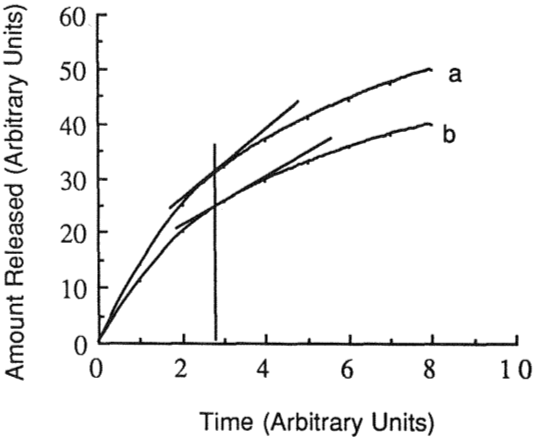

Fig. 12 Slope determination of flux of ointment release and release from ointment + membrane.

where subscripts refer to the respective phase J_{membrane} can be obtained from curves such as shown in Fig. 12 in the fashion that first the overall flux is obtained (with the membrane in place), giving the value of J, then the release is obtained without with membrane in place, giving J_{ointment}, that is

$$J = \frac{1}{A}\frac{dm_1}{dt} \tag{9.32}$$

and

$$J_{\text{ointment}} = \frac{1}{A}\frac{dm_2}{dt} \tag{9.33}$$

J_{membrane} is then obtained as the reciprocal of the difference.

In vivo testing is usually carried out by applying the dosage form to hairless rats followed by subsequent sacrifice. Since the skin consists of a number of layers with differing hydrophilicity, the overall fate of the drug is of importance.

11.3. Emulsions

In the case of emulsions, the preformulation studies become very formulation oriented. Williams and Mahaguna (1998) have described preformulation studies of Freund's incomplete adjuvant (FIA), which is a water-in-oil emulsion. This included measuring the critical micelle concentration of the formulations to be investigated. Using ovalbumin (a model antigenic protein) in the interface, the surface activity of mannide monooleate, in the interface between water and oil phases, was determined.