1. INTRODUCTION

According to World Health Organization (WHO) – "Any plant and its organs containing any substance can be used therapeutically or can be used as raw material for chemical / pharmaceutical synthesis". Herbal medicine has been described as the oldest form of therapy practiced by human today, with Archaeological evidence of medicinal use of herbs dating back to 60,000 years. Herbal medicine often-complete conventional treatments, providing safe and well tolerated remedies for chronic illness (Patel PM et al., 2006)

In developing countries—all over the world—80% of population continues to use traditional medicine in primary medical problems. In the past decade, therefore, research has been focused on scientific evaluation of traditional drugs of plant origin. *Momordica charantia* (MC) is one such plant that has been frequently used as medicine (Giron et al., 1991; Lans et al., 1998). MC, a climber belonging to family Cucurbitaceae, is commonly known as bitter gourd or bitter melon in English and karela in Hindi. *Momordica* means, “to bite”—referring to the jagged edges of the leaf, which appear as if bitten. All parts of the plant, including the fruit, taste bitter. The fruit is oblong and resembles a small cucumber, young fruit is emerald green that turns to orange-yellow when ripe, credit MC with antidiabetic, antiviral, antitumor, antileukemic, antibacterial, anthelmintic, antimitagenic, antimycobacterial, antioxidant, antiulcer, anti-inflammatory, hypcholesterolemic, hypotriglyceridemic, hypotenive, immunostimulant, and insecticidal properties (Ng et al., 1992; Raman et al., 1996; Basch et al., 2006). Several phytochemicals such as momorcharins, momordenol, momordicillin, momordicins, momordin, momordolol, charantin, charine, cryptoxanthin, cucurbitins, cucurbitacins, cucurbitanes, cycloartenols, diosgenin, elaeostearic acids, erythrodial, galacturonic acids, gentisic acid, goyaglycosides, goyasaponins, multiflorenol, have been isolated (Husain et al., 1996; Yuan et al., 1999; Parkash et al., 2002). The hypoglycemic chemicals of MC are a mixture of steroidal saponins known as charantins, insulin-like peptides and alkaloids and these chemicals are concentrated in fruits of MC, therefore fruit of MC has shown more pronounced hypoglycemic/antihyperglycemic activity (Raman et al., 1996; Ali et al.,1993).
The fruits of *Momordica charantia* L. (Cucurbitaceae) are used as vegetable in different parts of the world. Apart from their use for consumption, the fruits are reported to possess wide range of pharmacological activities such as hypoglycaemic (Zheng et al., 2005), antidiabetic (Sathishsekar et al., 2005a), antifungal (Schmourlo et al., 2005), inhibition of p-glycoproteins (Limtrakul et al., 2004), antihyperlipidemic (Chen et al., 2005) and antioxidant effects (Sathishsekar et al., 2005b). The fruits are used traditionally as anthelmintic, anathematic, carminative, purgative and for the treatment of anemia, jaundice, malaria, cholera etc (Ross et al., 1999). In Turkey, the olive oil extract of fresh fruits or dry fruit mixed with honey is used for the treatment of peptic ulcer (Dengiz et al., 2005). Earlier study carried out with olive oil extract of fresh fruits, dry fruit in honey and ethanol extract of dry fruits reported that they all possess gastric cytoprotective effect in rats (Gurbuz et al., 2000). The fruits are also reported to prevent the growth of *Helicobacter pylori*, the organism responsible for development of gastric and duodenal ulcers (Yesilada et al., 1999).

Currently MC is one of the ingredient of many formulations which are used as antidiabetic medicine like Diabecon (Himalaya), Diasulin (Himalaya), Diabetes-Daily Care (Nature’s Health Supply), Diabeta (Ayurvedic cure Ayurvedic Herbal Health Products) (Modak et al., 2007).