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***Mucuna pruriens* (L.) DC chemo sensitize human breast cancer cells via downregulation of prolactin-mediated JAK2/STAT5A signaling**

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Abstract:**Ethnopharmacological relevance**

Mucuna pruriens (L.) DC (MP) is an ancient Indian medicinal plant traditionally used to treat Parkinson's disease. L-Dopa (LD), precursor of dopamine is abundantly found in the seeds of MP. L-dopa is a natural inhibitor of prolactin (PRL) hormone which is required to maintain lactation in women but its over production (hyperprolactinemia) plays critical role in advancement of breast cancer.

Aim of the study

We aim to examine the pharmacological effect of LD and MP on this hyperprolactinemia associated breast cancer and related signaling for effective management of the disease. We also investigated chemo-sensitizing effect of MP on hyperprolactinemia-mediated cisplatin resistance.

Materials and Methods

Methanolic seed extract of MP were prepared and analysed using HPLC. Effect of LD and MP on the cellular viability of breast cancer cells (T47D, MCF-7, MDA-MB-468 and MDA-MB-231) were evaluated using MTT assay. Further, effect of LD and MP on colony forming potential, DNA damage, cell cycle distribution and apoptosis was determined using agar/agarose method, comet assay and annexin and PI method followed by FACS analysis. To reveal the molecular mechanism involved in the anti-cancer activity of MP, transcriptional and translational level analysis of the key proteins involved in the PRL-mediated signaling,

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