

〈原 著〉

眼刺激性試験代替法の検討： 角膜脂質リポソームの応用(2)

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An Alternative Method to the Draize Eye Irritation Test: Use of Liposome Prepared from Corneal Lipids (2)

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Abstract

Liposomes prepared with the several phospholipids were studied as an in vitro method to predict ocular irritancy of surface active agents (surfactants) used in cosmetics and drugs, by measuring the release of 4-methylumbelliferyl phosphate (Um-P) incorporated into liposomes beforehand.

The liposomes constituted with unsaturated phospholipids were more sensitive to the surfactants than those liposomes with the saturated ones, and good inverse correlations were observed between the values for Um-P₅₀ (the concentration of test materials at which 50% of Um-P is released) and the irritation scores of surfactants obtained by the Draize eye test.

The surfactants which degraded liposomes extensively had high solubility to liposomal lipids as well as high ability to change the membrane fluidity.

It is suggested that the hydrophobic interaction between surfactants and liposomal membranes is one of the important factors which occurs during the degradation of liposomes, which may explain the phenomenon of ocular irritation of chemicals.