

Introduction

Hepatocellular carcinoma (HCC) which is considered as Primary cancer of liver remains the fifth common cancer and the third leading cause of cancer mortality in the world (Schütte et al., 2009; Thun et al., 2010). The occurrence of HCC has been reported in several regions of the world such as Asia, sub-Saharan Africa, as well as parts of Europe and the North American continent (Jemal et al., 2011). Over the past decade, there was a progressive increase in the incidence of HCC among chronic liver disease patients in Egypt (El-Zayadi et al., 2005). Many risk factors such as inflammation have been incriminated in the occurrence of HCC (Pan et al., 2010).

Many side effects have been associated with chemotherapy for cancer and the therapeutic outcome remains very poor (Ahles et al., 2002). Therefore, many investigations is being conducted worldwide, to discover natural products that can suppress or prevent the process of carcinogenesis (Aggarwal et al., 2003).

Currently, camel milk has been used as a traditional medicine in Egypt in order to treat cancer and HCV infected patients. Camel's milk (CM) is an excellent source of well balanced nutrients and also exhibits a range of biological activities that influence digestion and metabolic responses to absorbed nutrients, growth and development of specific organs and resistance to diseases. These biological activities are mainly due to the presence of peptides and protein in milk (Korhonen and Pihlanto, 2001).

Camel milk is often used as an adjuvant treatment for several chronic diseases, such as diabetes mellitus, or in allergic patients (**Cardoso et al., 2010; Ehlayel et al., 2011**). Moreover, the anti-mutagenic and anti-carcinogenic potential of several milk constituents have been proven. It was proven that Camel casein induced apoptosis and that the viability of Huh7.5 cell line was greatly reduced (**EL-Fakharany et al., 2012**). The apoptosis caused by camel casein was also recorded in hepatoma and Hela cell lines (**Almahdy et al., 2011**).

Concomitantly, Two other compounds were used with or without camel milk to treat induced hepatocarcinogenesis including Curcuma longa extract (turmeric extract) and Cisplatin (a chemotherapeutic drug). The Curcumin (diferuloyl methane), is the major yellow pigment isolated from the ground rhizome of the curcuma species, belonging to the Zingiberaceae family. Curcumin has been proved to be a potent antioxidant (**Kuo et al. 1996**), anti-amyloid, anti-inflammatory, antimicrobial and anti-cancer agent (**Jagadeesh et al. 2009**). Curcumin suppresses the growth of several tumor cell lines, including drug-resistant lines (**Mukhopadhyay et al., 2002**). Cisplatin based combination chemotherapy regimens are currently used in the treatment of patients with solid tumor (**Langerak and Dreisbach, 2001**) never the less cisplatin was found to induce serious side effects including nephrotoxicity, neurotoxicity, ototoxicity, nausea and vomiting (**Giaccone, 2000**).

Therefore the aims of this work are the followings:

- 1- Investigate the ability of camel milk to regress hepatic cancer.
- 2- To compare the probable therapeutic effect of camel milk, turmeric extract and Cisplatin against induced hepatocarcinogenesis either alone or combined.
- 3- To examine the effect of camel milk on the cytotoxic effects of Cisplatin.