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Product Data Sheet
PML-RARa Primer Mixes

Cat. #: BA-WT, PR-B1, PR-B2, PR-B3

PML-RARa Clinical Relevance:

Acute Promyelocytic Leukemia (APL) accounts for 10-15% of Acute Myeloid Leukemia (AML) and is one of the most curable forms of leukemia with good sensitivity to all-trans retinoic acid (ATRA). Nearly all APL cases are characterized by the presence of the PML-RARa t(15;17) fusion gene transcript which is required for ATRA treatment response. Researchers have identified the utility of measuring PML-RARa transcripts to aid in the classification of APL, predicting treatment response, and monitoring minimal residual disease (MRD).[1,2]

CytoGenes offers primer mixes, standards, and controls allowing laboratories to detect the three most common PML-RARa fusions by quantitative PCR (bcr1, bcr2, and bcr3). PML-RARa transcripts levels can be normalized against the transcript levels of the endogenously expressed Abl gene.

Product Description:

Primer mixes utilize TaqMan quantitative PCR technology and require the use of a multi-color quantitative PCR instrument. Each primer mix contains a forward primer, reverse primer and TaqMan probe specific for the indicated target (See Product Specifications). TaqMan probes are labeled with a FAM reporter and BHQ quencher. Primer mixes are provided at a 25X concentration.

Primer sets are available to detect the PML-RARa fusions (bcr1, bcr2, and bcr3) as well as the endogenous ABL gene.

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Product Specifications:

The table below indicates the primer binding sites for each of the PCR primer mixes. Forward and reverse primers are located in different exons to prevent false amplification of contaminating sample genomic DNA.

Cat #	Item	Primer Binding Sites		
		Forward Primer	TaqMan Probe	Reverse Primer
BA-WT	BCR-ABL Wt Primer Mix	ABL1; Exon 1	ABL1; Exon 2	ABL1; Exon 2
PR-B1	PML-RARa bcr1 Primer Mix	PML; Exon 6	RARa; Exon 3	RARa; Exon 3
PR-B2	PML-RARa bcr2 Primer Mix	PML; Exon 6	RARa; Exon 3	RARa; Exon 3
PR-B3	PML-RARa bcr3 Primer Mix	PML; Exon 5	RARa; Exon 3	RARa; Exon 3

Volume: 45µl
Reactions: 50 (0.8µl/ reaction)

Procedure:

Researchers are advised to optimize the use of these primer mixes in any application. Prior to amplification, a reverse transcription step is required to convert RNA transcripts to suitable DNA templates. The components of the primer mix are suitable for a one-step reverse transcriptase/ Q-PCR reaction. Primers should be diluted appropriately into a suitable PCR master mix containing Reverse Transcriptase and Taq Polymerase. (Example: 0.8µl in a 20µl reaction)

Storage:

Store at -20°C. Once open store at 4°C. Repeated freezing/thaw cycles should be avoided.

References:

1. Cull EH, Altman JK. Contemporary Treatment of APL. *Current hematologic malignancy reports*. 2014;9(2):193-201. doi:10.1007/s11899-014-0205-6.

2. Lo-Coco F, Cicconi L. History of Acute Promyelocytic Leukemia: A Tale of Endless Revolution. *Mediterranean Journal of Hematology and Infectious Diseases*. 2011;3(1):e2011067. doi:10.4084/MJHID.2011.067.