Excellgen
Protein Engineering

Flp Recombinase CleanCapp mRNA

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FLP recombinase catalyzes the site-specific recombination of DNA between FRT sites. It has been widely used for generating conditional knockout mice, mediated by FLP/FRT system.

Recent studies demonstated that pseudouridine modified mRNA signaficantly reduce PKR activation in cells, thereby enhances translation of the encoded protein after being delivered into culture cells or injected into animals.

Codon optimized hFLP is a human-codon optimized thermo-stable mutant form of FLP, with enhanced recombinase activity by a 4-10 fold higher than FLP at 37°C.

hFLP mRNA contains all essential components inculding IRES promoter, Kozak sequence and polyA sequence for efficient expression of FLP protein in the mammalian cells.

Pseudouridine modified 5' Anti-Reverse Cap Analog (ARCA) capped NLS-hFLP recombinase (human codon-optimized NLS-hFLP) mRNA has been tested for FRT recombination in FRT-RFP-Stop-FRT-GFP reporter cells (e.g., HEK293, Hela, and NIH 3T3), and primary cells.

Product Information

- **Form:** CleanCap capped mRNA
- **Methyl Donor**: S-adenosylmethionine (SAM)
- **Catalog #:** EG-1044
- **cDNA sequence**

```
GCCACCATGGCCCCCAAGAAAAAGCGGAAAGTGATGAGCCAGTTCGACATCCTGTGCAAGACCCCCCCCAAGGTGCTCG
TGCGGCAGTTCGTGGAAAGATTCGAGAGGCCCAGCGGCGAGAAGATCGCCTCTTGTGCCGCCGAGCTGACCTACCTGTG
CTGGATGATCACCCACAACGGCACCGCCATCAAGCGGGCCACCTTCATGAGCTACAACACCATCATCAGCAACAGCCTG
AGCTTCGACATCGTGAACAAGAGCCTGCAGTTCAAGTACAAGACCCAGAAGGCCACCATCCTGGAAGCCAGCCTGAAGA
AGCTGATCCCCGCCTGGGAGTTTACCATCATCCCCTACAACGGCCAGAAGCACCAGAGCGACATCACCGATATCGTGTC
CAGCCTGCAGCTGCAGTTCGAGAGCAGCGAGGAAGCCGACAAGGGCAACAGCCACAGCAAGAAGATGCTGAAGGCCCTG
CTGAGCGAGGGCGAGAGCATCTGGGAGATCACAGAGAAGATCCTGAACAGCTTCGAGTACACCAGCCGGTTCACCAAGA
CCAAGACCCTGTACCAGTTCCTGTTCCTGGCCACCTTTATCAACTGCGGCCGGTTCTCCGACATCAAGAACGTGGACCC
CAAGAGCTTCAAGCTGGTGCAGAACAAGTACCTGGGCGTGATCATTCAGTGCCTCGTGACCGAGACAAAGACCAGCGTG
TCCCGGCACATCTACTTTTTCAGCGCCAGAGGCCGGATCGACCCCCTGGTGTACCTGGACGAGTTCCTGAGAAACAGCG
AGCCCGTGCTGAAGAGAGTGAACCGGACCGGCAACAGCAGCTCCAACAAGCAGGAATACCAGCTGCTGAAGGACAACCT
CGTGCGGTCCTACAACAAGGCCCTGAAGAAAAACGCCCCCTACCCCATCTTCGCCATTAAGAACGGCCCCAAGTCCCAC
ATCGGCCGGCACCTGATGACCAGCTTTCTGAGCATGAAGGGCCTGACAGAGCTGACCAACGTCGTGGGCAATTGGAGCG
ACAAGAGGGCCTCTGCCGTGGCCAGAACCACCTACACCCACCAGATCACAGCCATCCCCGACCACTACTTCGCCCTGGT
GTCTCGGTACTACGCCTACGACCCCATCAGCAAAGAGATGATCGCCCTGAAGGACGAGACAAACCCCATCGAGGAATGG
CAGCACATCGAGCAGCTGAAGGGCAGCGCCGAGGGCAGCATCAGATACCCTGCCTGGAACGGCATCATCTCCCAGGAAG
TGCTGGACTACCTGAGCAGCTACATCAACCGGCGGATCTAG
```

- **Amino Acid Sequence:**

```
MAPKKKRKVMSQFDILCKTPPKVLVRQFVERFERPSGEKIASCAAELTYLCWMITHNGTAIKRATFMSYNT
IISNSLSFDIVNKSLQFKYKTQKATILEASLKKLIPAWEFTIIPYNGQKHQSDITDIVSSLQLQFESSEEA
DKGNSHSKKMLKALLSEGESIWEITEKILNSFEYTSRFTKTKTLYQFLFLATFINCGRFSDIKNVDPKSFK
LVQNKYLGVIIQCLVTETKTSVSRHIYFFSARGRIDPLVYLDEFLRNSEPVLKRVNRTGNSSSNKQEYQLL
KDNLVRSYNKALKKNAPYPIFAIKNGPKSHIGRHLMTSFLSMKGLTELTNVVGNWSDKRASAVARTTYTHQ
ITAIPDHYFALVSRYYAYDPISKEMIALKDETNPIEEWQHIEQLKGSAEGSIRYPAWNGIISQEVLDYLSS
YINRRI
```

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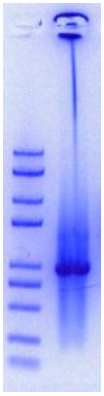
- **Protein Molecular Weight:** 49.7kDa
- **Total Amount of mRNA:** ~25 µg
- **Concentration:** See label
- **Shipping Temperature:** Dry ice
- **Storage Buffer**: RNAse-Free Water
- **Storage Temperature**: –80 oC
- **QC:** *Ex vivo FRT* recombination using purified capped mRNA.



Transfection Protocols:

1. Invitrogen RNAiMAX mRNA Transfection Protocol:
   http://www.invitrogen.com/etc/medialib/en/filelibrary/pdf.Par.34731.File.dat/Transfecting_Stealth_using_Lipofectamine_RNAiMAX.pdf

2. Mirus Bio TransIT-mRNA mRNA Transfection Protocol

   http://www.mirusbio.com/assets/protocols/ml036_transit_mrna_transfection_kit.pdf