

**SUPPLEMENTARY MATERIAL**

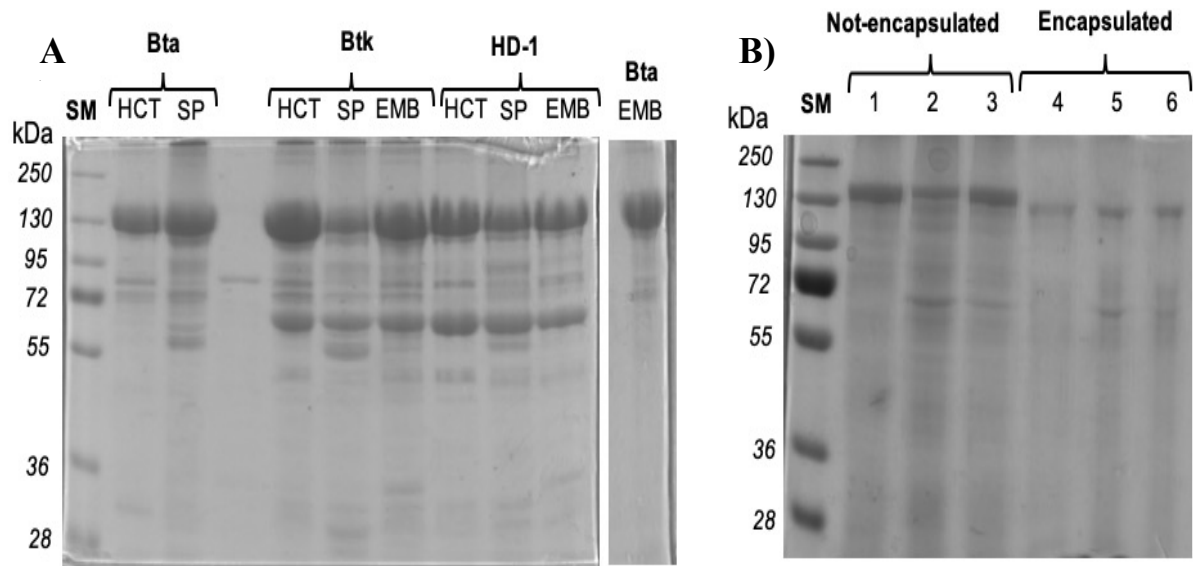
**Performance Insights into Spray-Dryer Microencapsulated *Bacillus thuringiensis*  
Cry Pesticidal Proteins with Gum Arabic and Maltodextrin for Effective Pest  
Control**

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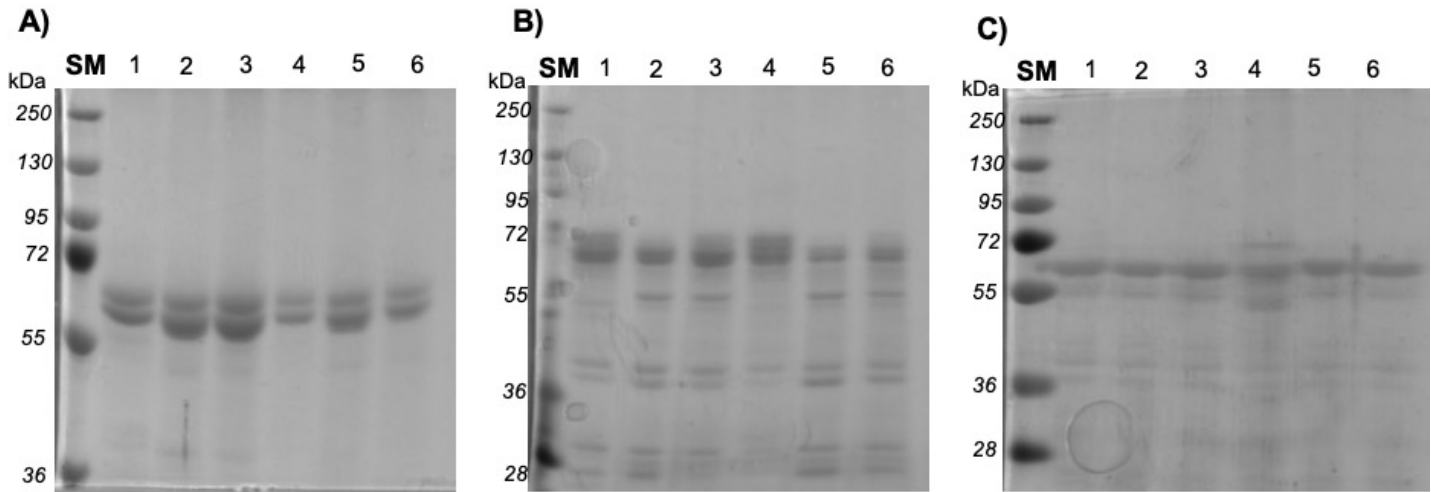
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**Figure S1:** Evaluation of the protein profile in SDS-PAGE analysis. A) Protein profile of Bt *aizawai* (Bta strain) and Bt *kurstaki* (Btk and HD-1 strains) in different culture media (HCT, SP and Embrapa-EMB); B) Protein profile for non-encapsulated Bt formulations (1, Xentari<sup>®</sup>; 2, Dipel<sup>®</sup>; and 3, Dipel<sup>®</sup>/Xentari<sup>®</sup>) and microencapsulated samples (4, MP\_Bta; 5, MP\_Btk; and 6, MP\_Btk/Bta).

