of libraries for compounds that specifically inhibit or kill cancer stem cells.

- Research tool to optimize therapeutic regimens in preclinical models.
- Potential to support precision medicine approach by screening therapeutics for efficacy against cancer stem cells in patient-derived xenografts.

Competitive Advantages:
- Efficient visualization of cancer stem cells by functional property rather than by use of highly variable cell surface markers.
- Flexible modular Gateway cloning technology allows constructs with alternative reporters to be readily generated.
- Approach is independent of cell-of-origin of tumor.

Cancer stem cell behavior can be monitored in real-time.

Development Stage:
- Pre-clinical.
- In vitro data available.
- In vivo data available (animal).

Inventors: Lalage Wakefield and Binwu Tang (NCI).

Publication: Manuscript under review. Text available on request.


Licensing Contact: Eggerton Campbell, Ph.D.; 301–435–5282; eggerton.campbell@nih.gov.

Collaborative Research Opportunity:

Description of Technology:

AAV–Aquaporin-1 Gene Therapy for Sjögren’s Syndrome

- Description of Technology: Sjögren’s syndrome is a chronic inflammatory disease affecting over 2 million Americans, whereby moisture-producing glands are attacked by the body’s immune system. The disease is marked by disabling dryness of the mouth and eyes as well as fatigue and pain. Researchers at the National Institute of Dental and Craniofacial Research have developed a therapy that alleviates xerostomia in an animal model of Sjögren’s syndrome. This technology consists of local delivery of adeno-associated virus (AAV) mediated aquaporin-1 (AQP1) fusion protein to salivary glands. Using a murine model that mimics Sjögren’s dry mouth symptoms, it was discovered that treatment restored salivary fluid movement upon expression of AQP1. Targeted delivery of the AAV–AQP1 system makes this invention a novel and potential long-term therapeutic for restoration of exocrine gland function and prevention of xerostomia-associated pain associated with Sjögren’s syndrome.

- Competitive Advantages:
  - AAV gene transfer to salivary glands is highly efficient.
  - AAV–AQP1 promotes de novo salivary flow.

- Development Stage:
  - Pre-clinical.
  - In vitro data available.
  - In vivo data available (animal).

In vivo data available (animal).

In vitro data available.

Competitive Advantages:
- AAV gene transfer to salivary glands is highly efficient.
- AAV–AQP1 promotes de novo salivary flow.

Development Stage:
- Pre-clinical.
- In vitro data available.
- In vivo data available (animal).

Inventor: John (Jay) Chiorini (NIDCR).


Related Technologies:

Licensing Contact: Vince Contreras, Ph.D.; 301–435–4711; vince.contreras@nih.gov.

Collaborative Research Opportunity:

The National Institute of Dental and Craniofacial Research, AAV Biology Section, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate or commercialize AAV–Aquaporin-1 Gene Therapy for Sjögren’s. For collaboration opportunities, please contact David Bradley at bradleyda@nidcr.nih.gov.

Dated: December 2, 2013.

Richard U. Rodriguez,
Director, Division of Technology Development and Transfer, Office of Technology Transfer, National Institutes of Health.