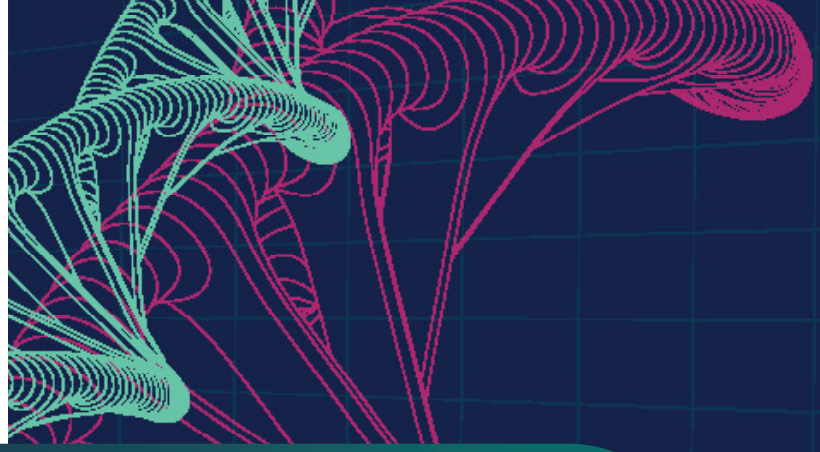


Applied StemCell

PRODUCT DATA SHEET

TARGATT™ RUO Hypo hiPSC Knock-in Kit

Catalog No. AST-9650 RUO • Rev. 1 | August 2026

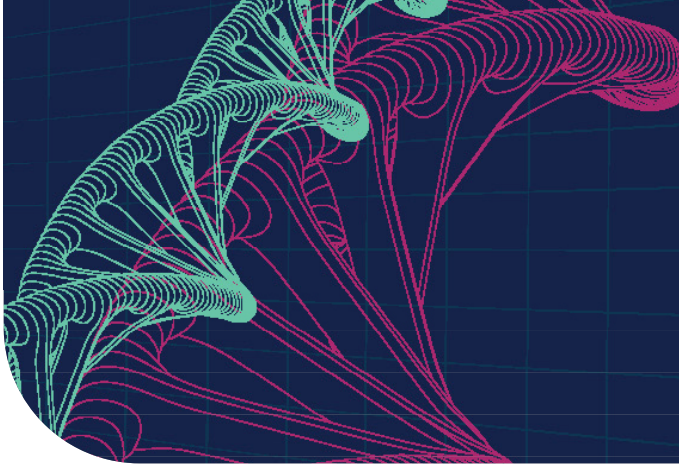
Product Overview

Key Features & Benefits

Feature	Benefit
Hypoimmunogenic design (B2M / CIITA double knockout)	Designed to eliminate HLA class I and II expression, reducing recognition by CD8+ and CD4+ T cells.
Knock-in ready at the H11 safe harbor	Add immune-evasion and disease-modifying genes at a reliable locus with no random-integration risk.
Large payloads (up to 20 kb; more with nested reactions)	Multiplex edits — insert multiple genes in a single reaction to build complex designs.
CD34+ cord blood background	Reduced immunogenicity and fewer somatic mutations compared with reprogrammed adult cells.
Genome editing performed with MAD7	A single, cost-effective license supports commercialization.
Broad differentiation potential	The line has been differentiated to cardiomyocytes, NK cells, T cells, monocytes/macrophages, and endothelial cells.

Applications

- Allogeneic (off-the-shelf) iPSC-derived cell therapy research



Applications

- Engineering of immune-evasion elements (for example NK-, macrophage-, and dendritic-cell evasion elements)
- Disease-modifying gene expression
- Hypoimmunogenic disease models

Product Specifications

Product Type	RUO
Cell Type	TARGATT™ RUO Hypo hiPSC master cell line (AST-9650-C)
Source / Background	CD34+ umbilical cord blood cells; male donor; normal
Reprogramming Method	Episomal (footprint-free)
Immune Engineering	Homozygous B2M and CIITA double knockout; no surface HLA class I or II expression
Integration Locus	H11 safe harbor (intergenic)
Integration Mechanism	Serine integrase; site-specific, single copy
Maximum Insert Size	Up to 20 kb; more with nested reactions
Engineering Method	MAD7 (no CRISPR/Cas9)
Format / Quantity	Cryopreserved cells, 1×10^6 cells/vial; kit provides sufficient material for 3 transfections
Quality Control	Certificate of Analysis (CoA) available on request
Storage	Ships on dry ice. Master cell line: liquid nitrogen vapor phase immediately upon receipt. Plasmids: −20°C; avoid repeated freeze-thaw
Shelf Life	See lot-specific CoA / component labeling

Quality Control Summary

Every lot is released against the following quality criteria. Lot-specific results are provided on the accompanying Certificate of Analysis (CoA).

- B2M and CIITA knockouts confirmed by Sanger sequencing; loss of B2M surface expression confirmed by flow cytometry
- Post-cryopreservation viability
- Pluripotency markers: OCT4, SOX2, NANOG, SSEA-4, and TRA-1-60; alkaline phosphatase (AP) staining
- Functional pluripotency: three germ layer formation
- Karyotype (normal) and STR profile
- Sterility; mycoplasma and pathogen testing

