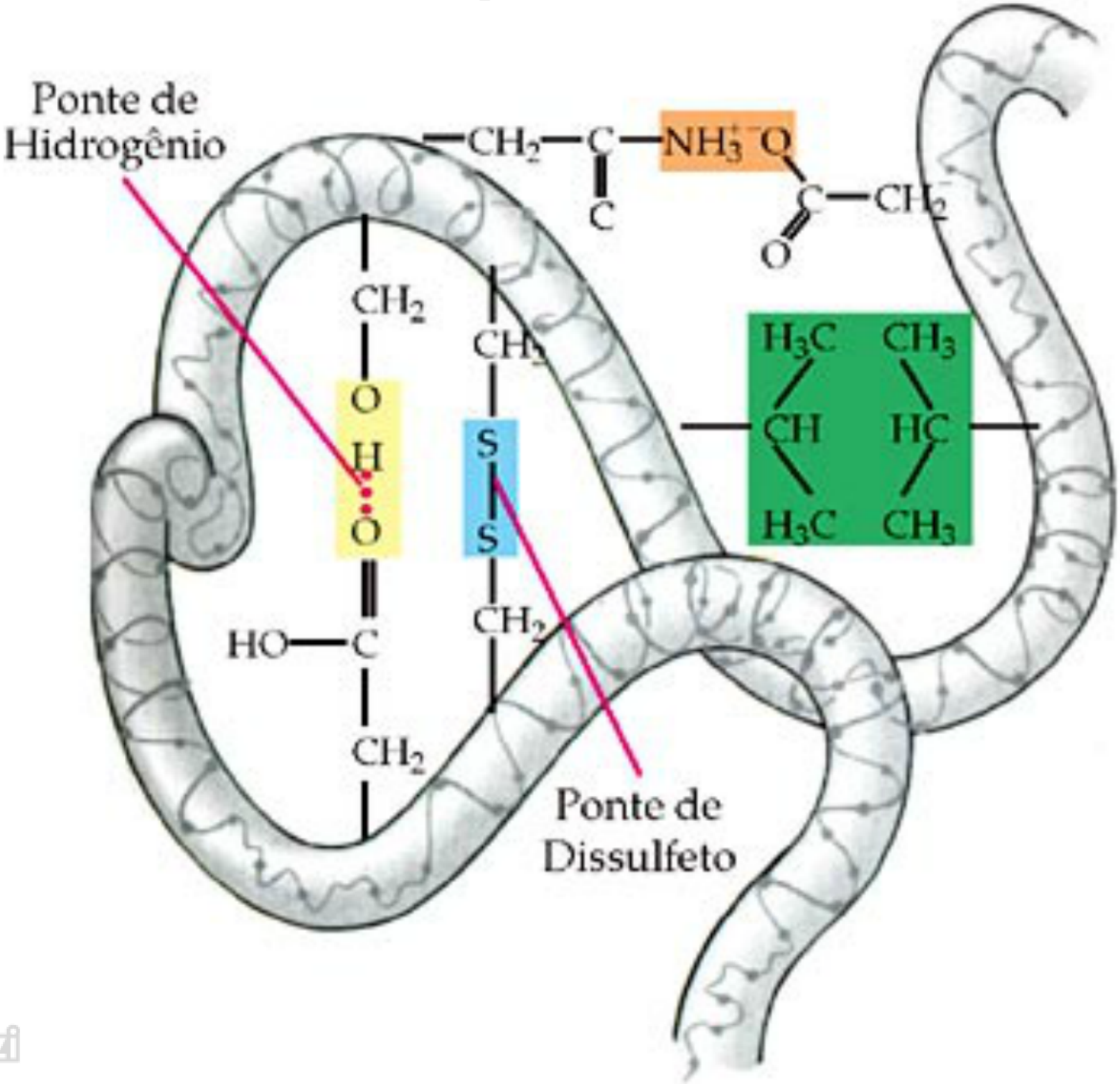
Secundária das proteínas

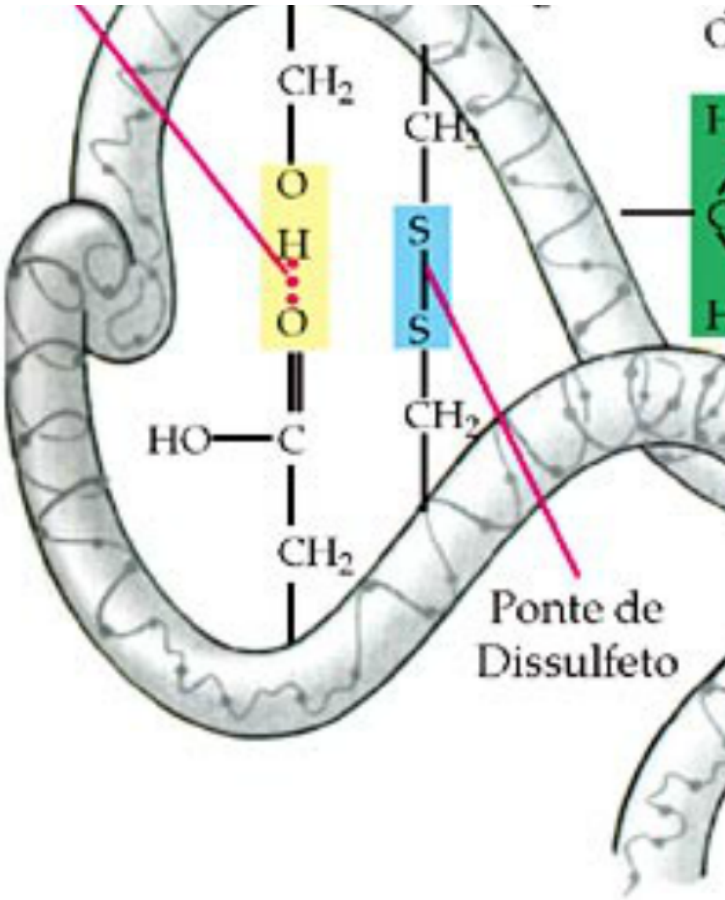


