

## Antimicrobial Activity of Amrycard Powder (A Ayurvedic formulation)

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**Abstract:** Antimicrobial activity was also studied against *Bacillus subtilis*, *Escherichia coli*, *Streptococcus aureus* and *staphylococcus* by using cup-plate method. Erythromycin was used as standard antibacterial agent. The methanol extract was diluted into different concentration (1,2, 4, 6, 8, 10 mg/100 µl) with DMSO. The results of the study revealed that, the Amrycard powder exhibited significant antibacterial activity.

**Key words:** Amrycard powder • *Streptococcus aureus* • DMSO • Erythromycin

### INTRODUCTION

Amrycard powder traditional used for the treatment of diabetics, it consists of Tej patra (*Cinnamomum Iners*), Bilv patra (*Aegle marmelos*), Gular patra (*Ficus racemosa*), Jamun patra (*Psidium guyava*), Methi beej (*Foeniculum vulgare*), Giloe (*Tinospora cordifolia*) and Neem Patra (*Azardirachta indica*). The ethnomedical claims of *Tinospora cordifolia*, *Cinnamomum iners*, *Ficus racemosa* and *Azardirachta indica* are antiseptic in urinary tract diseases, eczema, fever, cough, jaundice, laxative, diabetics and wounds. *Foeniculum vulgare* and *Aegle marmelos* as laxative, astringent, antipyretic and also contain tannins [1,2].

### MATERIALS AND METHODS

**Preparation of Amrycard Powder:** Tej patra, Bilv patra, Gular patra, Jamun patra, Methi beej, Giloe and Neem Patra made were reduced to fine powder and passed through the Sieve no.100 and mixed in geometric proportion and packed in well-closed container.

**Test Microorganisms:** Bacterial strains were obtained from Microbial type culture collection (MTCC) *Staphylococcus aureus* MTCC 3160, *Escherichia coli* MTCC 40, *Streptococcus* MTCC 389 and *Bacillus Subtilis* MTCC 121, procured from Department of Biotechnology, Nagarjuna College of Engineering and Technology, Bangalore.

**Preparation of Extract:** Amrycard powder was extracted with methanol by maceration process. The different concentrations (1, 2, 4, 6, 8 and 10 mg/100 µl) were prepared with DMSO for antimicrobial activity.

**Antimicrobial Activity:** The antimicrobial activity was evaluated by employing 24 hrs cultures of *B. subtilis*, *E. coli*, *S. aureus* and *Staphylococcus*, using nutrient agar medium. The bacterial strains were transferred to sterile plates aseptically. The plates were left at room temperature and allowed for solidification. In each plate one well of 6 mm diameter were made using a sterile borer. Accurately 100 µl different dilutions of methanol extract of Amrycard powder (1, 2, 4, 6, 8, 10 mg) and single concentration of erythromycin (5 mg/ml) solutions were transferred to wells aseptically and labeled accordingly. The plates were incubated at 37±1°C for 24 hrs. The diameter of zone of inhibition surrounding each of wells was recorded [3,4].

### RESULTS AND DISCUSSION

Antibacterial activity of different concentration of methanol extract of Amrycard powder was measured in terms of Zone of Inhibition. It revealed that significant antibacterial activity was showed against bacterial strains like *Escherichia coli*, *staphylococcus*, *Bacillus subtilis* and *Streptococcus* in comparison with standard erythromycin. Amrycard powder showed maximum effect against *E.Coli* and *Streptococcus* at small concentrations (Table 1).

Table 1: Antibacterial activity of methanol extract of Amrycard Powder

Microorganisms	Zone of Inhibition of methanol extract in mm						
	1 mg	2 mg	4 mg	6 mg	8 mg	10 mg	Erythromycin 5 µg/100 µl
<i>E. coli</i>	15	18	22	20	20	23	18
<i>Staphylococcus</i>	4	10	15	20	20	21	25
<i>B. subtilis</i>	5	10	17	15	18	17	25
<i>S. aureus</i>	10	12	15	12	15	17	18

The antibacterial activity of Amrycard powder showed significant activity against *E. coli* and *S. aureus* at 1 mg/ml concentration. This activity is due to the constituents like *Tinospora cordifolia*, *Cinnamomum iners*, *Ficus racemosa* and *Azardirachta indica* are antiseptic in urinary tract diseases, eczema, fever, cough, jaundice, laxative, diabetics and wounds. *Foeniculum vulgare* and *Aegle marmelos* as laxative, astringent, antipyretic and also contain tannins [1,2].

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