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Design and Development of Tdds of Toresemide

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Short Communication

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ABSTRACT

Non-medicated patch markets include thermal and cold patches, nutrient patches, skin care patches (a category that consists of two major sub-categories-therapeutic and cosmetic), aroma patches, weight loss patches, and patches that measure sunlight exposure.

INTRODUCTION

A skin patch uses a special membrane to control the rate at which the liquid drug contained in the reservoir within the patch can pass through the skin and into the bloodstream. The basic components of any transdermal delivery system include the drug(s) dissolved or dispersed in a reservoir or inert polymer matrix; an outer backing film of paper, plastic, or foil; and a pressure-sensitive adhesive that anchors the patch to the skin [1].

The adhesive is covered by a release liner, which needs to be peeled off before applying the patch to the skin. Drugs administered via skin patches include scopolamine, nicotine, estrogen, nitroglycerin, and lidocaine [2].

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Torasemide

Torasemide is a sulphonyl urea loop diuretic, which has been shown to be effective in the treatment of edema associated with congestive heart failure, renal disease, or hepatic disease. Also for the treatment of hypertension alone or in combination with other antihypertensive agents [3].

Torasemide

- Dose-2.5-5 mg
- Half Life-3.5 hrs
- Molecular weight-348.421 g/mol
- Melting point-164°C
- LogP-2.404

DESCRIPTION

Torasemide has absorption maxima in methanol have been previously reported. These methods were taken as reference and followed as such. For preformulation studies the simple and quick methods as UV-VIS spectrophotometry and FTIR were used. Other than preformulation UV-VIS spectrophotometry was used for studying the in vitro performance of the product (dissolution and drug release studies) (Table 1) [4].

Table 1. Trial batch formulations for preparation of free films.

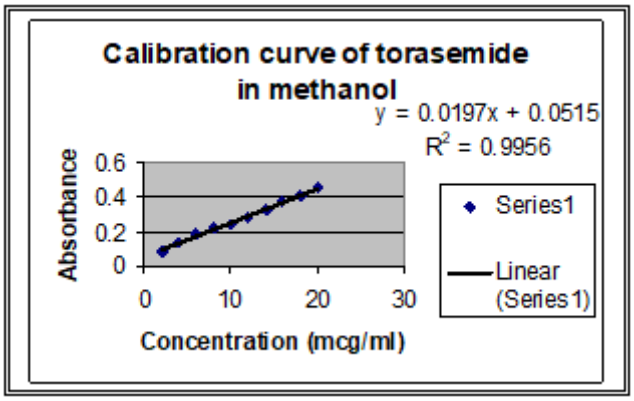
	Formulation Batches								
Ingredients	F1	F2	F3	F4	F5	F6	F7	F8	F9
Ethyl Cellulose (EC)	0.03	0.03	0.03	0.02	0.02	0.02	0.04	0.04	0.04
Polyvinyl pyrrrolidone (PVP)	0.02	0.02	0.02	0.03	0.03	0.03	0.01	0.01	0.01
Chloroform	q.s	-	-	q.s	-	-	q.s	-	-
Methanol	-	q.s.	-	-	q.s	-	-	q.s	-
Ethanol	-	-	q.s.	-	-	q.s	-	-	q.s
Polyethylene glycol 400	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

The wavelength of maximum absorbance (λmax.) was found to be 288nm in methanol. The peaks shown in Figure 1 are very much similar to the standard UV spectrum.

In trial formulation: A EC: PVP 3:2, 2:3, 4:1 and 1:4 are used in combination with three solvent (Plasticizer-PEG 400), which are given. In trial formulation: B EC: PVP 3:2, 2:3, 4:1 and 1:4 are used in combination with three solvent (Dibutyl phthalate), which are given. In trial formulation: C HPMC: PVP 3:2, 2:3, 4:1 and 1:4 are used in combination with three solvent (Plasticizer-PEG 400), which are given. In trial formulation: D HPMC: PVP 3:2, 2:3, 4:1 and 1:4 are used in combination with three solvent (Plasticizer- Dibutyl phthalate), which are given. In trial

formulation: E EC: HPMC 3:2, 2:3, 4:1 and 1:4 are used in combination with three solvent (Plasticizer-PEG 400). In trial formulation: F Hydroxyethylcellulose are used in different combination solvent (Figure 1) [5].

Figure 1. IR spectrum of Torasemide.



CONCLUSION

An ideal dosage regimen in the drug therapy of any disease is one, which immediately attains the desired therapeutic concentration of drug in plasma (or at the site of action) and maintains it constant for the entire duration of treatment. This is possible through administration of conventional dosage form in a particular dose and at a particular frequency. But as reported in literature conventional drug delivery has its own limitations, which switch over the formulator to developed new formulation. This overcomes the number of drawbacks associated with conventional dosage drug delivery system. The past decade has seen major advances in developing a drug through concept and technique of controlled and targeted drug delivery system.

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