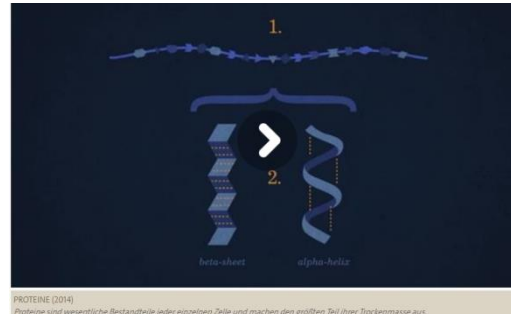


Proteins

Assignment

Watch the video “Life of Proteins (2014): Life comes with proteins as they build an essential ingredient of every cell”.

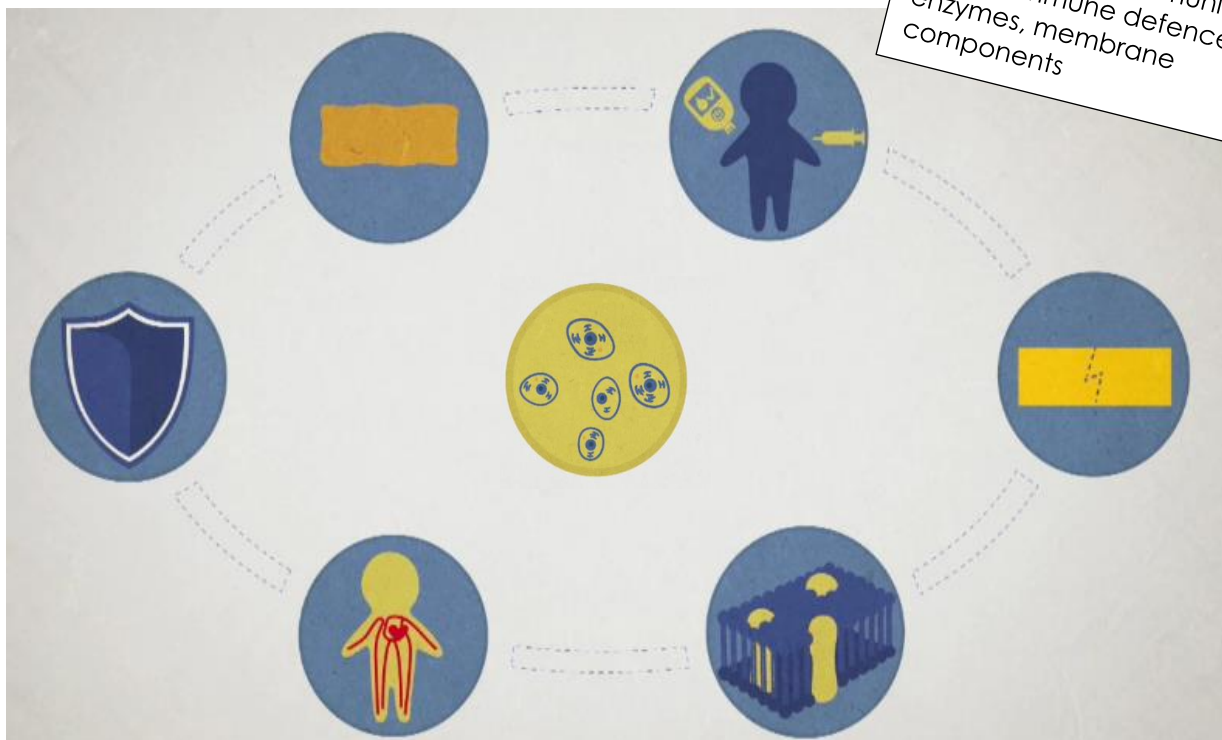
Link: <http://www.mediatheque.lindau-nobel.org/videos/31582/life-comes-with-proteins-as-they-build-an-essential-ingredient-of-every-cell-2013>



Work on the following exercises *afterwards*:

Exercise 1) Protein functions (Individual work)

a) Write the functions shown by the images.

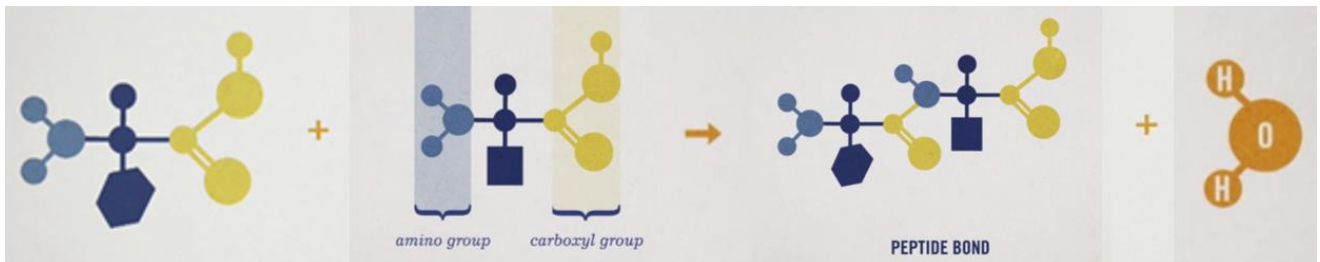


b) Define the term “proteome”.

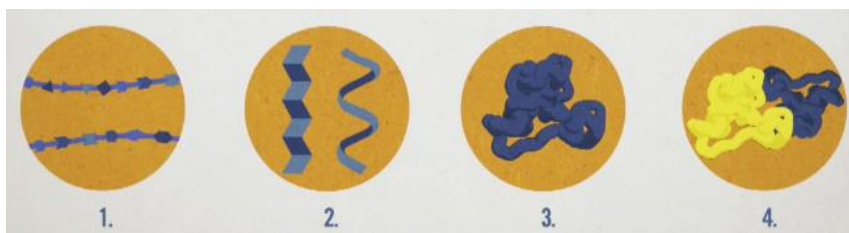
Proteome =

Exercise 2) Protein structure (Individual work)

- a) Proteins consist of **amino acids**, which are linked via the **peptide bond**. All amino acids differ only in their side chains. Consider the following general figures and then formulate the peptide bond for the amino acids alanine (side = CH₃) and glycine (side = H) in the booklet.



- b) The linked amino acids do not yet form a finished protein. It is the **3D structure** that determines the function of the protein. The amino acid chain must therefore be folded. The structures going through this process are illustrated in figures 1-4.



Select which image applies to which statement.

	1	2	3	4
The simple amino acid chain is called the <i>primary structure</i> .				
In this structure, two tertiary structures interact with each other. This is called a <i>quaternary structure</i> .				
The regular folding up of the chain in α -helices or β -sheets is called the <i>secondary structure</i> .				
The secondary structures interact with each other in the <i>tertiary structure</i> .				
This structure is stabilised by hydrogen bonds.				
This structure is stabilised by hydrophobic interactions.				
This structure is stabilised by salt bridges and disulfide bonds.				
This structure develops as a result of the interactions between the remaining groups.				