TABLE 12.3
Percutaneous Absorption of PAH by Body Region in Reference to Forearm

Chemical	PAH
Reference	(17)
Molecular Weight	Not applicable(a)
Partition Coefficient	Not applicable
Ventral forearm	1
Shoulder	2
Forehead	1
Groin	0.8
Hand (palmar)	0.5
Ankle	0.5

(a) PAH refers to a compound composed of 11 unique PAHs with varying molecular weights and partition coefficients.

Note: VanRooij and colleagues (17) determined skin absorption rate constants of several anatomical locations. The absorption rate constant of the forearm is used as a reference.

12.3.4 Plasma Pharmacokinetics: Gels and Solutions

12.3.4.1 Ketoprofen

Shah and colleagues (20) investigated peak plasma concentration of ketoprofen 3% gel when applied to the back, arm, and knee and found no significant differences in absorption when ketoprofen was placed on the back or arm, but there was significantly less absorption at the knee application site, resulting in a decreased peak plasma concentration and Area Under Curve $_{\text{steady state}}$ (AUC_{ss})

TABLE 12.4
ATR-FTIR Spectroscopy Data with Reference to Forearm

Chemical/Medication	Cimetidine	4-cyanophenol	Cimetidine
Reference	(18)	(18)	(19)
Molecular Weight (8)	252.3 g/mol	119.1 g/mol	252.3 g/mol
Partition Coefficient (8)	0.4	1.6	0.4
Forearm	1	1	1
Forearm – sebum supplementation			3.3
Forehead			3.8
Forehead – sebum removed			3
Back	2.2	1.4	
Thigh	0.5	0.7	
Leg	0.4	0.6	
Abdomen	0.5	0.5	

Note: Percutaneous absorption of cimetidine and 4-cyanophenol were measured in several anatomic locations and compared to absorption at the forearm. Additional data comparing sebum removal at the forehead and sebum supplementation at the forearm are shown.