

#### 4: Virulence of surface molecules

Bacterial surface molecules are sometimes associated with the adhesion to host tissues, antigenic ability and the resistant factors against host-derived antibacterial agents such as complement. We are studying surface molecules in *Aggregatibacter actinomycetemcomitans*, *Tannerella forsythia* and *Staphylococcus aureus*.

We previously identified 6 outer membrane proteins (Omps) in *A. actinomycetemcomitans*. Especially, We demonstrated one Omp designated as Omp100 is associated with adhesion or invasion to host cells, resistance to complement killing and induction of inflammatory cytokine expression. In *T. forsythia*, we identified that S-layer contributed to resistance to complement killing and co-aggregation with other oral bacteria. Also, we identified SasA of *S. aureus* which could bind to salivary agglutinin, gp340.

We are further investigating how these or other surface molecules are associated with bacterial infection in the host.

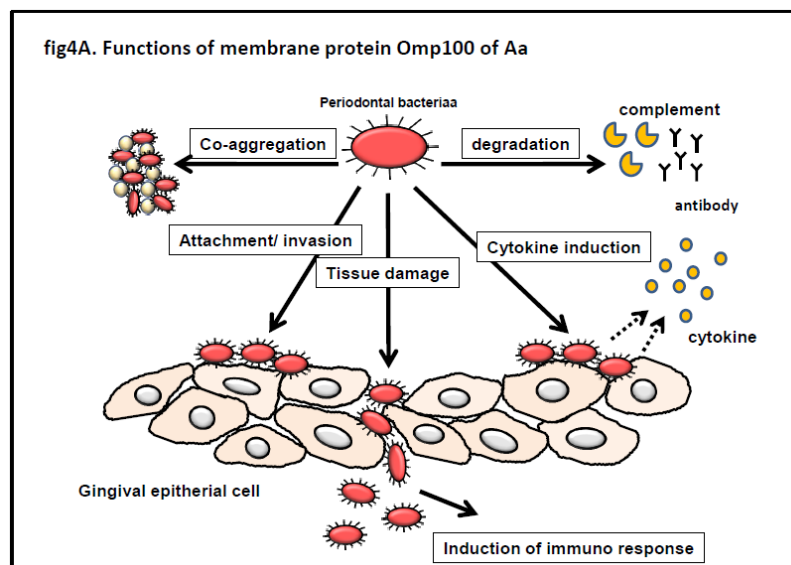
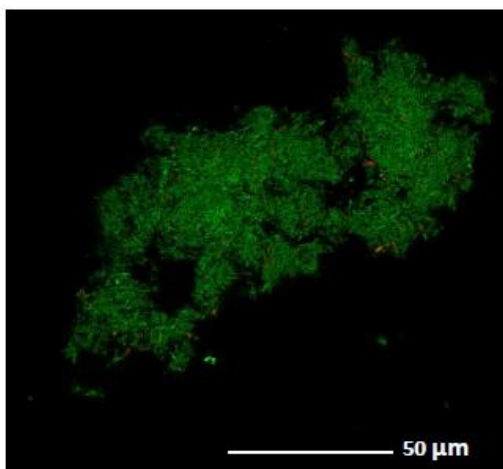
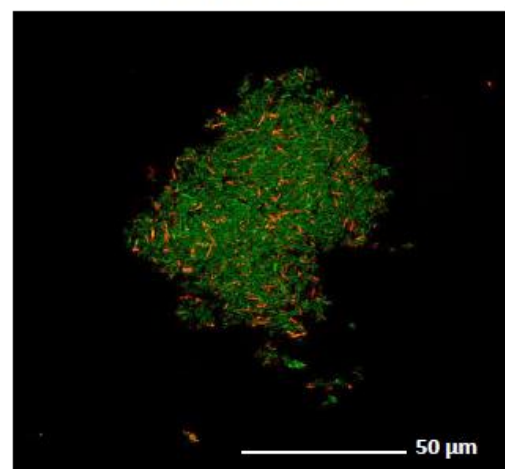


fig4A. Confocal image of treatment of serum in *T. forsythia* wild type and S-layer inactivation mutant ( $\Delta$  *tfsAB*)

*T. forsythia* WT



*T. forsythia*  $\Delta$  *tfsAB*



Serum-treated *T. forsythia* S-layer wild type and S-layer inactivation mutant  
Alive, green; dead, orange

