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## Ingestion of *Bacillus cereus* spores dampens the immune response to favor bacterial persistence

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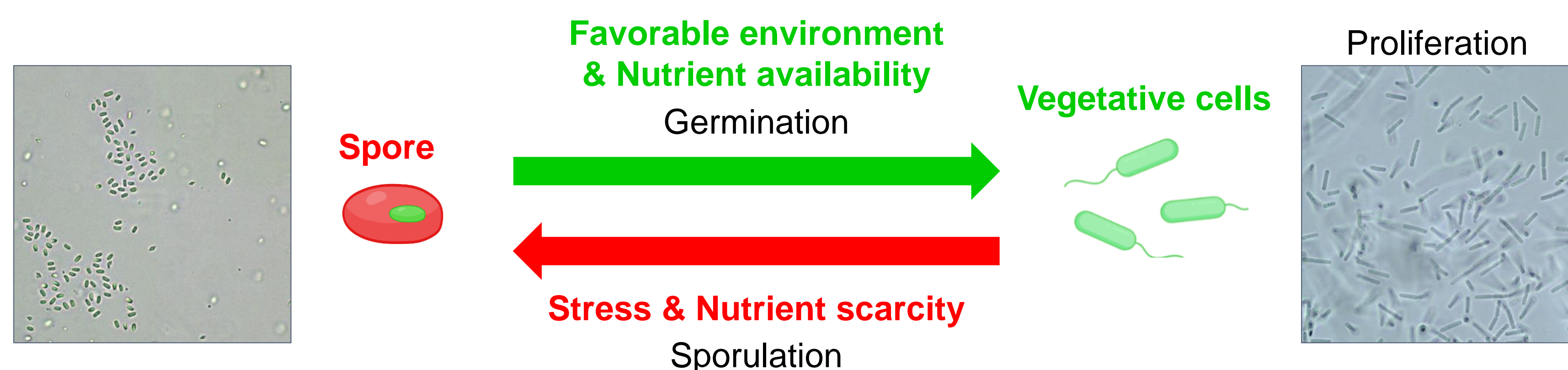
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# Ingestion of *Bacillus cereus* spores dampens the immune response to favor bacterial persistence

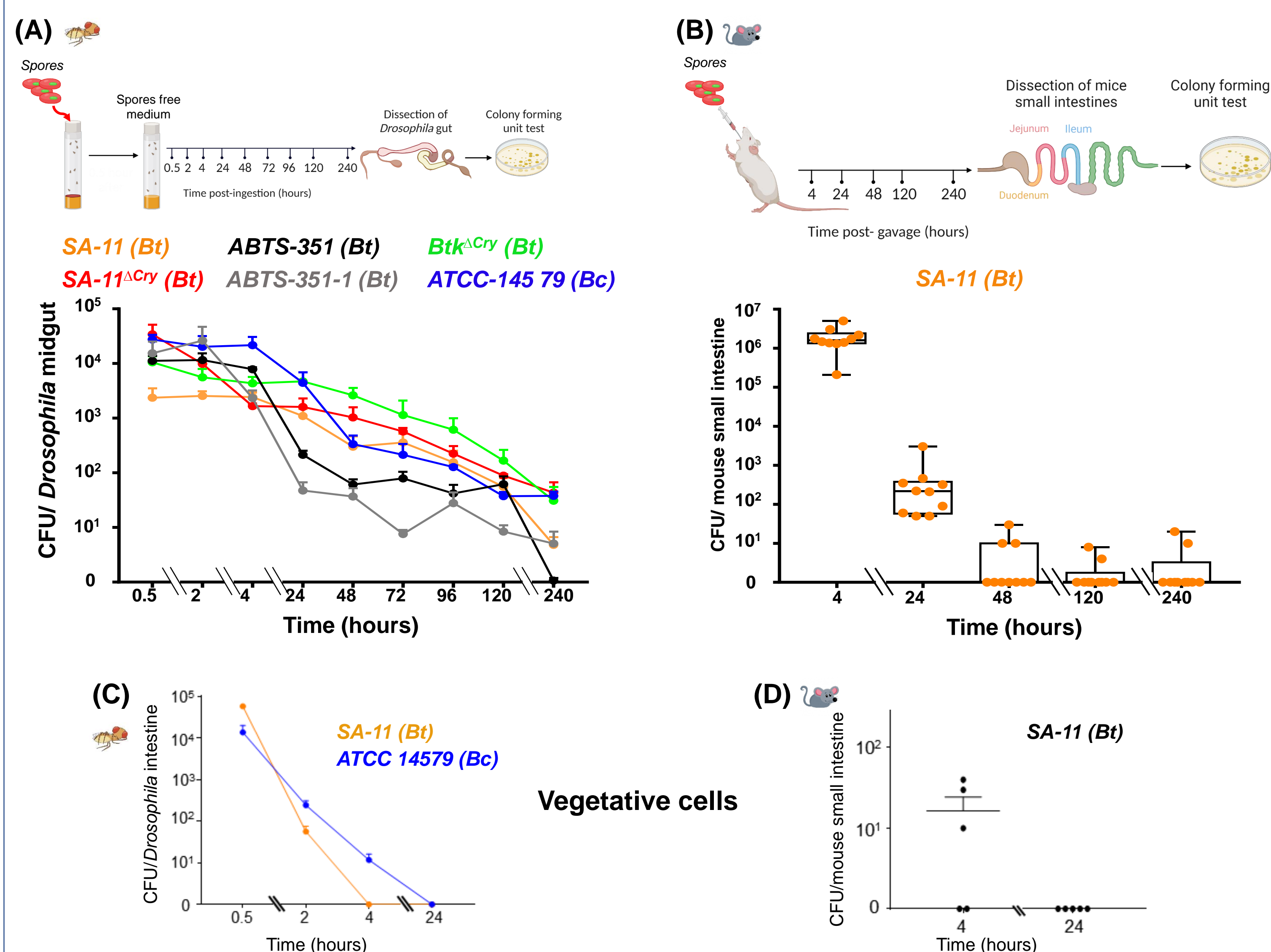
