

Abstract

The heterogeneity of biological membranes has led to development of a wide spectrum of simplified model systems whose composition, size and shape can be adapted to the requirements. There are two different approaches of making artificial phospholipid bilayers. One of them is based on creating bilayers in aqueous phase. This includes Black lipid membranes, Supported phospholipid bilayers, bilayers from water/air interface and liposomes. In the second approach bilayers are created in a bulk of organic phase by Droplet interface bilayer method. Each type of artificial bilayer has its experimental advantages that have been used to study many problems ranging from behaviour of single phospholipids and proteins to membrane fusion. Artificial lipid membranes are perfect tool for electrical characterisation of bilayers and embedded membrane proteins. This work is a complete review of most useful techniques of model membrane preparation.

Key words: membrane, lipid, phospholipid bilayer, liposome, black lipid membrane, supported lipid bilayer, droplet interface bilayer