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Abstract

The development and use of new chemicals, especially those in the pharmaceutical, industrial chemical and cosmetic fields is highly regulated by various authorities who need to assess potential hazards arising from either intended or accidental human exposure. For certain compounds, absorption through the skin may represent a major route of entry into the body. The rate and extent of skin penetration is therefore a key aspect of the overall risk assessment process. Dermal absorption is defined by a number of variables including skin morphology, biochemistry and physiology and, in particular, the physicochemical properties of the permeant. This presentation will cover some of the basic properties of the human stratum corneum that define the epidermal barrier and consequently limit the passage of chemicals into the systemic circulation. In addition, it will describe how *in vitro* models using resected skin are used to predict the dermal absorption of potentially toxic chemicals *in vivo*.



Biography

Professor Jon Heylings is Chairman of Dermal Technology Laboratory Ltd., a new Company based at Keele University Science Park. He is also Honorary Professor of Toxicology in the University's Faculty of Health. Jon was a Postdoctoral Research Fellow in Gastroenterology at the University of Texas Health Science Centre in Dallas in the 1980s. Since then, he has spent most his career at Alderley Park in Cheshire at the Pharmaceuticals Division of ICI and latterly at the Central Toxicology Laboratory of AstraZeneca and Syngenta, where he has had various scientific and managerial roles, mainly in the area of Biochemical Toxicology and In Vitro Toxicology. Jon helped establish the *in vitro* test guidelines for percutaneous absorption, representing the UK and various industry groups on the OECD Steering Committee and WHO Expert Groups.