WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 8, Issue 7, 2081-2082. Research Article ISSN 2277– 7105

HEAVY METAL (CADMIUM) ANALYSIS OF SIDDHA DRUG OMAKUDINEER USING ICPMS METHOD

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Article Received on
17 April 2019,

Revised on 07 May 2019,
Accepted on 28 May 2019

DOI: 10.20959/wjpr20197-15169

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ABSTRACT

Siddha products are naturals products obtained from herbs, minerals and animals. With the growing awareness of siddha health care, people are moving towards siddha medicine due to its safety. Proper standardization of siddha drugs is mandatory to gain support for its use worldwide. Oma kudineer is a siddha sastric drug for the treatment of common cold in pediatric age group. The present study was carried out to standardize oma kudineer by evaluating its Heavy metal analysis by ICPMS method.

KEYWORDS: Oma kudineer, heavy metal, cadmium, icpms, herbal.

INTRODUCTION

Herbal medicines are widely used for treatment of various diseses. They often contain highly active pharmacological components including minerals and some metal traces. In recent years usage of herbs has been increased in health care intervention Safety concern with increasing interest in usage of herbal products and herbs has been increased. Plants are the main link in transfer of some heavy metals from contaminated soil to humans. heavy metals accumulate in food chain. Metals such as zinc, copper, iron are essential nutrients. however, an increase in their intake above permitable limits may become toxic. Oma kudineer is a polyherbal formulation which comprises of 4 drugs omam (Carum copticum), pepper (Piper nigrum), long pepper (Piper longum) and garlic (Allium sativum). The content of cadmium is evaluvated in the drug oma kudineer

MATERIALS AND METHOD

ICP-MS

Inductively Coupled Plasma Mass Spectrometry (ICP-MS): ICP-MS is a type of mass spectrometry that is highly sensitive and capable of the determination of a range of metals and several non-metals at concentration below one part in 1012 (parts per trillion). Samples are decomposed to neutral elements in high temperature argon plasma and analyzed based on their mass to charge ratios. It is an automated, simple and unique quantitative and qualitative analysis. It measures elemental isotopes ratio.

Procedure

Digestion of sample is carried out by transforming 2.5 ml of the sample into a closed beaker and 5 ml concentrated HNO3 was added and digested to near dryness. 16 M nitric acid was further added each time to the sample and digested until the clear solution was obtained. 5ml of 12 M Hydrochloric acid was added to ensure complete digestion. The digested solution was cooled to room temperature and made to the final volume of 100 ml with deionized water. Sample solutions were then filtered through membrane (0.45micron) filter. Finally, the digested samples were used for metal analysis using inductively coupled plasma Mass Spectrometry (Perkin Elmer DRC-e Model) .Each sample was digested in triplicate. A blank solution was also prepared in a similar manner. Machine Model: Agilent 7700 ICPMS.

Element	Concentration (mg/L)	Upper Limit (mg/L)
Cadmium (Cd)	**BDL**	0.299

BDL- Below Detective Level

RESULT

The above analysis using ICPMS for the detection of cadmium in the siddha drug oma kudineer showed BDL (Below detective level)so this proves this drug is safe to use.

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