

Syal, K.; Maiti, K.; Kottari, N.; Avaji, P. G.; Chatterji, D.; Jayaraman, N. 2016, "Synthetic arabinomannan glycolipids impede mycobacterial growth, sliding motility and biofilm structure", *Glycoconjugate J.*, 33, 763-777.

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In this manuscript, a study of the arabinomannan glycolipids, wherein the arabinomannan pentasaccharide is either in the branched or in the linear form, is reported. These pentasaccharide glycolipids exhibited a significant reduction in the growth of the mycobacterium and severely affected the biofilm structures. The effects of the glycolipids are by far the most, as compared to our previously reported glycolipids containing arabinofuranoside only. We investigated an origin of these inhibitory effects of the glycolipids through one-dimensional chromatogram and lipodomics analysis of biofilm and crude cell extracts. These analyses provide a molecular basis for the inhibitory effect, wherein we observed significant downregulation of certain mycolic acids and phosphatidylinositol mannosides (PIMs). The present study thus establishes the effectiveness of otherwise non-toxic glycolipids as effective chemical entities to downregulate some of the mycobacterial functions. Downregulation activities of glycolipid glycoconjugates on phenotype functions, such as quorum sensing which results in biofilm structure formation, are hitherto unknown until our investigations.