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Purification and Crystallization of Membrane Proteins Involved in Type IV Pilus Biogenesis. L.M. Sampaleanu¹, P. Yip¹, L.L. Burrows^{1,2}, P.L. Howell^{1,2}, ¹Hospital for Sick Children, Toronto, ²Univ. of Toronto, Toronto, Canada.

Pseudomonas aeruginosa is an opportunistic pathogen that causes persistent chronic infections in the lungs of most CF patients and is the major cause of morbidity and mortality in these individuals. *P. aeruginosa* colonizes the lung epithelium as an antibiotic resistant biofilm. Formation, development and dissolution of the biofilm require the important adhesion and motility organelles Type IV pili (TFP). As disruption of proteins involved in TFP biogenesis results in various biofilm defects, understanding their structure and function may lead to novel strategies for the prophylaxis or treatment of *P. aeruginosa* infections. Of the over 50 proteins involved in the regulation, synthesis, assembly and function of TFP we are specifically interested in the integral or membrane associated proteins involved in the post translational processing the prepilin subunit (PilD), in the assembly/disassembly of the pilin subunits (PilB/PilT, PilU) and in the export of the preassembled pilus to the cell surface (PilQ). The genes for PilD, PilB, PilT, PilU and PilQ have been cloned from *P. aeruginosa* PAO1 and the corresponding proteins expressed in *E. coli* with a His₆-tag. Our progress on the purification and crystallization of these proteins will be presented.