

# *gen2-SCA* Publications List



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## 2024

Limits of Detection of Topically Applied Products in the Skin Using In Vivo Raman Spectroscopy.

Nico, C.; Bakker Schut, T.C.; Caspers, P.J.; Puppels, G.J.

Pharmaceutics 2024, 16, 304. <https://doi.org/10.3390/pharmaceutics16030304>

Evidence of the protective effect of anti-pollution products against oxidative stress in skin ex vivo using EPR spectroscopy and autofluorescence measurements.

Tran PT, Schleusener J, Kleuser B, Jung K, Meinke MC, Lohan SB.

Eur J Pharm Biopharm. 2024 Apr;197:114211. doi: 10.1016/j.ejpb.2024.114211

2023

A combined study of skin penetration by confocal Raman spectroscopy and human metabolism: A case of benzophenone-3 in sunscreen.

Wang M, Tan J, Qi Z, Ge X, Li G, Yu Y

Environ Pollut. 2024 Jan 1;340(Pt 1):122868. doi: 10.1016/j.envpol.2023.122868. Epub 2023 Nov 3. PMID: 37926406.

Atopic Dermatitis: Molecular Alterations between Lesional and Non-Lesional Skin Determined Noninvasively by In Vivo Confocal Raman Microspectroscopy.

Zolotas M, Schleusener J, Lademann J, Meinke MC, Kokolakis G, Darvin ME.

Int J Mol Sci. 2023 Sep 27;24(19):14636. doi: 10.3390/ijms241914636. PMID: 37834083; PMCID: PMC10572245.

Topical dexpanthenol effects on physiological parameters of the stratum corneum by Confocal Raman Microspectroscopy.

Vitoria Porto Ferreira, Gustavo Carlos Silva, Airton Abrahão Martin, Patricia Maia Campos

Skin Res Technol. 2023;29:e13317. <https://doi.org/10.1111/srt.13317>

Quantification of skin penetration of caffeine and propylene glycol applied topically in a mixture by tailored multivariate curve resolution-alternating least squares of depth-resolved Raman spectra.

Choe C, Pak GJ, Ascencio SM, Darvin ME

J Biophotonics. 2023 Aug 9:e202300146. doi: 10.1002/jbio.202300146. Epub ahead of print.

Optical Methods for Non-Invasive Determination of Skin Penetration: Current Trends, Advances, Possibilities, Prospects, and Translation into In Vivo Human Studies.

Maxim E. Darvin

Pharmaceutics 2023, 15, 2272. <https://doi.org/10.3390/pharmaceutics15092272>

Altered structure indicating reduced barrier function of lesional compared to non-lesional psoriatic skin—A non-invasive in vivo study of the human stratum corneum with confocal Raman micro-spectroscopy

Zolotas M, Schleusener J, Lademann J, Meinke MC, Kokolakis G, Darvin ME.

Exp Dermatol. 2023 Aug 4. doi: 10.1111/exd.14895. Epub ahead of print. PMID: 37540053.

In vivo analysis of the stratum corneum of Japanese neonates and infants using confocal Raman spectroscopy: a pilot study

Yukio Matsumoto, Naoko Mochimaru, Hazuki Yasuda, Kyongsun Pak, Tohru Kobayashi, Kiwako Yamamoto-Hanada,

Yukihiro Ohya, Megumi Kiuchi, Masashi Kurokawa, Kazue Yoshida

Skin Research and Technology Jan 2023 Volume 29, Issue 1; <https://doi.org/10.1111/srt.13276>

Quantitative determination of concentration profiles of skin components and topically applied oils by tailored multivariate curve resolution-alternating least squares using in vivo confocal Raman micro-spectroscopy

ChunSik Choe, Johannes Schleusener, JinSong Ri, SeHyok Choe, PokSil Kim, Jürgen Lademann, Maxim E. Darvin

Journal of Biophotonics February 2023, V16 I2, <https://doi.org/10.1002/jbio.202200219>

Red- and Near-Infrared-Excited Autofluorescence as a Marker for Acute Oxidative Stress in Skin Exposed to Cigarette Smoke Ex Vivo and In Vivo

Phuong Thao Tran, Parichat Tawornchat, Burkhard Kleuser, Silke B. Lohan, Johannes Schleusener, Martina C. Meinke,

Maxim E. Darvin

Antioxidants 2023, 12, 1011. <https://doi.org/10.3390/antiox12051011>

Confocal Raman Spectroscopy for Assessing Bioequivalence of Topical Formulations.  
Iliopoulos F, Tang CF, Li Z, Rahma A, Lane ME.  
Pharmaceutics. 2023 Mar 27;15(4):1075. doi: 10.3390/pharmaceutics15041075.

