



Southern Illinois University System

Applications

- Reagent for cancer/genetics research
- Creation of a miRNA gene/target library
- Rapid screening for cDNAs and miRNAs of interest with clear, measurable results

Inventors

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Genetic Selection System for microRNA Target Genes

miRNA target determination largely relies on computer-aided algorithms based on the nucleotide base pairing of a miRNA sequence and the 3'-untranslated regions of a potential target gene. However, predicted targets vary from one program to another. Recent evidence also indicates that even perfect base pairing may not predict miRNA-target interactions.

Invention

This novel system utilizes a specially constructed plasmid that contains a puromycin resistance gene, a resistance gene blocker, and cDNA for a gene of interest. The plasmid is transfected into host cells along with a vector expressing a miRNA. If the cDNA contains a miRNA target, the cells will live in the presence of puromycin. If the cDNA does not contain a miRNA target, the cells will die in the presence of puromycin. This method can be used with cDNAs and miRNAs of interest as a rapid screening tool that provides clear and measurable results. This invention could be sold either as individual plasmids or a kit and would save researchers weeks to months performing individual target validation tests.

Key Advantages

- Research tool
- RNA/DNA research
- microRNA screening/target validation
- High throughput
- Ease of use
- Measurable results
- No reliance on variable computer-based software for target prediction

Status

- U.S. Patent # 8,852,926 issued October 7, 2014
- This technology incorporates proprietary materials controlled by Tet Systems GmbH & Co. KG. Additional permissions and commercialization rights from Tet Systems may be required to market this technology.
- Current work is focused on optimizing the experimental system to create greater reliability and reduce the number of false positives.
- The technology is available for license.

Other opportunities related to this technology, included but not limited to sponsored and/or collaborative research, may be available. Please reach out to the designated contact identified at left for more information.