RESULTS:

bark material was powdered (250g) and extracted with hexane, Pharnanza Herbal Pvt. Ltd. Anand, India (PHPL/HB/060). The dried in vitro (India). Dimethyl sulphoxide, other chemicals and solvents used in this study were of analytical grade and obtained from Merck Limited, Mumbai (India). Trypsin and MTT were obtained from Sigma Aldrich, Bangalore (FBS), RNase A, ethidium bromide, penicillin and streptomycin Dulbecco’s Modified Eagle medium (DMEM), Fetal bovine serum (DME), cell cultures were further incubated for 24 h at 37 °C and 6.5 % CO2. 

Conclusion:

Symlocos racemosa bark extracts showed potential cytotoxic effects on human hepatocellular carcinoma cells. The anticancer activity exhibited by ethyl acetate and chloroform extract might be due to presence of phenolics and flavonoid constituents present in the bark. Ethyl acetate extract can further be explored for possible cytotoxic activity using in vivo models of liver cancer.

Keywords: Symlocos racemosa, Hepato cellular carcinoma, Cytotoxicity, Hep3B, MTT assay.

Objectives:

To investigate in vitro anticancer activity of different extracts of bark of Symlocos racemosa against hepatocellular carcinoma.

Methods:

Different successive extracts of Symlocos racemosa bark were prepared using hexane, chloroform, ethyl acetate, n-butanol and water and were tested in vitro for cytotoxicity using (3-4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium (MTT) assay in rat normal liver cells (BRL-3A) and human hepatocellular carcinoma (Hep3B) cells.

Results:

Ethyl acetate and chloroform extract of Symlocos racemosa exhibited cytotoxicity against human hepatocellular carcinoma (Hep3B) cells in vitro with IC50 value (µg/ml) of 63.45 and 75.55 respectively and not affected the normal liver (BRL-3A) cells.

Evaluation of IN VITRO ANTICANCER ACTIVITY OF SYMLOCOS RACEMOSA BARK AGAINST HEPATOCELLULAR CARCINOMA

Niyati S. Acharya1, Unnati R. Shah2, Ripal G. Shah3, Sanjeev Acharya1, Lal Hingorani4

1Department of Pharmacognosy, Institute of Pharmacy, Nirma University, Ahmedabad 382481, 2Department of Pharmacognosy, Pioneer Pharmacy Degree College, Vadodara 390019, 3Sun Pharmaceutical Advanced Research Center, Vadodara 390012, 4Pharmazna Herbal Pvt. Ltd., Kaniya, Anand 388430

Email: niyatis20103@gmail.com

Received: 23 Jul 2015 Revised and Accepted: 22 Sep 2015

ABSTRACT

Objective: To investigate in vitro anticancer activity of different extracts of bark of Symlocos racemosa against hepatocellular carcinoma.

Methods: Different successive extracts of Symlocos racemosa bark were prepared using hexane, chloroform, ethyl acetate, n-butanol and water and were tested in vitro for cytotoxicity using (3-4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium (MTT) assay in rat normal liver cells (BRL-3A) and human hepatocellular carcinoma (Hep3B) cells.

Results: Ethyl acetate and chloroform extract of Symlocos racemosa exhibited cytotoxicity against human hepatocellular carcinoma (Hep3B) cells.

Conclusion: Symlocos racemosa bark extracts showed potential cytotoxic effects on human hepatocellular carcinoma cells. The anticancer activity exhibited by ethyl acetate and chloroform extract might be due to presence of phenolics and flavonoid constituents present in the bark. Ethyl acetate extract can further be explored for possible cytotoxic activity using in vivo models of liver cancer.

Keywords: Symlocos racemosa, Hepato cellular carcinoma, Cytotoxicity, Hep3B, MTT assay.
Percentage cell growth inhibition or percentage cytotoxicity was calculated by following formula: \( \% \text{ cytotoxicity} = 100 - \% \text{ cell viability} \) [14].

In the present study, the cytotoxic effect of different extracts of *Symplocos racemosa* bark was evaluated on human hepatoma cell (Hep3B) and normal liver cell (BRL-3A) compared to standard drug doxorubicin using MTT assay method after 24 h of treatment. The results revealed that amongst all extracts tested, ethyl acetate extract and chloroform extract showed potential effectiveness against Hep3B cell lines with IC\textsubscript{50} value (µg/ml) of 63.45 and 75.55 respectively and not affected normal cells BRL-3A (>1000 µg/ml). Moderate effectiveness of n-butanol extract against Hep3B cell lines was also observed with IC\textsubscript{50} 111.3µg/ml. Fig. 1 and 2 showed the graphical representation of concentration in µg/ml versus % cell inhibition of standard doxorubicin and five different extracts of *S. racemosa* against Hep3B and BRL-3A cell lines respectively using MTT assay. Table 1 represents the IC\textsubscript{50} value of doxorubicin and five different extracts of *S. racemosa* bark against Hep3B cell line.

The results are shown as mean±SEM from three independent experiments.

**CONFLICT OF INTERESTS**

Declared None

**REFERENCES**