



National Human Genome Research Institute (NHGRI)

Research Materials Available for Licensing

Novel Genotoxic Detection

Assays

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Enhanced Level of Genomic Instability 1, Genotoxicity, Luciferase, High Throughput

Lead Inventor

Kyungjae Myung, Ph.D.

Genetics and Molecular Biology Branch,
NHGRI, NIH

Licensing Contact

Tara Kirby, Ph.D.

Senior Licensing and Patenting Manager
Office of Technology Transfer, NIH

kirbyt@mail.nih.gov

NHGRI Contact

Claire Driscoll

Director, NHGRI Technology Transfer
Office

cdriscol@mail.nih.gov

Summary

The Enhanced Level of Genomic Instability 1 (ELG1) protein functions in suppression of genomic instability caused by DNA damage. NHGRI researchers have demonstrated that human ELG1 (hELG1) protein is stabilized after DNA damage by various genotoxic stresses, and they have developed a cell line expressing ELG1-luciferase fusion protein. This cell line can be used to detect genotoxicity of compounds in less than twenty (20) hours and it was successfully utilized to survey the National Toxicology Program (NTP) library containing known genotoxic compounds. In addition, cell lines expressing hELG1-green fluorescent protein (GFP) and hELG1-cyan fluorescent protein (CFP) were developed and are available.

Potential Commercial Applications

Use of NHGRI's cell lines expressing hELG1-luciferase, hELG1-GFP, and hELG1-CFP in testing genotoxicity of compounds could give more robust and quicker results than those obtained with current ELISA-based assays. For example, the hELG1-luciferase line was used to screen 300,000 NIH Chemical Genomics Center compounds in two weeks in a high-throughput manner.

Related Article

Sidkar et al., *DNA Damage Responses by Human ELG1 in S Phase are Important to Maintain Genomic Integrity*, 8 Cell Cycle 3199 (2009).

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2880862/pdf/nihms201877.pdf>