

Hydrophobic Effects on Tyrosyl Ring ^1H Chemical Shifts in Peptides

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Hydrophobic environmental effects on tyrosine are measurable by ^1H NMR spectroscopy and can allow us to detect interactions between peptides and lipid membranes. We first investigated the effects of hydrophobic environments on the ^1H chemical shifts of tyrosine ring protons by using varying concentrations of isopropanol to mimic and calibrate the effects of hydrophobicity. Compared with this calibration, we then measured the interaction of tyrosine-containing peptides with sonicated unilamellar vesicles of phospholipids such as phosphatidylcholine and phosphatidylserine that are commonly found in biological membranes.