Undergraduate Category

Poster Title:

The quest for a better vaccine: characterization of the innate immune response to Vibrio cholerae reveals the importance of inflammatory cytokine IL-23

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Abstract

Cholera is an acute, diarrheal illness caused by infection of the small intestine by the bacteria ***Vibrio cholerae***. This bacteria is found in water and food sources contaminated by feces from infected persons. Cholera is most prevalent in Africa, Southeast Asia, and Haiti, with recent outbreaks in Yemen. Annually, there are 3-5 million cases and over 100,000 deaths per year caused by this disease. We observed IL-23 released from macrophages in response to ***V. cholerae*** lipopolysaccharide (LPS) and membrane components (MP) and developed an *in-vitro* cell culture model to investigate differences in innate immune responses between live ***V. cholerae*** infection vs. stimulation with dead bacteria. Cathepsin B, a proteasomal enzyme, may be an important upstream post-transcriptional regulator of IL-23 export. We use THI-1 monocytes since they are widely used to test innate immune responses to vaccine components.