Salma Hachfi<sup>1,2</sup>, Alexandra Brun-Barale<sup>1</sup>, Patrick Munro<sup>2</sup>, Marie-Paule Nawrot-Esposito<sup>1</sup>, Gregory Michel<sup>2</sup>, Arnaud Fichant<sup>1,3</sup>, Mathilde Bonis<sup>3</sup>, Laurent Boyer<sup>2</sup> and Armel Gallet<sup>1</sup>

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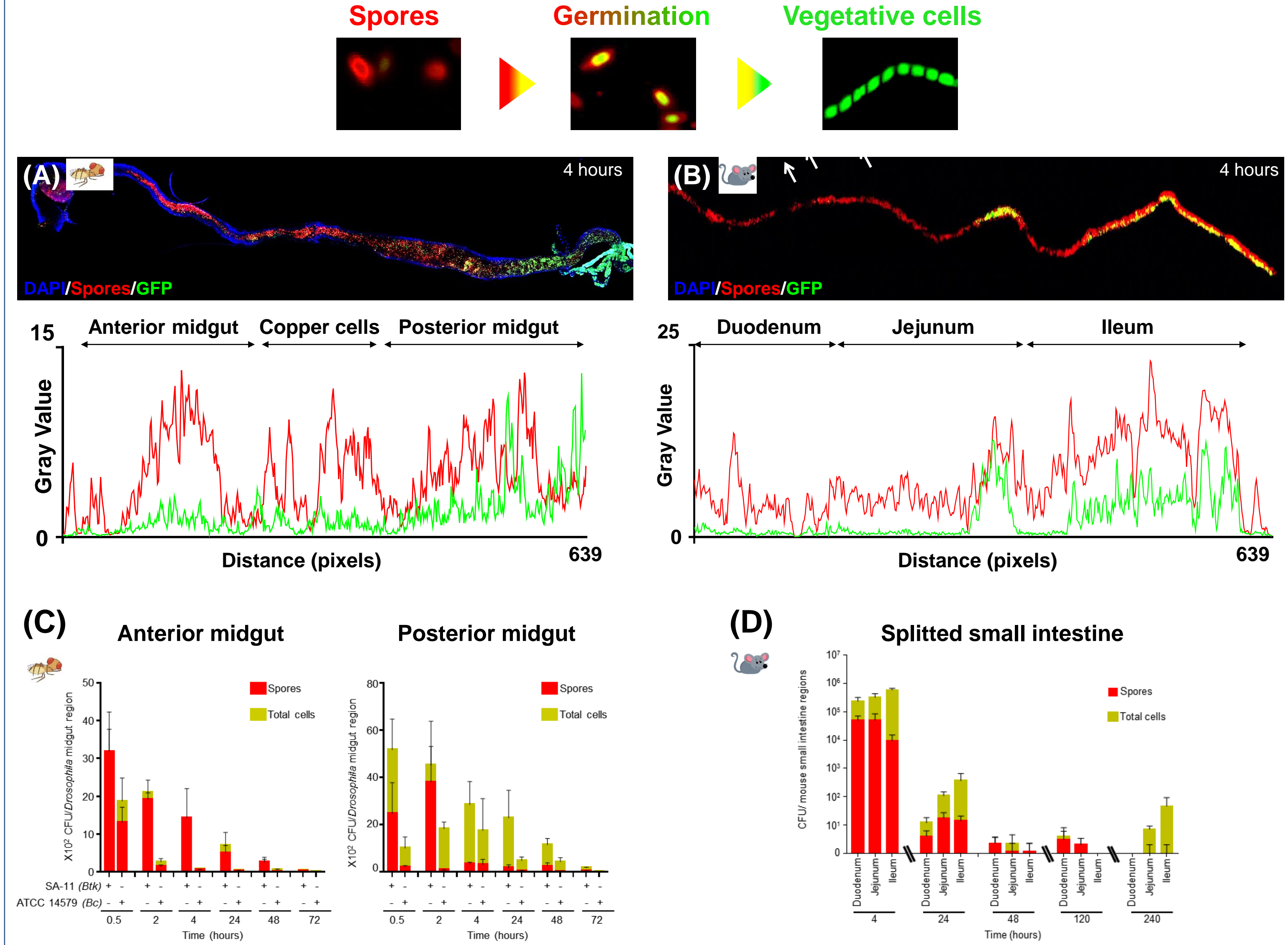
Members of the *Bacillus cereus* group are spore-forming bacteria commonly associated with foodborne outbreaks. The capacity of these bacteria to form highly resistant dormant entities, called spores, enables them to survive under extreme conditions. *Bacillus thuringiensis* (*Bt*) belongs to the group of *B. cereus*. Thanks to the toxins (named Cry) *Bt* produces during sporulation, *Bt* spores are the most used microbial insecticide to specifically kill lepidopteran larvae, a major pest crop. Here, we were interested in the fate and behavior of *Bt* and *Bc* in the intestine of *Drosophila* and mice (two organisms not targeted by *Bt* Cry toxins) upon ingestion of spores, as well as the innate immune responses mounted by the host.



