

## Formulation Design and Optimization of Orodispersible Tablets of Diphenhydramine Hydrochloride Having Adequate Mechanical Strength

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**Abstract :** In the present study, orodispersible tablets of diphenhydramine hydrochloride were prepared using croscarmellose sodium, crospovidone and camphor, menthol (as subliming agents) in different ratios and ODTs prepared with superdisintegrants were compared with ODTs prepared with camphor and menthol (subliming agents) for the following evaluation of in vitro disintegration time, dispersion time, wetting time, hardness and water absorption ratio. Results revealed that the tablets of all formulations have acceptable physical parameters. The drug and excipients compatibility study was evaluated using FTIR technique and has not detected any incompatibility. The in vitro release of drug from DC6 formulation was quick when compared to other formulations. Stability study was carried out as per ICH guidelines for three months and results revealed that upon storage disintegration time of tablets had not shown any significant difference. Microscopic study of different formulations of sublimed tablets showed formation of pores for the tablets prepared by sublimation method. Thus, conclusion can be made that the stable orodispersible tablets of diphenhydramine hydrochloride can be developed for the rapid release of diphenhydramine hydrochloride.

**Keywords :** orodispersible tablet, subliming agent, super disintegrants, diphenhydramine hydrochloride

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