Skin maturation from birth to 10 years of age: Structure, function, composition and microbiome.  
Stamatas GN, Roux PF, Boireau-Adamezyk E, Lboukili I, Oddos T.  
Exp Dermatol. 2023 Jun 11. doi: 10.1111/exd.14843. Epub ahead of print.

## 2022

Ex vivo-in vivo comparison of drug penetration analysis by confocal Raman microspectroscopy and tape stripping.  
Krombholz R, Fressle S, Nikolić I, Pantelić I, Savić S, Sakač MC, Lunter D  
Exp Dermatol. 2022 Dec;31(12):1908-1919. doi: 10.1111/exd.14672. Epub 2022 Sep 10. PMID: 36055759.

Comparison of Mildness of Six Baby Cleansers Using a Noninvasive Method Combined with Computational Modeling.  
Georgios Stamatias, Hequn Wang, Elea Greugny, Jalil Bensaci, Anna Hader, Simarna Kaur, Thierry Oddos  
J. Cosmet. Sci., 73, 237–244 (July/August 2022)

Dermal Delivery of Diclofenac Sodium—In Vitro and In Vivo Studies  
Fotis Iliopoulos, Choon Fu Goh, Tasnuva Haque, Annisa Rahma, Majella E. Lane  
Pharmaceutics 2022, 14, 2106. <https://doi.org/10.3390/pharmaceutics14102106>

Confocal Raman spectroscopy is suitable to assess hair cleansing-derived skin dryness on human scalp  
Ghaith Kourbaj, Stephan Bielfeldt, Iryna Kruse, Klaus-Peter Wilhelm  
Skin Res Technol. 2022;28:577–581., DOI: 10.1111/srt.13157

Penetration Depth of Propylene Glycol, Sodium Fluorescein and Nile Red into the Skin Using Non-Invasive Two-Photon Excited FLIM  
Red into the Skin Using Non-Invasive Two-Photon Excited FLIM  
Mohammad Alhibah, Marius Kröger, Sabine Schanzer, Loris Busch, Jürgen Lademann, Ingeborg Beckers, Martina C. Meinke, Maxim E. Darvin

Ex vivo—In vivo correlation of retinol stratum corneum penetration studies by confocal Raman microspectroscopy and tape stripping  
Richard Krombholz | Stefanie Fressle | Dominique Lunter  
Int J Cosmet Sci. 2022;44:299–308.

Monitoring dermal penetration and permeation kinetics of topical products; the role of Raman microspectroscopy  
S. Bielfeldt, F. Bonnier, H.J. Byrne et al.  
Trends in Analytical Chemistry 156 (2022) 116709

tMCR-ALS method for the determination of water concentration profiles in the stratum corneum of untreated and treated skin in vivo  
Chun Sik Choe, Jin Song Ri, Se Hyok Choe, Pok Sil Kim, Jürgen Lademann, Johannes Schleusener, Maxim E. Darvin  
J Raman Spectrosc. 2022;1–8., DOI: 10.1002/jrs.6349

Structural and Functional Analysis of Excised Skins and Human Reconstructed Epidermis with Confocal Raman Spectroscopy and in Microfluidic Diffusion Chambers  
Kocsis D, Kichou H, Döme K, Varga-Medveczky Z, Révész Z, Antal I, Erdő F.  
Pharmaceutics. 2022 Aug 13;14(8):1689. doi: 10.3390/pharmaceutics14081689

Novel aspects of Raman spectroscopy in skin research  
Lunter D, Klang V, Kocsis D, Varga-Medveczky Z, Berkó S, Erdő F.  
Exp Dermatol. 2022 Sep;31(9):1311-1329. doi: 10.1111/exd.14645

Characterization and ex vivo evaluation of excised skin samples as substitutes for human dermal barrier in pharmaceutical and dermatological studies

Kocsis D, Klang V, Schweiger EM, Varga-Medveczky Z, Mihály A, Pongor C, Révész Z, Somogyi Z, Erdő F.  
Skin Res Technol. 2022 Sep;28(5):664-676. doi: 10.1111/srt.13165. Epub 2022 Jun 21. PMID: 35726964.