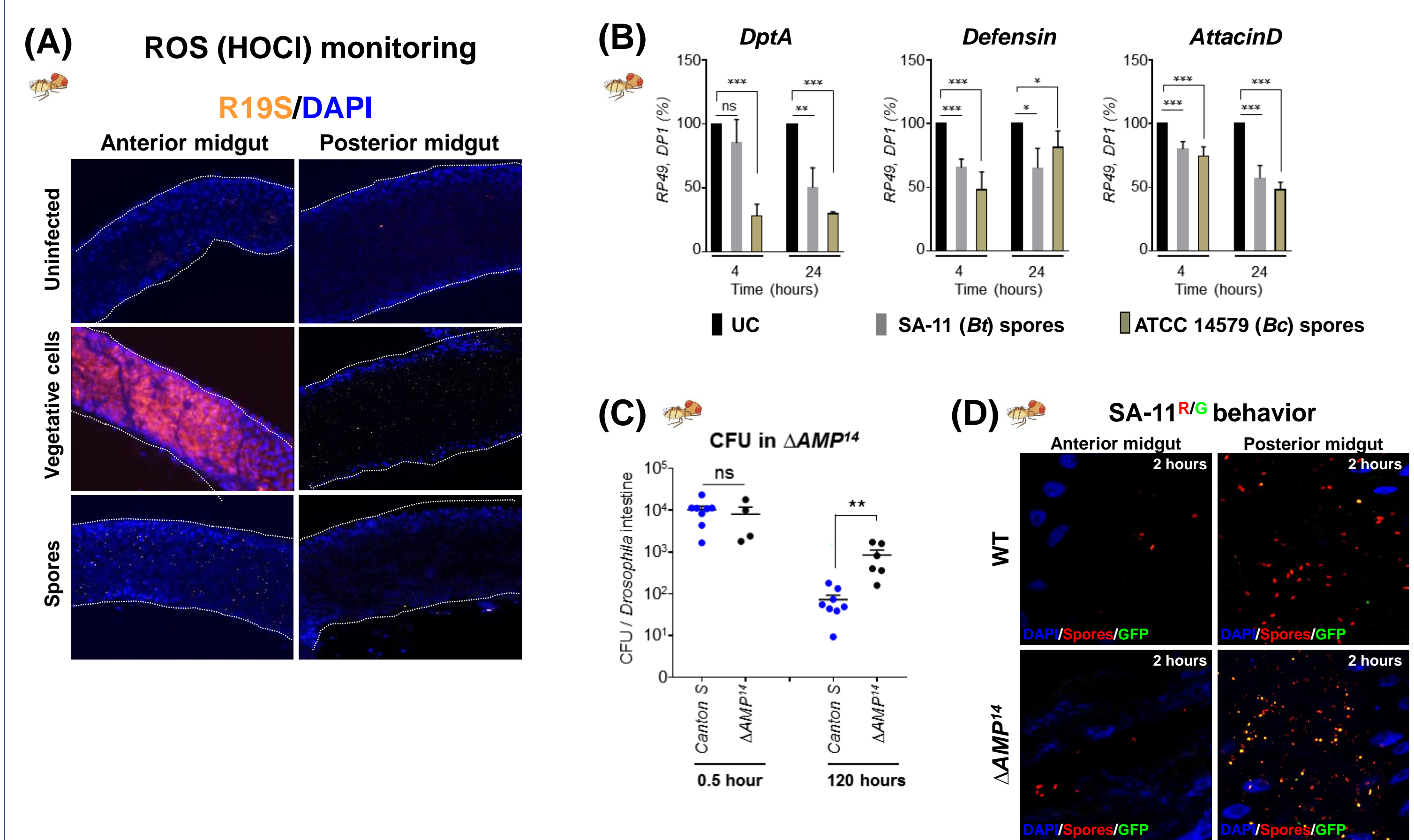
## 1) Bacteria of the *B. cereus* group persist in *Drosophila* and mice guts upon spore ingestion



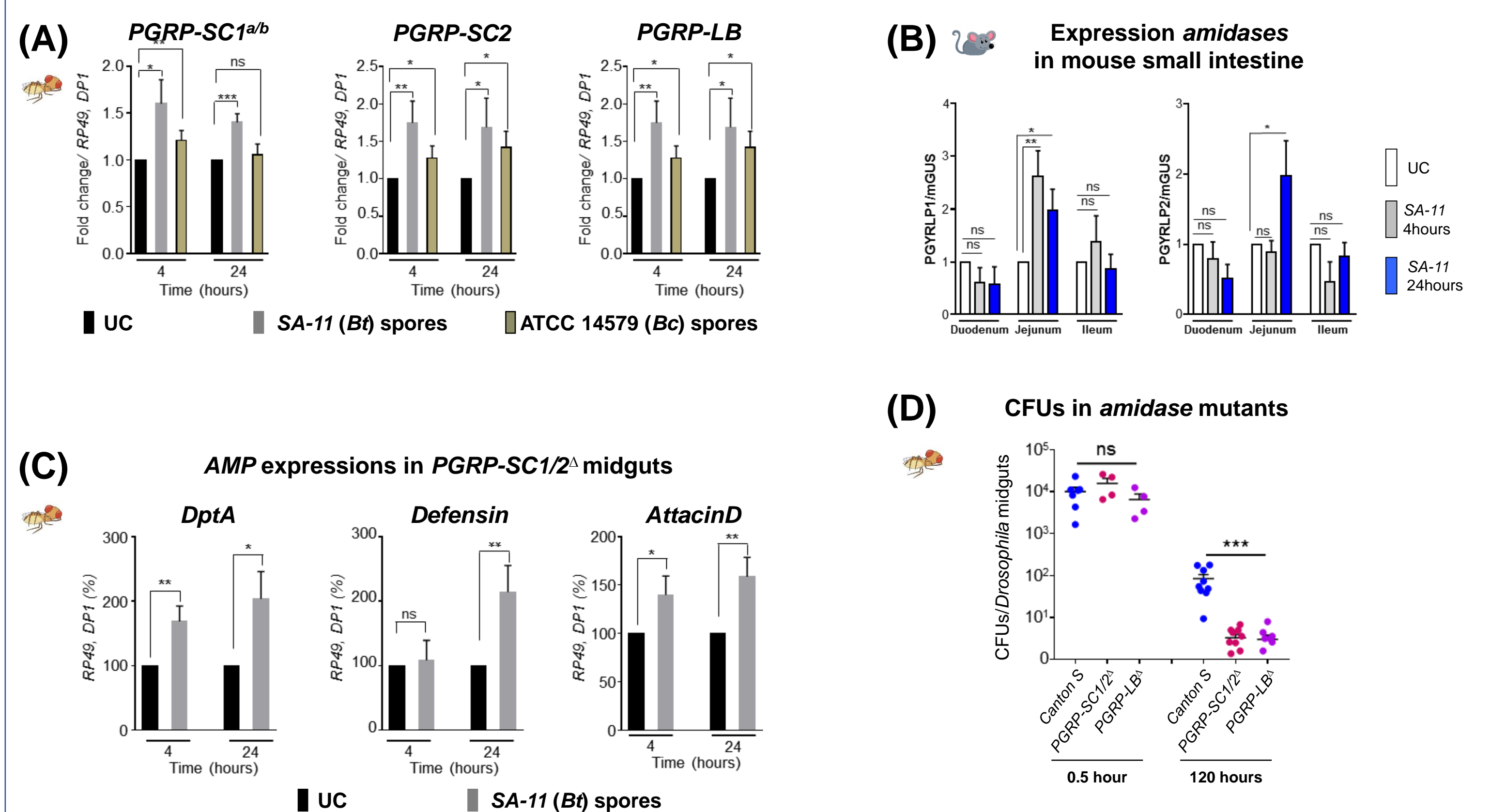
