



The SB Transposon System: A validated tool for cancer gene discovery & guided design of targeted therapeutics

The Sleeping Beauty (SB) Transposon System is a “cut and paste” system for efficient delivery of DNA to a wide range of vertebrate cells. Dr. David Largaespada has demonstrated the utility of SB for a new application: **cancer gene discovery**. Using SB to “tag” and clone cancer genes, this system distinguishes “driver” mutations from “passenger” mutations for guiding the design of targeted therapeutics.

Features & Benefits

- Fills Oncology pipeline with new drug targets
- Reduces costs and time to validation of oncology targets in **ONE STEP**
 - SB works as “tag” to find cancer genes in solid tumors
 - No need for cell culture or single gene mouse models for target discovery

- Controls transposase expression to identify genes of interest in specific target tissues
- Eliminates mRNA mutation screening for target discovery
- Conditional SB system preferentially identifies cancer “driver” genes
- SB is effective for somatic and germline mutagenesis- Identifies both tumor suppressor and oncogenes.
- SB System is validated with known cancer genes, and identified new cancer genes
- Method is validated for cancer gene discovery in Liver, GI tract, Brain (gliomas and Medulloblastomas), Fibrosarcomas, Leukemia and Histioscarcoma.
- Validation experiments in progress for osteosarcoma, germ cell

tumors, and mammary cancer

Publications:

1. Starr et al. **Science** 26 February 2009 [DOI: 10.1126/science.1163040]

2. Keng et al. (2009) **Nature Biotechnology** 01 Mar 2009 doi: 10.1038/nbt.1526

IP Status

US Patent application pending

Primary Inventor

Dr. David Largaespada
Center for Genome Engineering,
Dept of Genetics, Cell Biology and
Development

Questions? Contact:

Sue Patow
Technology Marketing Manager
Ph 612-624-3966
E-mail Patow001@umn.edu

UM Docket **Z04200**

Learn about more groundbreaking discoveries at www.research.umn.edu/techcomm

