



IndelCheck™ System for CRISPR & TALEN

GeneCopoeia's IndelCheck™ system is a powerful addition to your genome editing toolbox. While CRISPR and TALEN are highly efficient large variations in efficiency at individual target sites. The IndelCheck™ system is valuable for (Figure 1):

- CRISPR sgRNA or TALEN functional validation before undertaking long genome editing projects (3-6 months for genome edited cell lines, or 6-9 months for genome-edited mouse lines)
- Screening cell clones for knockout (KO) and knock-in (KI) modifications

Advantages:

- Complete system to simplify your CRISPR/TALEN validation and edited clone screening
- Robust amplification for the target site PCR. No genomic DNA isolation is required
- Easy to use T7 endonuclease I assay with optimized conditions and positive control
- High efficiency cloning of target site PCR products for screening and sequencing

The IndelCheck™ system consists of the Target site PCR kit (IC003 or IC004), the T7 endonuclease I assay kit (IC005 or IC006) and the newly launched Smart-Join™ Blunt-end PCR Cloning Kit (IC007 or IC008).

1) Target site PCR kit V2.0.

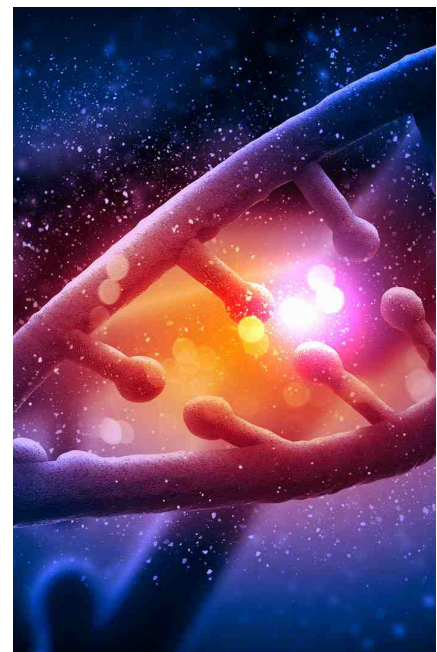
For amplification of targeted genomic regions from cell lysates without genomic DNA isolation. Now in Version 2.0, the Target Site PCR kit is an contains buffer, SuperHeRo™ DNA polymerase, and nucleotides together in one mix for greater convenience.

2) T7 endonuclease I assay kit.

For detection of CRISPR-introduced indel mutations near target site(s).

3) Smart-Join™ Blunt-end PCR Cloning Kit.

For cloning of PCR products to be used for sequencing and identification of CRISPR-mediated genomic modifications.



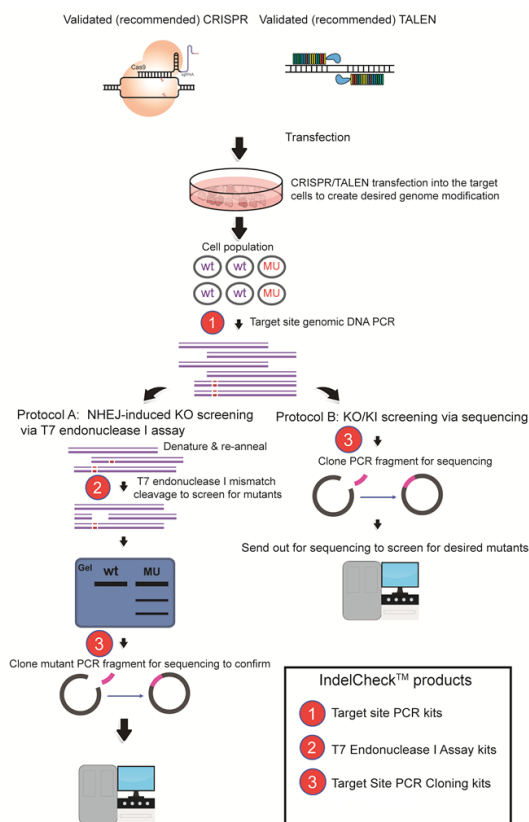


Figure 1. Two main applications of the IndelCheck™ system.

I. CRISPR or TALEN functional validation. Cells transfected with CRISPR or TALEN plasmids are harvested in bulk, followed by generation of a PCR product using primers flanking the target site with the Target site PCR kits (1). The PCR product is denatured, followed by re-annealing, leading to a population of double strand fragments, some of which contain mismatches. These mismatches are detected by the T7 endonuclease I Assay kit (2). If CRISPR or TALEN are active in the cell, then cleavage products will be visible on an agarose gel.

II. Screening for cell clones carrying desired CRISPR- or TALEN-mediated genomic modifications. Cells transfected with CRISPR or TALEN plasmids are plated for single clones, followed by generation of a PCR product using primers flanking the target site with the Target site PCR kits (1). In Protocol A (left) for identifying NHEJ-mediated knockouts, PCR products are screened for indels using the T7 Endonuclease I Assay kits (2). Positive PCR products are then cloned into a plasmid vector using the Smart-Join™ Blunt-end PCR Cloning Kit (3) and sequenced to confirm the presence of the mutation(s). In Protocol B, for identifying any knockout or knockin modification, PCR products are cloned directly into a plasmid vector using the Target Site PCR Cloning kit (3) and sequenced to detect the presence of the mutation(s).

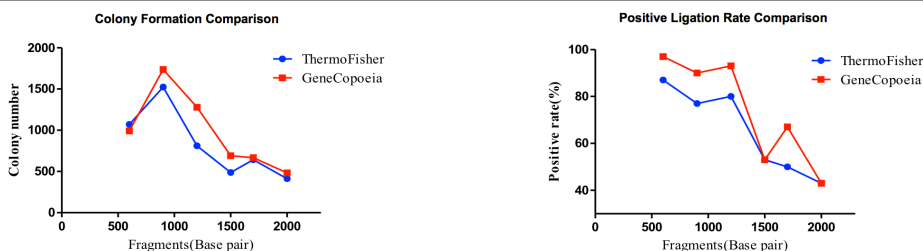


Figure 2. Smart-Join™ Blunt-end PCR Cloning Kit Performance Comparison. A variety of PCR products of different lengths were subjected to ligation reactions and transformed onto agar plates, the total number of colonies and the positive ligation rate were detected. It is shown that the ligation efficiency of Smart-Join™ Blunt-end PCR Cloning Kit (GeneCopeia, Cat.No IC007) is comparable to that of Zero Blunt™ PCR Cloning Kit (Thermo Fisher, Cat.No K275020).

Cat#	Description
IC001	IndelCheck™ CRISPR indel detection system; 50 rxns (IC001) or 200 rxns (IC002)
IC002	Includes target site PCR kit (IC003 / IC004) and T7 endonuclease I assay kit (IC005 / IC006)
IC003	Target Site PCR kit for amplifying region flanking CRISPR target site; 50 rxns (IC003) or 200 rxns (IC004)
IC004	
IC005	T7 endonuclease I assay kit, for cleaving mismatched PCR products to detect indel mutations; 50 rxns (IC005) or 200 rxns (IC006)
IC006	
NEW IC007	Smart-Join™ Blunt-end PCR cloning kit, for sequencing and identification of CRISPR-mediated genomic modifications; 20 rxns (IC007) or 100 rxns (IC008)
NEW IC008	

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