

# Antibacterial Activity of Mushroom *Osmoporus Odoratus*

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The petroleum ether, chloroform, acetone and water extracts of mushroom *Osmoporus odoratus* were selected for examine the antibacterial activity against *Staphylococcus aureus*, *Streptococcus pyogenes*, *Bacillus subtilis*, *Escherichia coli* and *Pseudomonas aeruginosa* by disc diffusion method using Muller Hinton agar media. And the extracts were compared with that of standard ampicillin (30 µg) and chloramphenicol (30 µg). The water extract alone showed antibacterial activity against the tested organisms and the results were comparable with that of ampicillin rather than chloramphenicol.

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**TABLE 1: ANTIBACTERIAL ACTIVITY OF DIFFERENT EXTRACTS OF *OSMOPORUS ODORATUS***

Organisms	Diameter of the inhibition zone (mm)					
	1	2	3	4	5	6
<i>Staphylococcus aureus</i>	-	-	-	12±0.23	16±0.12	25±0.08
<i>Streptococcus pyogenes</i>	-	-	-	14±0.06	22±0.05	28±0.03
<i>Bacillus subtilis</i>	-	-	-	21±0.05	15±0.02	35±0.05
<i>Escherichia coli</i>	-	-	-	09±0.02	18±0.15	40±0.10
<i>Pseudomonas aeruginosa</i>	-	-	-	10±0.10	17±0.13	26±0.14

\*All the values are mean±standard deviation of three determinations. 1. petroleum ether extract; 2. chloroform extract; 3. acetone extract; 4. water extract; 5. ampicillin (30 µg); 6. chloramphenicol (30 µg);

The mushroom *Osmoporus odoratus* is grows on horizontal surface, it is carpophores, 6.5×2.3 cm bracket shaped, sessile or turbinate circle<sup>1</sup>. Literature survey revealed the reports on the presence of compounds like 4-methoxy benzaldehyde, 4-hydroxy benzaldehyde, 4-methoxy phenyl acetaldehyde in *Osmoporus odoratus*. The present study was attempted to examine antibacterial property of the mushroom. The mushroom *Osmoporus odoratus* was collected from a tamarind tree growing in and around Melmaruvathur, Kancheepuram district, Tamil Nadu. The mushroom was dried in shade, powdered and extracted successfully with petroleum ether, chloroform, acetone and water using a Soxhlet extractor<sup>2</sup>. The extracts were collected and concentrated to dryness, the solid masses were redissolved in dimethylformamide (DMF) to get concentration of 100 µg/ml and screened for antibacterial activity<sup>3,4</sup>. Bacterial cultures used for antibacterial screening were *Staphylococcus aureus*, *Streptococcus pyogenes*, *Bacillus subtilis*, *Escherichia coli* and *Pseudomonas aeruginosa*. These bacterial cultures were obtained from Department of Microbiology, King Institute, Guindy, Chennai-600 032. The antibacterial activity was performed by disc diffusion method<sup>5</sup> using Mueller Hinton agar media. Sterilized Whatman No. 1. filter paper disc (diameter 6 mm) containing 100 µg/disc of each mushroom extracts were placed onto the surface of agar media. DMF alone served as negative control. The discs containing standard ampicillin (30 µg) and chloramphenicol (30 µg) were used as positive control. Aseptic conditions were maintained through out the experiment. The plates were incubated at 37±1° for 24 h. The assessment of antibacterial activity was based on the measurement of diameter of zone of inhibition (mm) formed around the disc. The results of the antibacterial activity of *Osmoporus odoratus* are summarized in Table 1.

The results indicates that the water extract exhibited antibacterial activity against the all tested microorganisms

selected in the study while the other extracts did not show any sign of activity. Further more the antibacterial activity of water extract was more or less close to that of standard ampicillin against the tested organisms. However the antibacterial activity of water extract was lower than that of standard chloramphenicol. A detailed study of the phytoconstituents in relation to the antibacterial property of water extract which show more light on its potential use in the treatment of bacterial infection.

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