

# Preparation of Abstracts

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Example:

## **Spores of *C. difficile* Clinical Isolates Display a Diverse Germination Response to Bile Salts**

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*Clostridium difficile* is the major underlying cause of antibiotic-associated diarrhoea. Spores are widely regarded to be the infectious stage of *C. difficile*, but in order to cause disease these spores must return to vegetative cell growth through germination. While the mechanisms of germination are well understood in *Bacillus*, knowledge of spore germination in *C. difficile* remains poor. Studies have shown that bile salts and amino acids play an important role in regulating germination in *C. difficile*. Taurocholate has been shown to act as a co-germinant with glycine, while chenodeoxycholate has been shown to inhibit spore germination in a clinical isolate. Chenodeoxycholate and its analogues have, therefore, been suggested as potential prophylactic drugs to prevent *C. difficile* infection. Our previous studies of *C. difficile* sporulation rates have identified a substantial diversity among clinical isolates. Consequently, we investigated how the germination characteristics of 29 *C. difficile* clinical isolates vary in response to bile salts. We show that significant diversity exists among this group of isolates in both the rate and extent of spore germination in response to rich medium supplemented with both glycine and taurocholate. We also provide evidence that components of rich medium such as BHIS may induce the germination of *C. difficile* spores, even in the absence of taurocholate. Most importantly, we show that, while a potent inhibitor of germination in most isolates, chenodeoxycholate does not inhibit germination, or vegetative cell outgrowth, in all *C. difficile* clinical isolates. These data suggest that the germination mechanisms of *C. difficile* spores in response to bile salts are complex and require further study. Furthermore, a prophylactic drug based on chenodeoxycholate might not be sufficient for the control of *C. difficile* infection as its inhibitory effect on spore germination is unlikely to be specific to all *C. difficile* strains.