Technical Sessions : A - 28

# Investigation of antibacterial activity of pinda thailaya

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Pinda Thailaya (PT) is an herbal ayurvedic preparation which is used mainly to treat gout, where inflammation of joints occurs due to deposition of uric acid crystals in joint fluid and capsule. This substance is applied topically, and is also used for the treatment of wounds. The objective of this study was to determine the anti-bacterial activity of PT, and to compare the antibacterial activity of different brands of PT available in the Sri Lankan market.

The antibacterial activity was determined by measuring the diameter of the zone of inhibition, and was tested against the bacterial strains, *Escherichia coli* (ATCC 25922, Gram-negative), *Staphylococcus aureus* (ATCC 25923, Gram-positive) and *Bacillus subtilis* (MTCC 121) by the disc-diffusion method. Three PT samples available in the local market, 'DC', 'L' and 'K' were examined. The minimum inhibitory concentration (MIC) was determined for the sample produced by Ayurvedic Drug Corporation (DC). The positive control was Azithromycin (1.5 mg/mL), and the negative control was DMSO: $CH_2Cl_2$ 1: 2.

Zone of inhibition from different percentages of PT of the Ayurvedic Drug Corporation were compared with that of the controls (Table 1). The results showed that all PT samples investigated in this study showed antibacterial activity against *E. coli*, *S. aureus* and *B. subtilis*. The pinda thailaya from the Ayurvedic Drug Corporation had the highest antibacterial activity.

**Table 1:** Diameter of inhibition zones shown by v/v 70% PT samples

| Bacterial strain | Diameter of zone of inhibition/mm | | | | |
|---|---|---|---|---|---|
| | (-) control | (+) control | Sample 'DC' | Sam-ple 'L' | Sample 'K' |
| *E. coli* | 0.0 | 19 (18-20) | 11 (10-13) | 6 (6-7) | 6 (6-7) |
| *S. aureus* | 0.0 | 10 (9-12) | 7 (5-9) | 7 (6-8) | 0 |
| *B. subtilis* | 0.0 | 25 (20-31) | 9.5 (6-12) | 6 | 6 |

(The range observed is given in parenthesis below the value.)

The Minimum Inhibitory Concentration (MIC) of pinda thailaya from Ayurveda Drug Corporation for the different bacterial strains are as follows: *E. coli* – 25% PT, *S. aureus* – 10% PT, *B. subtilis* - 19% PT (Table 2).

**Table 2:** Diameter of inhibition zones of PT of different concentrations from DC samples

| Bacterial strain | Diameter of zone of inhibition/ mm | | | | |
|---|---|---|---|---|---|
| | (- ) control | (+) control | PT10% | PT19% | PT25% |
| *E. coli* | 0.0 | 15 | 0.0 | 0.00 | 7.66 |
| *S. aureus* | 0.0 | 25 | 09 | 15 | |
| *B. subtilis* | 0.0 | 23 | 0.0 | 7 | |

**References:**

1. Ayurveda Pharmacopoeia; Department of Ayurveda, Colombo,Sri Lanka:
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