



Neural Marker Multiplex PCR Kits

Catalog Number MG-0027

(For Research Use Only)

Introduction

The nervous system is initially derived from the ectoderm. In response to a complex combination of signaling pathways, neural stem cells further differentiate into specific cell types of the central nervous system. Different neural cells have different gene markers, which can be used to monitor the neural development stage as well as distinguish specific cell types for brain development and neural network cancer research. Signosis has developed a multiplex PCR kit, which can monitor 5 neural differentiation markers (Nestin, MAP2, N-CAM, GFAP and GABA) simultaneously in one reaction.

Makers that can be monitored:

Makers	Description
Sox1	Neural precursor cells (NPC) marker
MAP2	General neuronal marker
NCAM	Early neuroectodermal marker
GFAP	Astrocyte marker
GABA	Mature neuronal marker

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
- Neural Marker PCR primer mix for Nestin, MAP2, N-CAM, GFAP and GABA.
- PCR buffer mix

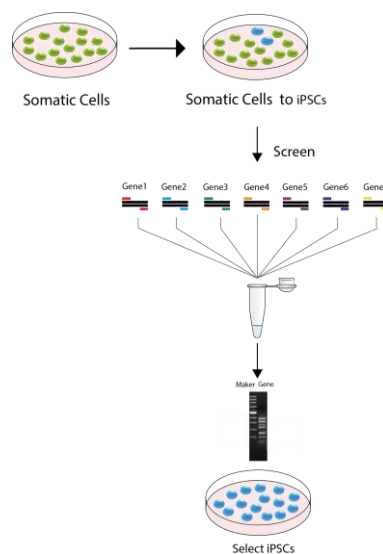


Diagram of Neural Marker PCR Kit

Materials required but not provided

- Sample cDNA
- PCR machine
- House Keeping Gene Multiplex PCR Control Kit (MG-0001)

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 Neural Marker

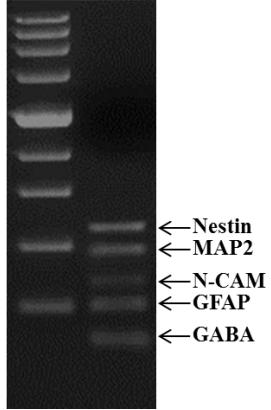


Figure: Oxidative Stress Multiplex PCR Kit, subjected to PCR for Multiplex Housekeeping genes with 35 cycles.