

EVALUATION OF ANTI- PLASMID POTENTIAL OF *PIPER* *BETLE* LINN

K.Vasuki*, **R.Senthamarai**¹, **T.Shri Vijaya Kirubha**¹, **K.Periyanayagam**² and **P. Punitha**¹.

1. Department of Pharmacognosy, Periyar College of Pharmaceutical Sciences for Girls, TIRUCHIRAPALLI – 600 021.

2. Department of Pharmacognosy, Madurai Medical College, MADURAI – 625 020.

The potential of volatile oil of leaves of *Piper betle* Linn (karpoori variety) was evaluated in *Escherichia coli* F'lac K12 strain to investigate the anti-plasmid activity using *invitro* model. The plasmid elimination was used as the parameter for anti-plasmid potential and was counted as lac⁻ plasmid less (pink) and lac⁺ plasmid containing (deep violet) colonies using menthol as a positive control.

Betel oil inhibited replication of the F'lac metabolic plasmids of *E.coli* to an extent of 94% at the concentration of 0.15µl/ml. GC-MS of *Betle* oil showed the presence of Eugenol.

INTRODUCTION

The plant *Piper betle* Linn. Is a dioecious perennial creeper belonging to the family Piperaceae. There are nearly 40 varieties in India out of which 30 are in West Bengal. The leaves of betel are used as carminative for indigestion, sialogogue and also used in the catarrhal inflammations of throat, larynx and bronchial infection, cough, dyspnoea and asthma. Betel leaves also used as aphrodisiac in Ayurvedic medicine, antibiotic and also used in headache, arthritis, joint pain, toothache and possess immunity boosting properties as well as anticancer properties, anti fertility activity (Adhikary *et al.*, 1989) and Betel leaves and turmeric had the anti-oxidative property (Lean *et al.*, 1999).

A thorough phytochemical studies on the volatile oil of Betel leaves contains primarily a class of allylbenzene compounds chavibetol (Betel phenol), chavicol, estragol, eugenol, methyl eugenol and hydroxycatechol, cineole (Guenther 1967). The betel oil also contains α - terpinene, γ - lactone sesquiterpinene and p-cymene, eucalyptol, carvacrol, cadinene, caryophyllene, etc., Essential oil is reported to possess the anti-plasmid activity (Schelz *et al.*, J. 2006) which means it is a potent agent which eliminate the resistance of plasmids of bacteria. From the above literature survey, the essential oils are reported to possess antimicrobial and anti-plasmid activity. We have also isolated the essential oil from *Piper betle* leaves. This isolated betel oil has not been so far evaluated with special reference to anti-plasmid activity. Hence, the present work has been undertaken to evaluate the anti-plasmid activity of *Piper betle* oil.

* Corresponding Author