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# Transcriptional response against biocontrol agents in the agricultural pest *Spodoptera frugiperda* (Lepidoptera: Noctuidae)

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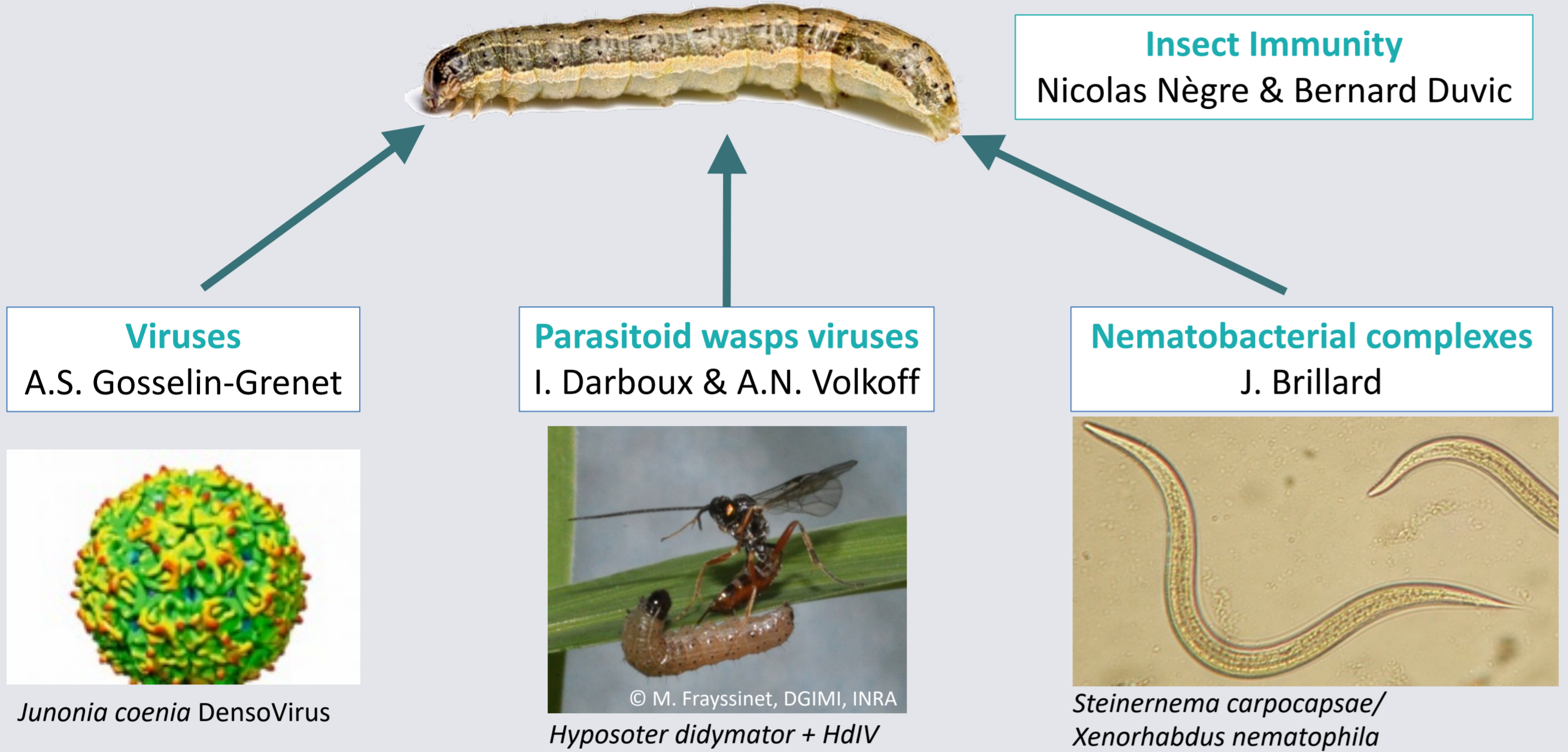
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# Transcriptional response against biocontrol agents in the agricultural pest *Spodoptera frugiperda* (Lepidoptera: Noctuidae)

