



## Beacon Designer for Real-Time PCR Assay Design

- Easily tailor results to your specific needs with primer and probe sets optimized for singleplex, multiplex, and allelic discrimination assays
- Take advantage of enhanced reaction specificity by designing optimal hydrolysis (TaqMan), hybridization (FRET), and molecular beacon probes
- Improve assay design by automatically screening for secondary structure and evaluating thermodynamic properties
- Obtain accurate melting temperatures ( $T_m$ ) from nearest neighbor thermodynamic theory calculations
- Rapidly retrieve Entrez sequence information and perform BLAST searches through direct integration with the Web

For more information, contact your local Bio-Rad representative or visit us on the Web at [www.bio-rad.com/beacon-designer-software](http://www.bio-rad.com/beacon-designer-software).

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## Features

### Primer Design

- Designs optimal primers for linear probe and molecular beacon assays
- Screens primers for secondary structure and thermodynamic properties
- Can import primer sequences for molecular beacon design
- Supports multiplexing to avoid cross-homologies

### TaqMan Probe Design

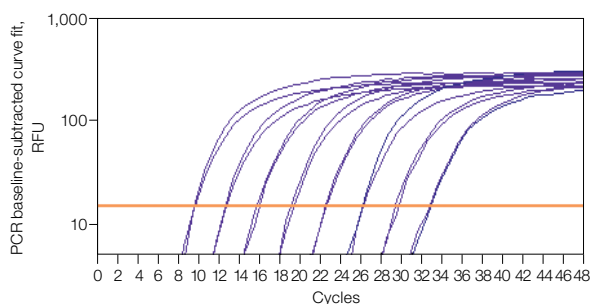
- Designs linear probes free of dimers and repeats
- Supports multiplex design to avoid cross-dimerization between probes and primers
- Provides graphic view of potential probe secondary structures
- Uses nearest neighbor thermodynamic theory and optimal annealing  $T_m$  calculations

### High Resolution Melt (HRM) Analysis Primer Design

- Employs proprietary algorithm
- Designs optimal primers for detecting all mutation types, including deletions, insertions, substitutions, mixed mutations, and single nucleotide polymorphisms (SNPs)
- Reports amplicons and their  $T_m$  for wild and mutant alleles

### Efficient Workflow

- Performs BLAST search on selected sequences with instant results display
- Allows loading of SNPs manually or from SNP database from the Web
- Inputs sequences directly from Entrez or from local files
- Outputs results in spreadsheet format for further manipulation
- Allows management of data by user-created projects



Amplification plot of an IL-1 $\beta$  plasmid 10x dilution series, from 10<sup>9</sup> to 10<sup>2</sup> copies, using a TaqMan probe and primers designed by Beacon Designer software. Standard curve slope = -3.34, efficiency = 99.3%,  $r = 1.000$ . RFU, relative fluorescence units.

## Comparison Table

| Feature  | Beacon Designer | Competitor |
|--|-----------------|------------|
| Integrates to Web  | Yes             | No         |
| Performs BLAST searches                                  | Yes             | No         |
| Screens for secondary structure                          | Yes             | No         |
| Allows sequence input from SNP database and Entrez       | Yes             | No         |
| Designs TaqMan probes                                    | Yes             | Yes        |
| Designs molecular beacons                                | Yes             | No         |
| Designs for SNP detection                                | Yes             | Yes        |
| Employs multiplex function to check for cross-homologies | Yes             | No         |
| Designs HRM analysis primers                             | Yes             | No         |

## Ordering Information

| Catalog # | Description   |
|-----------|---|
| 170-8734  | <b>Beacon Designer Probe/Primer Design Software C1000 Touch™ Thermal Cycler with 96-Well Fast Reaction Module</b> , includes C1000 Touch thermal cycler chassis, 96-well fast reaction module, USB flash drive                                      |
| 185-1196  |   |
| 185-5196  | <b>CFX96 Touch™ Real-Time PCR Detection System</b> , includes C1000 Touch thermal cycler chassis, CFX96™ optical reaction module, CFX Manager™ software, license for qbase <sup>PLUS</sup> software, communication cable, reagents, consumables     |
| 185-5200  | <b>CFX Connect™ Real-Time PCR Detection System</b> , includes CFX Connect thermal cycler chassis, CFX Connect optical reaction module, CFX Manager software, license for qbase <sup>PLUS</sup> software, communication cable, reagents, consumables |

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Purchase of this instrument conveys a limited non-transferable immunity from suit for the purchaser's own internal research and development and for use in human in vitro diagnostics and all other applied fields under U.S. Patent Number 5,475,610 (Claims 1, 44, 158, 160-163, and 167 only), or corresponding claims in its non-U.S. counterpart, owned by Applera Corporation. No right is conveyed expressly, by implication, or by estoppel under any other patent claim, such as claims to apparatus, reagents, kits, or methods such as 5' nuclease methods. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Bio-Rad's real-time thermal cyclers are licensed real-time thermal cyclers under Applera's U.S. Patent Number 6,814,934 B1 for use in research, human in vitro diagnostics, and all other fields except veterinary diagnostics.

Bio-Rad's real-time thermal cyclers are covered by one or more of the following U.S. patents or their foreign counterparts owned by Eppendorf AG: U.S. Patent Numbers 6,767,512 and 7,074,367.



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