

Study of herbal bioenhancers extract on various characteristics of isoniazid and rifampicin microspheres

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Bioenhancers are agents when combined with an active drug lead to potentiate the pharmacological effect of the drug but themselves do not any therapeutic effect. Recent development in bioavailability enhancement of drugs by herbal compounds has produced a new shift in the way of therapeutics. For the last decade, many novel carriers like liposomes, microspheres, nanoparticles, transferosomes, ethosomes, and lipid based systems have been reported for successful modified delivery of various drugs.

The major problems associated with the anti-TB drug therapy include loss of efficacy through bacterial resistance, side effects, and low patient compliance.

In the cited research work, we have attempted to solve the above mentioned problems by simultaneous use of both the concepts of microsphere drug delivery (higher bioavailability and low toxicity) and herbal bioenhancers (greater bioavailability).

We used isoniazid and rifampicin as a model drug used in TB therapy. Hydro-alcoholic extracts of *Carum carvi* and *Ocimum sanctum* were used as bioenhancers.

The *in-vitro* drug release of different formulations was checked and compared. It was found that *in-vitro* drug release of the formulations where we used bioenhancer extract was found to be significantly increased as compared to formulations where bioenhancers were not used. Other parameters like percentage bioadhesion, permeability study using intestinal sac method, etc., were also studied.

Phytochemical and pharmacognostical investigations on aerial roots of *Ficus lacor* Buch. Ham

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The aim of the present study is to evaluate phytochemical and pharmacognostical investigations on the aerial roots of *Ficus lacor* Buch. Ham. The investigations are as per WHO guidelines and other standard parameters. The aerial roots are typical roots, fibrous and slightly bitter. The microscopy of the powder revealed the presence of annular xylem vessel, lignified fibre, parenchymatous cell and cork cells. Total ash, acid insoluble ash, water insoluble ash and sulphated ash were 14.15%, 8.57%, 10.75%, 6.00% respectively. The extractive values i.e. petroleum ether, chloroform, ethyl acetate, ethanol and aqueous extract were 5.7%, 10%, 5.5%, 4.5%, 10.5%. The fiber content was 9.45%. The plant can be used as bitter as its bitterness was found to be 1.9 unit/g. The foaming index was 124.6. The plant possesses haemolytic activity. The plant extracts were good to be free of microbial contamination. The tannin content was 22. The preliminary phytochemical screening of petroleum ether extract, ethyl acetate extract, chloroform extract, ethanol extract, and aqueous extract was performed. The presence of flavonoids, carbohydrates, saponins, phenolic compounds, and sterol in various extracts were observed. The alcoholic and aqueous extracts were screened for presence of amino acid and carbohydrates. The TLC profile of extracts showed the presence of three amino acid viz. alanine, methionine, ornithine and tyrosine and three carbohydrates i.e. galactose, lactose and sucrose. This is first ever phytochemical and pharmacognostical study carried out on the aerial roots of *Ficus lacor* Buch. Ham. useful for future standardization of *Ficus lacor* aerial roots.

Biography

Rakesh K. Sindhu is an assistant Professor (Pharmacognosy) in Chitkara College of Pharmacy, Chitkara University, India. He has published more than 14 papers in reputed journals. He is life member of professional body like SPER.