

AI-designed Gene Editing Service & Ready-to-use Hypoimmune Cell Lines

StemEdit employs a *de novo* AI-designed RNA-guided CRISPR nuclease engineered for high-precision genome editing in human cells.

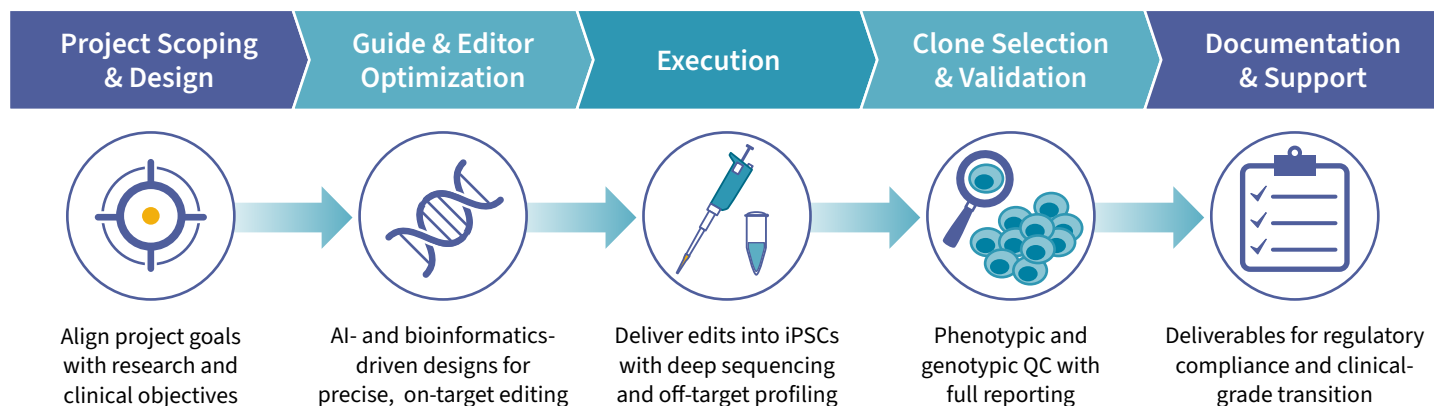
Compared with naturally derived CRISPR systems, StemEdit demonstrates:

- High on-target editing efficiency
- Reduced off-target activity
- Lower predicted immunogenicity

StemEdit Service

Research & Clinical Projects

StemEdit supports projects from early design through validated edited clones, reducing the technical gaps between discovery research and clinical development.



StemEdit Products

Ready-to-use Hypoimmune Cell Lines

Ready-to-use HLA class I/II knockout StemEdit Hypoimmune iPSC lines are available for research and clinical translation. Generated from StemRNA™ Clinical iPSC Seed Clones using non-interfering StemRNA reprogramming and StemEdit genome editing, the female parental line (HLA-A & HLA-DPA1 homozygous, blood type O+) enables broad patient coverage and reduces immune recognition for allogeneic cell therapy.

REPROCELL Cat. No.	Description	Size
RCRP052	StemEdit hiPSC B2M/CIITA DKO RPC-LLF-34-F3	1 vial
RCRP051	StemEdit hiPSC CIITA KO RPC-LLF-34-F3	1 vial
RCRP053	StemEdit hiPSC B2M KO RPC-LLF-34-F3	1 vial

Recommended Reagents:

Culture medium: [NutriStem™ hPSC XF Culture Medium](#)

Substrate: [iMatrix-511 Stem Cell Culture Substrate](#)

The StemRNA parent line is also available as research or clinical version.

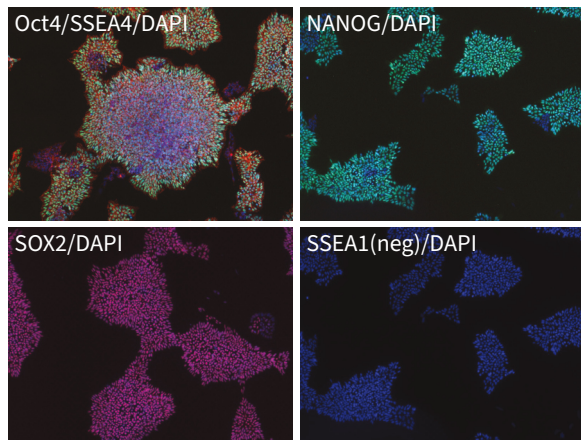
Please inquire: info-us@reprocell.com

<https://www.reprocell.com/gene-editing-services/stemedit>



StemEdit Hypoimmune iPSCs: B2M/CIITA Double Knockouts

Pluripotency



Marker	Flow Positive Cells
Oct4	94.5%
Nanog	98.9%
SSEA4	97.9%
SSEA1 (neg control)	0%

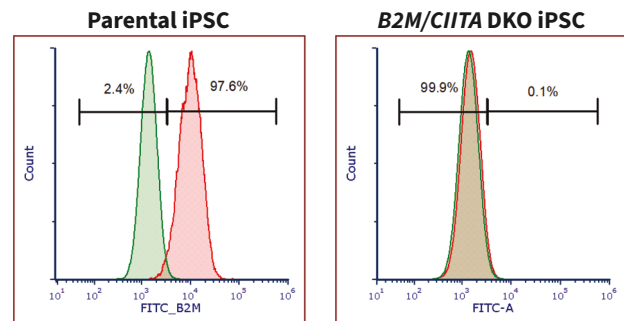
B2M/CIITA double knockout cells (iPSC DKO line #RCRP052) were stained for common positive and negative pluripotency markers and analyzed by immunofluorescence microscopy and flow cytometry, demonstrating that the cells maintain high pluripotency.

Mutation Analysis

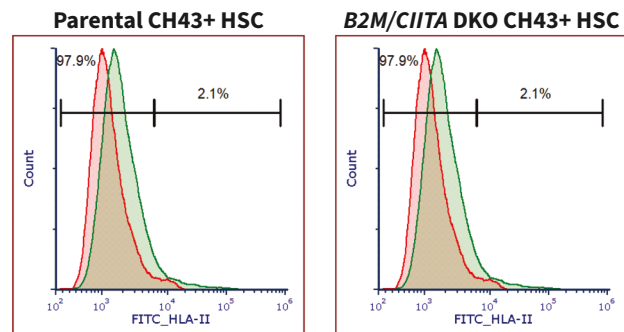
Gene	Seq Result
HLA Class I	Absent
HLA Class II	Absent

Knockout of the *B2M* and *CIITA* genes in the DKO iPSC line #RCRP052 was confirmed by NGS. Functional loss of β 2-microglobulin (*B2M* product) was validated by flow cytometry in iPSCs, and functional loss of *CIITA* was verified in iPSC-derived HSCs. Flow cytometry shows that double knockout of *B2M/CIITA* eliminates both HLA Class I and Class II surface expression.

HLA Class I



HLA Class II



Cell Line Characterization



Assay	Result
Karyotype	Normal (46 XX)
Bacteria and Fungi	Negative
SSEA4	Negative
Virus	Negative
STR (CellCheck)	Pass