Assessment of penetration and permeation of caffeine by confocal Raman spectroscopy in vivo and ex vivo by tape stripping.

Kourbaj G, Gaiser A, Bielfeldt S, Lunter D.

Int J Cosmet Sci. 2023 Feb;45(1):14-28. doi: 10.1111/ics.12820. Epub 2022 Nov 24.

## 2021

Targeted dry skin treatment using a multifunctional topical moisturizer

Hans Stettler, Jonathan M. Crowther, Marianne Brandt, Bailu Lu, Alison Boxshall, Raffaella de Salvo, Sabrina Laing, Natascha Hennighausen, Stephan Bielfeldt and Peter Blenkiron

International Journal of Cosmetic Science, 2021, 43, 191–200

A Predictive Self-Organizing Multicellular Computational Model of Infant Skin Permeability to Topically Applied Substances

Georgios N. Stamatias, Jalil Bensaci, Elea Greugny, Simarna Kaur, Hequn Wang, Maria Victoria Dizon, Michael J. Cork, Adam J. Friedman and Thierry Oddos

Journal of Investigative Dermatology (2021), ; doi:10.1016/j.jid.2021.02.012

Multi parametric biophysical assessment of treatment effects on xerotic skin

H. Stettler, J. M. Crowther, M. Brandt, A. Boxshall, B. Lu, R. de Salvo, S. Laing, N. Hennighausen, S. Bielfeldt, P. Blenkiron

Skin Health and Disease. 2021;1:e21, DOI: 10.1002/ski2.21

Natural moisturizing factor as a biomarker for filaggrin mutation status in a multi-ethnic paediatric atopic dermatitis cohort

M.M.F. van Mierlo, P.J. Caspers, M.S. Jansen, G.J. Puppels, A.E.M. Nouwen, M.B. Bronner, L.M. Pardo, M. van Geel, S.G.M.A. Pasmans

Clin Exp Allergy 2021, DOI: 10.1111/cea.14001

Retaining Skin Barrier Function Properties of the Stratum Corneum with Components of the Natural Moisturizing Factor—A Randomized, Placebo-Controlled Double-Blind In Vivo Study

J. Schleusener, A. Salazar, J. von Hagen, J. Lademann, M.E. Darwin

Molecules 2021, 26, 1649. Doi: 10.3390/molecules26061649

In vivo examination of healthy human skin after short-time treatment with moisturizers using confocal Raman spectroscopy and optical coherence tomography: Preliminary observations

C. Ruini, B. Kendziora, E.Z. Ergun, E. Sattler, C. Gust, L.E. French, I.S. Bagci, D. Hartmann

Skin Res Technol. 2021: DOI: 10.1111/srt.13101

Confocal Raman spectroscopy as a tool to assess advanced glycation end products on solar-exposed human skin

A.F.M. Pereira, B.V.M. Rodrigues, L.P. Medeiros Neto, L. de O. Lopes, A.L.F. da Costa, A. S. Santos, B.C. Viana, M.G. Tosato, G.C. da Silva, G.O.M. Gusmao, P.P. Favero, A. A. Martin

Vibrational Spectroscopy 114 (2021) 103234

Effect of hydroxypropyl- $\beta$ -cyclodextrin in fluid and semi-solid submicron emulsions on physiological skin parameters during regular in vivo application

A. Pany, M. Wohlgenannt, S. Klopprogge, M. Wolzt, T. Heuser, H. Kotisch, C. Valenta, V. Klang

International Journal of Cosmetic Science 43:263–268, 2021.

Raman microscopy for skin evaluation

M. Egawa

Analyst 146:1142–1150, 2021.

The stratum corneum water content and natural moisturization factor composition evolve with age and depend on body site

E. Boireau-Adamezyk, A. Baillet-Guffroy, G.N. Stamatias

International Journal of Dermatology 60:834–839, 2021.

To study the effect of acute infrared radiation-induced alterations in human skin at cellular and molecular level using in vivo confocal Raman spectroscopy

S.M. Ali, S.G. Khalid

Photodermatol. Photoimmunol. Photomed. 2021: DOI: 10.1111/phpp.12714

Dermal Delivery of Niacinamide – In Vivo Studies,

Y. Zhang, C-P. Kung, F. Iliopoulos, B.C. Sil, J. Hadgraft, M.E. Lane,

Pharmaceutics, 13: 726, 2021. DOI: 10.3390/pharmaceutics13050726

In Vitro – In Vivo Correlation in Dermal Delivery: The Role of Excipients,

A.Patel, F. Iliopoulos, P.J. Caspers, G.J. Puppels, M.E. Lane,

Pharmaceutics 13:542, 2021.

