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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 A_2.

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 NaN_3, 1 mM $CaCl_2$). 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 A_2 (*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 Specifically, 25-μL aliquots were withdrawn at different time intervals, spotted as a 4-cm line on silica gel tlc plates (EM Science, 0.25 mm thickness, 5 cm X 14 cm), and eluted with $CHCl_3/CH_3OH/H_2O$ (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% $Mg(NO_3)_2 \cdot 6\ H_2O$, 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 molybdenium reagent (made from 1 part of 10% ascorbic acid in water plus 6 parts of 0.5% $(NH_4)_6Mo_7O_{24} \cdot 4\ H_2O$ in 2 M H_2SO_4) 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 perecent of homodimers of (○)14^{D} and (△) 18^{L} remaining as a function of time of exposure to Phospholipase A_2.

Figure 1