

Reply

Response to Leopoldo Palma. Comments on Ekino *et al.* Cloning and Characterization of a Unique Cytotoxic Protein Parasporin-5 Produced by *Bacillus thuringiensis* A1100 Strain. *Toxins* 2014, 6, 1882–1895

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Received: 18 November 2015; Accepted: 19 November 2015; Published: 27 November 2015

Academic Editors: Vernon L. Tesh and Anne-Brit Kolstø

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I appreciate the thoughtful comments from Dr. Leopoldo Palma [1] on our research about cytotoxic protein parasporin-5 produced by *Bacillus thuringiensis* (BT) A1100 strain [2]. First of all, the term parasporin is defined as “*Bacillus thuringiensis* and related bacterial parasporal proteins that are non-hemolytic but capable of preferentially killing cancer cells” [3,4]. The definition does not refer to insecticidal activity. Mizuki *et al.* carried out a large-scale screening of BT strains for the new biological activity, that is, cytotoxic activity to human cancer cells with non-hemolytic activities [5]. In this study, 1744 BT strains were investigated not only for cytotoxic activity but also for insecticidal activities against 11 species of five orders (Lepidoptera, Diptera, Orthoptera, Dictyoptera, and Isoptera). As a result, 42 cytotoxic BT strains, parasporin producers, have been discovered, all of which have non-insecticidal activities as far as tested. Further, the A1100 strain in our study was not toxic to the above 11 species. However, the insecticidal activity that we have studied was limited. Based on the above definition of parasporin, we do not deny the possibility that parasporins have insecticidal activity. Known parasporins might have insecticidal activity and novel insecticidal parasporins may be discovered. Further interesting research will clarify this unknown parasporin world.

Conflicts of Interest: The authors declare no conflict of interest.

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