

Remarkable delivery platform breathes new life into a wide variety of proven active ingredients, enhancing effectiveness, persistence, and skin-friendliness

The Amidermal Platform

At the heart of the remarkable performance of Provodine® is Microdermis' patented Amidermal® technology. The unique properties of the Amidermal technology provide a compelling platform for the delivery of a wide variety of active ingredients to, into and through the layers of the skin. The precise control of the depth of penetration, remarkable persistence, and very skin-friendly properties are the hallmark of products based on this market-changing Amidermal platform.

Built upon the research of a Nobel-prize winning scientist, the power of the Amidermal® Platform lies in its ability to penetrate and protect—to precisely deliver therapeutic agents, while shielding the skin beneath a protective barrier in breathable comfort and persistence. These seemingly contradictory qualities are a function of the Amidermal Delivery Platform's continuum of layers.

Mechanism of Action

The top layer, or the protective barrier, is a breathable film that forms on top of the epidermis creating a persistent layer on the immediate outermost surface of the skin. It is polymeric in nature and contains some wax-ester residues to help prevent the product from rubbing off the surface of the skin. This layer also provides the competitive advantage of an extended kill time of 6 hours and resistance to removal by alcohol rubs and/or soap and water.

Immediately below the protective barrier is the cargo layer where one or more additional layers contain emollients and the active ingredient(s). This layer of the delivery system is comprised of Ether Esters functioning as penetration modulators or fine tuners. In this layer mono- and Di-glycerides are reacted with certain fatty acids to control penetration and help to marry active ingredient to the depth of penetration set by the tertiary amide.

The last layer, also known as the dermal barrier, controls delivery of one or more compounds and/or components to various depths in the epidermis and/or dermis. This layer provides the ability to enhance or retard absorption of these components or products (metered dosing) created by an ionic bond between skin cells and the tertiary amide/acid hydrate. The layer of penetration can be dialed up or down depending on the chemistry and the particular needs of a given clinical situation.

The tertiary amides are the gross adjusters, controlling the depth level depending on shape, flexibility and molecular weight. The depth of penetration can be at the dermis, the epidermis or the dermal/epidermal juncture. Once the depth is established, a sandwich effect occurs because nothing gets past the Amidermal layer. The rest of the formula backs up against that layer that is set in the skin with the tertiary amides. Thus, the emollients and the active ingredients sit on top of the amide layer.

This multi-layer system allows for a variable amount of fine-tuning in the formula, including the depth and amount of delivery. Formulations vary by product category and according to desired degree of bonding, barrier, seal or absorption. The proprietary system also provides the ability to modulate the moisture that comes from the deep layers of the skin up to the surface, creating an inherently moisturizing system that does not require additional moisturizers be applied.

Applications and Licensing Opportunities

The unique properties of Microdermis' revolutionary patented Amidermal® drug delivery system can provide significantly enhanced product performance using well-known, proven active ingredients, as demonstrated in the remarkable performance of Provodine® as compared to other Povidone-iodine based antiseptic products, as well as with new emerging active principal ingredients. The combination of drug and delivery system can enable ground-breaking new product opportunities at compelling development and manufacturing costs, with properties inherently included with the Amidermal® system. Microdermis has begun internal developments on a number of new applications of the Amidermal technology. To date, several pharmaceutical and personal care companies have entered into licensing arrangements with Microdermis, in areas ranging from fine fragrances to incontinence care and several positions in between.