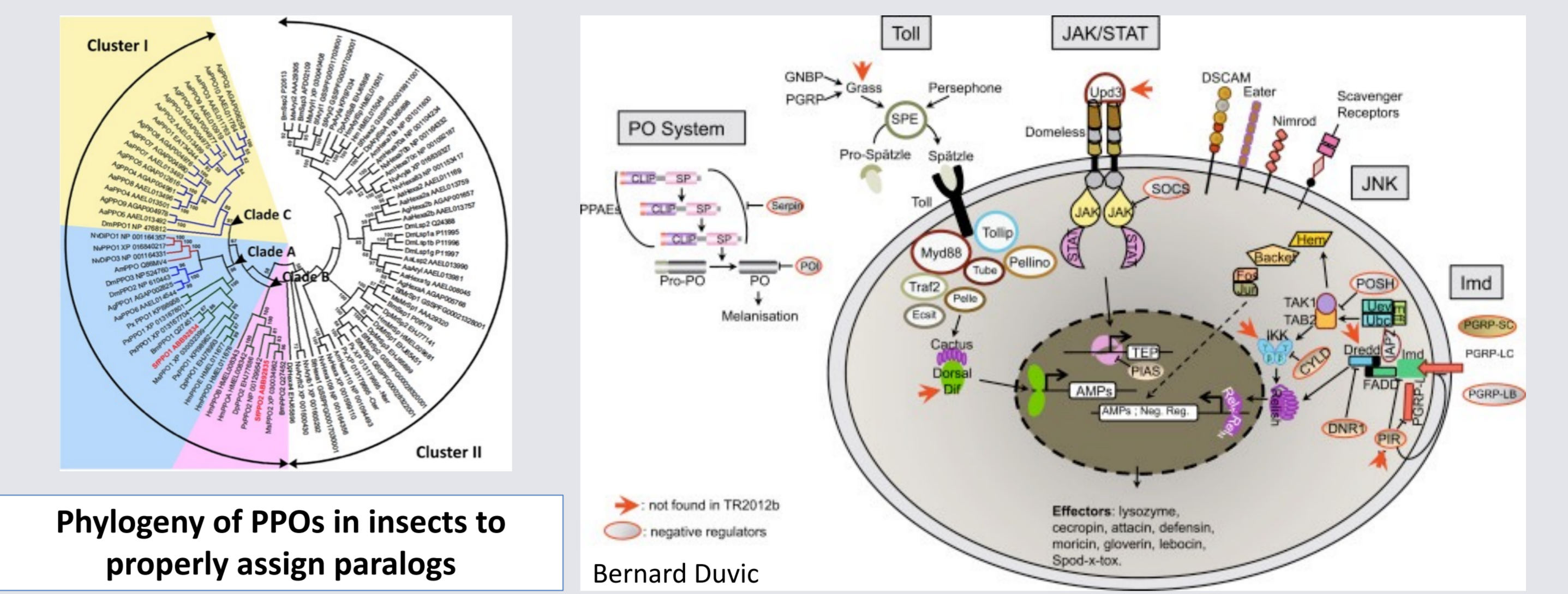
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## *Spodoptera frugiperda* : a hungry caterpillar confronted with various microbial agents used in biocontrol

