

Repetitive and disordered proteins in Gram-positive infections

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Staphylococci and streptococci cause human infections associated with significant morbidity and mortality. Our lab has studied repetitive and/or disordered bacterial proteins that are attached to the bacterial cell wall and facilitate host cell invasion and/or formation of medical-device associated biofilm infections. These proteins have posed particular challenges that have been addressed using NMR spectroscopy, isotope-labelling strategies, X-ray crystallography and a range of biophysical techniques. Our studies have revealed novel mechanisms of protein-protein recognition and novel protein structures (Fig. 1).



Fig. 1 Structure of G5¹-E-G5² from SasG, an *S. aureus* surface protein involved in formation of biofilms. Gruszka et al. *Proc. Natl. Acad. Sci. (USA)* 109, E1011-1018 (2012)