



## NOTE

### Studies on Antibacterial Activity of *Viburnum punctatum* Buch-Ham. Ex D. Don

A. RENJITH ALEX<sup>1,2,\*</sup> and K. ILANGO<sup>3</sup>

<sup>1</sup>Devaki Amma Memorial College of Pharmacy, Malappuram-673 634, India

<sup>2</sup>Karpagam University, Coimbatore-641 021, India

<sup>3</sup>SRM College of Pharmacy, SRM University, Kattankulathur, Kanchipuram-603 203, India

\*Corresponding author: E-mail: akin\_pharm@yahoo.co.in

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Various extracts of the aerial parts of *Viburnum punctatum* were screened for antibacterial activity against *E. coli* and *S. aureus* by cup plate method in nutrient agar medium. The activity was compared with standard ciprofloxacin under similar conditions. *Viburnum punctatum* extracts were found to exhibit moderate antibacterial activity but the methanolic extract exhibits significant antibacterial activity against *E. coli* and *S. aureus* as compared to the standard ciprofloxacin.

**Key Words:** *Viburnum punctatum*, Antibacterial activity, Cup plate method.

*Viburnum punctatum* is a medicinal plant belonging to caprifoliaceae family. The various parts of the plant was traditionally used for the treatment of stomach disorders, fever and antiperiodic effect<sup>1</sup>. The phytochemical constituents such as flavanoids, steroids, glycosides, terpenoids, alkaloids, tannins and other polyphenolic compounds and the derivatives are reported to be present with this species<sup>2</sup>. A few *Viburnum* species such as *Viburnum chinshanense*<sup>3</sup>, *Viburnum luzonicum*<sup>4</sup>, *Viburnum nervosum*<sup>5</sup>, *Viburnum foetidum*<sup>6</sup>, *Viburnum awabukii*<sup>7</sup> and *Viburnum acuminatum*<sup>8</sup> have been already investigated and reported in the literatures for their medicinal values such as analgesic, antiinflammatory and antispasmodic effects. Antibacterial activity of *Viburnum punctatum* is relatively less explored, so based on the evidence, present work is to study the antibacterial activity of aerial parts of *Viburnum punctatum* against *E. coli* and *S. aureus* by cup plate method in nutrient agar medium.

The aerial parts of *Viburnum punctatum* were collected from Nilgiri hills and authenticated by Dr. V. Chellathurai, Professor of Botany, Government Siddha Medical College, Tirunelveli, Tamilnadu, India and the voucher specimen has been deposited at the pharmaceutical chemistry department. The powdered material was extracted with petroleum ether, methanol, chloroform and water for five days. It was then filtered to get the petroleum ether extract (PVP), methanolic extract (MVP), chloroform extract (CVP), aqueous extract (AVP), which were evaporated to dryness under vacuum and the dried extract was used for the antibacterial activity.

**Antibacterial screening:** The estimation of potency of various plant extracts of *Viburnum punctatum* were performed for its antibacterial activity by cup plate method<sup>9</sup>. This is based on the measurement of zone of inhibition of bacterial growth. The various extract of *Viburnum punctatum* was placed on the surface of the agar medium, previously inoculated with a culture of *E. coli* and *S. aureus*<sup>10</sup>. The inhibition produced by the various extracts of *Viburnum punctatum* were compared with that of standard ciprofloxacin. Antibacterial activity of various extracts of *Viburnum punctatum* is presented in Table-1.

TABLE-1  
ANTIBACTERIAL ACTIVITY OF VARIOUS  
EXTRACTS OF *Viburnum punctatum*

Compound	Zone of Inhibition (in mm)			
	<i>E. coli</i>		<i>S. aureus</i>	
	100 µg	200 µg	100 µg	200 µg
Petroleum ether extract	–	12	–	12
Methanolic extract	18	20	17	21
Chloroform extract	12	14	13	14
Aqueous extract	–	12	11	14
Ciprofloxacin	34	36	32	34

Results of antibacterial activity (Table-1) indicates the various aerial parts of extracts of *Viburnum punctatum* exhibit moderate antibacterial activity (zone of inhibition 11 - 17 mm) against *E. coli* and *S. aureus* but the methanolic extract (MVP) exhibits significant activity against *E. coli* and *S. aureus* (zone of inhibition 18-21 mm) as compared with that of standard

ciprofloxacin (zone of inhibition 30-34 mm) under similar conditions. Further studies regarding isolation and antimicrobial screening are under process.

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