

## Functionalization of PLGA nanoparticles with 1,3- $\beta$ -glucan enhances the intracellular pharmacokinetics of Rifampicin in Macrophages

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### ABSTRACT:

*Mycobacterium tuberculosis* which causes tuberculosis, is primarily resident within macrophages. 1,3- $\beta$ -glucan has been proposed as a ligand to target drug loaded nanoparticles (NPs) to macrophages. In this study we characterized the intracellular pharmacokinetics of the anti-tubercular drug rifampicin delivered by 1,3- $\beta$ -glucan functionalized PLGA NPs (Glu-PLGA). We hypothesized that Glu-PLGA NPs would be taken up at a faster rate than PLGA NPs, and consequently deliver higher amounts of rifampicin into the macrophages.