

Tni-FNL: An Improved Trichoplusia Ni Cell Line for Protein Expression

Summary

Researchers at the National Cancer Institute (NCI) seek licensing for an improved cell line called Tni-FNL which is capable of high level expression of heterologous proteins using baculovirus expression systems.

NIH Reference Number

E-146-2017

Product Type

- Research Tools

Keywords

- Tni-FNL, Cell Line, Baculovirus, Protein Expression, Insect Cell, Esposito

Collaboration Opportunity

This invention is available for licensing.

Contact

- Rose Freel
NCI TTC

rose.freel@nih.gov (link sends e-mail)

Description of Technology

Researchers at the National Cancer Institute (NCI) have developed an improved insect cell line, Tni-FNL, derived from the cabbage looper, *Trichoplusia ni*. The Tni-FNL cell line is capable of high level expression of heterologous proteins using baculovirus-based expression systems. When compared to commercially available cell lines used for the same purpose, the Tni-FNL cell line often outperforms those for protein expression. These cells have a high growth rate and are capable of growth at a lower temperature. The complete genome sequence of the Tni-FNL cell line has been determined, opening the door to systems biology approaches to further improve the protein expression capabilities of the cell line.

Potential Commercial Applications

- Research tool for production of protein
- Target organism for advanced systems biology approaches to improve protein

production

Competitive Advantages

- In side-by-side comparisons with other insect cell lines, this cell line outperforms for protein production for several different proteins tested
- Cell line has a highly robust growth rate, including at lower temperatures
- Cell line genome sequence was determined to a coverage and accuracy far exceeding any other lepidopteran cell line or host organism

Inventor(s)

[Dominic Esposito](#), Ralph Hopkins, Veronica Roberts

Development Stage

- Prototype

Publications

Gillette WK, et al. Farnesylated and methylated KRAS4b: high yield production of protein suitable for biophysical studies of prenylated protein-lipid interactions. (PMID: 26522388) [[PMID: 26522388](#)]

Patent Status

- **Research Material:** NIH will not pursue patent prosecution for this technology

Related Technologies

- [E-009-2015 - Improved Production of Prenylated Protein in Insect Cells](#)

Therapeutic Area

- Cancer/Neoplasm

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