The effects of methanolic leaves extract of *Andrographis Paniculata* on *Staphylococcus Aureus*

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*Andrographis Paniculata* leaves are known to have antimicrobial activities and it is widely used as traditional medicine worldwide. This study investigated the antimicrobial activities of methanolic extract of *S. aureus* (ATCC 25923) by determining the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC), time-kill assay and the effects of *A. paniculata* extract on *S. aureus* in SDS-PAGE analysis. Several concentration of the *A. paniculata* extracts were used to determine MIC value and the lowest concentration that can inhibit growth of *S. aureus* were further tested to obtain MBC value. Time-kill assay was performed in 24 hours to determine the incubation period needed for *A. paniculata* extract to completely kill *S. aureus*. The treated samples (*A. paniculata* extract and *S. aureus*) and untreated samples (*S. aureus* only) were compared in terms of appearance of cytoplasmic protein bands to determine the effect of treatment. *A. paniculata* extract showed high antimicrobial activity against *S. aureus* with MIC and MBC value was 0.06 mg/ml. The MIC value was able to completely killed *S. aureus* in 24 hours incubation time. Lipase (76 kDa) was identified on SDS-PAGE analysis which was inhibited when treated with *A. paniculata* extract. The observation suggests that a possible mechanism by which methanolic extract of *A. paniculata* inhibits *S. aureus* by lowering production of an important protein, lipase.

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Peculiar nature of preparation of homeopathic herbal medicines and challenges in homeopathic pharmacopoeias

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Homeopathy is one of health system widely practiced in almost all continents. Dr. Hahnemann, the founder of the system, introduced an unconventional approach in the preparation of the medicines and a new therapeutic principle for the treatment of the sick. Hahnemann has not written a pharmacopeia detailing the standards of preparation of homeopathic medicines, but his other works such as Organon of medicine, Chronic Diseases and Materia medica Pura gives detailed process of its preparation. Based on this, pharmacopeia is evolved in different countries as official standards for preparation of homeopathic medicines. As on now, Germany, UK, France, USA, India, Brazil, Mexico has evolved official homeopathic pharmacopeia. About 70 % of the homeopathic medicines derive from herbs. There is discrepancy in the method of collection, preservation, parts used and even in the botanical names of the herbs in different homeopathic pharmacopeia. The International Conference of Drug Regulatory Authorities (ICDRA) jointly organized by the WHO and the Government of the People's Republic of China on 24–27 June, 2002 recommended harmonising the homeopathic pharmacopeias. The credibility of the medical system is based on the quality of its medicine. Qualitative and quantitative analysis of homeopathic medicines in ultra-high dilution is a big challenge. Therefore, authoritative information on drugs and preparations, their description, formulation, analytic composition, physical constants, main chemical properties used in identification, standards for strength, purity and dosage, chemical tests for determining identity and purity of the original herb used in the preparation of homeopathic medicine is highly essential. Nomenclature of the medicines in modern scientific terminology along with the exact botanical name is also essential to identify the medicine in different countries.

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