Preparation of Naratriptan Base and Evaluation of Its Buccal Permeation Characteristics

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Abstract

Naratriptan is currently delivered in tablet form for the management of migraine. Unfortunately patient compliance is poor because of gastrointestinal side effects associated with oral administration of the drug. Buccal delivery offers an attractive alternative to oral delivery as the rate of onset of drug action is faster and the incidence of gastrointestinal side effects should be reduced compared with the oral route. The aim of this project was to prepare and characterise naratriptan base and to develop and optimise a range of buccal formulations of the drug.

Naratriptan was prepared from the salt form and characterised by a range of analytical techniques. *In vitro* permeation studies using porcine buccal mucosa were validated using caffeine as a marker molecule. Single, binary and ternary solutions, and gel formulations of naratriptan were prepared. All formulations were evaluated using the porcine buccal model.

The major findings of the thesis are (i) Naratriptan base was isolated and characterised (ii) The use of porcine buccal tissue for *in vitro* permeation experiments was validated (iii) New dosage forms of naratriptan were successfully prepared and tested for the first time (iv) The flux values achieved for the optimal naratriptan formulation were estimated to result in therapeutic plasma concentration when applied to an area < 10 cm^2.