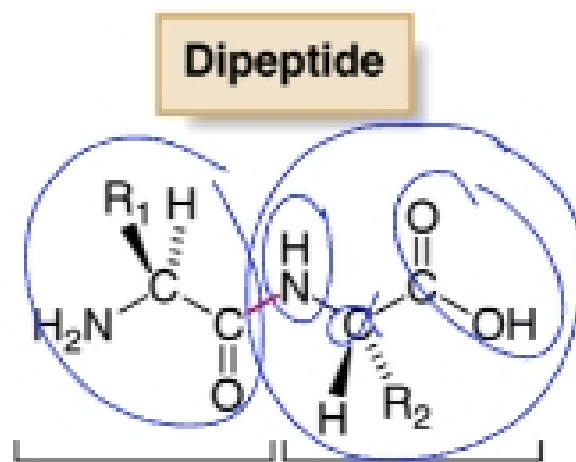


1) Peptides: Intro

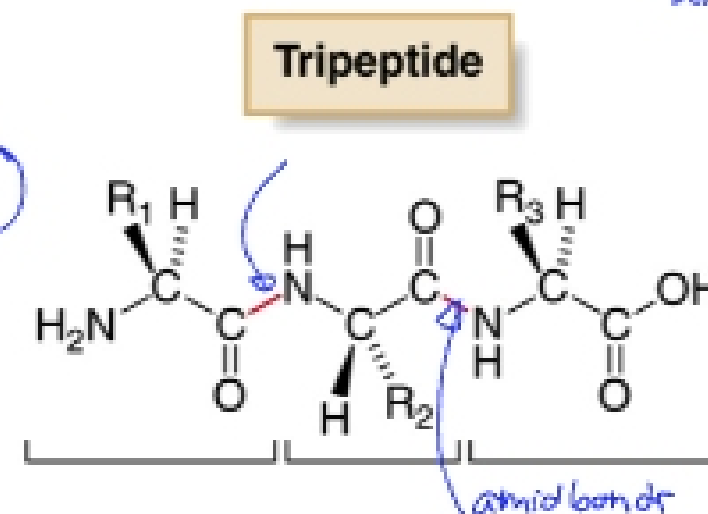
Peptides (and proteins) are amino acid polymers in which the individual amino acid units, called amino acid residues, are linked together by amide (peptide) bonds.

All peptide bonds = amide bonds but not vice versa.



Two amino acids joined together.

[Amide bonds are drawn in red.]



Three amino acids joined together.

- A dipeptide has two amino acids joined together by one amide bond.
- A tripeptide has three amino acids joined together by two amide bonds.

The term "Peptide" is usually reserved for amino acid polymers of less than 50 amino acid residues.

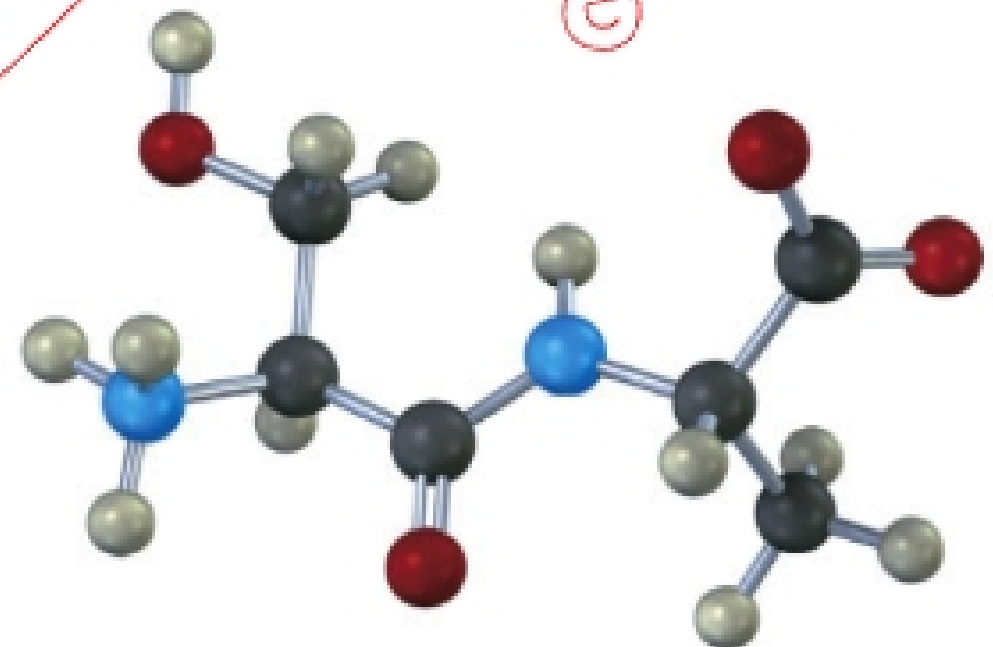
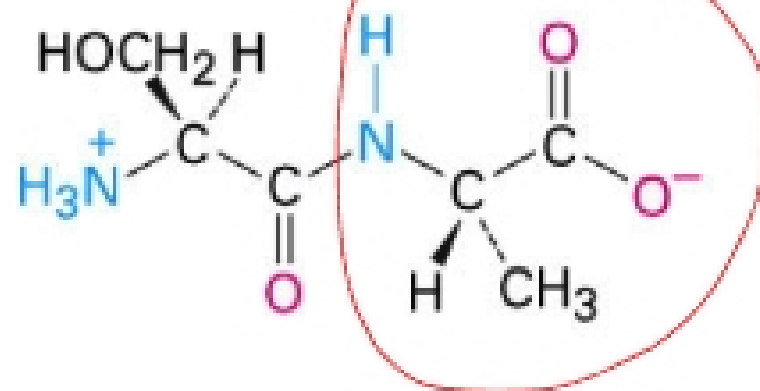
An amino group from one residue forms an amide bond with the carboxyl of a second residue

