

## Certificate of Analysis

**Product Name:**

- PCR Ready First Strand cDNA
- cDNA Panel
- Human cDNA Matched Pair (PP/PM)
- Universal cDNA

**Catalog No.:** Cxxxxxxx  
**Catalog No.:** C8xxxxxx  
**Catalog No.:** C823xxxx-PP/PM  
**Catalog No.:** C4xxxxxx

**Storage Condition:** -20°C**Shipping Condition:** Dry Ice**Shelf Life:** One year from the date of receipt under proper storage condition**Description**

- **cDNA** Total RNA used for cDNA synthesis is isolated by modified guanidine thiocyanate techniques. 11 µg total RNA was primed by an oligo dT primer and reverse transcribed by MMLV reverse transcriptase in 40 µl final volume. RT Reaction stopped by heating at 65°C for 10 minutes. The cDNA is in 1x RT buffer. (1x RT Buffer: 50 mM Tris-Cl, pH 8.3, 75 mM KCl, 3 mM MgCl<sub>2</sub>, 10 mM DTT). The estimated cDNA concentration is about 2.5 ng/µl. 1 µl cDNA is good enough for one PCR reaction.
- **The cDNA panel** is comprised of 5 cDNAs from 5 different tissues. Each of them contains 10 µl of cDNA.
- **Human cDNA matched pair.** Products include: Primary Pair (PP), or Primary and Metastatic Pair (PM). PP consists of cDNAs isolated from primary tumor (or diseased tissue) and its adjacent normal tissue; PM consists of cDNAs from primary tumor and corresponding metastatic tumor. cDNAs in each pair are prepared from the same donor. This product line is designed for identifying tumor-specific (or disease specific) genes and tumor metastatic genes.
- **Universal cDNA** is prepared by reverse transcribed BioChain's Universal RNA by using random hexamer or oligo dT primer. Total RNA is isolated by modified guanidine thiocyanate techniques. The Universal cDNA serves as a standard for comparison of gene expression by real time PCR and regular PCR, and also as a gene pool for cloning genes
  - **Human Universal cDNA** is prepared from major organs of both male and female adult donors
  - **Dog (Beagle) Universal cDNA** is prepared from major organs of both male and female adult donors
  - **Monkey (Cynomolgus and Rhesus) Universal cDNA** is prepared from major organs of both male and female adult donors
  - **Mouse Universal cDNA** is prepared from several male and female Balb/C mice whole bodies without fur
  - **Rat Universal cDNA** is prepared from several male and female Sprague Dawley or Wistar rats whole bodies without fur

**Quality Control**

1. The integrity of the RNA used for cDNA synthesis is examined by visual inspection for the presence of intact bands of 18s and 28s ribosomal RNA when electrophoreses on a denaturing agarose gel. The quality and purity of total RNA were tested by spectrophotometer. A<sub>260/280</sub> is between 1.8 and 2.0 (detected in 10 mM Tris-Cl, pH 7.5). The ratio of 28S/18S is  $\geq 1$ .
2. The RNA used for cDNA synthesis is treated by DNase I, and is tested as DNA free RNA by PCR.
3. The synthesized human, animal, and cell line cDNA was 5' selected to ensure its full length. The cDNA was used as template for PCR amplification of  $\beta$ -actin gene and an 838 bp  $\beta$ -actin band was visualized on 1% agarose gel.  $\beta$ -actin control primer is included. It is enough for 10 PCR reactions.
4. The synthesized plant cDNA was used as template for PCR amplification of chloroplast gene. A 458 bp chloroplast band was visualized on 1% agarose gel. Chloroplast control primer is included. It is enough for 10 PCR reactions.

**Control PCR component is as follow:**

PCR Mix ( <b>BioChain Cat#L5051100</b> )	12.5 $\mu$ l
H <sub>2</sub> O, Nuclease-free	10.5 $\mu$ l
Control primers (5 $\mu$ M)	1.0 $\mu$ l
<u>PCR Ready First Strand cDNA</u>	<u>1.0 <math>\mu</math>l</u>
Total Volume	25.0 $\mu$ l
<b>Or</b>	
Taq Polymerase (5 u/ $\mu$ l) ( <b>BioChain Cat#L7051001 or L7051200</b> )	0.2 $\mu$ l
10 x PCR Buffer	2.5 $\mu$ l
10 mM dNTP ( <b>BioChain Cat#K6011105</b> )	0.5 $\mu$ l
H <sub>2</sub> O, Nuclease-free	19.8 $\mu$ l
Control primers (5 $\mu$ M)	1.0 $\mu$ l
<u>PCR Ready First Strand cDNA</u>	<u>1.0 <math>\mu</math>l</u>
Total Volume	25.0 $\mu$ l

**Control PCR Condition is as follow:**

94°C x 2 minutes, 1 cycle,  
94°C x 30 seconds, 55°C x 30 seconds, 72°C x 30 seconds, 35 cycles  
72°C x 5 minutes, 1 cycle. Then hold at 4°C.

Note: If customers failed to detect or amplify low abundant genes from Biochain's cDNAs, we recommend customers make their own cDNAs with Biochain's mRNAs as templates.

Warranty: BioChain is committed to providing high quality products to customers. All cDNA products passed the QC standard described in the certificate of analysis. If customers are not satisfied with any of cDNA products, it will be Biochain's decision to either replace the product or to credit the full purchase price and delivery charge.

**FOR IN VITRO RESEARCH USE ONLY****APPROVED BY:** \_\_\_\_\_