

ABSTRACT

**METHOD VALIDATION OF FLAME ATOMIC ABSORPTION
SPECTROMETRY (FAAS) FOR THE DETERMINATION OF
MINERAL (Mg, Mn AND Zn) IN CAPLET DOSAGE FORM OF
HEALTH SUPPLEMENT**

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This study aims to validate Flame Atomic Absorption Spectrometry (FAAS) for the determination of minerals, such as Mg (magnesium), Mn (manganese) and Zn (zinc) in caplet dosage forms of health supplement. Mineral separation method was done from dry material matrix (550 ± 20 °C) using wet ashing with concentrated H_2O_2 solution and mixture of 6 M HCl with concentrated HNO_3 (20:1). The validation method consisted of selectivity studies, linearity, detection limits (LOD), quantitation limits (LOQ), precision and accuracy. The proposed method showed good linear in the concentration ranging between 0.09 - 0.79 mg / L, 0.49 - 1.98 mg / L, 0.99 - 7.99 mg / L for Mg, Mn, and Zn, respectively. The correlation coefficient (r) obtained for this regression is higher than 0.999 and the relative process standard deviation value (V_{xo}) is not more than 5%. Detection limits (LOD) of Mg, Mn, and Zn were found to be 1.35×10^{-3} mg / L, 2.79×10^{-3} mg / L, and 2.47×10^{-2} mg / L, respectively. While the limit of quantitation (LOQ) was found to be 4.10×10^{-3} mg / L, 8.45×10^{-3} mg / L, and 7.50×10^{-2} mg / L for Mg, Mn and Zn, respectively. This method is successfully applied for determining minerals e.g. Mg, Mn and Zn in caplet dosage forms of health supplements.

Keywords : Method validation, FAAS, magnesium, manganese, zinc, health supplement, caplet dosage form