SimpleChIP® Human ID1 Promoter Primers

Cell Signaling
T E C H N O L O G Y®

☑ 500 µl
(250 PCR reactions)

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For Research Use Only. Not For Use In Diagnostic Procedures.

Applications ChIP	Species Cross-Reactivity H	Primer Anneal/Extension 60°C	PCR Product Length 105 bp

Description: SimpleChIP® Human ID1 Promoter Primers contain a mix of forward and reverse PCR primers that are specific to a region of the human inhibitor of differentiation 1 (ID1) promoter. These primers can be used to amplify DNA that has been isolated using chromatin immunoprecipitation (ChIP). Primers have been optimized for use in SYBR® Green quantitative real-time PCR and have been tested in conjunction with SimpleChIP® Enzymatic Chromatin IP Kits #9002 and #9003 and ChIP-validated antibodies from Cell Signaling Technology®. The ID1 gene is regulated by Smad proteins in response to TGF-β signaling.

E= 95.6% R^2= 0.996
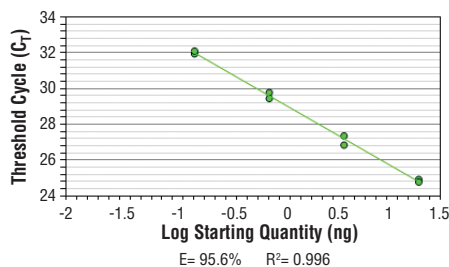
SimpleChIP® Human ID1 Promoter Primers were tested on DNA isolated from cross-linked cells using the SimpleChIP® Enzymatic Chromatin IP Kit (Magnetic Beads) #9003. Real-time PCR was performed in duplicate on a serial dilution of 2% total input DNA (20 ng, 4 ng, 0.8 ng, and 0.16 ng) using a real-time PCR detection system and SYBR® Green reaction mix. The PCR amplification efficiency (E) and correlation coefficient (R^2) were calculated based on the corresponding threshold cycle (C_T) of each dilution sample during 40 cycles of real-time PCR (95°C denaturation for 15 sec, 60°C anneal/extension for 60 sec).

Storage: Supplied in nuclease-free water at a concentration of 5 µM (each primer is at a final concentration of 5 µM). Store at -20°C.

Directions for Use:

1. Label the appropriate number of PCR tubes or PCR plates compatible with the model of real-time PCR machine to be used. PCR reactions should be performed in duplicate and should include a tube with no DNA to control for contamination, and a serial dilution of a 2% total input chromatin DNA (undiluted, 1:5, 1:25, 1:125), which is used to create a standard curve and determine amplification efficiency.

2. Add 2 µl of the appropriate ChIP DNA sample to each tube or well of the PCR plate.

3. Prepare a master PCR reaction mix as described below. Add enough reagents for two extra reactions to account for loss of volume. Add 18 µl of the master PCR reaction mix to each PCR reaction tube or well of the PCR plate.

Reagent	Volume for 1 PCR Reaction (20 µl)
Nuclease-free H_2O	6 µl
5 µM SimpleChIP® Primers	2 µl
2X SYBR® Green Reaction Mix	10 µl

4. Start the following PCR reaction program:
   a. Initial Denaturation: 95°C for 3 min
   b. Denaturation: 95°C for 15 sec
   c. Anneal and Extension: Primer-specific temp. for 60 sec
   d. Repeat steps b and c for a total of 40 cycles.

5. Analyze quantitative PCR results using software provided with the real-time PCR machine.
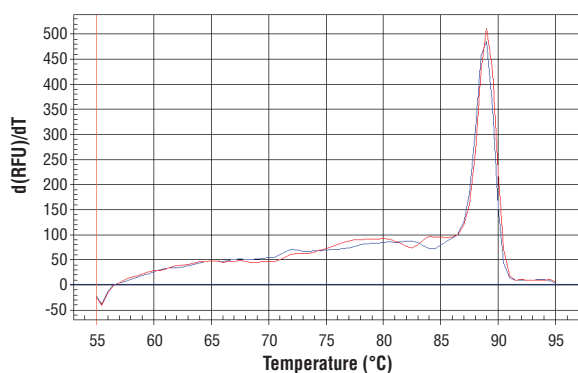
PCR product melting curves were obtained for real-time PCR reactions performed using SimpleChIP® Human ID1 Promoter Primers. Data is shown for both duplicate PCR reactions using 20 ng of total DNA. The melt curve consists of 80 melt cycles, starting at 55°C with increments of 0.5°C per cycle. Each peak is formed from the degradation of a single PCR product.

SYBR® Green is a registered trademark of Molecular Probes, Inc.

Applications Key: **W**—Western   **IP**—Immunoprecipitation   **IHC**—Immunohistochemistry   **ChIP**—Chromatin Immunoprecipitation   **IF**—Immunofluorescence   **F**—Flow cytometry   **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human   **M**—mouse   **R**—rat   **Hm**—hamster   **Mk**—monkey   **Mi**—mink   **C**—chicken   **Dm**—D. melanogaster   **X**—Xenopus   **Z**—zebrafish   **B**—bovine
Dg—dog   **Pg**—pig   **Sc**—S. cerevisiae   **Ce**—C. elegans   **Hr**—horse   **All**—all species expected   Species enclosed in parentheses are predicted to react based on 100% homology.