3º Estrutura terciária das proteínas



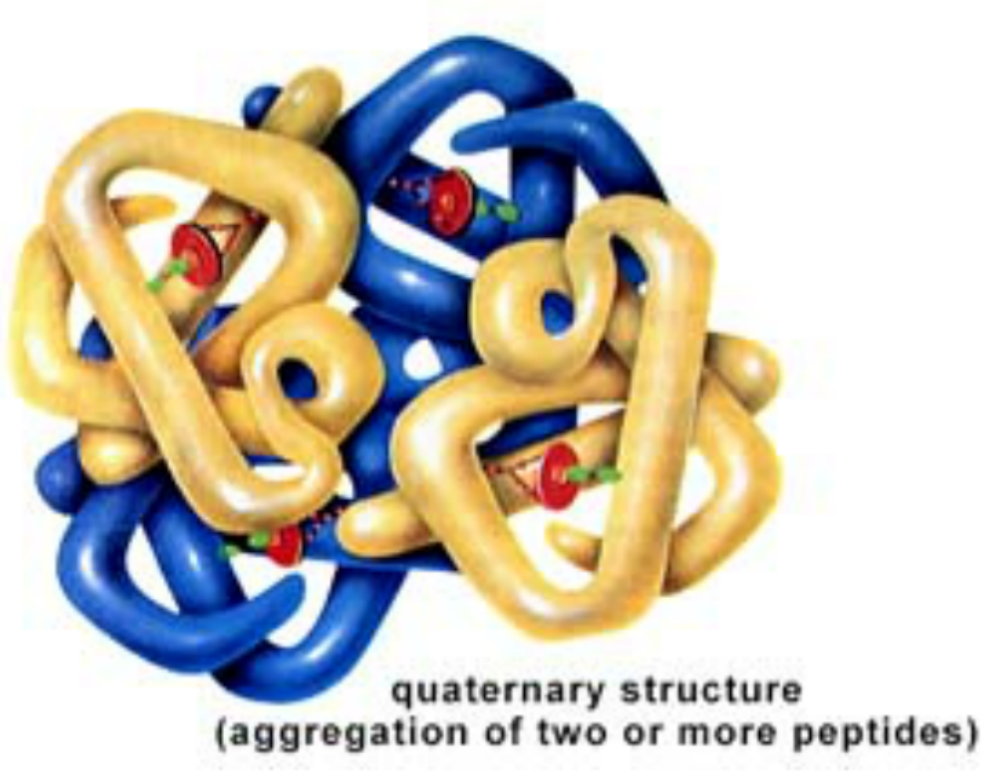
tertiary structure
(folded individual peptide)

