

News Release

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Study Finds EMD Millipore's Strat-M® Synthetic Membrane Comparable to Human and Animal Skin for Permeation Studies

- Results showed similar permeability coefficients for human skin, rat skin and Strat-M® membrane
- Demonstrated Strat-M® membrane is an effective alternative to use of animal or human skin for permeation studies
- Ideal for transdermal diffusion testing for a wide range of pharmaceutical and cosmetic compounds

Billerica, Massachusetts, May 6, 2015 – [EMD Millipore](#), the Life Science business of Merck KGaA of Darmstadt, Germany, announced publication of a study showing that its Strat-M® synthetic membrane predicts skin permeation of chemical compounds during *in vitro* transdermal diffusion studies as effectively as human or animal skin. The [study](#) was conducted by researchers at Josai University in Japan and published in the January 25, 2015 issue of *European Journal of Pharmaceutical Sciences*.

Strat-M® membrane is a synthetic, non-animal-based model that is predictive of diffusion in human skin for a wide range of compounds and formulations, including active pharmaceutical ingredients, cosmetic actives, personal care products, pesticides and other chemicals. The membrane provides highly consistent, reproducible diffusion data without the lot-to-lot variability that often occurs with biological models.

The new study evaluated the ability of Strat-M® membrane to serve as an alternative to human and animal skin for estimating the skin permeability of different chemical

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compounds. Thirteen compounds were tested on excised human skin, hairless rat skin and Strat-M[®] membrane. Permeability coefficients obtained with Strat-M[®] membrane could be used to predict those obtained from the human and rat skins.

“*In vitro* skin permeation studies are essential to development of new transdermal delivery systems,” said Kenji Sugibayashi, Ph.D., author of the study, Professor of Pharmaceutical Sciences at Josai University, and renowned expert on skin permeation. “Biological models are often used to conduct this research, but there are various drawbacks, including high variability, low availability, safety considerations and storage limitations.” Study coauthor Dr. Hiroaki Todo added, “Our study suggests that Strat-M[®] membrane can serve as an alternative to human and animal skin in permeation studies, offering researchers a valuable tool for screening candidate compounds.”

“Drs. Sugibayashi’s and Todo’s peer-reviewed research confirms that Strat-M[®] membrane can be used for transdermal diffusion testing,” said Patrick Schneider, Ph.D., Head of Bioscience at EMD Millipore. “Published results supporting the membrane’s application will increase awareness and accelerate adoption by the research community, facilitating *in vitro* testing of transdermal formulations.”

Introduced in 2012, Strat-M[®] membrane is constructed of multiple layers, creating morphology similar to human skin. Strat-M[®] membrane is individually packaged as precut discs that are easy to store and do not need to be hydrated prior to use.

For more information, please visit www.emdmillipore.com/stratm.

About EMD Millipore

EMD Millipore is the U.S. Life Science subsidiary of Merck KGaA, Darmstadt, Germany. As part of the global Life Science business of Merck KGaA, Darmstadt, Germany, EMD Millipore offers a broad range of innovative, performance products, services and business relationships that enable our customers' success in research, development and production of biotech and pharmaceutical drug therapies. Through dedicated collaboration on new scientific and engineering insights, and as one of the top three R&D investors in the life science tools industry, the Life Science business of Merck KGaA, Darmstadt, Germany, serves as a strategic partner to customers and helps advance the promise of life science. Headquartered in Billerica, Massachusetts, the global business has around 10,000 employees, operations in 66 countries and 2014 revenues of €2.7 billion.

For more information, please visit www.emdmillipore.com.

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About Merck KGaA, Darmstadt, Germany

Merck KGaA, Darmstadt, Germany, is a leading company for innovative and top-quality high-tech products in healthcare, life science and performance materials. The company has six businesses – Biopharmaceuticals, Consumer Health, Allergopharma, Biosimilars, Life Science and Performance Materials – and generated sales of € 11.3 billion in 2014. Around 39,000 employees work in 66 countries to improve the quality of life for patients, to foster the success of customers and to help meet global challenges. Merck KGaA, Darmstadt, Germany, is the world's oldest pharmaceutical and chemical company – since 1668, the company has stood for innovation, business success and responsible entrepreneurship. Holding an approximately 70% interest, the founding family remains the majority owner of the company to this day. Merck KGaA, Darmstadt, Germany holds the global rights to the Merck name and brand. The only exceptions are Canada and the United States, where the company operates as EMD Serono, EMD Millipore and EMD Performance Materials.

For more information, please visit www.emdgroup.com.