

Group B Streptococcus breaches the blood-brain-barrier

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Bacterial meningitis is a life-threatening infection of the central nervous system. Group B *Streptococcus* (GBS) is the leading cause of meningitis in newborn babies and can cause severe complications in those that survive the infection. GBS must cross the blood-brain-barrier (BBB) to cause disease but it is not clear how these organisms breach this barrier.

A new study in the *Journal of Clinical Investigation* identifies a pathway that is induced by GBS and disrupts junctions between cells. Kelly Doran and colleagues at San Diego State University determined that GBS induces a protein, Snail1, which inhibits expression of genes involved in maintaining junctions between cells. Enhanced Snail1 disrupted junctions between cultured brain endothelial cells, increasing permeability of the cell layer. In zebrafish, Snail1 expression in response to GBS disrupted the BBB, allowing the bacteria to breach this barrier. Inhibition of Snail1 in GBS-infected fish increased survival.

This work suggests that GBS directly disrupts the BBB in the development of meningitis.

More information: Bacterial induction of Snail1 contributes to blood-brain barrier disruption, *J Clin Invest.* [DOI: 10.1172/JCI74159](https://doi.org/10.1172/JCI74159)

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