Changes in Skin Barrier Function after Repeated Exposition to Phospholipid-Based Surfactants and Sodium Dodecyl Sulfate in Vivo and Corneocyte Surface Analysis by Atomic Force Microscopy

C. Vater, A. Apanovic, C. Riethmuller, B. Litschauer, M. Wolzt, C. Valenta, V. Klang,

Pharmaceutics, 13: 436, 2021. DOI:10.3390/pharmaceutics13040436

Effect of Hydroxypropyl-beta-cyclodextrin in Fluid and Semi-Solid Submicron Emulsions on Physiological Skin Parameters during regular in vivo Application,

A.Pany, M. Wohlgenannt, S. Klopprogge, M. Wolzt, T. Heuser, H. Kotsch, C. Valenta, V. Klang,

IJCS, 1-6, 2021.

In vivo non-invasive Determination of the Water Concentration and Water Bonding Properties in the Human Stratum Corneum using Confocal Raman Microspectroscopy,

M.E. Darvin, C.S. Choe, J. Schleusener, J. Lademann,

Quantum Electronics, 51:28-32, 2021.



## 2020

Measurement of dermal water content by confocal RAMAN spectroscopy to investigate intrinsic aging and photoaging of human skin in vivo

Ghaith Kourbaj, Stephan Bielfeldt, Matthias Seise, Klaus-Peter Wilhelm

Skin Res. Technology 2020, DOI: 10.1111/srt.12948

In vivo Determination of Dermal Water Content in Chronological Skin Aging by Confocal Raman Spectroscopy, C. A. Tellez-Soto, M. G. Pereira Silva, L. dos ´ Santos, T.de O. Mendes, P.Singh, S. A. Fortes, P. Favero, A.A. Martin, Vibrational Spectroscopy, 103196, 2020.

Melanin Distribution from the Dermal-Epidermal Junction to the Stratum Corneum: non-invasive in vivo assessment by Fluorescence and Raman Microspectroscopy,

B.P. Yakimov, E.A. Shirshin, J. Schleusener, A.S. Allenova, V.V. Fadeev, M.E. Darwin,

Scientific Report, 1-:14374, 2020.

Barrier dysfunction in Atopic newBorns Study ´ (BABY): protocol of a Danish Prospective Birth Cohort Study,

T. Gerner, A. Halling, M.R. Rinnov, N. Ravn, M.H. Knudgaard, C.M. Bonefeld, C. Ewertsen, S. Trautner, I. Jakasa, S. Kezic, L. Skov, J.P. Thyssen,

BMJ Open, 10:033801, 2020.

A Novel Microfiber Wipe for Delivery of Active Substances to Human Skin: Clinical Proof of Concept,

M. Kaegi, C. Adlhart, M. Lehmann, M. Risch, W. Wessling, P. Klaffenbach,

Polymers 12:2715, 2020.

Non-Invasive Methods for in vivo Determination of the Skin Barrier Function – Advantages of Confocal Raman Microspectroscopy,

M.E. Darwin, C.S. Choe, J. Schleusener, J. Lademann,

Ser. Physics, 20:171-177, 2020.

Profiling of Drug Crystallization in the Skin,

C.F. Goh, B.J. Boyd, D.Q.M. Craig, M.E. Lane,

Exp opinion of Drug Delivery, vol 17, No 9, 1321-1334, 2020.

Franz Cell Diffusion Testing and Quantitative Confocal Raman Spectroscopy: In Vitro – In Vivo Correlation,

F. Iliopoulos, P.J. Caspers, G.J. Puppels, M.E. Lane,

Pharmaceutics, 12,887, 2020.

The Effectiveness of Glycerol Solutions for Optical Clearing of the Intact Skin as Measured by Confocal Raman Microspectroscopy,

I.Yanina, J. Schleusener, J. Lademann, V.V. Tuchin, M.E. Darwin,

Optics and Spectroscopy 128:759-765, 2020.

Stratum Corneum Occlusion Induces Water Transformation towards Lower Bonding State: a Molecular level In vivo Study by Confocal Raman Microspectroscopy,

C.Choe, J.Schleusener, S.Choe, J.Ri. J.Lademann, M.E.Darvin,

IJCS 42:482-493, 2020.