Supporting Data

Schematic representation of TARGATT™ knock-in strategy

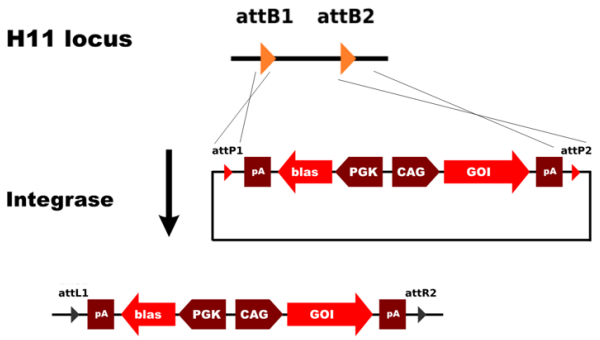
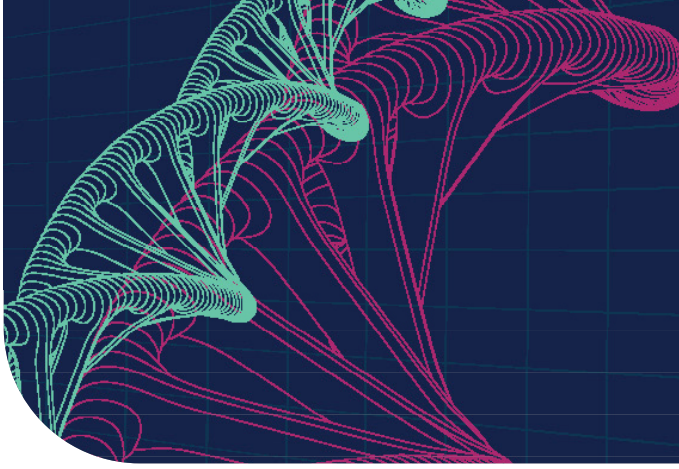


Figure 1. Schematic representation of TARGATT™ site-specific transgene integration mediated by integrase. The master cell line carries the attB landing pad at the H11 safe harbor locus. The cloning plasmid carries the corresponding attP sites, the CAG promoter, and the gene of interest (GOI). The integrase mediates stable, site-specific integration of the transgene at H11.



Supporting Data

HLA class I and II expression eliminated. B2M and CIITA knockouts were confirmed by Sanger sequencing, and loss of B2M surface expression was confirmed by flow cytometry. The line retains pluripotency-marker expression and a normal karyotype. Characterization figures are provided in the CoA or on request.

References

- Chi X, Zheng Q, Jiang R, Chen-Tsai RY, Kong LJ. A system for site-specific integration of transgenes in mammalian cells. PLOS ONE. 2019;14(7):e0219842.
- Zhu F, Gamboa M, Farruggio AP, et al. DICE, an efficient system for iterative genomic editing in human pluripotent stem cells. Nucleic Acids Research. 2014;42(5):e34.

Licensing

TARGATT™ kits are designed to enable evaluation of the technology prior to purchasing a commercial license. Academic researchers may purchase TARGATT™ technology without licensing. Contact Applied StemCell to discuss commercial licensing terms.

Related Services

If you prefer to outsource, Applied StemCell offers custom genome engineering, iPSC gene editing and differentiation, cGMP cell banking and manufacturing, and process, analytical, quality, and regulatory support. Contact us for a custom service project quote.

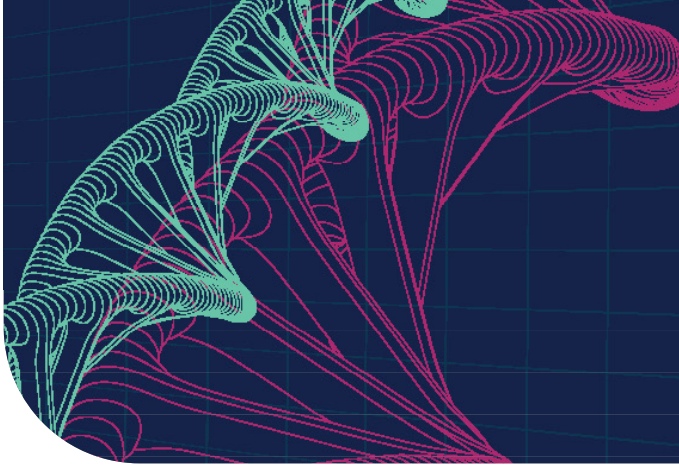
Kit Components

Catalog No.	AST-9650-C
Description	TARGATT™ RUO Hypo hiPSCs (B2M/CIITA double knockout; H11 landing pad)
Format	Cells
Pack Size	1×10^6 cells/vial

Catalog No.	AST-3091
Description	TARGATT™ 46 CAG-MCS Cloning Plasmid
Format	Plasmid
Pack Size	Per CoA

Catalog No.	AST-3084
Description	TARGATT™ CAG-Integrase Plasmid
Format	Plasmid
Pack Size	Per CoA





Ordering Information

Catalog No.	AST-9650
Description	TARGATT™ RUO Hypo hiPSC Knock-in Kit
Format	Kit
Pack Size	1 kit (3 transfections)

Related Products

- AST-9750 – TARGATT™ RUO Hypo Plus Human iPSC
- AST-9450 – TARGATT™ RUO hiPSC Knock-in Kit
- AST-9480 – TARGATT™ GMP hiPSC Knock-in Kit
- AST-1602 – TARGATT™ Female hiPSC Knock-in Kit
- Contact Applied StemCell for compatible media and related cell models.

Let's advance your research.

Applied StemCell powers your basic, autologous, and allogeneic research and development with 15+ years of iPSC experience, proven GMP know-how, and proprietary TARGATT™ gene editing technology, which takes over where CRISPR/Cas9 ends.

Contact & Ordering

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Ready to accelerate your genome engineering project?

Scan the QR code or visit our website to explore product details, access technical resources, discover related TARGATT™ solutions, and request a consultation with our scientific team.

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© 2026 Applied StemCell, Inc. Inserted constructs must be shown to be expressed in iPSCs or the differentiated cell type.