1.6 Rifampin (Rifampicin)

Rifampin is a semisynthetic derivative of macrocyclic antibiotic produced by *Streptomyces mediterranei*. Rifampin is a bactericidal, large lipid-soluble molecule active against gram-negative and gram-positive cocci, mycobacteria, enteric bacteria, and chlamydiae. It is used in the treatment of mycobacterial Infections (Katzung *et al.* 2004). Rifampin's mechanism of action is through binding to the β-subunit of bacterial DNA-dependent RNA polymerase and thereby inhibits RNA synthesis. However, it does not affect mammalian polymerases (Craig and Stitzel 2004).

1.6.1 Rifampin drug interactions

Rifampin is an enzyme inducer which potently induces CYP1A2, 3A4, 2D6, 2C8, 2C9, and 2C19. Therefore, reduces the $t_{0.5}$ of many compounds, such as digoxin, digitoxin, mexiletine, PRN, metoprolol, disopyramide, quinidine, tocainide and ketoconazole as well as non-nucleoside reverse transcriptase inhibitors, and HIV protease (Brunton *et al.* 2006).