



Peptide Solubility Suggestions

STEP 1. Calculate the polarity of received peptide. Please follow the table below to sum up the charge value of each residue.

Positive charge residues (+1)	K, R, H, N-terminal
Negative charge residues (-1)	D, E, C-terminal
Hydrophobic uncharged residues (0)	W, L, I, F, M, V, Y, P, A

- e.g.1 RKDEFILGASRHD: (+5) + (-4) = +1 This is a basic peptide.
- e.g.2 EKDEFILGASEHR: (+4) + (-5) = -1 This is an acidic peptide.

STEP 2. Based on the result from STEP 1, follow the table below to choose the suitable solvent for received peptide.

- Please test the solubility of a **small portion** of received peptide.
- For basic and acidic peptide, try water first. If water fails, try dissolving the peptide by adding a small portion of another solution gradually.

charge>0 (basic peptide)	1. water; 2. 10-20% acetic acid; 3. 10-50 ul TFA
charge<0 (acidic peptide)	1. water; 2. 50ul NH ₄ OH or 10% ammonium bicarbonate
charge=0 (neutral peptide) ≥ 25% *charged residues	water or aqueous buffers
charge=0 (neutral peptide) < 25% *charged residues	DMSO, ACN, DMF
>50% hydrophobic residue	DMSO, ACN, DMF

* The charge residue includes the positive and negative charge residue (e.g., D, K, R, H and E).

- Cys (C) and Met (M) are unstable in DMSO, use DMF as an alternative solvent.
- Briefly sonicate the mixture to aid peptide dissolution, if necessary.