RESEARCH PAPER International Journal of Medical Sciences (October, 2009 to March, 2010) Vol. 2 Issue 2 : 152-154

Anti-cancer Activity of Arka (*Calotropis procera*) on HCT-15 Cancer Cell Line

MADHULIKA BHAGAT AND VIKAS SHARMA

See end of the article for authors' affiliation

Correspondence to :
VIKAS SHARMA
Division of Biochemistry and Plant Physiology, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, FOA, Main Campus, Chatha, JAMMU (J&K) INDIA

ABSTRACT

In vitro assay for cytotoxic activity of the stem-leaves of _Calotropis procera_ was carried out against human cancer cell lines at the concentration of 10, 30 and 100«g/ml. Results revealed that the extracts of the plant possessed _in vitro_ anticancer potential against HCT-15 (colon) cancer cell line at different concentrations. Further, the fractionation of the extracts was carried out and the fractions were tested on the same human cancer cell line. It was found that all the fractions inhibited the growth of HCT-15 at 100«g/ml except water-soluble fractions, but the significant growth inhibition was shown by the chloroform-soluble fractions of the ethanolic extract and 50% ethanolic extract.

Key words : *Calotropis procera, In vitro* cytotoxic, Human cancer cell lines

***Accepted :* August, 2009**

Calotropis procera (Ait.) R.Br., belongs to family Asclepiadaceae. It is a popular medicinal plant which possesses relevant medicinal properties especially lessening of inflammation, relief of pain, healing and reducing secondary bacterial infections (Fabiyi *et al*., 1993). The decoction of the aerial parts of the plant is commonly used in Saudi Arabia as traditional medicine for the treatment of variety of diseases including fever, joint pain, muscular spasm, constipation and its ethanolic extract have a significant antipyretic, analgesic, neuromuscular blocking activity (Mossa *et al*., 1991). The latex of *Calotropis procera* contains antinociceptive (Soares *et al*., 2005), anti-inflammatory (Kumar and Basu, 1994), antipyretic (Larhsini *et al*., 2002), antidiarrhoeal (Kumar *et al*., 2001), anthelmintic (Al-Qarawi *et al*., 2001) and analgesic (Dewan *et al*., 2000) properties. The present investigation is an attempt to identify novel anticancer agents from traditional herbal medicine by carrying out *in vitro* cytotoxicity of *Calotropis procera* stem-leaves extracts against human cancer cells.

MATERIALS AND METHODS

Plant material:

The plant parts were collected in the month of July from Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu. The freshly collected plant parts were chopped, shade dried and ground into powder. The powdered dried plant material was then extracted with different solvents at room temperature to obtain extracts for bio-evaluation.

Extraction of plant material:

The ethanolic extract was prepared by percolating the dried ground plant material (100g) with 95% ethanol and then concentrating it to dryness under reduced pressure. For aqueous ethanolic (50% ethanolic) extract, dried ground plant material (100g) was percolated with 50% ethanol and concentrated to dryness under reduced pressure. The aqueous extract was obtained by boiling dried ground plant material (100g) for 30 min. in distilled water (300ml).

Preparation of stock/working solutions and positive control:

Stock solutions of 20mg/ml were prepared by dissolving ethanolic extract in DMSO, 50% ethanolic extract in 50% DMSO and aqueous extract in sterile water. Stock solutions were prepared atleast one day in advance and were not filtered/sterilized, but the microbial