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# Bioanalytical Method for Vinpocetine and Apovincamine Acid from Human Plasma by LC-MS/MS

**B. B.Dongare, B. B.Kashid and A. A.Ghanvat***

School of Chemical Science, Solapur University, Solapur. 413255, Maharashtra, **INDIA**

Email: anil_ghanwat@yahoo.com

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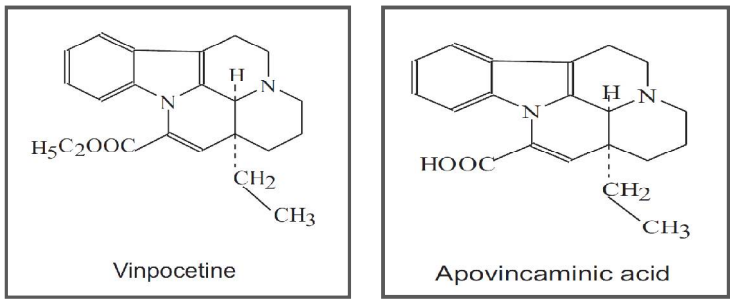
## ABSTRACT

*A sensitive and reproducible liquid chromatography-electro spray ionization-tandem mass spectrometry (LC-MS/MS) method was developed for the quantification of vinpocetine (VP) and its active metabolite apovincamine acid (AVA) in human plasma, with racem propyl vinpocetine(VP-IS) and racem propyl apovincamine acid (AVA-IS) as an internal standard (IS). The analyte was extracted with Solid Phase Extraction using ion exchange cartridges and analyzed on a Zorbax SB-CN (250 mm × 4.6 mm, 5 µm) column. The mobile phase was composed of methanol 10 mM ammonium acetate with 0.1% Formic Acid (70:30). Vinpocetine, apovincamine acid and IS racem propyl vinpocetine, racem propyl apovincamine acid were ionized by positive ion pneumatically assisted electro spray and detected in the multi-reaction monitoring (MRM) mode using LC-MS/ MS (API 5500 QTrap) →productions of m/z 351.4→280.1, m/z 323.2→279.2, m/z 365.3→294.1 and m/z 337.1→293.2 respectively. The specificity, matrix effect, recovery, sensitivity, linearity, accuracy, precision, and stabilities were all validated over the concentration range of 0.5 –250.0 ng $mL^{-1}$ for both vinpocetine and apovincamine acid. The method developed was successfully and demonstrated for evaluation of pharmacokinetic profile of vinpocetine and apovincamine acid in human plasma.*

## Graphical Abstract

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**Keywords:** LC-MS/MS-Liquid Chromatography Tandem Mass Spectroscopy, Solid Phase Extraction, Vinpocetine, Apovincamine acid.