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Product Data Sheet
BCR-ABL Controls

Cat. #: BA-HC, BA-LC

BCR-ABL Clinical Relevance:

The BCR-ABL fusion results in constitutive ABL tyrosine kinase activity contributing to unregulated cell division. The BCR-ABL fusion is found in 95% of chronic myelogenous leukemia (CML), 25–30% adult acute lymphoblastic leukemia (ALL), and 2–10% child ALL. Researchers have identified the utility of measuring BCR-ABL transcripts to aid in the assessment of minimal residual disease (MRD) and the response to treatment. An international consortium has developed "International Standards" allowing the comparison of BCR-ABL levels measured by different quantitative PCR assays.[1,2,3]

CytoGenes offers primer mixes, standards, and controls allowing laboratories to detect the three most common BCR-ABL fusions by quantitative PCR (b2a2, b3a2, and e1a2). A set of standards normalized to the International Scale allows results to be reported on the International Scale.

Product Description:

RNA controls can be utilized to evaluate assay performance. Researchers are advised to include controls in each run of samples and evaluate control results for acceptable performance in relation to expected and historical results. Each control contains total RNA isolated from cell lines generating RNA specific for each of the indicated targets (See Product Specifications). Due to gene expression variations between different cell lines, variations in RNA concentrations specific for each of the assay targets are expected. Controls are available in high and low RNA concentrations.

Controls are designed to yield positive results in reverse transcription PCR reactions for all of the three most common BCR-ABL primer sets (b2a2, b3a2, and e1a2) as well as the primer set for the endogenous ABL gene.

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Product Specifications:

The table below indicates the assay targets and concentrations for each of the RNA Controls.

Cat #	Item	Assay Targets Included	Concentration
BA-HC	BCR-ABL High Control	ABL, BCR-ABL (b2a2, b3a2, e1a2)	3ng/ul
BA-LC	BCR-ABL Low Control	ABL, BCR-ABL (b2a2, b3a2, e1a2)	0.3ng/ul

Volume: 45µl
Reactions: 20 (2µl/ reaction)

Procedure:

Researchers are advised to optimize the use of these controls in any application. RNA controls should be tested utilizing the same conditions as utilized for test samples. The volume of RNA controls used in a PCR reaction should be the same as all other test samples.

Storage:

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

References:

1. White HE, Matejtschuk P, Rigsby P, Gabert J, Lin F, Lynn Wang Y, Branford S, Müller MC, Beaufils N, Beillard E, Colomer D, Dvorakova D, Ehrencrona H, Goh HG, El Housni H, Jones D, Kairisto V, Kamel-Reid S, Kim DW, Langabeer S, Ma ES, Press RD, Romeo G, Wang L, Zoi K, Hughes T, Saglio G, Hochhaus A, Goldman JM, Metcalfe P, Cross NC. Establishment of the first World Health Organization International Genetic Reference Panel for quantitation of BCR-ABL mRNA. Blood. 2010 Nov 25;116(22):e111-7. Epub 2010 Aug 18.

2. WHO International Standard. 1st WHO International Genetic Reference Panel for quantitation of BCR-ABL translocation by RQ-PCR.

3. Hughes T, et al. Monitoring CML patients responding to treatment with tyrosine kinase inhibitors: Review and recommendations for harmonizing current methodology for detecting BCR-ABL transcripts and kinase domain mutations and for expressing results. Blood. 2006;108:28-37.