Applied StemCell

PRODUCT DATA SHEET

TARGATT™ CHO-K1 Knock-in Kit (H11)

Catalog No. AST-1420 RUO • Rev. 1 I August 2026

Product Overview

The TARGATT™ CHO-K1 Knock-in Kit (H11) is designed for fast, site-specific knock-in in Chinese Hamster Ovary cells using a simple, plasmid-based workflow. The master cell line carries the attP docking site engineered into the CHO H11 safe harbor locus.

Any gene of interest can be cloned into the supplied TARGATT™ attB cloning plasmid and transfected into the master cell line to generate a stable knock-in line. Integrase-based insertion delivers efficient, high-level gene expression without disrupting endogenous genes.

The line supports uniform, site-specific knock-in, generation of isogenic cell lines, and amplification strategies for isolating high-expressing cells — without the need for single-cell cloning.the TARGATT™ Integrase expression plasmid.

Key Features & Benefits

Feature	Benefit
Site-specific integration at the CHO H11 safe harbor locus	No position effects, no silencing, no disruption of endogenous genes
Irreversible attP × attB integrase reaction	Permanent, stable integration
Single-copy insertion	Predictable genotype; avoids multi-copy instability
Integration efficiency over 90% after selection	Fewer cells to screen; faster route to a production-ready line
Large cargo capacity — up to 50 kb in a single reaction, more with nested reactions	Multi-protein complexes and complex constructs beyond CRISPR, transposon, and lentiviral limits
Consistent expression clone to clone	Pool-based workflows replace clonal purification, removing weeks from development timelines
Development directly in CHO	Expression and glycosylation behavior reflect the intended manufacturing cell type
Compatible with high-throughput and automated pipelines	Scales into existing discovery and development workflows
Kit format precedes licensing	Evaluate the technology before committing; academic researchers may purchase without a license

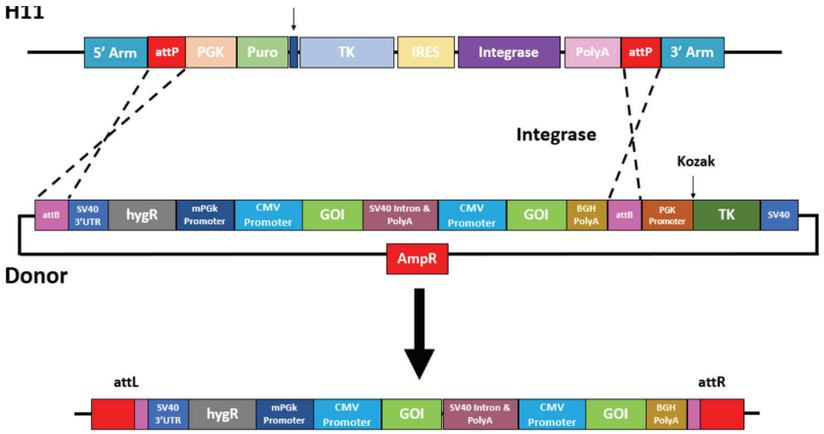
Product Specifications

Host cell line	CHO-K1 suspension cells
Integration site	CHO H11 (Hipp11) safe harbor locus
Master cell line design	Contains both the attP docking site and the integrase expression cassette at the H11 locus
Integration mechanism	Serine integrase; attP × attB; unidirectional and irreversible
Copy number	Single copy
Maximum insert size	Up to 50 kb in a single reaction; larger via nested reactions
Integration efficiency	85.3% GFP-positive after ganciclovir selection (5.49% before selection; 0.25% by random integration in the parental line)
Transfection method	Neon™ electroporation, 1550 V / 30 ms / 1 pulse; 5 µg DNA per reaction (3.75 µg donor + 1.25 µg integrase)
Enrichment	Hygromycin 400 µg/mL from day 3 to day 14, then ganciclovir 1 µg/mL to eliminate parental cells and random integrants
Quality control	Certificate of Analysis with detailed QC information for the cell line and kit components provided with each shipment
Shipping conditions	Dry ice
Storage conditions	Master cell line: liquid nitrogen immediately upon receipt. Plasmids: -20°C; avoid repeated freeze-thaw
Stability	At least 6 months from date of receipt when stored as directed
Product grade	Research use only

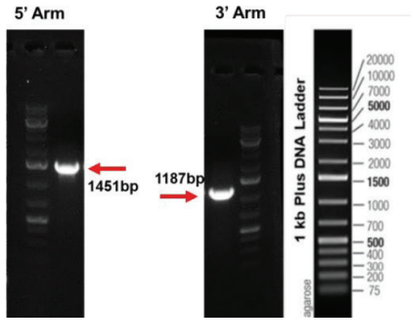
Applications

- Recombinant protein and biologics expression
- Multi-protein complex expression
- Isogenic cell line generation
- High-expressing pool and clone development
- Bioproduction process development