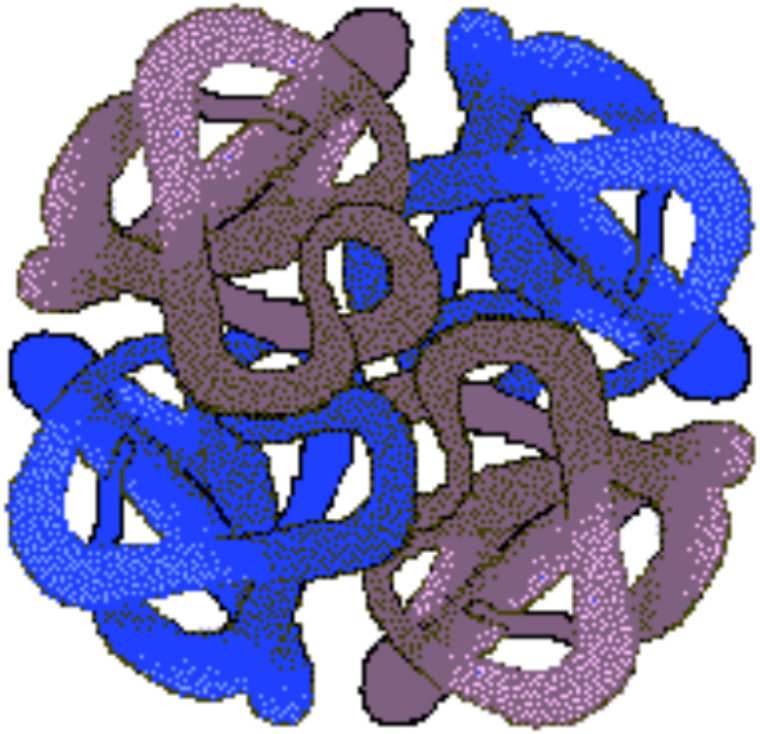

Ponte de Hidrogênio
Ponte de Dissulfeto



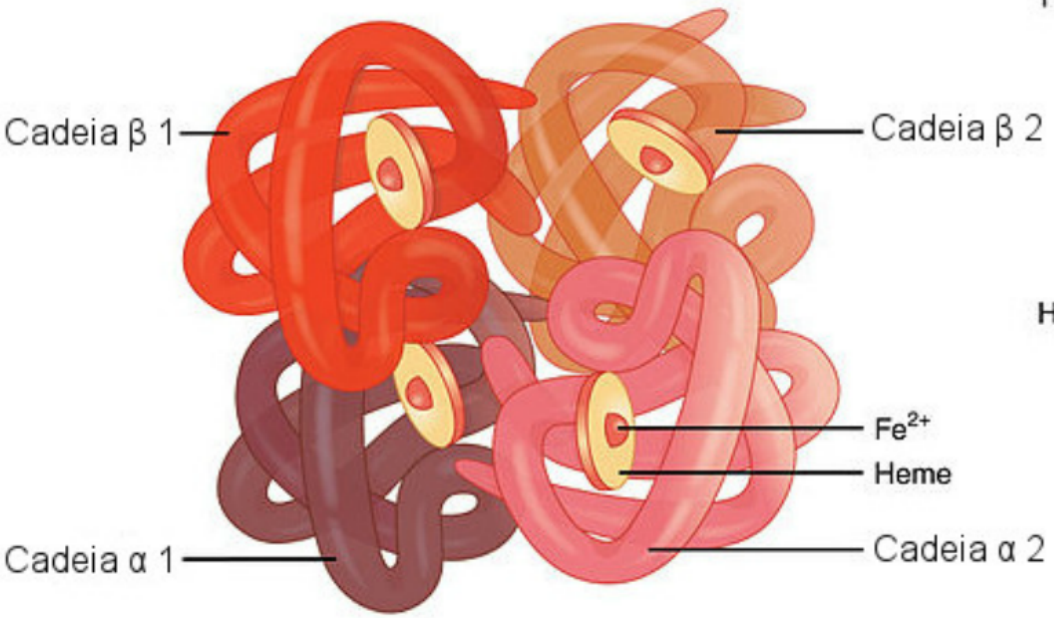
tertiary structure
(folded individual peptide)

