

GENOME ENGINEERING SERVICES

SPEED UP YOUR SCIENCE WITH SBI'S HIGH-QUALITY CUSTOM SERVICES

SYSTEMBIO.COM/GENOME-ENGINEERING-SERVICES

HIGHLIGHTS

- **Choose either vector design and construction or our complete Cell Line Engineering Service**
- **Leverage our well-designed CRISPR/Cas9 products which are used in a number of peer-reviewed papers**
- **Accomplish more with turn-around times of only 10 - 14 weeks**
- **Rest easy with your project in the hands of our experienced team that's completed dozens of successful genome engineering projects**
- **Enjoy consistent quality, confidentiality, and on-time delivery with all projects completed on-site in our Palo Alto, CA, facility**

Get the cell lines you need quickly and hassle-free

When you need to focus on your research and don't have the time or know-how to design genome engineering strategies and constructs, or to perform the cell line engineering work needed, SBI offers an array of services conducted by the same experts that create our highly-regarded products.

From start to finish, we offer services covering your entire genome engineering workflow. Our experienced staff understands the intricacies of using Cas9 and know how to overcome many of the common pitfalls that can make genome engineering with CRISPR/Cas9 technology challenging. Because each project is different, we customize our offering to meet your specific project needs.

"In a recent in-house experiment to knock-out miR-21 in HCT116 cells using PrecisionX Cas9 SmartNuclease with an HR donor, we obtained a high rate of homozygous modification (7/34), demonstrating the power of the Cas9 SmartNuclease system when coupled with an HR donor."

—Fangting Wu, Ph.D., SBI

Tier 1: Design and cloning of custom gRNA and HR donors

SBI will design and clone custom gRNA and/or HR donor vectors. For gRNAs, SBI will design and clone a single gRNA or multiplex gRNAs against a target locus into any SBI SmartNuclease or SmartNickase vector (or customer provided gRNA cloning vector). For HR donors, SBI will design and clone homology arms into any SBI HR donor plasmid for knock-out, knock-in, tagging, or single nucleotide modification genome engineering projects. When a custom HR donor plasmid is ordered together with custom gRNA design and cloning, the donor vector will not contain full gRNA sequences in the homology arms to ensure full compatibility with gRNA.

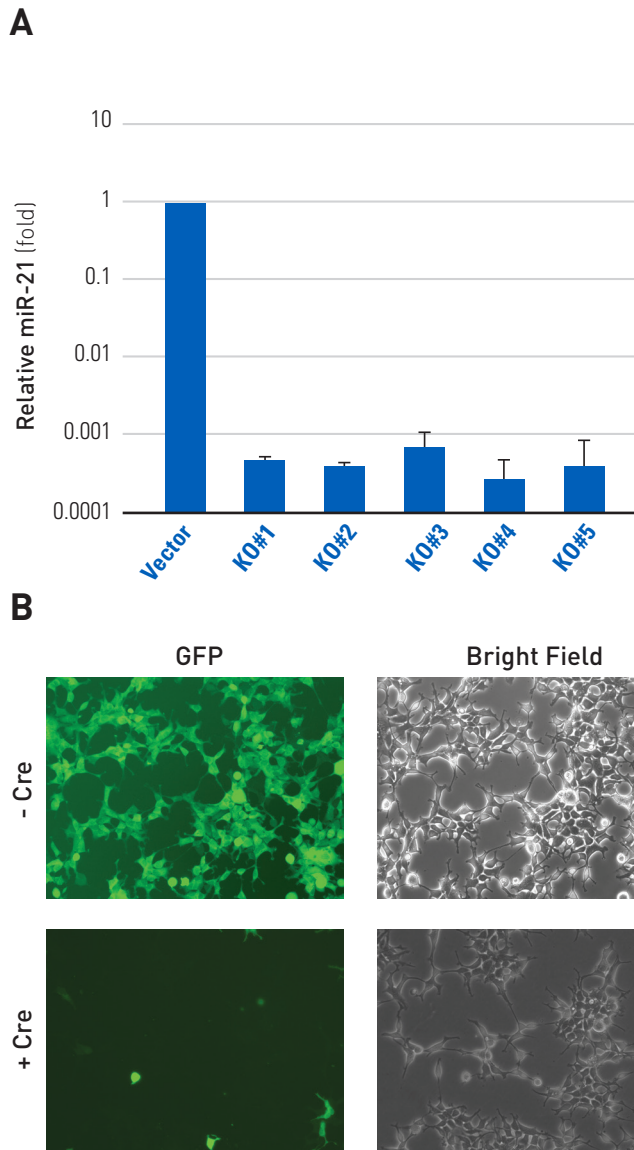
Tier 2: Full service custom cell line engineering

SBI will use custom Cas9/gRNA constructs and plasmid or oligonucleotide-based HR donor templates to engineer target cell lines for knock-out, knock-in, tagging, or single nucleotide modification applications. SBI can screen cells to identify a clonal line with the desired modification or deliver a mixed population of cells for further characterization.



Genome engineering with SBI. Effective, efficient knock-out of miR-21 in HEK293 cells. gRNA, HR Donor design (with Puro and GFP selection markers), implementation, and analysis performed by SBI's genome engineering services team. (A) Low relative levels of miR-21—as measured by qPCR in GFP-positive clones—demonstrate the effectiveness of the approach. (B) After excision with Cre recombinase, the inserted GFP and Puro markers are efficiently excised, leaving only a single LoxP site from the HR Donor.

From Ho, TT, et al. Targeting non-coding RNAs with the CRISPR/Cas9 system in human cell lines. *Nucleic Acids Res.* 2015 Feb 18; **43**(3):e17.



Building the tools that speed your research

With an eye on the latest advances, SBI finds promising technology and converts it into easy-to-use tools and robust services. Our Genome Engineering Services are just one example. See what other ways SBI can drive your research forward—visit us at systembio.com.

Get more information about our Genome Engineering Services or receive a complimentary custom scientific consultation about your project—email services@systembio.com