

Role of Mahua (*Madhuca Longifolia*) in the Inhibition of Prostate Cancer Cells

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Abstract: The problem of prostate cancer, which is the second most deadly cancer that happens to men is being tried to overcome by the various phytochemicals and bioactive constituents obtained using the Indian medicinal plant *Madhuca indica* (syn., *Madhuca longifolia*) which could be a great discovery as an alternative treatment for inhibiting the growth of cancerous cells that are mainly due to the higher levels of PSA (prostate-specific antigen) and in the development of a better phytochemical based natural anti-cancer medicine. Various phytochemicals present in the *Madhuca* species were studied and their peculiar characteristics and their plant-based anti-proliferative property were investigated in the prostate cancer cell line. Various qualitative and quantitative tests done on the mahua showed the presence of various flavonoids, sugar, vitamin, protein, alkaloids, phenolic compounds, etc., were done and also various researchers suggested the quantities of various phytochemicals using the paper chromatographic techniques which showed certain effective phytochemicals present which showed a better amount of anti-proliferative property where the n-hexanoic extract of *M. longifolia* that was got through Soxhlet extraction showed a better activity at an increased concentration. Such effective bioactive compounds are really necessary that could be investigated further through in vivo models to develop anticancer drugs and that could curb the PSA levels in a better way.

Keywords: Prostate cancer, *Madhuca indica*, PSA, Bioactive compounds, Medicinal Plant extract, Chromatographic analysis, Anti-cancerous effect.

Introduction

General Overview of various types of cancer and prostate cancer:

Public health systems are facing a great threat in the most developed as well as in the under developed countries due to the uncontrollable growth of various deadly diseases over the past decades, commonly one of which includes cancers, which is portrayed as one of the difficult situations as its leading to a syndrome like situation which is neither curable nor preventable (Etemadi *et al.*, 2008). This deadly cancer is being referred to as one of the most noticeable, prevalent, mortality

causing and costly disease due to the hazard it causes irrespective of any gender or age. It is for a cause that this disease is considered as one of the most tremendously health damaging disease as it ranks 2nd in the most devastating and morbidities causal disease worldwide (Casey *et al.*, 2015) (Siegel *et al.*, 2015).

Uncontrolled cell division and growth is the reason that leads to its growth and spread from a single zone to its metastasising to various body portions which is a reason for threat of its rapid growth that further leads to its change from being a localised cancer to a metastasised cancer (Adjiri, 2016). The resistance it possesses against various