Electropenetrography proves a plant bacterial manipulation of its insect vector's energy metabolism

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Vector-borne plant bacterial pathogens interact with their vectors at the cellular and organismal levels and alter their physiology. '*Candidatus* Liberibacter asiaticus' is transmitted by *Diaphorina citri* in a persistent, circulative, and propagative manner. '*Ca*. L. asiaticus' genome possesses an ATP translocase that mediates the uptake of ATP and other nucleotides from the surrounding environments to achieve its biological processes, such as growth and multiplication. The levels of ATP and many other nucleotides were significantly increased in *D. citri* after infection '*Ca*. L. asiaticus'. Gene expression analysis showed upregulation for ATP synthase subunits, while enzymatic activity showed a decrease in ATPase. These findings indicated that '*Ca*. L. asiaticus' stimulated *D. citri* to produce more ATP and many other energetic nucleotides, while it may inhibit their consumption by the insect. As a result of ATP accumulation, the adenylated energy charge (AEC) was increased, and the AMP/ATP and ADP/ATP ratios were decreased in '*Ca*. L. asiaticus' -infected *D. citri*. Survival analysis confirmed a shorter lifespan for infected *D. citri*. Electropenetrography showed a significant reduction in total non-probing time, salivation time, and time from the last E2 (phloem ingestion) to the end of the recording, indicating that '*Ca*. L. asiaticus' -infected *D. citri* were at a higher hunger level and they tended to forage more often. This increased feeding activity reflects the '*Ca*. L. asiaticus' induced energetic stress. In conclusion, *C*Las alters the energy metabolism of its psyllid vector, *D. citri*, to secure its need for energetic nucleotides.