

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.

BIO-RAD

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

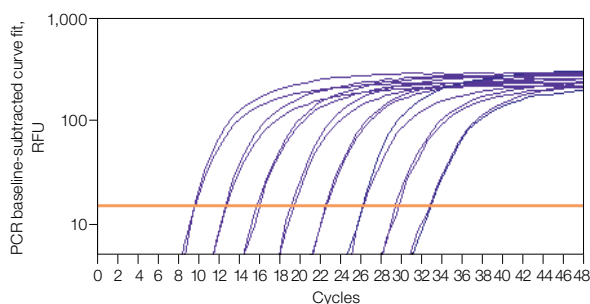
- Designs linear probes free of dimers and repeats
- Supports multiplex design to avoid cross-dimerization between probes and primers
- Provides graphic view of potential probe secondary structures
- Uses nearest neighbor thermodynamic theory and optimal annealing T_m calculations

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 β plasmid 10x dilution series, from 10⁹ to 10² 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	Beacon Designer Probe/Primer Design Software C1000 Touch™ Thermal Cycler with 96-Well Fast Reaction Module , includes C1000 Touch thermal cycler chassis, 96-well fast reaction module, USB flash drive
185-1196	
185-5196	CFX96 Touch™ Real-Time PCR Detection System , includes C1000 Touch thermal cycler chassis, CFX96™ optical reaction module, CFX Manager™ software, license for qbase ^{PLUS} software, communication cable, reagents, consumables
185-5200	CFX Connect™ Real-Time PCR Detection System , includes CFX Connect thermal cycler chassis, CFX Connect optical reaction module, CFX Manager software, license for qbase ^{PLUS} software, communication cable, reagents, consumables

Beacon Designer is a trademark of PREMIER Biosoft International. BLAST is a trademark of National Library of Medicine. HRM is a trademark of QIAGEN GmbH. TaqMan is a trademark of Roche Molecular Systems, Inc.

Molecular beacons and their use are licensed under patents owned by The Public Health Research Institute of the City of New York, Inc.

Notice regarding Bio-Rad thermal cyclers and real-time systems:

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.



BIO-RAD

**Bio-Rad
Laboratories, Inc.**

Life Science
Group

Web site www.bio-rad.com USA 800 424 6723 Australia 61 2 9914 2800 Austria 01 877 89 01 Belgium 09 385 55 11 Brazil 55 31 3689 6600
Canada 905 364 3435 China 86 21 6169 8500 Czech Republic 420 241 430 532 Denmark 44 52 10 00 Finland 09 804 22 00
France 01 47 95 69 65 Germany 089 31 884 0 Greece 30 210 777 4396 Hong Kong 852 2789 3300 Hungary 36 1 459 6100 India 91 124 4029300
Israel 03 963 6050 Italy 39 02 216091 Japan 03 6361 7000 Korea 82 2 3473 4460 Malaysia 60 3 2117 5260 Mexico 52 555 488 7670
The Netherlands 0318 540666 New Zealand 64 9 415 2280 Norway 23 38 41 30 Poland 48 22 331 99 99 Portugal 351 21 472 7700
Russia 7 495 721 14 04 Singapore 65 6415 3170 South Africa 27 861 246 723 Spain 34 91 590 5200 Sweden 08 555 12700
Switzerland 061 717 95 55 Taiwan 886 2 2578 7189 Thailand 66 2 6518311 United Kingdom 020 8328 2000