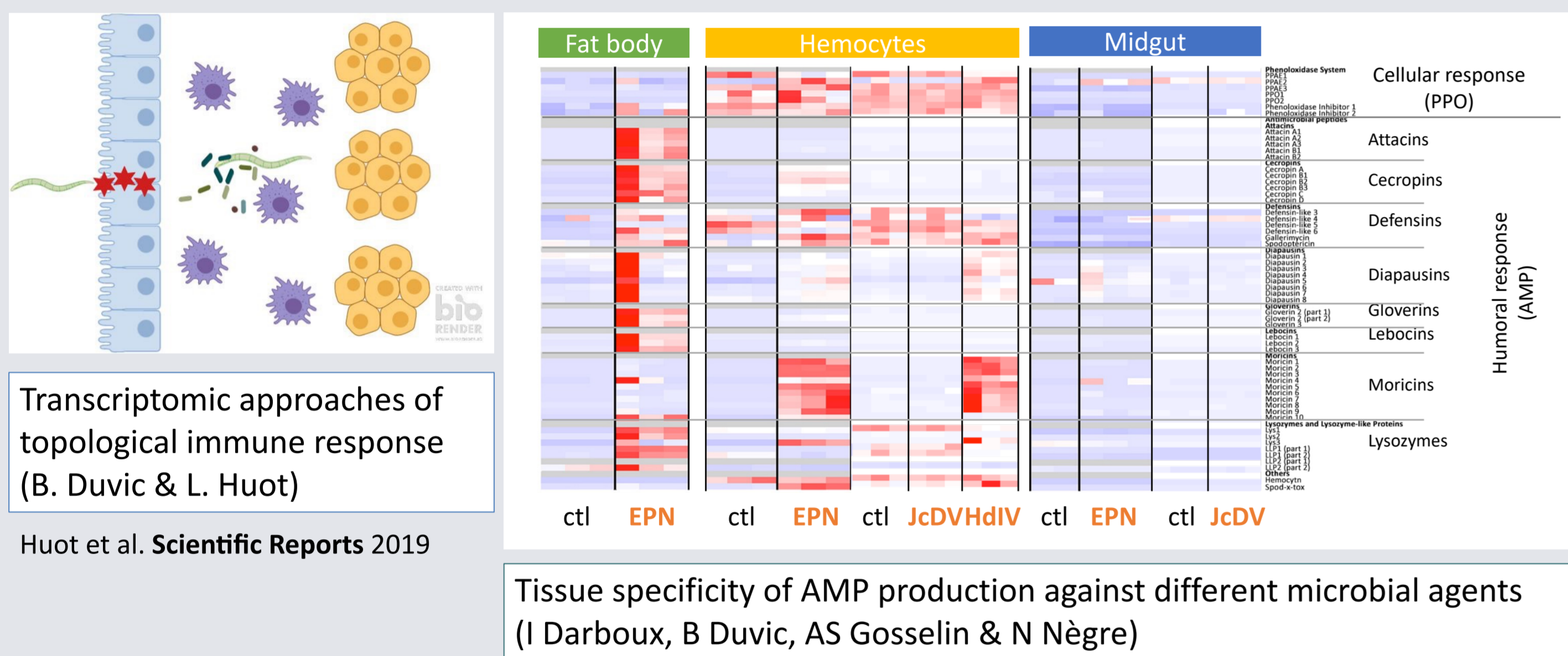


## Genome assembly and manual curation of genes for the description of the immunome



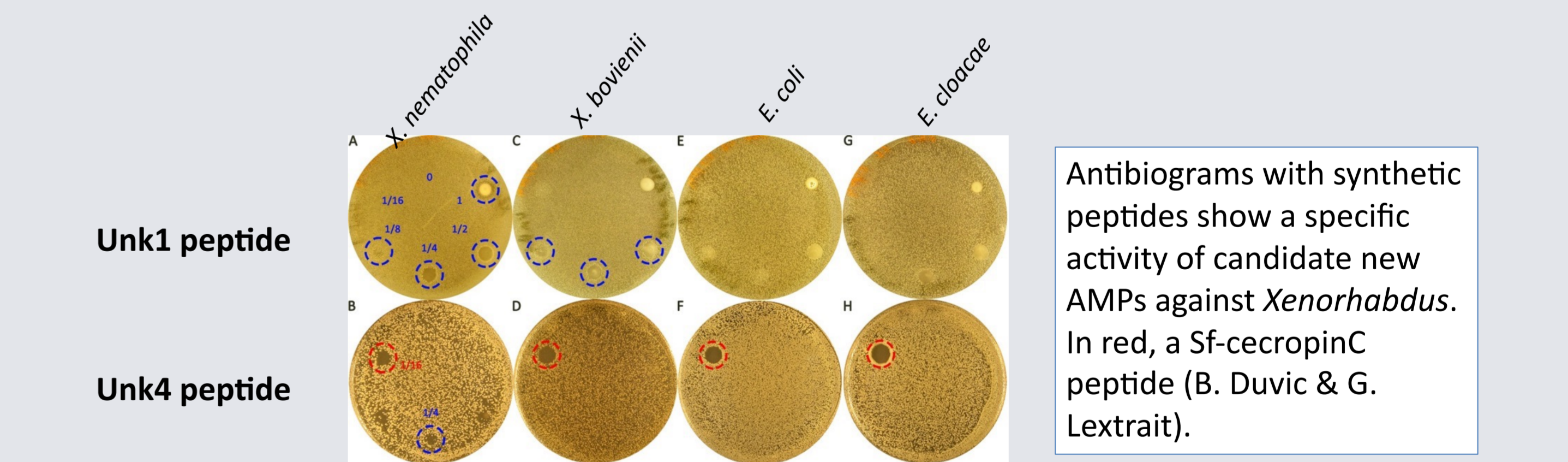
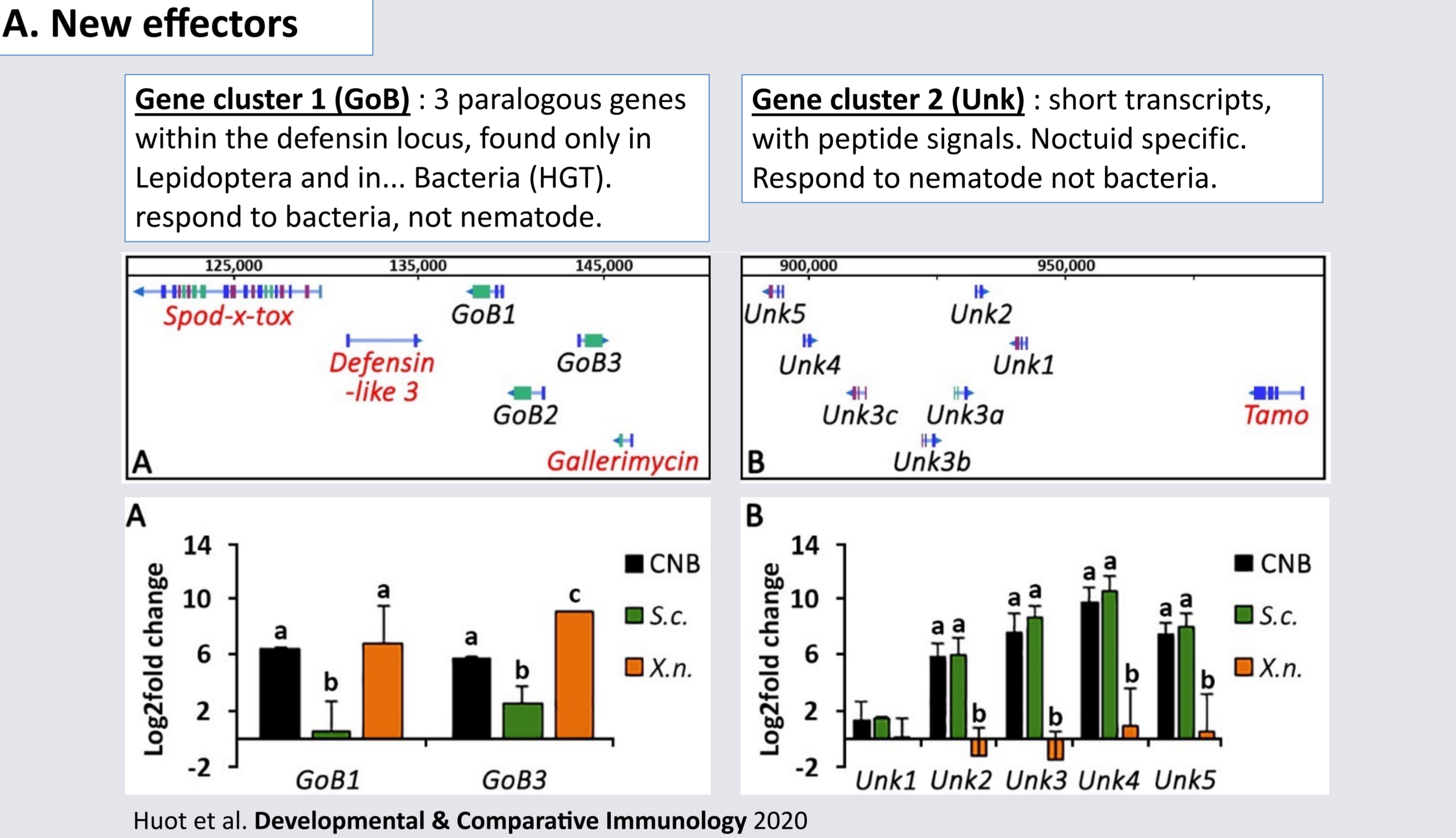
- Legeai et al. 2014: Establishment and analysis of a reference transcriptome for *Spodoptera frugiperda*. *BMC Genomics*.
- Gouin et al. 2017: Two genomes of highly polyphagous lepidopteran pests (*Spodoptera frugiperda*, Noctuidae) with different host-plant ranges. *Scientific Reports*

