



**Human Mesenchymal Stem Cell Chondrogenesis Detection Kit  
(HMSC-C PCR)**

*Cat. No. 8328, 50 reactions*

**Product Description**

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Human mesenchymal stem cells (MSC) are a population of multipotent cells that can be differentiated into multiple lineage-specific cells, which can form bone, fat, cartilage, muscle and tendon. The process of chondrogenesis that forms cartilage is regarded as a promising alternative to improve the quality of cartilage regeneration in repairing cartilage damage. ScienCell has created a convenient multiplex PCR kit for the routine detection of human mesenchymal stem cell chondrogenesis. Multiplex PCR allows two or more primers to be amplified in a single PCR reaction by using multiple primer pairs in a single reaction mixture, allowing for considerable saving in labor, cost and precious DNA samples. All required PCR reagents are supplied in this kit. Simply add DNA template and perform PCR reaction. The ready-PCR mix contains *SOX9* and *COL2A1* primers that allow for the detection of early-to-mid- and late-stage of human MSC chondrogenesis, respective [1].

**Kit Components**

Cat. No.	# of vials	Name	Quantity	Storage
8328a	1	Ready-PCR mix	660 $\mu$ L	-20°C
8328b	1	Nuclease-free H <sub>2</sub> O	1 mL	-20°C

**Materials to be Supplied by the User**

DNA templates  
Thin wall PCR tubes  
Thermal cycler  
Agarose gel  
Ethidium bromide  
Electrophoresis system  
Gel imager

**Quality Control**

cDNAs from differentiated human mesenchymal stem cells during the time-course of chondrogenesis were used as template DNA. Each PCR product was sequenced to ensure specificity.

**Product Use**

HMSC-C PCR kit is for research use only. Not for use in animals, humans, or diagnostic procedures.

**Storage**

Store at -20°C upon receipt. Avoid repeated freeze thaw cycles by making six aliquots at 110  $\mu$ L each.

**Shipping**

Dry ice.

**References**

[1] Sekiya, I., Vuoristo, J. T., Larson, B. L., & Prockop, D. J. (2002). *In vitro* cartilage formation by human adult stem cells from bone marrow stroma defines the sequence of cellular and molecular events during chondrogenesis. *PNAS*, 99(7), 4397-4402.

## Procedures

1. Mix the following components in a thin-wall PCR tube:

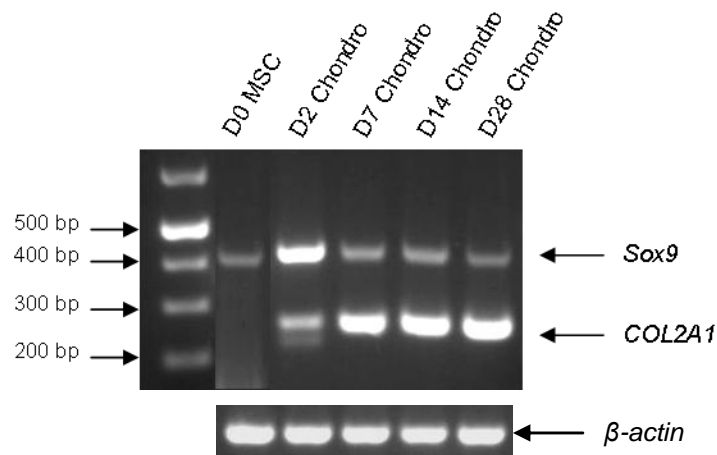
Component	Amount
Ready-PCR mix	12 $\mu$ L
cDNA template*	100 ng
Nuclease-free H <sub>2</sub> O	up to 20 $\mu$ L

\* Amount of cDNA template can be at least 100 ng

2. Perform PCR using the following conditions:

Step 1: 95°C                      3 min  
Step 2: 95°C                      30 sec  
Step 3: 58°C                      30 sec  
Step 4: 72°C                      1 min  
Step 5: Repeat Steps 2-4 for 34 times  
Step 6: 72°C                      10 min

3. Visualize PCR products on a 1.5% agarose gel containing ethidium bromide.



4. Expected product sizes:

Gene	Expected Size
<i>SOX9</i>	399bp
<i>COL2A1</i>	241bp