

CHAPTER 15

Antibacterial activity of selected plants against

Streptococcus pyogenes

MB Rojalin¹, Sweta Mishra¹, Gyanranjan Mahalik² and Nihar Ranjan Singh^{*3}

¹Biodiversity and Conservation Lab., Ambika Prasad Research Foundation, Odisha, India

²School of Applied Sciences, Centurion University of Technology and Management, Odisha, India

³Department of Botany, Ravenshaw University, Odisha, India

*Email-Id: nihar.singh@gmail.com

ABSTRACT

Streptococcus pyogenes a bacteria causes several diseases in humans' like-skin infection, throat infection, fever, etc. Hence an attempt has been made taken to gather the reported information and from which *Azadirachata indica*, *Helicteres isora*, *Clerodendrum viscisum* & *Chromolaena odorata* plants are selected in the urban areas of Bhubaneswar. The results revealed through phytochemical screening, thin layered chromatography and anti-bacterial activities of the selected plant species that some of them show pharmacological potential against *S. pyogenes*.

Keywords: *Streptococcus pyogenes*, Antibacterial, *Azadirachata indica*, *Helicteres isora*, *Clerodendrum viscisum*, *Chromolaena odorata*

15.1 INTRODUCTION

Streptococcus pyogenes is a gram – positive beta haemolytic bacteria. It is also known as group A streptococci (GAS) that causes a wide variety of infections in infants, children and adults. (Randhawa *et al.* 2018). It tends to group together in chains or pair of cells (Westbroek *et al.* 2010). Cells of this species have a diameter of 0.5-1.0 micrometre and are usually spherical to ovoid cocci. *Streptococcus pyogenes* is a facultative anaerobe and the optimal temperature for growth is 37°C. *Streptococcus pyogenes* required a nutrient rich medium of serum and blood for its growth (Zhou and Li 2015). *S. pyogenes* is a gram-positive bacterium that causes several diseases in humans, including pharyngitis, skin infections, acute rheumatic fever, scarlet fever, post streptococcal glomerulonephritis, a toxic shock like syndrome and necrotizing fasciitis(Cunningham MW 2000).Plant-derived compounds of interest are