Table 1. Oxygen permeability coefficients for PtdCho–cholesterol membranes

Membrane	Temp. °C	δ_H, Å	δ_P, Å	P_M, cm/s
[Myr_2]PtdCho				
0 mol % cholesterol	8	28.2	6.9	5.3 ± 0.4
	18	30.3	7.1	12.2 ± 0.4
	29	25.2	5.4	125 ± 5.3
	45	24.7	5.3	232 ± 12.5
50 mol % cholesterol	8	35.3	6.9	5.7 ± 0.9
	18	35.3	7.1	10.4 ± 1.6
	29	35.3	5.4	22.7 ± 4.1
	45	35.3	5.3	53.0 ± 6.1
[Ole_2]PtdCho				
0 mol % cholesterol	10	24.5	3.8	33.0 ± 1.9
	30	24.5	3.8	114 ± 4.9
50 mol % cholesterol	10	30.6	3.8	13.7 ± 1.6
	30	30.6	3.8	54.6 ± 5.6

The thicknesses of the hydrocarbon layer and of the polar headgroup region (including the glycerol ester groups) are designated δ_H and δ_P. They were calculated for [Myr_2]PtdCho, following Cornell and Separovic (27), from published membrane thickness data (22), the surface area of the PtdCho moiety (28), and the average volume of CH_2 groups [assuming vol(CH_3) = 2 vol(CH_2)] as given in ref. 17. Because cholesterol does not affect δ_P (29), its effect on δ_H could be estimated from data on the thickness of cholesterol-containing membranes (22, 30, 31). A similar procedure was used for [Ole_2]PtdCho with the following additional assumptions: (*i*) vol(CH_2) = vol(CH). (*ii*) The average volume of CH_2 obtained for [Myr_2]PtdCho at 60°C can be used at both 10°C and 30°C. This is justified by the observation that well above the main phase transition the average volumes asymptotically approach a constant temperature and chain-length-independent value (17, 22, 28). (*iii*) The thickness and surface area of [Ole_2]PtdCho at 0 and 50 mol % cholesterol can be estimated from membrane thickness of egg yolk PtdCho (30, 32).