

**QUANTITATIVE X-RAY DIFFRACTION ANALYSIS OF
POLYMORPHS IN MEBENDAZOLE DRUG AVAILABLE IN
THE SRI LANKAN MARKET.**

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Abstract:

X-ray powder diffraction technique is a powerful technique for analysis of crystalline solids. Pharmaceutical solids commonly exhibit polymorphism. XRPD is ideal for characterizing, identifying and quantifying the polymorphs. Among quantitative analysis of XRD, matrix-flushing method for multi component analysis is simple and fast. The matrix flushing theory gives an exact relationship between the intensity and the concentration free from matrix effect. Under favourable conditions, the weight percent of every component can be determined from a single scan of the original sample without any internal standard or calibration curve.

In this study, polymorphs of the Mebendazole drugs were determined quantitatively using the matrix flushing method. Corundum was used as the flushing agent to eliminate the matrix effect. Three types of Mebendazole drugs were chosen for quantification. Polymorph A and C were identified using the XRD patterns. Then they were analyzed and calculated quantitatively using the matrix - flushing equation.

The quantity of polymorph in each tablet was lower than the quantity indicated in the prescription.

