



Human MMPs Multiplex PCR Kit

Catalog Number MG-0002

(For Research Use Only)

Introduction

Matrix metalloproteinases (MMPs) are involved in the breakdown of extracellular matrix in the process of embryonic development, reproduction, and tissue remodeling. MMPs have gained considerable attention due to their participation in human diseases, such as arthritis, invasive tumor growth, and metastasis. Recent studies demonstrated that the expression of some MMPs, such as MMP2 and MMP-9, is abnormally elevated in human cancers. The expression of MMPs is mainly regulated at transcriptional level. To effectively monitor the expression and the transcriptional alteration of MMPs, Signosis has developed multiplex PCR kit that allows the measurement of the gene expression of five MMPs at one time, including MMP2, MMP9, MMP14, MMP3, and MMP7. The Multiplex PCR kit provides the optimized and ready-to-use PCR mix, containing polymerase and dNTP, and the primer mix with optimized concentration.

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 MMP PCR primer mix for MMP2, MMP3, MMP7, MMP9 and MMP14
- PCR buffer mix
- PCR Polymerase

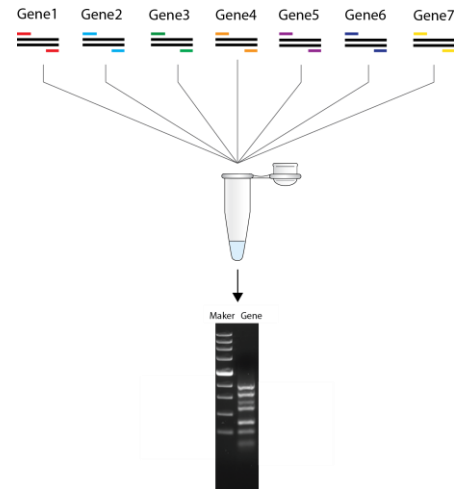


Diagram of Multiplex PCR Kit

Material may required but not provided

- Sample cDNA
- PCR machine

PCR amplification

- (1) Prepare PCR reactions
Mix the following component for one reaction:
18.8 μ l PCR buffer mix
0.5 μ l control cDNA mix or specific cDNA
0.5 μ l PCR primer mix
0.2 μ l 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

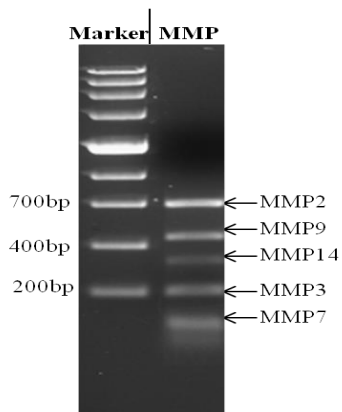


Figure: Human MMP Multiplex PCR Kit, subjected to PCR for Multiplex MMP with 35 cycles