

## THE EQUILIBRIUM OF PHOSPHATIDYLCHOLINE-CHOLESTEROL IN MONOLAYERS AT THE AIR/WATER INTERFACE

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Investigations of the behaviour of monolayers of either cholesterol (Ch) or phosphatidylcholine (L) or their mixtures at the air/water interface were performed. The surface tension values of pure and mixed monolayers were used to calculate the  $p - A$  isotherms. The theory of equilibrium between the components of monolayers at the air/water interface was developed in order to obtain the stability constant of the Ch-L complex. We considered the equilibrium between L, Ch and the Ch-L complex on the basis of the derived equations. We established that lecithin and cholesterol formed a 1:1 complex, with a stability constant of  $K = 2.56 \cdot 10^6$ .

The interfacial tension of the phosphatidylcholine-cholesterol system was measured across the whole concentration range. The surface pressure-area isotherm measurements were carried out in a Langmuir trough at the air/water interface at room temperature (22°C). The interfacial tension of the air/water interface was divided into individual contributions. Assuming the existence of a 1:1 complex between phosphatidylcholine and cholesterol, the interfacial tension of such a complex was calculated to be 18.05 mN/m. The difference between the stability constant of the 1:1 complex in the bilayer and the monolayer at the air/water interface is presented.