

Drugs ~Infectious diseases~

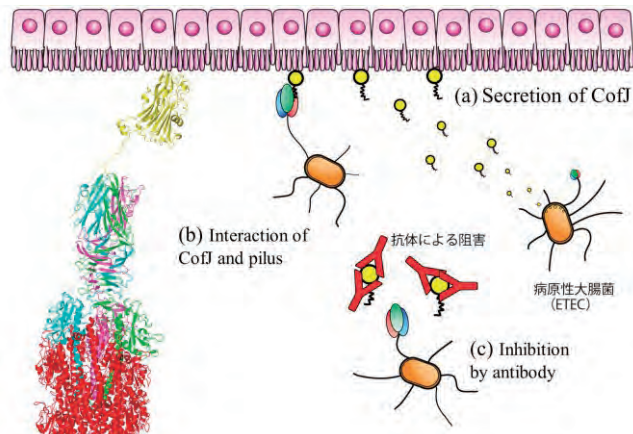
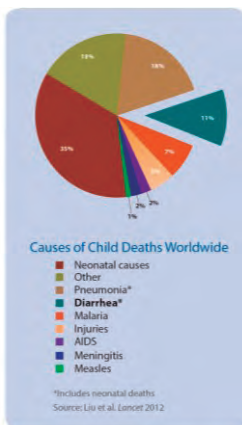
Development of Anti-Adhesive Agents against Enteric Infectious Diseases

Principal Investigator

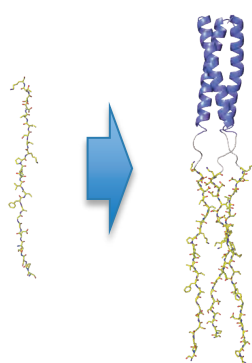
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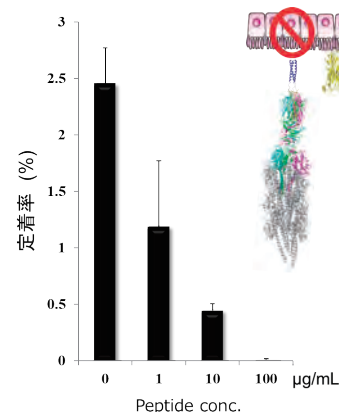
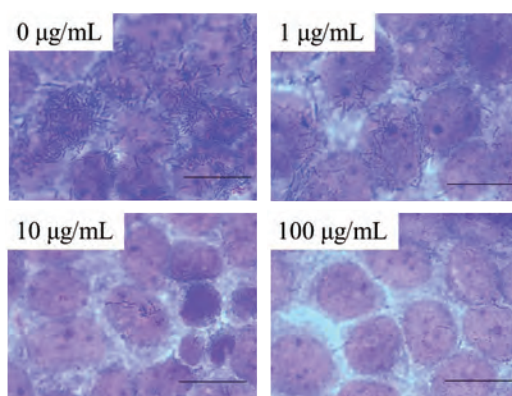
Project Outline



Diarrheal disease is the second leading cause of death in children under five years old and is responsible for killing around 801,000 children every year. The enteric pathogens such as cholera, enterotoxigenic *E. coli* (ETEC) cause this disease. The infections begin when the pathogenic bacteria colonize the human intestine. This colonization process is mediated by fibrous protein structures called a pilus. We have revealed the three-dimensional structure of the pilus proteins and their roles in colonization. Based on this result, we designed a peptide that can inhibit colonization. Indeed, this peptide inhibited the colonization of intestinal epithelial cells by ETEC. This study aims to develop drugs or functional foods containing this peptide inhibitor that can be taken after meals to prevent food poisoning, traveler's diarrhea, and severe intestinal infections in children in developing countries.



Design of multivalent inhibitory peptides by linking the trimerization domain (GCN4 coiled coil)



Patent pending in Japan, USA, India and EU as a ETEC inhibitory peptide.
Patent No. 2016-089902, PCT/JP2017/016284