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Influence Of Phospholipid Chirality On Nearest-Neighbor Interactions Within Fluid Bilayers

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Supporting Information

Digestion of Large Unilamellar Vesicles By Phospholipase A₂.

Typically, a vesicle dispersion was prepared using 0.6 μmol of each of the homodimers derived from 14^D and 18^L in 1 mL of 10 mM borate buffer (pH 7.4, 140 mM NaCl, 2 mM NaN₃, 1 mM CaCl₂). Subsequent addition of bovine serum albumin (8 mg in 200 μL of buffer), followed by heating at 60°C for 15 min with stirring, and addition of Phospholipase A₂ (*Naja naja*, 0.3 units in 12 μL of buffer) yielded a dispersion whose lability toward the enzyme was monitored as a function of time. Specifically, 25- μL aliquots were withdrawn at different time intervals, spotted as a 4-cm line on silica gel tlc plates (EM Science, 0.25 mm thickness, 5 cm X 14 cm), and eluted with CHCl₃/CH₃OH/H₂O (65/25/4, v/v/v). The bands that corresponded to the homodimers of 14^D and 18^L (visualized by spraying with 2',7'-dichlorofluorescein, and detecting with UV light at 365 nm) were then removed and analyzed for phosphorus content after combustion. Specifically, the silica gel that contained the desired phospholipid was placed over a strong flame, after addition of 0.4 mL of 7.5% Mg(NO₃)₂·6 H₂O, until the evolution of a colored vapor ceased. The colorless residue was then suspended in 0.5 mL of 0.1 M HCl and heated to 100°C for 15 min. After cooling to room temperature, 1.7 mL of a molybdenum reagent (made from 1 part of 10% ascorbic acid in water plus 6 parts of 0.5% (NH₄)₆Mo₇O₂₄·4 H₂O in 2 M H₂SO₄) was then added. The mixture was vortex mixed,

incubated for 30 min at 45°C, and its absorbance immediately measured at 820 nm.

Appropriate calibration curves were made using the starting phospholipids.

Figure 1. Plot of percent of homodimers of (○)14^D and (△) 18^L remaining as a function of time of exposure to Phospholipase A₂.

Figure 1

