**Table 1.** Mean temperatures at the peak maxima and enthalpies associated with the mesomorphic transitions of the homologous series of phosphatidylcholines obtained by DSC ($n = 3$).

| Processes | 1 Pre-*Tm* | | 2 Chain-melting | | Phase transitions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | |
| Compound | Peak Temp (°C) | ΔH / J g-1 | Peak Temp (°C) | ΔH / J g-1 | Peak Temp (°C) | ΔH / J g-1 | Peak Temp (°C) | ΔH / J g-1 | Peak Temp (°C) | ΔH / J g-1 | Peak Temp (°C) | ΔH / J g-1 | Peak Temp (°C) | ΔH / J g-1 | Peak Temp (°C) | ΔH / J g-1 |
| DLPC | 34 ± 1 | 12.4 ± 0.5 | 91 ± 1 | 17.0 ± 0.9 | - | - | 137 ± 1 | 2.5 ± 0.2 | 163 ± 1 | 2.1 ± 0.2 | 176 ± 1 | 1.9 ± 0.1 | 183 ± 1 | 7.4 ± 0.3 | 216 ± 1 | 1.4 ± 0.2 |
| DMPC | 57 ± 1 | 19.2 ± 0.8 | 101 ± 1 | 20.1 ± 0.8 | 122 ± 1 | 1.2 ± 0.2 | 134 ± 1 | 1.9 ± 0.1 | 156 ± 1 | 1.7 ± 0.3 | 168 ± 1 | 1.7 ± 0.4 | 185 ± 1 | 7.2 ± 0.3 | 209 ± 1 | 1.3 ± 0.2 |
| DPPC | 70 ± 1 | 20.4 ± 0.6 | 106 ± 1 | 31.0 ± 0.4 | - | - | 131 ± 1 | 1.8 ± 0.1 | 150 ± 1 | 1.6 ± 0.2 | 162 ± 1 | 1.5 ± 0.1 | 186 ± 1 | 8.2 ± 0.4 | - | - |
| DSPC | 78 ± 1 | 10.8 ± 0.7 | 109 ± 1 | 35.9 ± 0.9 | - | - | 127 ± 1 | 1.2 ± 0.1 | 145 ± 1 | 1.4 ± 0.1 | 157 ± 1 | 1.4 ± 0.1 | 183 ± 1 | 7.8 ± 0.5 | - | - |

**Table 2.** The temperatures at the peak maxima of the pre-*Tm* transition and chain-melting transition processes detected for DLPC, DMPC DPPC and DSPC.

| Compound | Pre-*Tm* / °C | *Tm* / °C | Temperature difference between the two transitions / °C |
|---|---|---|---|
| **DLPC** | 34 | 91 | 57 |
| **DMPC** | 57 | 101 | 44 |
| **DPPC** | 70 | 106 | 36 |
| **DSPC** | 78 | 109 | 31 |

**Table 3**. DSC data of calculated mean apparent activation energies of the chain-melting transition at each value of α for DLP, DMPC, DPPC and DSPC ($n = 3$).

| α | $E_a$ / kJ mol$^{-1}$ | | | |
|---|---|---|---|---|
| (%) | DLPC (12:0) | DMPC (14:0) | DPPC (16:0) | DSPC (16:0) |
| **10** | $606 \pm 50$ | $610 \pm 24$ | $869 \pm 90$ | $826 \pm 45$ |
| **20** | $530 \pm 43$ | $511 \pm 45$ | $682 \pm 31$ | $705 \pm 38$ |
| **30** | $466 \pm 51$ | $486 \pm 19$ | $612 \pm 28$ | $669 \pm 55$ |
| **40** | $434 \pm 23$ | $455 \pm 18$ | $534 \pm 42$ | $591 \pm 31$ |
| **50** | $418 \pm 34$ | $405 \pm 36$ | $448 \pm 20$ | $563 \pm 62$ |
| **60** | $331 \pm 18$ | $350 \pm 20$ | $365 \pm 29$ | $538 \pm 44$ |
| **70** | $260 \pm 21$ | $309 \pm 27$ | $317 \pm 17$ | $481 \pm 26$ |
| **80** | $218 \pm 24$ | $211 \pm 18$ | $192 \pm 10$ | $534 \pm 43$ |
| **90** | $204 \pm 22$ | $144 \pm 8$ | $334 \pm 27$ | $453 \pm 25$ |