## 2) Spores of the *B. cereus* group germinate preferentially in the intestinal posterior regions



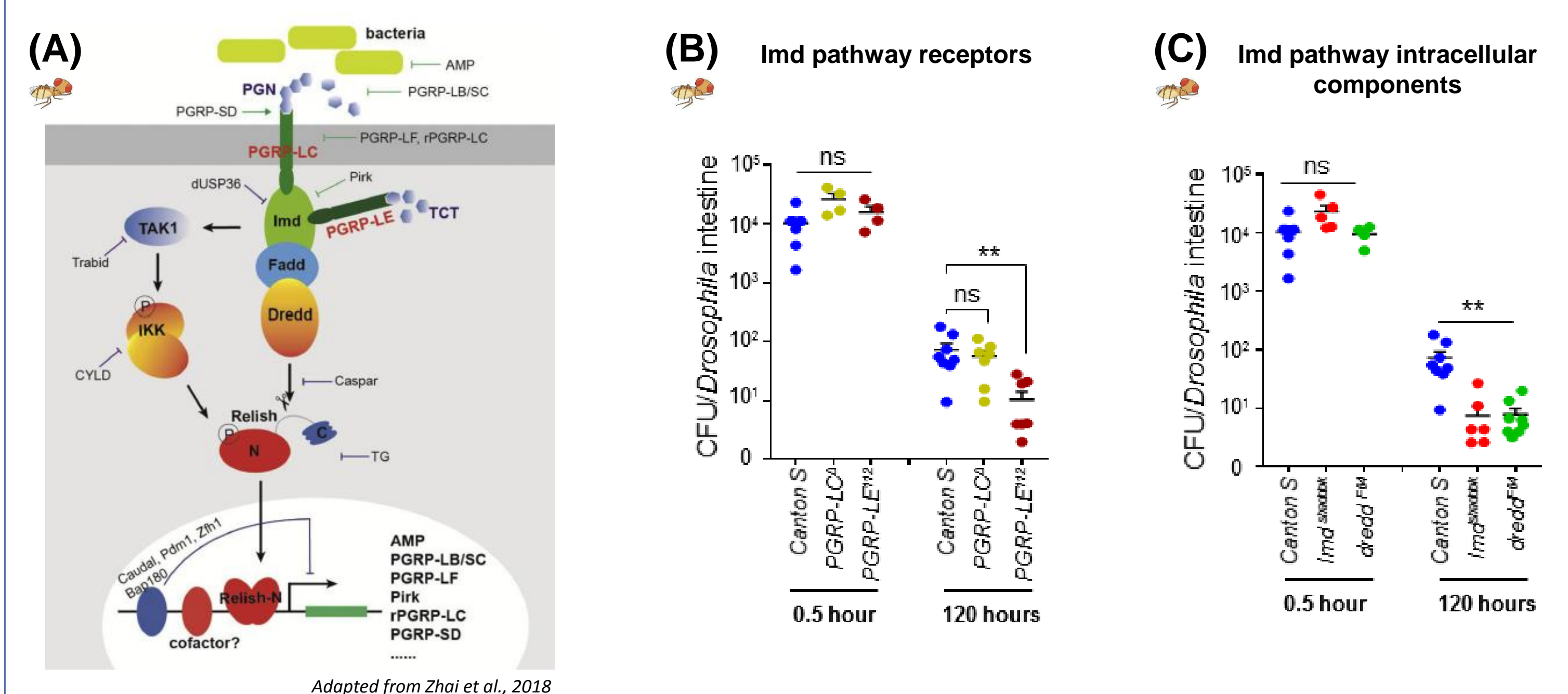
## 3) Spores do not trigger innate immune response