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Data Article

In vitro studies data on anticancer activity of *Caesalpinia sappan L.* heartwood and leaf extracts on *MCF7* and *A549* cell lines

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ARTICLE INFO

Keywords:
Chloroform extract
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ABSTRACT

This article contains data on in vitro cytotoxicity activity of chloroform, methanolic and water extracts of leaf and heartwood of *Caesalpinia sappan L.* a medicinal plant against Breast cancer (MCF-7) and Lung cancer (A-549) cells. This data shows that Brazilin A, a natural bioactive compound in heartwood of *Caesalpinia sappan L.*induced cell death in breast cancer (MCF-7) cells. The therapeutic property was further proved by docking the Brazilin A molecule against BCL-2 protein (an apoptotic inhibitor) using auto dock tools.

Specifications table

Subject area	Biology
More specific subject area	Screening for Anti Cancer Activity in medicinal plants and Ethno medicines
Type of data	Tables, microscopy images, text file, graphs, Chromatogram figure, docking images

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How data was acquired	Conducting of anticancer activity assays and cytotoxicity studies with methanol and water extracts of leaf and heartwood *of Caesalpinia sappan* L. on MCF-7 (Human breast cancer) and A549 (Human lung cancer) cell lines. The in vitro anti tumor activity was screened by assessing tumor volume, viable and nonviable tumor cell count, tumor weight, hematological parameters and biochemical estimations by MTT Assay and Flow cytometry studies.
Data format	Analyzed data
Experimental factors	Leaf and heart wood was extracted in chloroform, water and methanol solvents to study their cytotoxic effect on human cancer cell lines and determine the extracts IC_{50} value.
Experimental features	The effect of leaf and heartwood extracts prepared in water and methanol on MCF-7 (Human breast cancer) and A549 (Human lung cancer) and Identification of compounds from *Caesalpinia sappan L.,* leaf and heartwood water and methanol extracts through LC–MS ( ) and Docking studies against a BCl2 (B-cell lymphoma 2) protein which regulates the apoptosis.
Data source location	Yogi Vemana University campus green house facility (N 14°.473′, E 78°.710)
Data accessibility	Data are available within this article

Value of the data

- The data can be further explored to develop and design anticancer drugs for human Lung and breast cancer treatment from *Caesalpinia sappan* L. plant as a source for drugs [1,2].
- These plant compounds can also be tried on other types of cancers for anticancer activity and compare with curing effect with the drugs currently in use, as plant based products are safer than synthetic drugs and with no side effects.

1. Data

The Dataset in this study shows the potential of leaf and heart wood extracts (chloroform, methanol and water) of *Caesalpinia sappan L.* (Family: *Caesalpiniaceae L.)* as anti cancer agents(Fig. 1 and Table 1) which can be used further for drug development and designing in pharmaceutical industry. The Protein BCL-2 was used for carrying out docking studies (Fig. 2) with the compounds from leaf and heartwood (Figs. 3–6) (Table 2).

2. Experimental design, materials and methods

2.1. Cell culture

The pure cultures of *MCF-7* (Breast cancer cell line) and *A549* (Lung Cancer), were obtained From National Centre for Cell Science, Pune, Maharashtra state,India. The cells were grown and maintained in RPMI – 1640 media, supplemented with 10% v/v foetal bovine serum, sodium carbonate with 100 mg/l penicillin, 50 mg/l streptomycin to prevent the bacterial contamination and incubated at 37 °C in a humidified atmosphere having 5% CO_2.

2.2. Anticancer assay

Soxhlet extraction method [3] was used for extraction of heart wood and powdered leaf sample of *Caesalpinia sappan L.* The cytotoxic activity of these extracts was tested against MCF7 and A549 cell

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