



Vacuum Foam Dried Sugar-Phosphate Amorphous Mixtures for Stabilization of Doxorubicin Hydrochloride

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SUMMARY. The objective of the present study was to stabilize doxorubicin hydrochloride in sugar-phosphate amorphous mixtures at ambient temperature by drying it with vacuum foam drying. Finished products were evaluated for foam characteristic, residual moisture content, reconstitution time, percent drug recovery and drug-excipient interactions. FTIR studies revealed existence of physical interaction of drug with sugar. Light microscopy showed formation of amorphous glass which was supported by the observations of XRPD analyses. The optimized composition in vacuum foam drying was processed by lyophilization and their stability was compared. Storage at ambient temperature for 6 months showed that stability of vacuum foam dried product was better than lyophilized products. The amount of residual moisture affected the stability of drug. The detailed study revealed lactose and sodium dihydrogen phosphate is best suited for stabilization of doxorubicin hydrochloride at room temperature.

KEY WORDS: Doxorubicin hydrochloride, Stability, Sugar-phosphate mixtures, Vacuum foam drying.

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