



Oxidative Stress Multiplex PCR Kits

Catalog Number MG-0026

(For Research Use Only)

Introduction

Oxidative stress induced modification of biological components such as proteins, nucleic acids, and lipids plays an important role in degenerative pathophysiologic states, including inflammation, cancer and neurodegenerative disease. Compelling evidences have demonstrated that oxidative stress activates signaling pathways including NFkB, p38 MAPK, and Nrf2, which lead to the alteration of expression of a series of responding genes. These genes are often used as markers to monitor the oxidative stress, related cellular changes, and degenerative diseases. Signosis has developed a multiplex PCR kit, which can monitor 5 oxidative stress-responding genes (NRF2, iNOS, HO-1, GPX-1 and GSTP-1) simultaneously in one reaction.

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
- Oxidative Stress PCR primer mix for NRF2, iNOS, HO-1, GPX-1 and GSTP-1.
- PCR buffer mix

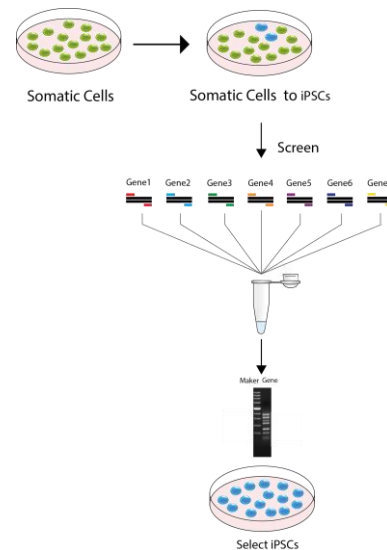


Diagram of Oxidative Stress PCR Kit

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 Oxidative Stress

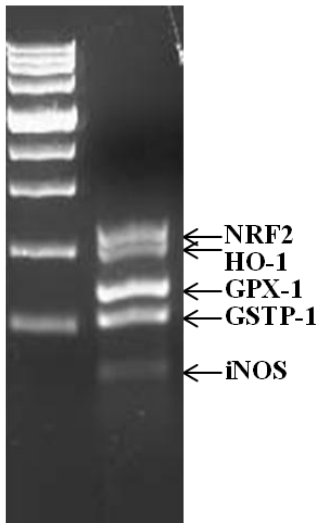


Figure: Oxidative Stress Multiplex PCR Kit, subjected to PCR for Multiplex Housekeeping genes with 35 cycles.