



## A Multivariate Strategy for Tablet Manufacturing Optimization

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**SUMMARY.** The objective of this work was to develop a multivariate strategy to optimize tablet manufacturing employing mephenesin as model drug. The process variables for granulation step were binders and lubricants types, while the mixture variables included the proportions of binders and lubricants. To reduce the experimentation and tablet characterization in the compression step, a principal component analysis was performed. Tableting process was studied according to a three level factorial design. The factors were the scores in first principal component of granulation variables and hardness of the tablets. The properties of tablets were mainly influenced for the scores of granules. The optimum formulation, achieved using the desirability function, was the formulation with PVP K 90 as binder (4.25 %) and talc as lubricant (1.25 %). The multivariate strategy provides an effective tool for tablet manufacturing optimization when the high experimentation costs are prohibitive or the granulation process is influenced by many factors.

**KEY WORDS:** Crossed experimental design, Mephenesin, Multivariate strategy, Principal component analysis, Tablet manufacturing.

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