Naresh, K.; Avaji, P. G.; Bharati, B. K.; Chatterji, D.; Jayaraman, N., 2011, "Synthesis, biological studies of linear and branched arabinofuranoside-containing glycolipids and their interaction with surfactant protein A", *Glycobiology*, *21*, 1237 – 1254.

The work pertains to the synthesis of linear and branched oligoarabinofuranoside containing glycolipids, relevant to mycobacterial cell wall components. Linear tetra-, hexa- and octa-oligoarabinofuransides and a branched hepta-arabinofuranoside were synthesized, initiating from available monomer building blocks. Chemical syntheses were generally high yielding, although judicious choices of protections and deprotections had to be employed in the multi-step oligosaccharide synthesis. Subsequently, synthetic glycolipids were studied for their role in bacterial biofilm formation and bacterial sliding motilities. The studies show that glycolipids are inhibitors of bacterial biolfilm formation. In addition, glycolipids affected sliding motilities of bacterium, namely, M. smegmatis. Following the biological studies, we undertook to evaluate the binding of synthetic glycolipids with a surfactant protein, namely, surfactant protein-A. The interactions were assessed using surface plasmon resonance method and from the study, relative rate constants of binding and apparent binding constants were evaluated for the series of synthetic glycolipids. The study is comprehensive from the perspectives of involved oligosaccharide, glycolipid synthesis, their biological and biophysical studies. From the studies, we are able to identify the importance of glycolipid structure, in tandem with the sugar and lipid portions. Further, from this comprehensive study, we are able to derive a scope for evolving newer types of bacterial inhibitors, namely, oligoarabinofuranoside-containing glycolipids.