ERRATUM

Transdermal Iontophoretic Delivery of Triptorelin *In Vitro*

YANNIC B. SCHUETZ,[1,2] AARTI NAIK,[1,2] RICHARD H. GUY,[1] EVELYNE VUARIDEL,[3] YOGESHVAR N. KALIA[1,2]

[1]School of Pharmaceutical Sciences, University of Geneva, Geneva CH-1211, Switzerland

[2]Centre Interuniversitaire de Recherche et d'Enseignement, ''Pharmapeptides,'' Site d'Archamps, F-74160 Archamps, France

[3]Debiopharm Galenic Unit, CH-1196 Gland, Switzerland

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The present address of the University of Bath had been linked erroneously to Evelyne Vuaridel, when it should have been linked to Richard Guy. The corrected footnote appears on the following page.

The publisher apologizes and regrets any inconvenience this may have caused.

Correspondence to: Yogeshvar N. Kalia (Telephone: +33 450 31 50 24; Fax: +33 450 95 28 32;
E-mail: yogi.kalia@pharm.unige.ch)

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ABSTRACT: The feasibility of delivering triptorelin ([*D*-Trp^6]LHRH) by transdermal iontophoresis was evaluated *in vitro*. Peptide electrotransport at different current densities and donor concentrations was measured across porcine ear skin. The concomitant delivery of an electroosmotic marker enabled calculation of the respective contributions of electromigration (EM) and electroosmosis (EO) to iontophoretic delivery. At a given concentration (3 mM), a threefold increase in current density produced a corresponding increase in the cumulative amount of peptide present in the receptor compartment. Conversely, doubling the concentration to 6 mM produced a twofold reduction in the amount of peptide delivered, partly due to a concentration-dependent inhibition of EO. EM was revealed to be the predominant transport mechanism, accounting for 80% of overall delivery. Finally, despite the inhibition of EO, the results indicate that application of an iontophoretic current of 0.8 mA over a relatively small contact area (4 cm^2) would provide a delivery rate of 36 μg/h, largely sufficient for therapeutic requirements. © 2005 Wiley-Liss, Inc. and the American Pharmacists Association
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Keywords: transdermal iontophoresis; triptorelin; electroosmosis; electroosmosis inhibition

INTRODUCTION

Transdermal delivery has been proposed as a route for administering peptide and protein therapeutics on the grounds that it offers a viable alternative to the conventional, and inconvenient, administration by parenteral injection. However, given that peptides are often charged and of high molecular weight, their passive transdermal delivery is not feasible. Hence, different strategies have been developed to overcome the skin's excellent barrier properties in a transient and reversible fashion.[1,2] Iontophoresis offers the advantage of providing a controlled and noninvasive delivery method that has been extensively investigated.[3] The two main transport mechanisms during iontophoresis are electromigration (EM; direct effect of the applied electric field on the charged species) and electroosmosis (EO; convective solvent flow in the anode-to-cathode direction, as a consequence of the skin's net negative charge at physiological pH).

A distinguishing feature of iontophoresis is that, in contrast to other enhancement technologies, it acts primarily on the molecule itself. That is, enhanced delivery is not due to increased passive drug transport subsequent to barrier disruption: the driving force is supplied by the applied electric field. Furthermore, iontophoresis enables customized therapy: the drug-input rate

Richard Guy's present address is Department of Pharmacy & Pharmacology, University of Bath, Claverton Down, Bath BA2 7AY, United Kingdom.

Correspondence to: Yogeshvar N. Kalia (Telephone: +33 450 31 50 24; Fax: +33 450 95 28 32; E-mail: yogi.kalia@pharm.unige.ch)

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