



## Phytochemical Profiling, Toxicity Study and Abortifacient Activity of Seed and Whole Plant of *Momordica charantia* Linn. (Cucurbitaceae)

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### ABSTRACT

The objective of this study was to extract the seed and plant of *Momordica charantia* Linn. with methanol using soxhlet apparatus, phytochemically screen the methanol extracts using standard procedures, determine the acute toxicity of the methanol extracts of seeds and plant in Wistar strain rats by Lorke's method and evaluate the abortifacient activity on adult nonpregnant albino rat *in-vitro*. The phytochemical screening of both the methanol seed and plant extracts revealed the presence of carbohydrates, terpenoids, cardiac glycosides, cardenolides and saponins for seed, while carbohydrates, terpenoids, cardiac glycosides, cardenolides, saponins and flavonoids were present in the plant extract. The intraperitoneal LD<sub>50</sub> of seed and plant extracts were calculated to be 288 mg/kg and 714 mg/kg respectively. The abortifacient activity of *Momordica charantia* of both plant and seeds were investigated in induced contraction on the uterus in an organ bath setup. Oxytocin was used as a standard. The seed and plant extracts in a dose dependent manner induced contraction, the amplitude of contraction and percentage increase were independently significant ( $p < 0.05$ ). The result showed the synergistic activity between oxytocin and the plant extract. It may be concluded that the methanol seed and plant extracts of *M. charantia* induced uterine contraction, thus having abortifacient activity and this justifies this claim in traditional medicine.

## 1. Introduction

Pregnancy is defined as the period between conception (260–294 days since the first day of the last menstrual period) to birth time. Newborn before the interval of complete 37 weeks are called preterm and those born after 42 weeks or beyond are called post-term. Abortion is an act of deliberate termination or cessation of pregnancy. Miscarriage is also termed a spontaneous abortion which is the spontaneous loss of pregnancy before the 20<sup>th</sup> week which is usually painful both emotional and physical.

Miscarriage is one of the most frequent problems that happens during pregnancy in the human [1]. Some chemical substances, plants, beverages, drinks and other consumables to extent have the potentials of

causing miscarriage during pregnancy. These substances which include coffee (containing caffeine) consumption during pregnancy have been associated, in some studies, with miscarriage. Scientifically, there is no safe dose regimen or limit for alcohol during pregnancy, though the mechanism of this substance in miscarriage is still less-known. *Momordica charantia* or bitter melon is known to be domesticated in India and China. *Momordica charantia* grows in most tropical parts of the world, which include Eastern and Western Africa, Asia, the Caribbean and South Africa. It grows well during the rainy season in Nigeria. It is found mainly in home gardens and farmlands as a troublesome weed [3]. The plant has been used for long

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