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ORIGINAL ARTICLE

# Synthesis and biological evaluation of new oxime-ether derivatives of steroid as anti-bacterial agents <sup>☆</sup>

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## KEYWORDS

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**Abstract** Various oxime-ether derivatives of cholesterol have been synthesized by the alkylation of the steroidal oxime with 1-(2-chloroethyl) pyrrolidine hydrogen chloride/chloroethylamine hydrochloride in the presence of sodium methoxide in dry methanol. The structures of these compounds were elucidated by IR <sup>1</sup>H NMR, FAB mass spectroscopic methods and elemental analyses. The anti-bacterial activity was first tested *in vitro* by the disk diffusion method against two Gram-positive and two Gram-negative bacteria, and then the minimum inhibitory concentration (MIC) of compounds were determined. The results showed that the chloro derivatives exhibited better anti-bacterial activity than the standard drug chloramphenicol.

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<sup>☆</sup> A new series of steroidal oxime-ether derivatives were synthesized. The anti-bacterial activity of these compounds was determined with reference to standard drug chloramphenicol.

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## 1. Introduction

The tissue-lying *Staphylococcus aureus*, *Streptococcus pyogenes*, *Salmonella typhimurium* and *Escherichia coli* causes food poisoning, rheumatic, salmonellosis and diarrhea; these are the second leading cause of death from bacterial disease worldwide (Qadri et al., 2005). More than 50 million people worldwide are infected and up to 150,000 die every year due to these bacterial infections (Zhang et al., 2006). Amoxicillin, norfloxacin, chloramphenicol, ciprofloxacin are the most common drugs used for these bacterial infections but are associated with severe side effects (Puertoa et al., 2006). Toxicity and resistance to the drugs also play important role in the treatment failure (Dore and Lacroix, 1987). Therefore; there is an urgent need to screen new compounds for the development of new anti-bacterial agents. The study of oxime-ether derivatives have become of much interest in recent years on account of their antiprotozoan (Brain et al., 1989), anti-bacterial (Chern