## Immune response of *Spodoptera frugiperda* against micro or macropathogens

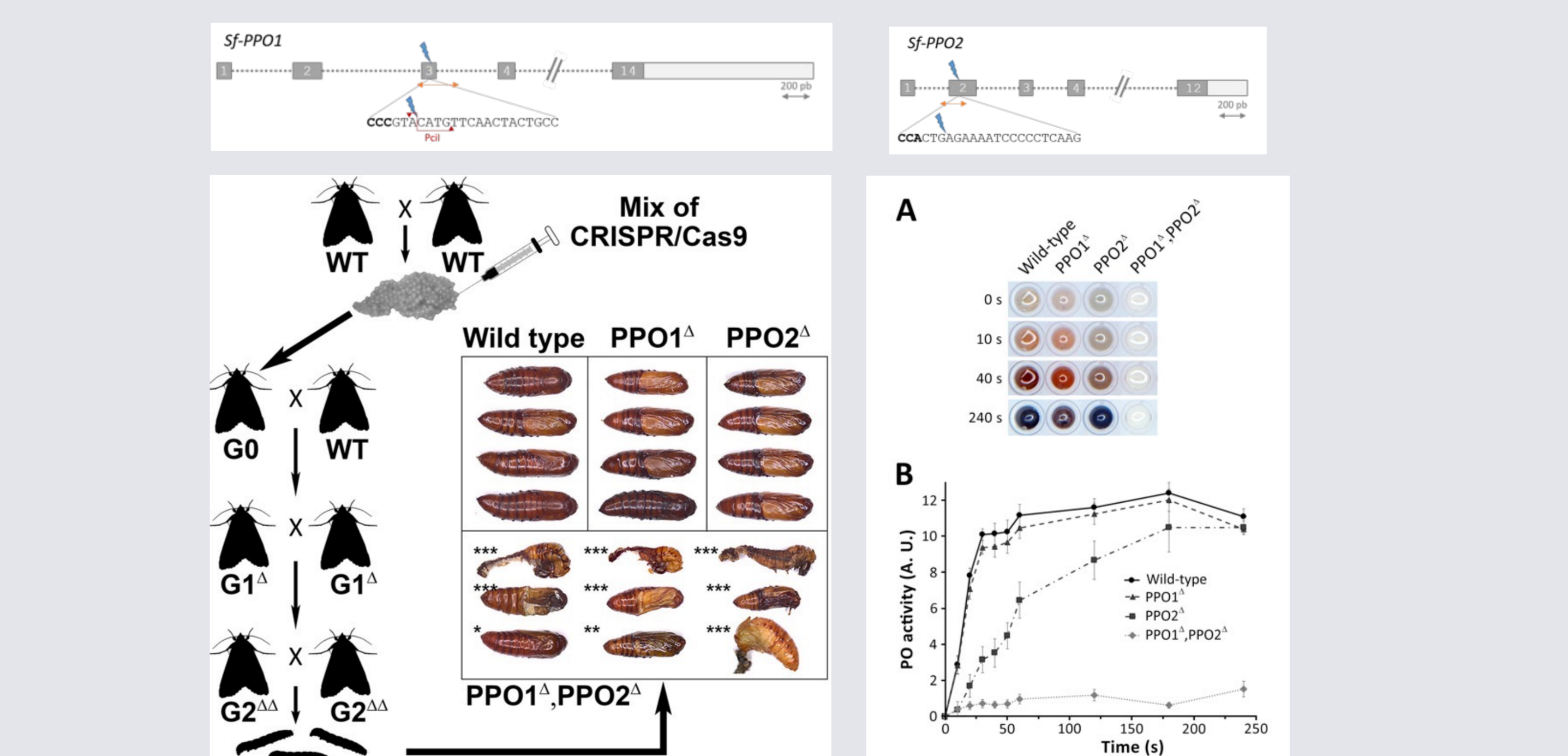


Towards a **Systems biology of biotic interactions** by combining:  
 => **transcriptomic studies**: Huot et al 2019, Huot et al. 2020, Orsucci et al. 2022, Pigeyre et al. 2019  
 => **epigenomic studies**: Moné et al. 2018, Gimenez et al. 2020, Nhim et al. 2022  
 And their integration on the **BIPAA platform** (<https://bipaa.genouest.org/is/lepidodb/>)

