Molecular Pathogenesis Training
Seminar Series

THURSDAY, 17 October 2019
Time: 1:00 PM • Place: MRB III 1220

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PhD Candidate, the Lacy Laboratory

Characterization of an epidemic Clostridioides difficile TcdB

You should care because ...

• TcdB produced from epidemic strains of C. difficile are hypothesized to have increased cytotoxicity compared to pre-epidemic strains
• We find that epidemic RT027 C. difficile produce a variant TcdB that affects the toxin’s receptor interactions and its cytotoxic properties
• We conclude that TcdB from RT027 strains induces pathology with mechanisms distinct from those used by pre-epidemic strains

Multiple Receptors Interact with TcdB

<table>
<thead>
<tr>
<th>Multiple Receptors</th>
<th>Cytotoxicity</th>
<th>Biochemical Analysis</th>
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<tbody>
<tr>
<td>TcdB</td>
<td>Untreated</td>
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<tr>
<td>Nectin-3</td>
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<td>Fzd-7</td>
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<td>CSPG4</td>
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</tbody>
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$K_D = 36 \pm 12 \text{ nM}$
$K_D = \text{ND}$
$K_D = \text{ND}$

Biochemical Analysis