DDC
Texas Medical Center Digestive Diseases Center

WEEKLY GI RESEARCH WEBINAR

"Lightning Storms of Calcium Signaling in Enteric Virus Pathophysiology"

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A hallmark of rotavirus infection is the global dysregulation of host cell calcium homeostasis, which is consistently implicated in multiple mechanisms of rotavirus-induced diarrhea and vomiting. Through investigating how rotavirus exploits host calcium signaling pathways, we discovered that rotavirus induces intercellular calcium waves that propagate from infected to surrounding uninfected cells via paracrine purinergic signaling. Further, we will discuss how paracrine signaling contributes to multiple aspects of
rotavirus pathogenesis.

References: (1) A.C. Chang-Graham, J.L. Perry, M.A. Engevik, et al. Rotavirus induces intercellular calcium waves through ADP signaling. Science. 2020. Nov 20; 370, eabc3621. DOI: 10.1126/science.abc3621. PMID: 33214249. (2) A.L. Chang-Graham, J.L. Perry, et al. Rotavirus calcium dysregulation manifests as dynamic calcium signaling in the cytoplasm and endoplasmic reticulum. Sci. Rep. 2019. Jul 25; 9(1):10822. PMID: 31346185; PMCID: PMC6658527. (3) A.C. Strtak, J.L. Perry, M.N. Sharp, A.L. et al. Recovirus NS1-2 has viroporin activity that induces aberrant cellular calcium signaling to facilitate virus replication. mSphere. 2019 Sep 18;4(5). pii: e00506-19. doi: 10.1128/mSphere.00506-19. PMID: 31533997;PMCID PMC6751491.

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