



## Human PPIA—Certified LUX™ Primer Set

|                              |  |
|------------------------------|--|
| <b>Cat. Nos.</b>             | <b>Size:</b>                                   |
| <b>106H-01 (FAM labeled)</b> | <b>100 µl × 2</b>                              |
| <b>106H-02 (JOE labeled)</b> | <b>100 µl × 2</b>                              |
| <b>Conc: 10 µM</b>           | <b>Store at -20°C (non-frost-free freezer)</b> |

### LUX™ Primers

LUX™ primers are a sensitive and efficient method for performing real-time (quantitative) PCR and RT-PCR. Each LUX™ primer pair includes a fluorogenic primer and a corresponding unlabeled primer, which have been designed to amplify and detect a specific gene of interest. The hairpin secondary structure of the fluorogenic primer quenches the attached fluorophore (FAM or JOE). When this primer is incorporated into double-stranded PCR product, the fluorophore is dequenched and the signal increases by up to 10-fold. LUX™ primers combine high specificity with multiplexing and melting curve capability, have a broad dynamic range of 7–8 orders, and are compatible with most real-time PCR instruments.

### Certified LUX™ Primer Sets for Housekeeping Genes

Certified LUX™ Primer Sets for Housekeeping Genes are predesigned primer sets for genes that are commonly used as internal controls for normalizing real-time RT-PCR experiments. These primer sets have been optimized and functionally validated to provide accurate, reproducible results using standard LUX™ protocols, and are supplied in a ready-to-use format.

Certified LUX™ Primer Sets contain a vial of labeled primer and a vial of unlabeled primer, each at 10 µM concentration. Volumes are sufficient for 100 50-µl reactions or 250 20-µl reactions. For real-time PCR and RT-PCR protocols using LUX™ primers, visit the LUX™ Web site at [www.invitrogen.com/lux](http://www.invitrogen.com/lux).

| <b><u>Primer</u></b> | <b><u>Direction</u></b> | <b><u>Amount</u></b> | <b><u>Conc</u></b> |
|----------------------|-------------------------|----------------------|--------------------|
| Labeled (FAM or JOE) | Forward                 | 100 µl               | 10 µM              |
| Unlabeled            | Reverse                 | 100 µl               | 10 µM              |

Part No. 106H.pps

Rev. date: 05/10/03

This product is distributed for laboratory research only. CAUTION: Not for diagnostic use. The safety and efficacy of this product in diagnostic or other clinical uses has not been established.

**Shipping and Storage**

Primers are supplied in TE buffer and should be stored at -20°C in the dark in a non-frost-free freezer.

**PPIA**

PPIA (peptidylprolyl isomerase A), or cyclophilin A, is a specific, high-affinity binding protein for the immunosuppressant agent cyclosporin A. It is a member of the immunophilin class of proteins that all possess peptidylprolyl cis/trans isomerase activity, and therefore are believed to be involved in protein folding and/or intracellular protein transport.

Database information for PPIA is provided in the table below:

| <u>Gene</u> | <u>Species</u>      | <u>GenBank<sup>®</sup><br/>Accession #</u> | <u>Entrez<sup>®</sup><br/>Ref Seq #</u> | <u>OMIM<sup>™</sup> #</u> |
|-------------|---------------------|--|---|---------------------------|
| PPIA        | <i>Homo sapiens</i> | Y00052                                     | NM_021130                               | 123840                    |

OMIM<sup>™</sup> database: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM>

Entrez<sup>®</sup> database: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Nucleotide>

**Primer Specifications**

The Human PPIA Certified LUX<sup>™</sup> Primer Set amplifies the region of PPIA coding sequence that spans the exon junction 2/3.

| <u>Label</u> | <u>CDS Location</u> | <u>Amplicon<br/>Melting Temp<sup>**</sup></u> | <u>PCR Product<br/>Size Range</u> |
|--------------|---------------------|---|-----------------------------------|
| JOE or FAM   | Exons 2/3           | T <sub>m</sub> = 79°C                         | 50–100 bp                         |

<sup>\*\*</sup>Note that this is the T<sub>m</sub> of the amplicon, not the primers. T<sub>m</sub> is approximate and dependent on experimental conditions.

**Dye Information**

Each fluorogenic LUX™ primer is labeled with one of two reporter dyes:

| <u>Dye</u>   | <u>Wavelength</u> |                 |
|--|-------------------|-----------------|
|  | <u>Excitation</u> | <u>Emission</u> |
| FAM (6-carboxy-fluorescein)                                  | 490 nm            | 520 nm          |
| JOE (6-carboxy-4', 5'-dichloro-2', 7'-dimethoxy-fluorescein) | 520 nm            | 550 nm          |

**Protocols**

Primers are supplied at 10 µM concentration. Use 1 µl of each primer (labeled and unlabeled) per 50 µl reaction, or 0.4 µl per 20 µl reaction.

Refer to the LUX™ Primers manual for detailed protocols for performing real-time PCR and RT-PCR. The manual can be downloaded at [www.invitrogen.com/lux](http://www.invitrogen.com/lux).

**Note:** We strongly recommend DNase I digestion of RNA samples prior to amplification with LUX™ gene-specific primers. See the LUX™ Primers manual for more information.

**Product Qualification**

Certified LUX™ Primer Sets are designed to discriminate between messages and known pseudogenes/different isoforms. Performance is functionally validated using a dilution series in a two-step real-time RT-PCR with total HeLa RNA. The amplification efficiency based on the slope of the resulting standard curve is greater than 90%.

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