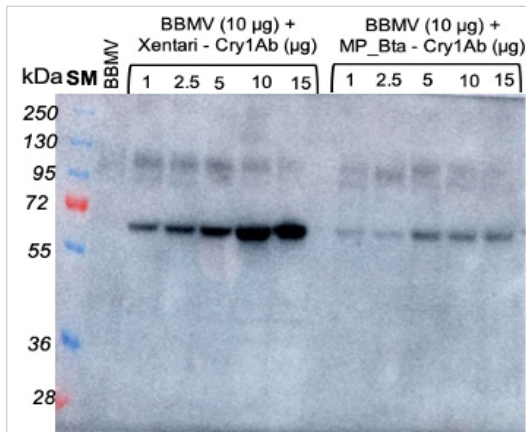


**Figure S2:** Analysis of activation efficiency after Protein quantification of SDS-PAGE profiles. A) Protein profile after activation with trypsin; B) Protein profile after activation with chymotrypsin; C) Protein profile after activation with midgut juice; Formulations: 1, Xentari®; 2, Dipel®; 3, Dipel®/Xentari®; 4, MP\_Bta; 5, MP\_Btk; and 6, MP\_Btk/Bta.

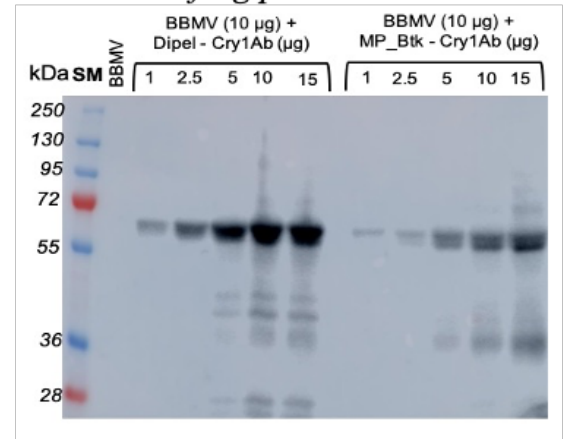


**Figure S3.** Binding interaction of formulations to BBMV from *Spodoptera frugiperda* (A and B) and *Manduca sexta* (C and D). A) A sample of 10 µg SfBBMV was incubated with 1 to 15 µg of Cry activated toxins present in Xentari and MP\_Bta formulations. B) A sample of 10 µg of SfBBMV was incubated with 1 to 15 µg of activated toxins present in Dipel and MP\_Btk formulations. C) A sample of 10 µg of MsBBMV was incubated with 1 to 15 µg of toxins present in Xentari and MP\_Bta formulations. D) A sample of 10 µg of MsBBMV was incubated with 1 to 15 µg of activated toxins present in Dipel and MP\_Btk formulations.

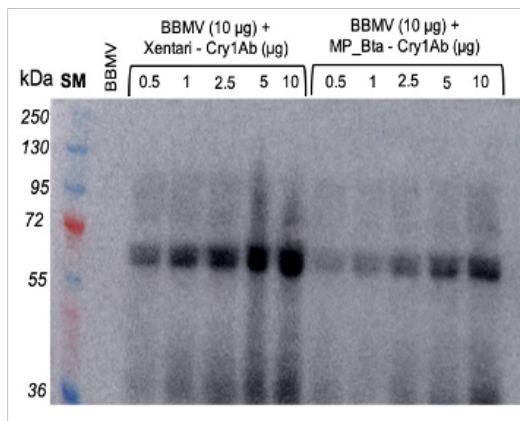
**A** Binding of Xentari and MP-Bta to *S. frugiperda* BBMV



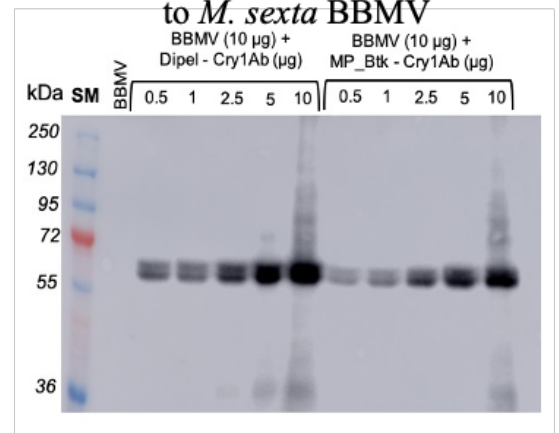
**B** Binding of Dipel and MP-Btk to *S. frugiperda* BBMV



**C** Binding of Xentari and MP-Bta to *M. sexta* BBMV



**D** Binding of Dipel and MP-Btk to *M. sexta* BBMV



**Figure S4:** ELISA binding analysis of Xentari, Dipel, MP\_Bta and MP\_Btk formulation containing trypsin-activated Cry1Ab toxin to SfBBMV (A) and MsBBMV (B).