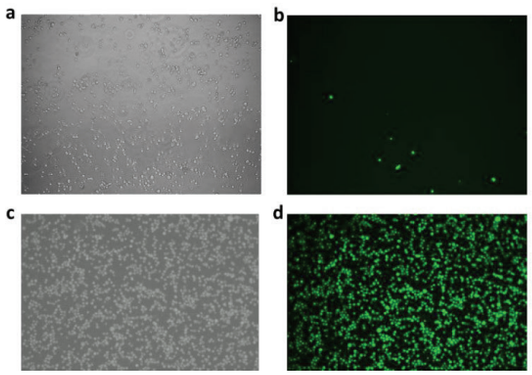
Supporting Data



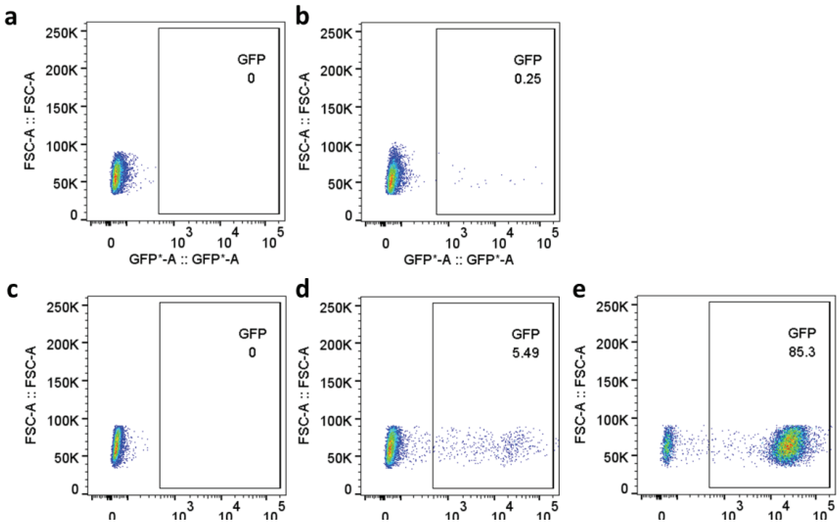
Figures 1. Schematic representation of TARGATT™ site-specific transgene integration mediated by integrase in the TARGATT™ CHO-K1 (H11) master cell line. The TARGATT™ CHO-K1 (H11) master cell line was engineered with the attP landing pad at the Hipp11 (H11) safe harbor locus. The TARGATT™ plasmid containing the integrase recognition site, attB, is used to clone the transgenes. The integrase catalyzes an irreversible reaction between the attP site in the genome and the attB site in the donor vector, resulting in site-specific integration of the gene of interest at the selected locus. Cells that have stably knocked in the donor plasmid can be enriched with hygromycin; parental cells, random integrants and other undesired cells can be further eliminated via ganciclovir selection.



Figures 2. Genotyping of the 5'-arm and 3'-arm in the TARGATT™ CHO-K1 (H11) master cell line. PCR analysis shows the expected sizes for the 5'-arm and 3'-arm junction PCR products on a 1.5% agarose gel: 1451 bp and 1187 bp, respectively.



Figures 3. Uniform and stable GFP expression 21 days post-transfection using the TARGATT™ CHO-K1 (A2) master cell line and knock-in kit. The TARGATT™ CAG-GFP plasmid vector was used to evaluate gene integration in parental CHO-K1 cells (a–b) and in the TARGATT™ CHO-K1 (A2) master cell line (c–d). An enriched GFP signal was detected by fluorescence imaging in the master cell line. (Left) bright field microscopy. (Right) immunofluorescence, GFP channel.



Figures 4. Flow cytometric analysis of GFP expression level in CHO-K1 cells. GFP expression was measured by flow cytometry after transfection of TARGATT™ CAG-GFP plasmid in the parental CHO cell line by random integration and in the TARGATT™ CHO-K1 (H11) master cell line by site-specific gene integration. (a) parental line, untransfected (0%); (b) parental line randomly transfected with TARGATT™ CAG-GFP (0.25%); © master cell line, untransfected (0%); (d) master cell line transfected with TARGATT™ CAG-GFP before GCV selection (5.49%); (e) after GCV selection (85.3%).

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.

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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.	Component	Format	Quanity
AST-1400-1	TARGATT™ CHO-K1 (H11) Master Cell Line	Cells	2×10^6 cells
AST-3082	TARGATT™ 42 Dual CMV-Hyg-TK Cloning Plasmid	Plasmid	15 µg
AST-3076	TARGATT™ 30 (CAG-GFP-TK-No hyg)	Plasmid	8 µg
AST-3071	TARGATT™ CMV-Integrase Plasmid	Plasmid	15 µg

Additional kit components are available for purchase by customers who have purchased the kit. Contact Applied StemCell for details.

Ordering Information

Catalog No.	AST-1420
Description	TARGATT™ CHO-K1 Knock-in Kit (H11) — General purpose, H11 site
Format	kit
Pack Size	1 kit

Related Products

- AST-1405 – TARGATT™ CHO Knock-in Kit (A2), General purpose, A2 site
- AST-1410 – TARGATT™ CHO-K1 Knock-in Kit (H11), Antibody Library Screening; Drug selection
- AST-1409 – TARGATT™ CHO-K1 Knock-in Kit (H11), Antibody Library Screening; FACS
- Contact Applied StemCell for compatible media and related cell models.

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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