PHARMACOLOGICAL AND TOXICOLOGICAL STUDY OF FIVE SELECTED MEDICINAL PLANTS WITH TRADITIONALLY PERCEIVED HYPOGLYCEMIC ACTIVITY IN EMBU COUNTY

NJERU ZEPHANIA GITONGA

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Department of Biochemistry and Biotechnology
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Supervisors
Prof. Eliud N.M. Njagi
Department of Biochemistry and Biotechnology
Kenyatta University
Signature .................................. Date .........................................

Dr. Joseph J. N. Ngeranwa
Department of Biochemistry and Biotechnology
Kenyatta University
Signature .................................. Date .........................................
ABSTRACT

Aqueous extracts of *Aristida adscensionis* (common needle grass), *Mangifera indica* (mango tree), *Elaeodendron schlechterianum* (Loes) Loes, *Lonchocarpus bussei* (Harms) and *Aspilia mossambicensis* plants have been used for a long time by the people of Embu County in management of diabetes and other common ailments like abdominal infections. In spite of the progress in the management of diabetes using synthetic drugs, many traditional plants treatments are still used throughout the world. In spite of the extensive use of these plants, their efficacy and safety has not been determined. Many of the synthetic drugs used in management of diabetes are expensive and also pose serious side effects as they are used for a long time. Plants have been found to synthesize compounds that are useful in management of diabetes. However, few traditional anti-diabetic plants have received proper scientific validation. There is little evidence to verify hypoglycemic effects and possible toxicity of the plants. The aim of this study is therefore to determine the hypoglycemic potential and the safety of the five selected medicinal plants in mice. In this study, the toxicity, phytochemical, mineral composition and hypoglycemic activity of aqueous extracts from the above mentioned plants will be investigated. Screening the aqueous extract for hypoglycemic activity will be carried out on white male Albino mice with experimentally induced diabetes mellitus. The mineral composition of the plant extract will be estimated using Total Reflection X-ray Fluorescence system (TRXF), while the presence of the different types of phytochemicals will be assessed using standard procedures. The aqueous extract will be tested for toxicity by orally and intraperitoneally administering 1000mg/kgbw of the plant extract daily in mice for thirty days and determining changes in body and organ weight, hematological and biochemical parameters and histology. The data obtained will be statistically analyzed using one-way analysis of variance (ANOVA) and Post ANOVA. The level of significance for all the analysis will be set at p< 0.05. The research findings will provide an insight on efficacy and possible toxicity of the plants under test. The findings will further be useful in advising the communities on the effects of long term use of these plants,