

Supplement 5 - Lamellar repeat spacings in MLVs and oriented multilayers

Supplementary information for:

Order parameters and areas in fluid-phase oriented lipid membranes using wide angle x-ray scattering

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Table S5.1 shows lamellar repeats for fully hydrated MLV samples and oriented samples. The samples containing 1:1 DOPC/DPPC with 0%, 15%, 20%, 25% and 30% cholesterol are discussed in the accompanying paper about using x-ray scattering to identify liquid-liquid phase coexistence in ternary mixtures. In Table S5.1, if the oriented sample D value was more than 5 Å from full hydration, this is because this was the best image obtained that avoided flooding conditions. For example, for DOPC + 40% cholesterol, WAXS data were also taken closer to full hydration ($D=65.1$ Å) and were very similar to the data presented in the paper ($D=59.7$ Å). If two D values are listed, two lamellar repeats were observed.

Table S5.1. Lamellar repeat spacings as a function of temperature for fully-hydrated MLVs and oriented samples.

Sample	Temp. (°C)	MLVs D (Å)	Oriented D (Å)
DOPC	25	61.9 (should be ~63)	60.9
DOPC + 10% Chol	25	63.0 ($T=30^{\circ}\text{C}$)	60.0
DOPC + 40% Chol	25	66.6	59.7 (also took data with $D=65.1$ -results in agreement)
DPPC	25	63.4	63.4
	45	65.5	66.8
DPPC + 10% Chol	25	80.5	77.5
	45	67.4	64.5
DPPC + 15% Chol	25	78.4	75.9
	45	67.7	64.3
DPPC + 25% Chol	25	73.5	68.2
	45	68.4	64.4
DPPC + 40% Chol	25	67.3	66.7
	45	66.1	65.2
1:1 DOPC/DPPC	25	63.2	62.8
	45	62.8	60.8
1:1 DOPC/DPPC + 15% Chol	15	72.4, 63.7	71.2, 60.2
	20	71.6, 63.9	71.0, 60.8
	25	70.5, 64.3	69.2, 59.5
	30	68.8, 64.9	69.1, 61.4
	35	65.4	63.4
	40	65.0	62.0
	45	64.8	61.5
1:1 DOPC/DPPC + 20% Chol	15	70.5, 63.9	67.7, 59.9
	20	69.7, 64.0	-----
	25	68.9, 64.2	65.9, 59.3
	30	67.6, 64.7	-----
	35	65.3	61.6
	40	64.9	-----
	45	64.6	61.6
1:1 DOPC/DPPC + 25% Chol	15	69.2, 64.8	68.1, 61.3
	20	68.6, 65.0	67.4, 60.5
	25	67.8, 65.5	66.7, 61.0
	30	66.2	67.0, 63.8
	35	66.0	63.2
	40	65.8	63.5
	45	65.6	62.7
1:1 DOPC/DPPC + 30% Chol	15	68.5, 65.3	66.4, 60.8
	20	68.0, 65.4	-----
	25	66.8	64.5, 60.5
	30	66.4	-----
	35	66.2	64.3
	40	66.1	-----
	45	66.0	63.2