2) Peptides: N-Terminus / C-Terminus

The long, repetitive sequence of —N—CH—CO— atoms ^(A) that make up a continuous chain is called the protein's backbone

^(B) Peptides are always written with the N-terminal amino acid (the one with the free —NH_2 group) on the left — this is the substituent and gets a "-yl" ending

Peptides are always written with the C-terminal amino acid (the one with the free $\text{—CO}_2\text{H}$ group) on the right — this is the ROOT name

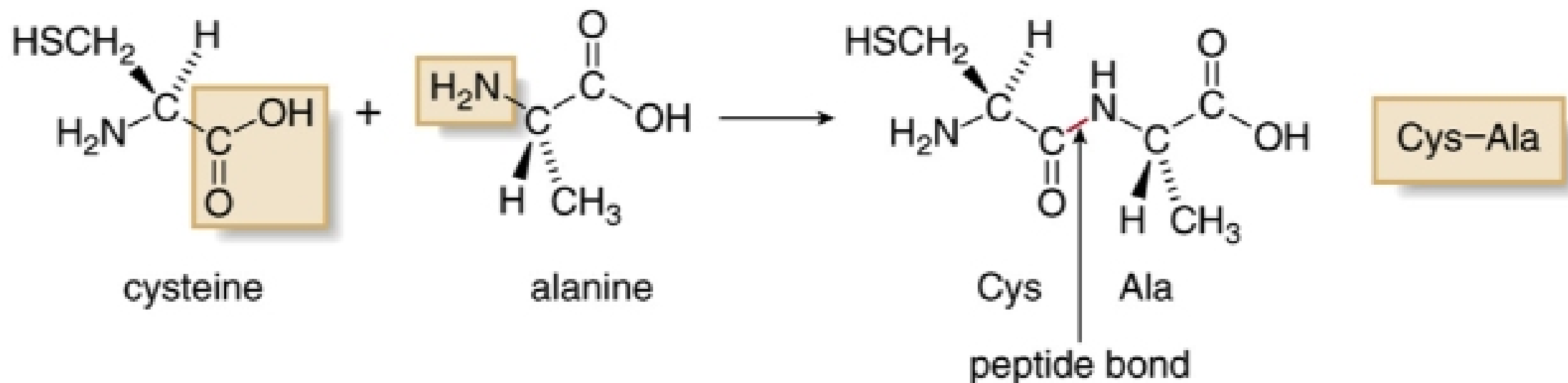
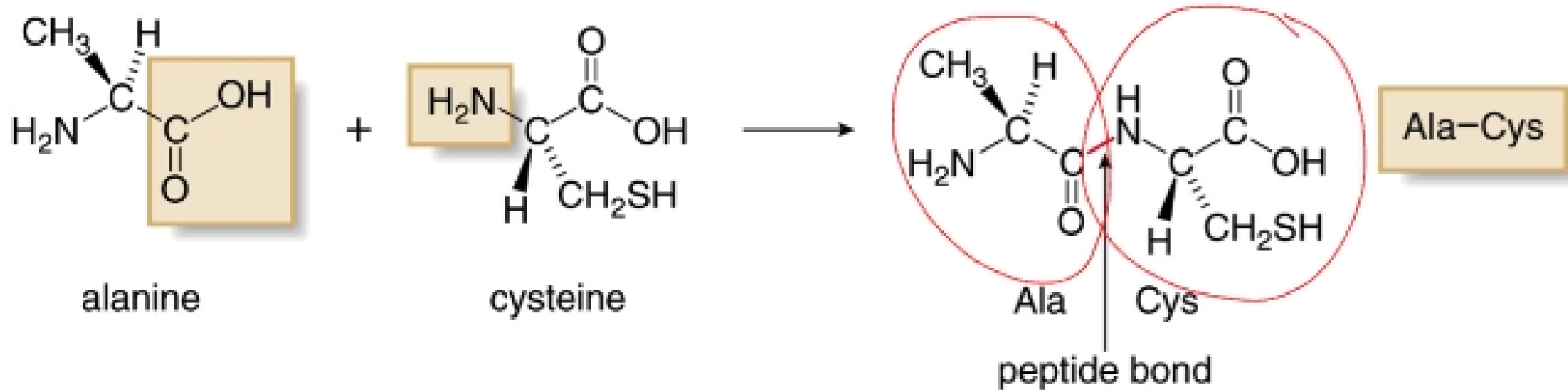


^(D) *in order!*
Serylalanine (Ser-Ala)

Serylalanine is abbreviated Ser-Ala (*or S-A*)

3) Peptides: Dipeptides

Since each amino acid has both an amino group and a carboxy group, two different peptides can be formed.



N-terminal amino acid is always written at the left end of the chain and the C-terminal amino acid at the right.