## Functional genomics of Lepidoptera specific immune genes



## B. Prophenoloxidases CRISPR mutants

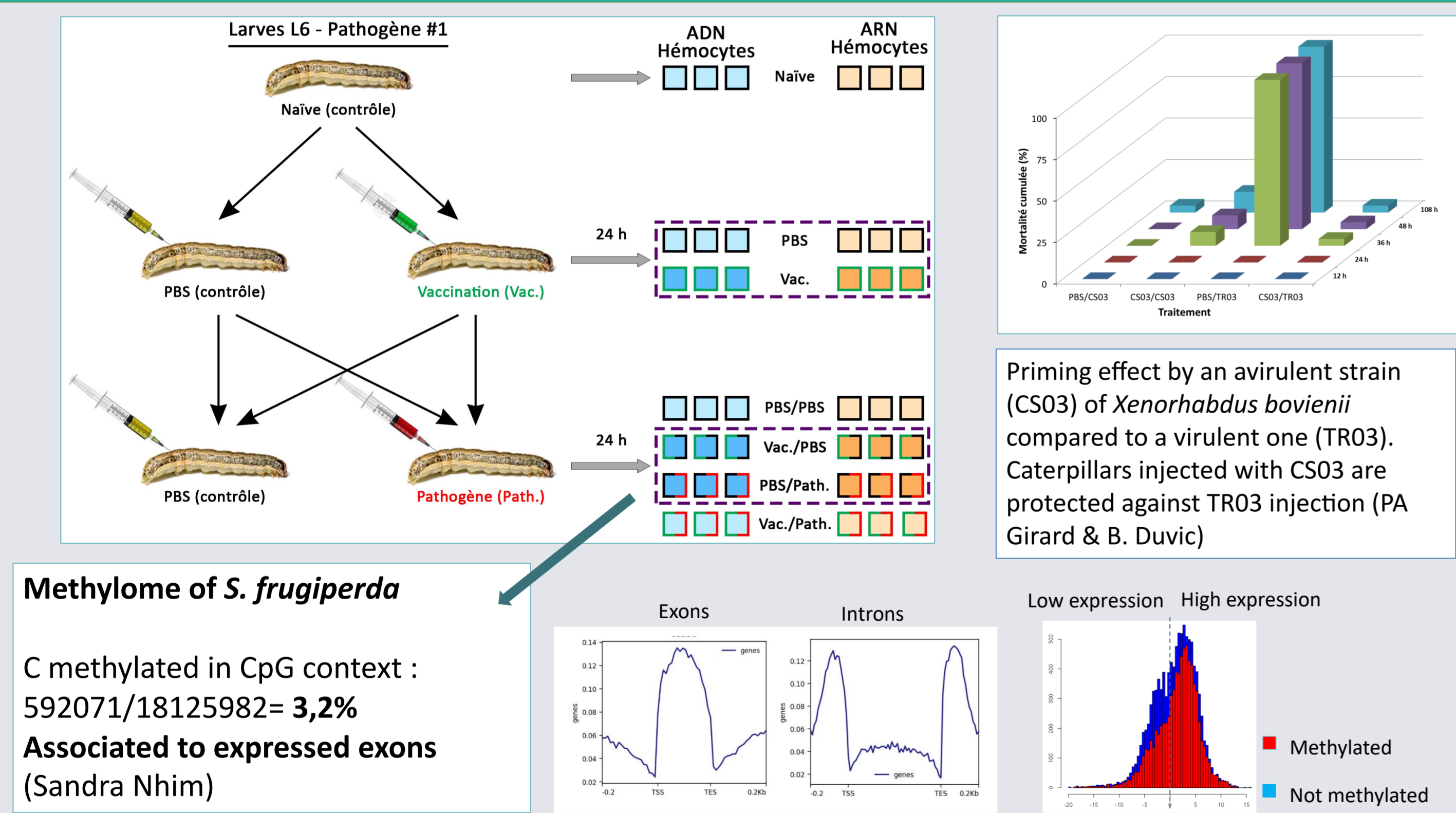


**Conclusion: Gene Regulation and Immunity of Lepidoptera**

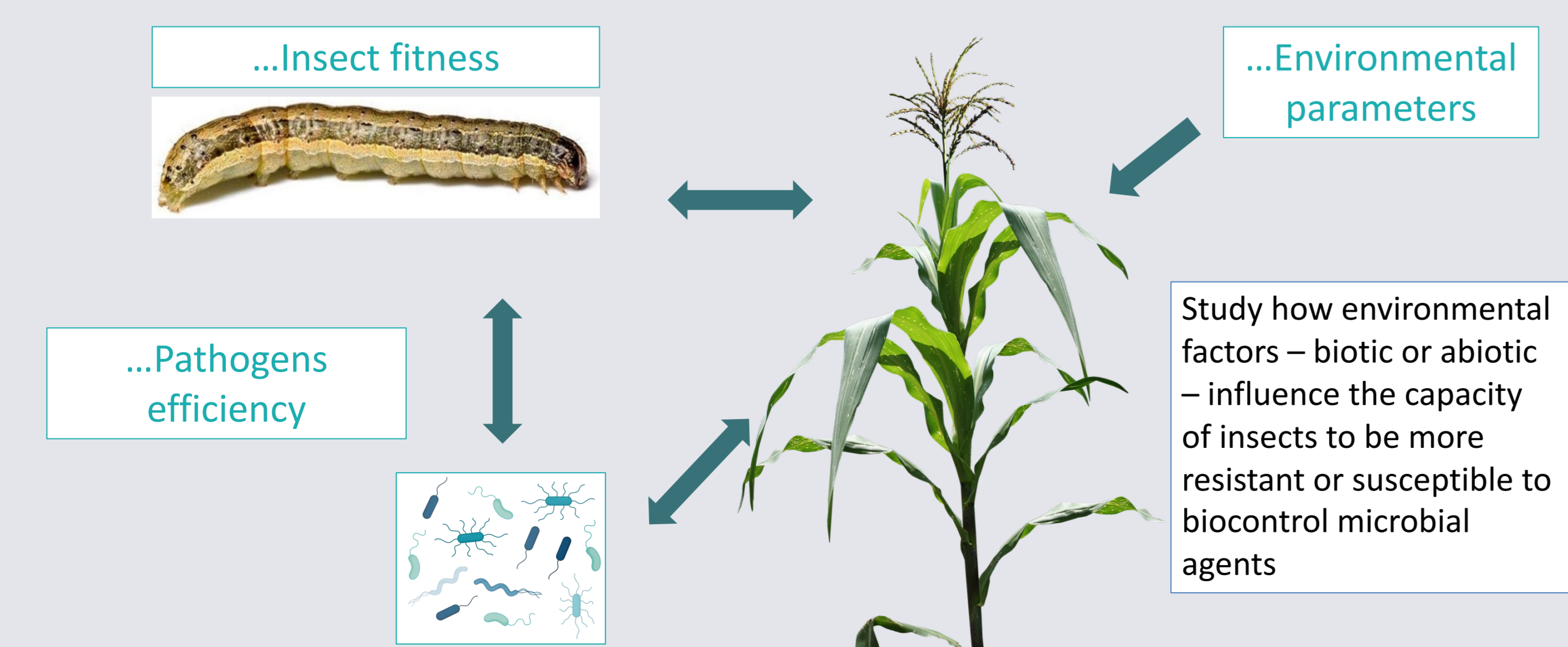
Establishment of genomic and functional genomics resource of immune genes in *Spodoptera frugiperda*

**Current research 1:** Characterization of Lepidoptera specific effectors  
**Current research 2:** Epigenomics basis of regulation during priming  
**To hire:** a researcher in Eco-Immunology

## Epiprime: epigenetics basis of priming



## Towards an eco-immunology approach: variations in...



**CONTACT US IF YOU ARE INTERESTED IN WORKING ON THIS THEME IN DGIMI, MONTPELLIER !!!**