2: Sugar metabolism

Bacteria can uptake several sugars in the host. There are several general sugars (e.g. glucose and fructose) and amino sugars (e.g. glucosamine and N-acetyl-glucosamine) in the host. Incorporated sugars are then distributed to mainly glycolytic pathway and cell wall synthetic pathway. We previously analyzed the factors, GlmS and NagB, which are responsible for this distribution in *S. aureus* and *S. mutans*. Finally, we demonstrated that these two molecules are essential for the distribution of general sugars and amino-sugars.

Also, we demonstrated that the inactivation of each factor affected the virulence. In *S. aureus*, inactivation of these genes caused the alteration of the susceptibility against beta-lactams. In *S. mutans*, we found that the mutants showed the altered biofilm formation. We are still investigating the regulation mechanism of both factors and the relation to virulence.