



# Continuous honey bee cell-line, AmE-711 (2020-240)

**The first and only honey bee cell-line available for use in research and experimental testing.**

## Applications

- Basic honey bee and insect research
- Product testing (including herbicides and pesticides)

## Key Benefits & Differentiators

- First and only continuous honey bee cell-line available.
- Facilitates in depth biochemical study of cellular pathways and mechanisms.
- Cells remain viable and replicate for more than 40-50 generations, translating to over a year of culture in the lab.

## The importance of honey bee research

Colony collapse disorder (CDD) is a threat to the survival of honey bees and could significantly disrupt agricultural production. CCD research into how pathogens and toxic compounds affect honey bees is a rapidly expanding field. However this research is limited by the lack in vitro cultures composed of honey bee cells. Instead researchers must use precious whole organisms (bees) or colonies, limiting progress and the types of studies that can be carried out. To address this limitation, University of Minnesota researchers Drs. Goblirsch, Spivak and Kurtti developed the first and only honey bee cell-line that supports continuous culturing of the insect cells. The cell line, named AmE-711, was isolated and characterized from primary cell cultures derived from fragmented honey bee embryonic tissues without the use of retroviruses or transfection of human oncogenes. The cell culture system we developed has potential application for studies aimed at honey bee development, genetics, pathogenesis, transgenesis, and toxicology.

## Phase of Development

Fully established cell line that has been characterized and published.

## Desired Partnerships

This cell line is fully developed and available for license. Please contact our office to learn more.

## Researchers

- **Dr. Michael Goblirsch** Agriculture Research Service, USDA
- **Dr. Marla Spivak** Distinguished McKnight Professor, College of Food, Agriculture and Natural Resources Sciences
- **Dr. Tim Kurtti** Professor, Department of Entomology

## References

## Technology ID

2020-240

## Category

Life Sciences/Research Tools  
Agriculture & Veterinary/Ag  
Biotechnology  
Agriculture & Veterinary/Food  
Science & Nutrition  
Agriculture &  
Veterinary/Veterinary Medicine

## Learn more



1. Michael J. Goblirsch, Marla S. Spivak, Timothy J. Kurtti (2013), <https://doi.org/10.1371/journal.pone.0069831>, PLOS ONE
2. Jimena Carrillo-Tripp, Adam G. Dolezal, Michael J. Goblirsch, W. Allen Miller, Amy L. Toth & Bryony C. Bonning (2016), <https://doi.org/10.1038/srep22265>, Scientific Reports