In vivo Raman Spectroscopy Discriminates Between FLG Loss-of-function Carriers vs Wild-type in Day 1-4 Neonates  
C.N. Chaoimh, C. Nico, G.J. Puppels, P.J. Caspers, X.F.C.C. Wong, J.E. Common, A.D. Irvine, J. O'Hourihane,  
Ann Aller Asthma Immunol 500-504, 2020.

Cleansing-induced Changes in Skin Measured by In Vivo Confocal Raman Spectroscopy,  
M.A. Davies,  
Skin Res Technol. 26:30-38, 2020.

Cleansers 'mildness: Stratum Corneum Lipid Organization and Water Uptake After a Single Wash,  
S.Perticaroli, J.L.Meyers, F.C.Wireko, O.Akintelure, J.T.Webber, R.T.Cambron, S.Vierling, S.R.Sealschott, K.S.Weil, E.Smith,  
P.J.Ray,  
Journal of Raman Spect, Vol.51, 5: 795-806, 2020.

Determination of Skin Penetration Profiles by Confocal Raman Microspectroscopy: Evaluation of Interindividual Variability  
and Interlab Comparability,  
L. Binder, C. Valenta, D. Lunter  
J Raman Spectrosc. 51:1037–1043, 2020

Natural Moisturizing Factor as a Clinical Marker in Atopic Dermatitis,  
A.E.M. Nouwen, D. Karadavut, S.G.M.A. Pasmans, N.J. Elbert, L.D.N. Bos, T.E.C. Nijsten, N.J.T. Arends, M.W.H. Pijnenburg, S.  
Koljenovic, G.J. Puppels, P.J. Caspers,  
Allergy, 75:188-239, 2020.

A Modification for the Calculation of Water Depth Profiles in Oil-treated Skin by In Vivo Confocal Raman Microscopy,  
C.Choe, J.Schleuserner, S. Choe, J.Lademann, M.Darvin,  
J Biophotonics, Jan; 13, 2020.

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Method to Quantify the In Vivo Skin Penetration of Topically Applied Materials Based on Confocal Raman Spectroscopy, P.J. Caspers, C.Nico, T.C. Bakker Schut, J. de Sterke, P.D.A. Pudney, P.R. Curto, A. Illand, G.J. Puppels, *Translational Biophotonics*, 1:1-10, 2019.

Review of Modern Techniques for the Assessment of Skin Hydration, M. Qassem, P.Kyriacou, *Cosmetics* 6, 19, 2019. DOI:10.3390/cosmetics6010019

In vivo Change of Keratin-Bound Molecules in the Human Stratum Corneum following Exposure to Ultraviolet Radiation, S.H.Yoon, J.I.Park, J.E.Lee, C.H.Myung, J.S.Hwang, *Skin Pharmacol Physiol* 32:254-264, 2019.

Topical Application of Highly Concentrated water-in-oil Emulsions: Physiological Skin Parameters and Skin Penetration in vivo – A Pilot Study, L.Binder, V.Klang, S.S. Rezaei, O.Neuer, Z.Zhang, D.J.Lunter, M.Wolzt, C.Valenta, *Int Journ of Pharmaceutics*, 571, 118694, 2019.

In vivo Tracking of DNA for Precise Determination of the Stratum Corneum Thickness and Superficial Microbiome Using Confocal Raman Microscopy, J.S.Ri, S.H.Cho, J.Schleusener, J.Lademann, C.S.Cho, M.E.Darvin, *Skin Pharmacol Physiol* 10. 1159, 2019.

Characterization and Validation of an in vivo Confocal Raman Spectroscopy Led Tri-Method Approach in the Evaluation of the Lip Barrier, S. Bielfeldt, S. Laing, T. Sadowski, H. Gunt, K-P Wilhelm, *Skin Res Technol.*, 00:1-8, November 2019.

The Role of Viscosity on Skin Penetration from Cellulose Ether-based Hydrogels, L.Binder, J.Mazal, R.Petz, V.Klang, C.Valenta, *Skin Res Technol*, 25:725-734, 2019.

MCR Approach Revealing Protein, Water, and Lipid Depth Profile in Atopic Dermatitis Patients' Stratum Corneum via in Vivo confocal Raman Spectroscopy, L. Zhang, T. Cambron, Y. Niu, Z. Xy, N. Su, H.Zheng, K. Wei, P.Ray, *Anal. Chem.* 91, 2784-2790, 2019.

