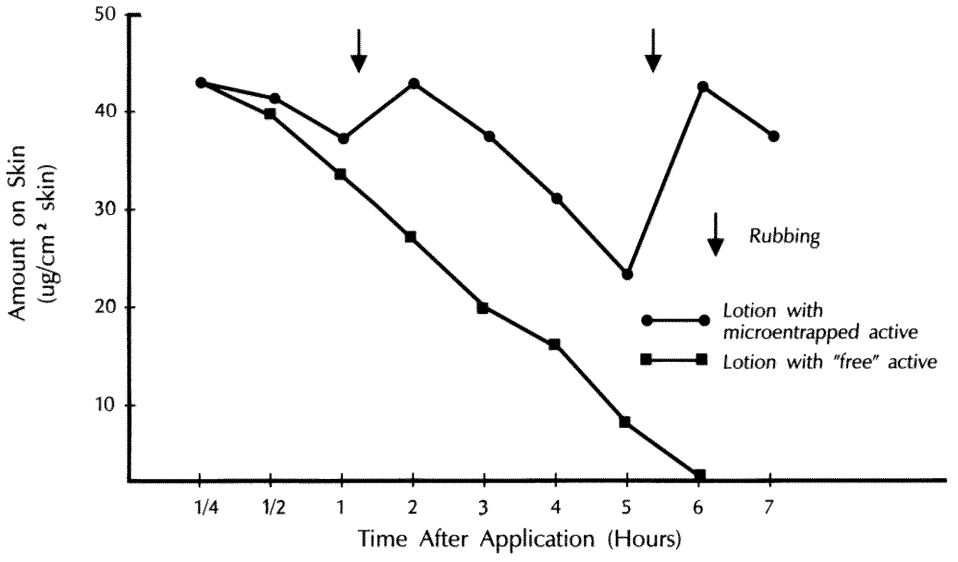

Figure 15.17 Amount of [^{14}C]octyldimethyl PABA recovered from the superficial skin layers of disks of excised human skin after application of lotions containing sunscreen either freely dispersed (squares) or entrapped in a Microsponge system (circles). At each time point, the surface of individual skin disks was quickly rinsed with a stream of 95% ethanol and the stratum corneum was then stripped three times and counted.

conducted as described elsewhere (9). Disks of excised human skin were utilized and one disk was used for each data point. The amount of sunscreen remaining on the skin surface was determined by quickly rinsing the surface of each disk with a stream of ethanol to remove nonabsorbed material. For mass balance, the rinses were collected and counted for radioactivity. The stratum corneum was then stripped three times with cellophane tape and the strips were counted for radioactivity. The results presented in Fig. 17 show that the amount of sunscreen present on the epidermal layers of these skin disks treated with the "free" sunscreen product gradually decreased as a consequence of percutaneous absorption. Conversely, those disks treated with the sunscreen in the Microsponge system consistently had a higher surface concentration of active ingredient and, when the skin surfaces were rubbed just before assay, that amount went back almost to baseline.