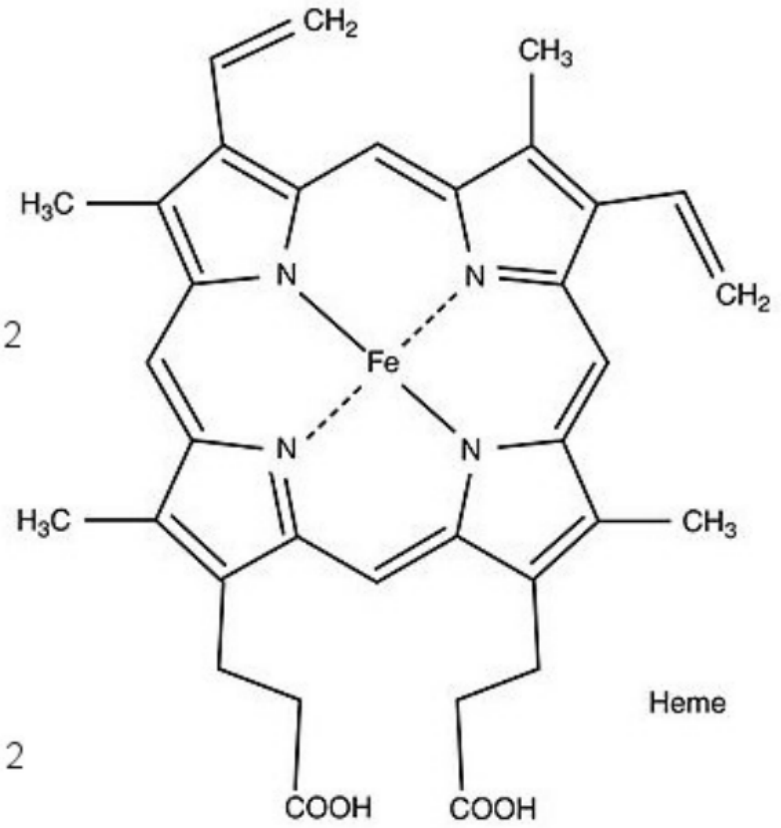
4 Estrutura quaternária das proteínas



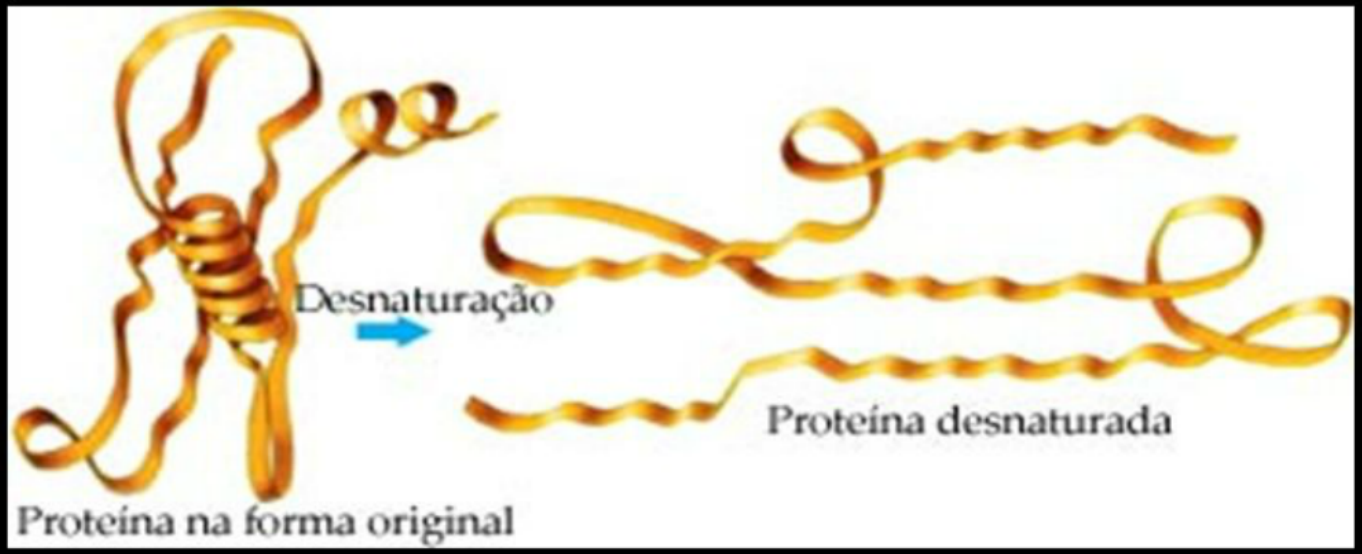


Grupos prostéticos





Desnaturação Protéica



Ex.: