

Sharma A, Sharma P, Gurav AM. Annual variation in camptothecin and 9-methoxy camptothecin accumulation and its determination in different parts of *Nothapodytes nimmoniana* by HPLC analysis. *Bull. Pharm. Res.* 2016;6(1):14-20.

Abstract: *Nothapodytes nimmoniana* is a rich source of camptothecin (CPT) and 9-methoxy camptothecin (9-MCPT), a well known anticancer alkaloid. We investigated annual variation in the concentration of CPT and 9-MCPT in different parts of *N. nimmoniana*, collected during three consecutive year starting from 2008 to 2010. The CPT and 9-MCPT content in *N. nimmoniana* extracts was determined by HPLC analysis. The maximum CPT and 9-MCPT accumulation in different parts of *N. nimmoniana* was found during the year 2010, followed by year 2008 and 2009. The CPT and 9-MCPT accumulation in different parts of *N. nimmoniana* collected during all the three years was in the following order root > fruit > stem > leaf. The root collected in the month of February 2010, showed higher accumulation of CPT (2.65%) and 9-MCPT (1.06%) than fruit, stem and leaf of *N. nimmoniana*. The root showed more than 2-fold accumulation of CPT and 9-MCPT than fruit, stem and leaves of *N. nimmoniana*. The months starting from October to February were characterized by high humidity, low air temperature and less evaporation rate which enhanced CPT and 9-MCPT accumulation in different parts of *N. nimmoniana* during all the three years (2008 to 2010). Moreover the variations in CPT and 9-MCPT accumulation might be because of changes in seasonal patterns, weather events, temperature changes, biotic and abiotic stresses. These findings indicate that the accumulation of CPT and 9-MCPT in different parts of *N. nimmoniana* vary annually.

Key words: Annual variation, Camptothecin, 9-Methoxycamptothecin, *N. nimmoniana*.

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