



## Human iPSC Multiplex PCR Screening Kit

Catalog Number MG-0005

(For Research Use Only)

### Introduction

Induced pluripotent stem cells (iPSCs) are somatic cells that have been genetically reprogrammed to a pluripotent state by the enforced expression of transcription factor genes. Development of iPSCs requires examination of clones expressing these pluripotency gene markers, including OCT4, SOX2, KLF4, C-Myc or Nanog. The most challenge part is to distinguish fully reprogrammed clones from partially reprogrammed or simply transformed colonies because of inherently low efficiency of iPSC derivation. Signosis developed the human iPSC multiple PCR screening kit, which can simultaneously amplify 5 iPSC markers (OCT4, SOX2, KLF4, Myc, and Nanog) along with control primer GAPDH in one PCR reaction to facilitate iPSC screening. The all-in-one kit provides all of components required for effectively identifying iPSC clones.

### Principle

Multiple targets are amplified simultaneously with different primers in one PCR reaction. The resulted products with differential sizes are easily distinguished with regular agarose gel electrophoresis. The parameters of PCR including the primer concentration and the reaction buffer are optimized in order to provide the highest specificity and sensitivity of amplification of multiple targets in one reaction.

### Materials provided

- Control cDNA mix
- Human iPSC PCR primer mix for OCT4, SOX2, KLF4, Myc, and Nanog
- PCR buffer mix
- PCR Polymerase

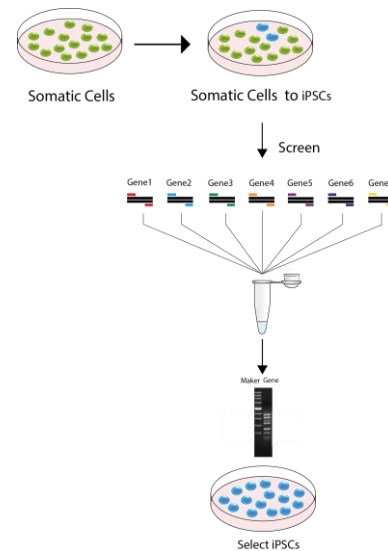


Diagram of iPSCs Multiplex PCR Kit

### Materials required but not provided

- Sample cDNA
- PCR machine

### PCR amplification

- (1) Prepare PCR reactions

Mix the following component for one reaction:

18.8 ul PCR buffer mix

0.5 ul control cDNA mix or specific cDNA

0.5 ul PCR primer mix

0.2 ul PCR Polymerase

Note: make a master mix by multiplying the volume by the number of your reactions

(2) Proceed PCR cycles:

Heat the reactions at 94 °C for 30 sec, and proceed PCR for 35 cycles as follows:

94 °C 30 seconds

58 °C 30 seconds

72 °C 30 seconds

Note: PCR cycle can be adjusted according to a specific primer designing.

(3) Run PCR products on 1.5% agarose gel electrophoresis.

### Data example

#### Maker iPSCs

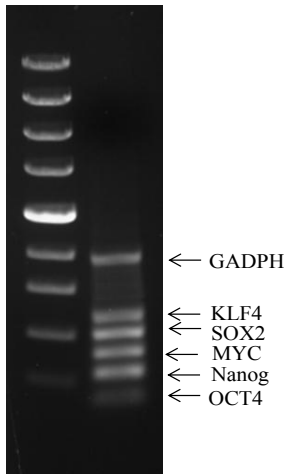


Figure: Human iPSC Multiplex PCR Kit, subjected to PCR for Multiplex iPSC with 35 cycles