

Solvent Accessibility to Aspartyl and Succinimidyl Residues at Positions 7 and 23 in the Amyloid β 1–28 Peptide

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The water accessibilities to aspartyl residues at positions 7 and 23 in the amyloid β 1–28 peptide associated with Alzheimer's Disease have been calculated using different techniques. These accessibilities of water were compared to those of the succinimidyl residues (SUC) replacing the aspartyl ones (ASP). It has been possible to ascertain that these modifications (ASP \rightarrow SUC) lead to a significant increase in the water accessibility to the backbone and α -carbon atom of the SUC7 and SUC23 residues. It is suggested that the spontaneous transformation of ASP \rightarrow SUC might lead to an increase of the racemization rates due to the higher accessibility of water at these sites. It is also proposed that the behavior of the adjacent residues in the selectivity of the racemization is to control the water accessibility at the reactive residue.

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