TECHNOLOGY

A Stable Fibroblast Cell Line To Study Innate Immunity and Host-Viral Interactions

OVERVIEW

Background
Pathogenic viral infection induced host responses are often driven by specific molecules like interferons. Specific recognition of viral nucleic acids serves as a trigger to stimulate expression of interferons. An essential transcription factor for interferon expression interferon regulatory factor-3 (IRF3) is present in the cytoplasm in an inactive form. Upon recognition of viral nucleic acids, IRF-3 is activated by modification with a phosphate group, followed by dimerization and translocation into the nucleus to drive interferon expression. Generating a stable cell line that is able to overexpress IRF3 can serve as a model system to study and elucidate the molecular mechanisms in host-viral interactions.

Innovative Technology
Researchers at University of Maryland have constructed a stable cell line that is able to over-express interferon regulatory factor-3 (IRF3) and successfully employed this cell line in the study of host responses to Hepatitis E virus and Zika virus. Such a model system can therefore be translated to study and identify viral factors driving host-defense responses.

Advantages
- Stable cell line that selectively over-expresses IRF3
- Demonstrated utility to study host-defense responses against viral infections

Applications
- Study of innate immunity and host-viral interactions as a model system

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Additional Information

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EXTERNAL RESOURCES

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