





# Document details - Partially purified lead molecules from *Dodonaea viscosa* and their antimicrobial efficacy against infectious human pathogens

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## Partially purified lead molecules from *Dodonaea viscosa* and their antimicrobial efficacy against infectious human pathogens(Article)([Open Access](#))

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### Abstract

**Background:** The utilization of medicinal plants and their drugs have the advantage of reducing side effects compared with manufactured antimicrobials. Artificial drugs have unpleasant side effects, further, the number of drug resistant pathogens is increasing, thus huge challenge for control of resistant pathogens. Therefore, the current research explores the potential of partially purified bioactive compounds from *Dodonaea viscosa* against certain human pathogens. **Methods:** Healthy leaves of *D. viscosa* (L.) were collected, extracted and optimized with different solvents. Preliminary phytochemical screening of the extracts was done and antibacterial activities were tested against human pathogens. The active crude extract was further purified by column chromatography and the homogeneity was confirmed by thin layer chromatography (TLC). The partially purified compounds were screened further for antibacterial, antibiofilm and anticancer activities. **Results:** The crude ethanol extract of *D. viscosa* leaves showed the presence of phytochemical like tannins, alkaloids, flavanoids, terpenoids, glycosides, steroids and phenols. Ethanol extract exhibited the maximum zone of inhibition (11 mm) against *S. agalactiae*, *B. cereus*, *S. typhi* and *E. coli* at 15 mg when compared with other bacteria. Column chromatography fractions Dv12 and Dv20 exhibited the maximum zone of inhibition against *B. cereus*. 1000 µg of Dv12 partially purified compound against streptococcus isolates in glass test tube showed biofilm inhibition range of 34.4%–63.1%. Whereas *B. cereus*, *S. aureus*, *S. typhi*, and *K. pneumoniae* showed 31.1%–53.6% biofilm inhibition compared to curcumin control. Active fractions of Dv12 and Dv20 increased concentration confirmed that the gradual decrease in cell density and possesses growth inhibition towards A 549 human lung adenocarcinoma cells. **Conclusion:** We have extracted the bioactive compounds from *D. viscosa* (L.) leaves and tested the activity of a partially purified compound against human pathogenic bacteria, biofilm formation and cytotoxicity against A 549 human lung adenocarcinoma cells. The purified bioactive compounds might be used as therapeutic agents against different microbial infections such as skin infection, throat infection and other infectious diseases. © 2021

### Author keywords

[Anti-bacterial](#) [Anti-biofilm](#) [Anti-cancer](#) [Bioactive compounds](#) [Dodonaea viscosa](#) [Partially purified](#)

### Indexed keywords

EMTREE drug terms: [alcohol](#) [alkaloid](#) [curcumin](#) [glycoside](#) [phytochemical](#) [polypeptide antibiotic agent](#) [steroid](#) [tannin derivative](#) [terpenoid](#) [antiinfective agent](#) [plant extract](#)

### Cited by 1 document

Herrera-Calderon, O. , Pari-Olarte, J.B. , Chacaltana-Ramos, L.J.

In silico Evaluation of Dodonic Acid from *Dodonaea viscosa* Jacq on Target Proteins from *Staphylococcus aureus*

(2022) *Journal of Pure and Applied Microbiology*

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high content screening   human   human cell   *Klebsiella pneumoniae*   pathogenesis  
pharyngitis   plant leaf   screening   skin infection   *Staphylococcus aureus*   *Streptococcus*  
thin layer chromatography   zone of inhibition   communicable disease   microbial sensitivity test

MeSH:

Anti-Bacterial Agents   Anti-Infective Agents   Communicable Diseases   *Escherichia coli*  
Humans   Microbial Sensitivity Tests   Plant Extracts   *Staphylococcus aureus*

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