

Molecular Weight Calculation of Peptides

Since peptides are ionic structures, you will always receive your peptide containing a certain amount of counter ions. This fact has to be considered for the correct calculation of the molecular weight and the preparation of stock solutions for assays.

With this flyer, BIOSYNTAN will give you a simple method at hand, how to calculate the molecular weight of your peptide correctly.

As mentioned, the molecular weight of a peptide consists of two parts: the peptide itself and the counter ions. Since the purification of your peptide is usually carried out under acidic conditions, the number of basic residues in your peptide directly correlates to the number of counter ions.

At first, count all arginine (**Arg**), histidine (**His**) and lysine (**Lys**) residues and add one more residue for a free N-terminus if present.



Multiply this number with the molecular weight of the counter ion: x 114 for **TFA-salts** / x 35.5 for **hydrochlorides**. You will find the type of salt stated in datasheet provided with your peptide.

Add this number to the molecular weight of your peptide, which can be depicted from the datasheet as well.

	MW	=	MW_{peptide}	+	n x TFA	
e.g.	MW	=	2000 Da	+	4 x 114 Da	= 2456 Da

Please note, that arginine in particular can bind more than 1 eq. of TFA. For an exact determination of peptide content, analysis by amino acid sequencing is possible.

With this corrected molecular weight in hand, you can start to calculate the amount of peptide needed for your assay.