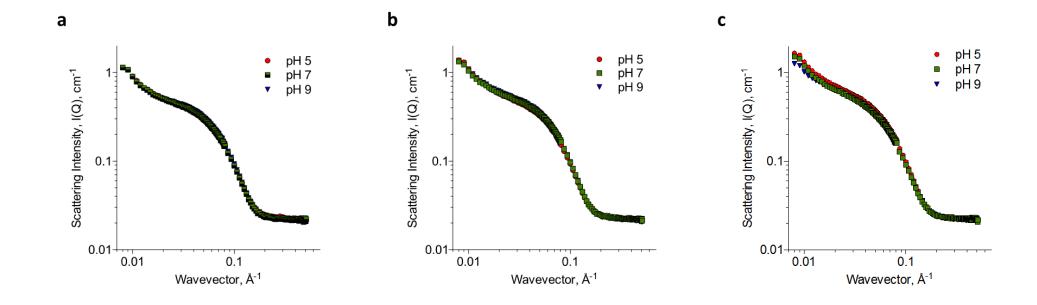
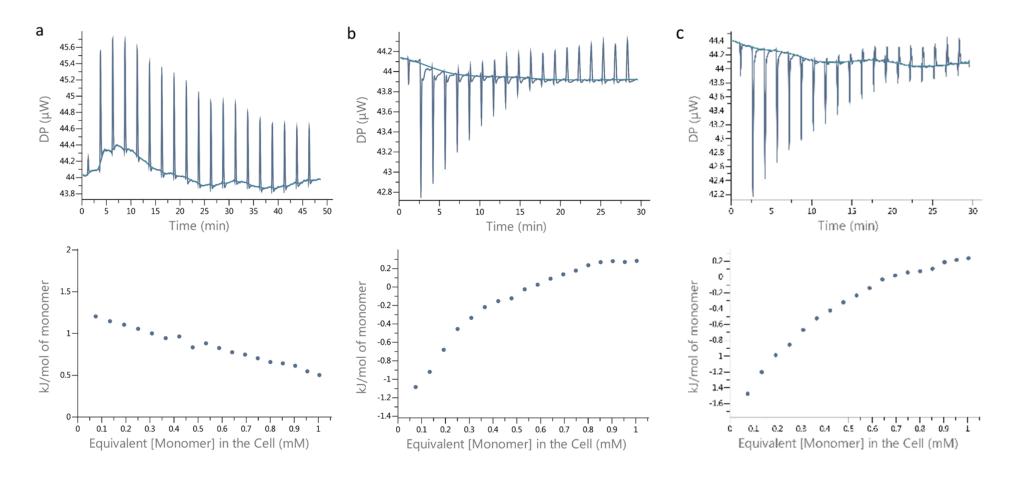
The antimicrobial effects of the alginate oligomer OligoG CF-5/20 are independent of direct bacterial cell membrane disruption

Manon F. Pritchard*¹; Lydia C. Powell¹; Saira Khan¹; Peter C. Griffiths²; Omar T. Mansour²; Ralf Schweins³; Konrad Beck¹; Niklaas J. Buurma⁴; Christopher E. Dempsey⁵; Chris J. Wright⁶; Philip D. Rye⁷; Katja E. Hill¹; David W. Thomas^{†1}; Elaine L. Ferguson^{†1}

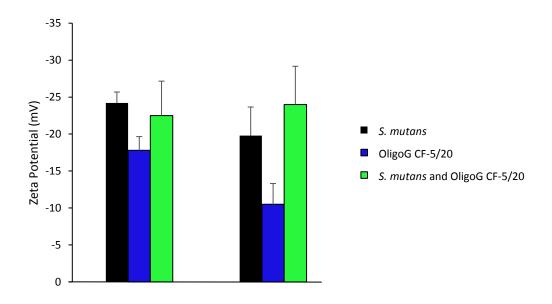
¹Advanced Therapies Group, Oral and Biomedical Sciences, School of Dentistry, College of Biomedical and Life Sciences, Cardiff University, Heath Park, Cardiff, UK. ²Department of Pharmaceutical, Chemical and Environmental Sciences, Faculty of Engineering and Science, University of Greenwich, Medway Campus, Central Avenue, Chatham Maritime, UK. ³Institut Laue-Langevin, DS/LSS group, 6 rue Jules Horowitz, 38042 Grenoble Cedex 9, France. ⁴ Physical Organic Chemistry Centre, School of Chemistry, Cardiff University, Cardiff, UK. ⁵School of Biochemistry, Biomedical Sciences Building, University Walk, Clifton, BS8 1TD, UK. ⁶Centre for NanoHealth, Systems and Process Engineering Centre, College of Engineering, Swansea University, Swansea, UK. ⁷AlgiPharma AS, Sandvika, Norway. *Corresponding author (email: PritchardMF@cardiff.ac.uk). †These authors jointly supervised this work.



Supplementary Fig. S1. Structural analysis of LPS. Small-angle neutron scattering from LPS (10 mg/ml) in D₂O containing (a) 0.001 M NaCl, (b) 0.01 M NaCl and (c) 0.1 M NaCl at pH 5-9.



Supplementary Fig. S2. Self-aggregation of OligoG CF-5/20. Enthalpogram for the dilution of 20 mg/ml OligoG CF-5/20 at 37°C in buffer (a) 20 mM phosphate pH 7, 100 mM NaCl, 1 mM EDTA, or (b) in 20 mM phosphate pH 7, 100 mM NaCl, 1 mM CaCl₂ (c) or in 20 mM phosphate pH 7, 100 mM NaCl, 1 mM EDTA, 2 mM CaCl₂.



Supplementary Fig. S3. Effect of OligoG CF-5/20 on *S. mutans* cell surface charge at pH 5 and pH 7 (2.6 mM NaCl ± 60 mg/ml OligoG CF-5/20). Mean zeta potential measurements (mV) of *S. mutans*, 60 mg/ml OligoG CF-5/20 and both combined following hydrodynamic shear.