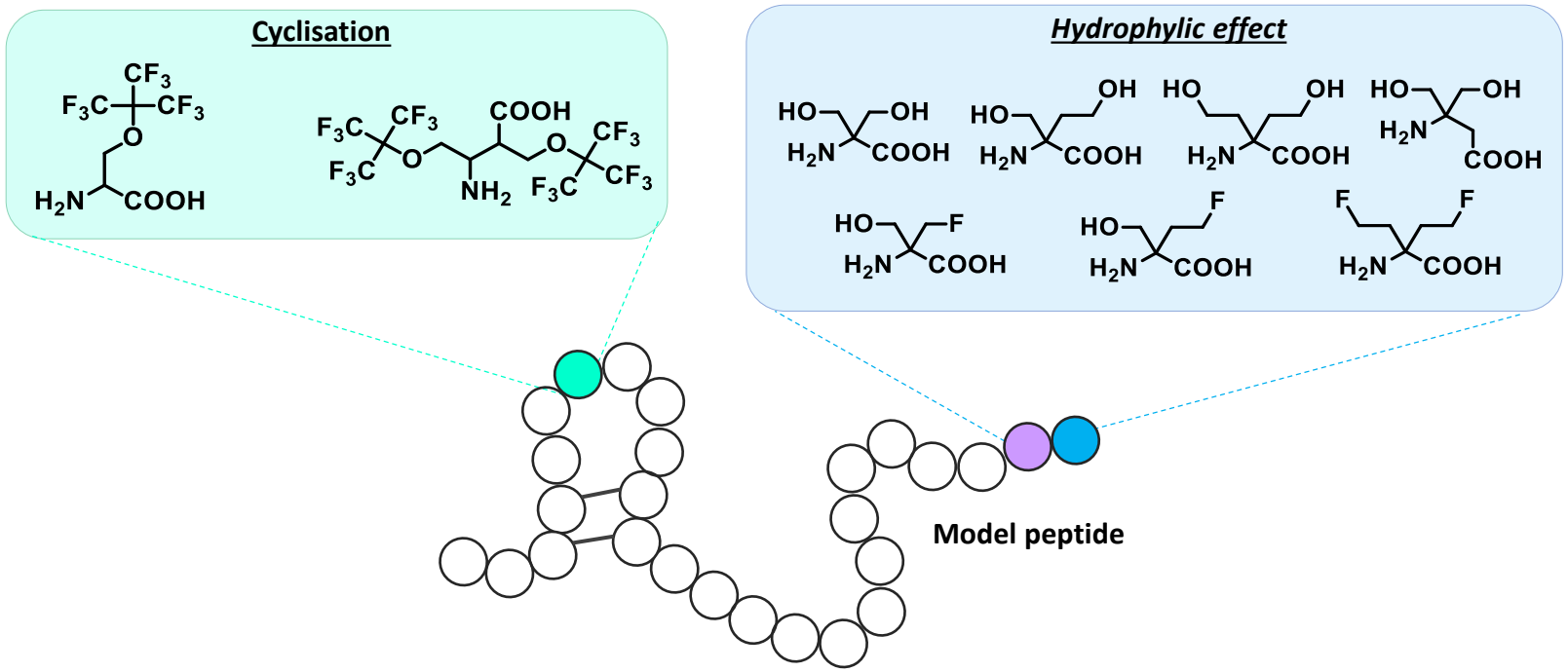
Synthesis of orthogonally protected non-natural amino acids to inhibit peptide aggregation and modify turn structures



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Synthesis / method / protocol: The basis of our research is the α-hydroxymethylserine, which sidechain-extended, fluorine-containing, β-amino acid, or nonafluoro-*tert*-butyl-modified analogs will be synthesized. Their effect is investigated on peptide aggregation and structure.

Scientific Goal: Problematic properties of biologically active peptides (eg. aggregation) can be compensated by the incorporation of non-natural amino acids. Thus, our goal is to provide a library of non-natural amino acid building blocks, that can aid multiple research areas.

Result: Several hydroxymethyserine derivatives (Hms, O-Bn-Hms, Boc-Hms) and *O*-perfluoro-*tert*-butylserine had been synthetized. Modell peptides were prepared to analyse their effect of aggregation and cyclisation.