Stereochemistry of Cell Penetrating Peptides

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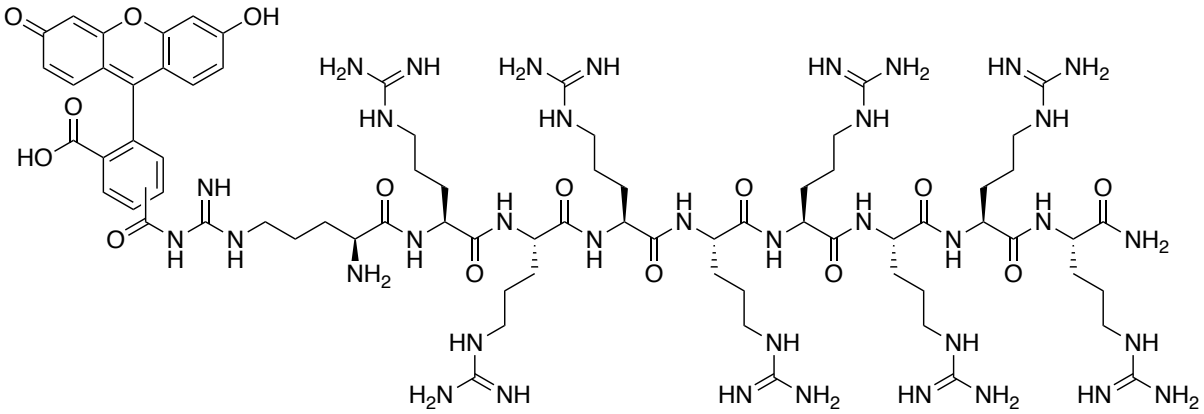
Peptides are linear oligomers of amino acids, almost exclusively of L-amino acids. Nevertheless, mixed-chirality sequences also occur, either in natural products mostly from microbial origin, such as the cyclic peptide Gramicidin S,[1] or in designed peptides such as our recently reported antimicrobial undecapeptide **ln69**.[2] Both of these peptides are membrane disruptors and the mixed chirality appears to play a key role in their activity/toxicity profile. Here we asked the question whether mixed chirality might also affect the properties of cell penetrating peptides (CPPs), focusing on the case of the arginine nonapeptide which is well-known as a drug delivery peptide.[3] We prepared a series of nona-arginine diastereomers by solid-phase peptide synthesis which we labeled at their N-terminus with 5(6)-carboxyfluorescein to trace cellular uptake.[4] The results of this study will be presented in the poster.



References

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