Deposition of Plant Lipids after Single Application of a Lip Care Product Determined by Confocal Raman Spectroscopy, Corneometry and Transepidermal Water-loss, S. Bielfeldt, J. Blaak, S. Laing, M.Schleissinger, C.Theiss, K-P Wilhelm, P.Staib, *Int Journ of Cosm Science*, 41, 281-291, April 2019.

Evaluation of Penetration Process into Young and Elderly Skin Using Confocal Raman Spectroscopy, L. dos Santos, V. K. Tippavajhala, T.O.Mendes, M.G.Pereira da Silva, P.P. Favero, C.A. Tellez Soto, A.A. Martin, *Vibrational Spectroscopy*, Vol 100, 123-130, Jan 2019.

Confocal Raman Spectroscopy as a Tool to Measure the Prevention of Skin Penetration by a Specifically Designed Topical Medical Device,

S. Laing, S. Bielfeldt, K-P. Wilhelm, J. Obst,  
Skin Res Technol. 00, 1-9, 2019.

The Non-Homogenous Distribution and Aggregation of Carotenoids in the Stratum Corneum Correlates with the Organization of Intercellular Lipids in vivo,

C.Choe, J.Ri, J.Schleuserner, J.Lademann, M.Darvin,  
Exp Dermatol Nov 28 (11):1237-1243, 2019.

Modified Normalization Method in in vivo Stratum Corneum Analysis using Confocal Raman Microscopy to Compensate Nonhomogeneous Distribution of Keratin,

C.Choe, S.Choe, J.Schleuserner, J.Lademann, M.Darvin,  
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Hydrogen Bound Water Profiles in the Skin influenced by Optical Clearing Molecular Agents—Quantitative Analysis using Confocal Raman Microscopy,

A.Y.Sdobnov M.E. Darvin, J.Schleuserner, J.Lademann, V.V.Tuchin,  
J Biophotonics May; 12(5), 2019.

Cleansing-induced changes in Skin Measured by In Vivo Confocal Raman Spectroscopy,

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Skin Res Technol. 00:1-9, 2019.

Translating Chemometric Analysis into Physiological Insights from in vivo Confocal Raman Spectroscopy of the Human Stratum Corneum,

S. Perticaroli, D.J. Yeomans, F.C. Wireko, J.T. Webber, K.M. Werchowski, R.T. Cambron, P.J. Ray,  
Biomembranes 1861, 403-409, 2019.

Novel confocal Raman Microscopy Method to Investigate Hydration Mechanisms in Human Skin,

H.Wang, Q.Zhang, G.Mao, O.Conroy, Y.Pyatski, MJ.Fevola, G.O.Cula, P.Maitra, R. Mendelsohn, C.R. Flach,  
Skin Res Technol 25:653-661, 2019.

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L. dos Santos, V.K. Tippavajhala, T.O. Mendes, M.G. Pereira da Silva, P.P. Favero, C.A. Tellez Soto, A.A. Martin,  
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L. dos Santos, V.K. Tippavajhala, T.O. Mendes, M.G. Pereira da Silva, P.P. Favero, C.A. Tellez Soto, A.A. Martin,  
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Effect of Physical and Chemical Hair Removal Methods on Skin Barrier Function in vitro: Consequences for a Hydrophilic Model Permeant,  
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M.E. Darvin, J.Schleusener, F.Parenz, O.Seidet, C.Krafft, J.Popp, J.Lademann  
Analyst, 4990, 143, 2018.

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Noninvasive Analysis and Minimally Invasive in Vivo Experimental Challenges of the Skin Barrier,

P.E.J. van Erp, M. Peppelman, D. Falcone,  
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Penetration Monitoring of Drugs and Additives by ATR-FTIR spectroscopy/tape stripping and Confocal Raman Spectroscopy – A Comparative Study,

L. Binder, E.M. Kulovits, R. Petz, J. Ruthofer, D.Baurecht, V. Klang, C. Valenta,  
European Journal of Pharmaceutics and Biopharmaceutics, vol. 130, pg 214-223, Sept 2018.

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V.K. Tippavajhala, T.D. Magrini, D.C. Matsuo, M.G.P. Silva, P.P. Favero, L.R. de Paula, A.A. Martin,  
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NLC versus Nano emulsions: Effect on Physiological Skin Parameters during Regular in vivo Application and Impact on Drug Penetration,

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