# Determination of Clozapine in Human Plasma by High – Performance Liquid Chromatography with UV – VIS Detector

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## ABSTRACT

***A specific reversed- phase high-performance liquid chromatographic method has been developed for the simultaneous determination of clozapine in human plasma. Diazepam was used as an internal standard. The drug from human plasma were extracted by liquid-liquid extraction with diethyl ether. The analysis was performed on a C18 analytical column with UV – VIS detector at 250 nm and acetonitrile-methanol-0.5% triethylamine (40:10:50) was used as mobile phase. It was found to be linear linear over the concentration range of 25 to 2000 ng/ml and extraction recovery was more than 80% . The coefficients of variation (CV) for intraday and interday assay were found to be less than 5%. The limit of quantification (LOQ) was 25 ng/ml. This analysis method was successfully used in pharmacokinetic and bioequivalence study of clozapine in schizophrenic patients.***

**Key words:** Clozapine, Plasma analysis, HPLC, Determination, Pharmacokinetic

## INTRODUCTION

Clozapine, a dibenzodiazepine derivative (piperazine – substituted tricyclic antipsychotic agent) (McEvoy, 2005) is used in the treatment of schizophrenia in patients who do not respond or are tolerant to the other antipsychotic drugs.

Clozapine has a yellow crystalline powder and melting point at 183°C and is slightly soluble in water. The structure of clozapine is 8-chloro-11-(4-methyl-1-piperazinyl)-*5H*-dibenzo [*b,e*] [1,4] diazepine and molecular weight is 326.8 (McEvoy, 2005).The chemical structures of clozapine and diazepam are similar and are presented in Figure1.