

# Instruccions

We will skip section 1.2 for the time being. This section will be covered later in the course. Read Section 1.3 and answer the following:

- What amino acids have a Sulphur atom? Do they behave in the same manner?

Cysteine, Disulfide bridges enable different parts of the chain to be covalently bound. Because the intracellular environment is reducing, disulfide bridges are only observed in extracellular proteins. Cysteine can also coordinate metals and its SH group is rather reactive. In some viral proteases it takes the role of serine in serine protease active sites we have already described.

- What happens to charged residues when they are "buried"?

When buried, they are involved in salt bridges, i.e. they form strong hydrogen bonds with positively charged amino acids.

- What residues can interact with metals?

Histidine can, furthermore, bind metals (e.g. zinc).

- Provide two important features of aromatic residues.

The term "aromatic" was used by chemists to describe molecules with peculiar odors long before their chemical properties were understood. In chemistry, a molecule is called aromatic if it has a planar ring with  $4n + 2$   $n$ -electrons where  $n$  is a non negative integer (Hückers Rule).

Also, if an aromatic residue is held rigidly in space in an asymmetric environment, it absorbs left-handed and right handed polarized light differently. Another important property of amino acids with aromatic side-chains is that they can interact favorably with each other.

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