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TITLE

The Efficacy of Penetration of a Control Released System to Deliver Progesterone Through the Stratum Corneum and Dermis by in vivo Confocal Raman Spectroscopy

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The purpose of this study is to monitor in vivo the effect of chemical penetration of a control released system on the delivery of Progesterone into human skin. It was developed a controlled released system that was able to alter barrier properties of the SC by disruption of the membrane structures or maximizing drug solubility with the skin. The great majority of experiments are performed in vitro. The Raman spectroscopy allows measurements of biological processes in vivo and this paper shows for the first time that the effect of penetration on the delivery of Progesterone can successfully be measured in vivo using this technique. Here, the volar forearm of volunteers was treated with a nanostructured Progesterone formulation. The formulation is a highly effective controlled delivery system identified from clinical experiments: Progesterone in a Biolipid (BIOLIPID/B2, Evidence®), being a well-known and efficient penetration nanoparticulated delivery system in association with a lipid fluidizer commonly used in skin creams is added and either contains a lipid extractor. The nanoparticulated Progesterone cream was applied once and measurements were performed up to 24 h after treatment. Remarkable differences in the delivery of Progesterone between before and after treatment can clearly be seen. Moreover, the type of penetration nanoparticulated delivery system is also shown to influence the delivery. For the first time, the effect of penetration nanoparticulated delivery system on the delivery of Progesterone has been monitored, non invasively in vivo, with time.

Biography

Marco Botelho has completed his Ph.D at the age of 38 years from Federal University of Ceara and postdoctoral studies from Michigan University School of Dentistry Medicine. He is the Coordinator of PhD Program at University Potiguar, a Biotechnology Program. He has published more than 20 papers in reputed journals and serving as an editorial board member of reputed Journals.