in *Drosophila* midguts



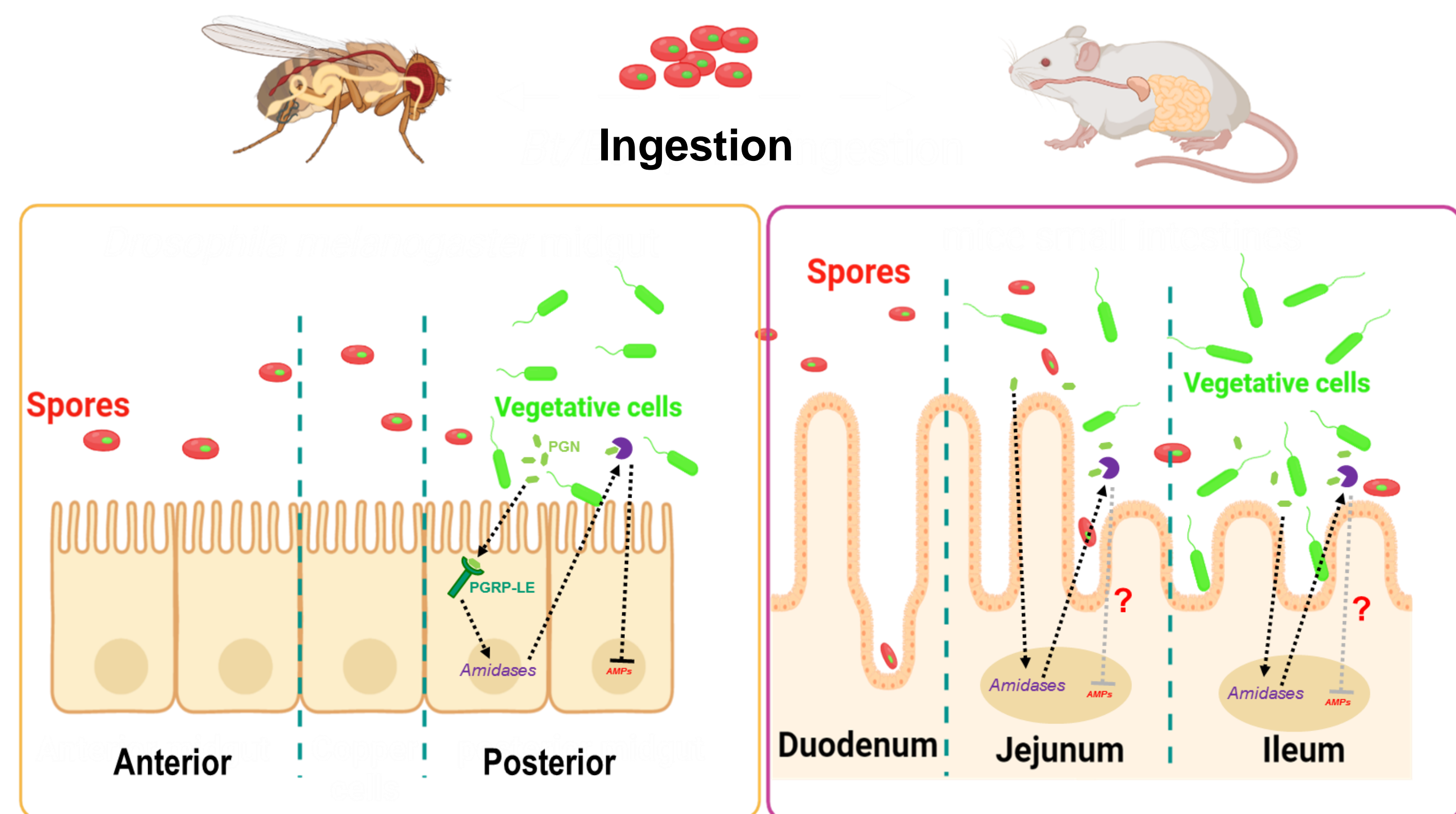
## 4) Amidases are involved in the intestinal persistence of *Bt/Bc*



## 5) PGRP-LE but not PGRP-LC is involved in *Bt/Bc* persistence



## Conclusion and Model



## Reference

Hachfi S. et al., "Ingestion of *Bacillus cereus* spores dampens the immune response to favor bacterial persistence" (2023). *bioRxiv*