

ERRATUM

By oversight the abstract entitled 'Lung Uptake of Niosome-Entrapped Rifampicin Following Intravenous and Intratracheal Administration in Rat' by A. R. Mullaicharam and R. S. R. Murthy was published as a part of the abstract entitled 'Proliposomal System of Clotrimazole: Design and Evaluation' by M. S. Nagarsenkar and M. P. Munot, in Indian J. Pharm. Sci. 2002, 3, 300. The editorial team regrets this mistake. Both the abstracts have now been reprinted separately below:

Proliposomal System of Clotrimazole: Design and Evaluation

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Clotrimazole (CLT), a synthetic imidazole derivative, is locally used in the treatment of vaginal and skin infections due to yeast and dermatophytes. This study presents development of a proliposomal system of clotrimazole with anticipation that the vesicles formed after hydration would localize and prolong the residence time of drug within skin and mucous membrane by acting as a slow release depot. It is also expected to result in minimal systemic absorption and reduce local side effects.

Gel based proliposomes were prepared by the organization of lipid\ ethanol\ water mixture in to lamellar structure, which could be converted into liposomes upon hydration. The hydrated formulation was characterized for entrapment efficiency, transmission electron microscopy (TEM), particle size distribution following hydration and for differential scanning calorimetry (DSC) studies. The drug leakage studies were performed at 4°, 25° and 45°.

Free flowing proliposomes were prepared by coating the lipids on sodium chloride as inert carrier material. Liposomal dispersions reconstituted from proliposomes were characterized for encapsulation efficiency, particle size distribution, TEM and scanning electron microscopy (SEM) studies. Both the formulations were evaluated for *in vitro* antifungal activity against *Candida albicans* using agar diffusion method.

Liposome formation following hydration of the gel-based proliposomes was confirmed by TEM. The vesicles appeared spherical in shape. The formulation showed unimodal distribution with mean diameter of 6.48 μm . DSC studies showed that the endotherm of CLT proliposomes and CLT liposomal pellets was not significantly different from empty proliposomes and empty liposomal pellets. This suggests

that clotrimazole does not interact with the liposomal bilayer and it is present in the aqueous compartment of liposomes. Stability data have shown that the proliposomal gel of the formulation was much more stable as compared to the liposomal dispersions at 4° and 25° for the period of 45 d. The formulation stored at 45° became thinner in consistency with development of yellow tinge within a few days and was not evaluated further.

Free flowing proliposomes were found to be easy to prepare and store. Upon hydration liposomes formed appeared as bilayered and spherical in shape in TEM photomicrographs. Dispersion exhibited unimodal particle size distribution with geometric mean diameter of 4.67 μm . SEM photomicrographs of free flowing proliposomes showed that edges of sodium chloride crystals became rounded which could be due to deposition of phospholipids on its surface, while the crystal lattice of sodium chloride was maintained which explains the flowability of proliposomes. Proliposomal gel and liposomal pellets obtained from the liposomal dispersions of both the formulations showed significant antifungal activity against *Candida albicans*. However it was found that width of zone of inhibition of proliposomes and liposomal pellets was less as compared to clotrimazole solution. This may be due to slow release of drug from the liposomes.

Both the methods used in the preparation of proliposomes were found to be simple, easy to prepare and gave significantly less drug leakage on storage as compared to conventional liposomes. Free flowing proliposomes were found to give smaller vesicles as compared to gel-based proliposomes. Both the formulations showed good *in vitro* antifungal activity against *Candida albicans*.