

Product Data Sheet BCR-ABL Standards

Cat. #: BA-S1, BA-S2, BA-S3

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:

DNA standards can be utilized to generate a standard curve in Q-PCR reactions to calculate concentrations for indicated targets in test samples. Each standard contains an equal mixture of DNA fragments specific for each of the indicated targets (See Product Specifications). All DNA targets are represented at the same concentration as indicated. Note that successful amplification of DNA standards does not reflect successful amplification of RNA samples.

Standards 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.

Product Specifications:

The table below indicates the assay targets and concentrations for each of the DNA Standards.

Cat #	Item	Assay Targets Included	Concentration
BA-S1	BCR-ABL Standard-1	ABL, BCR-ABL (b2a2, b3a2, e1a2)	5e ⁵ Copies/ul
BA-S2	BCR-ABL Standard-2	ABL, BCR-ABL (b2a2, b3a2, e1a2)	5e ³ Copies/ul
BA-S3	BCR-ABL Standard-3	ABL, BCR-ABL (b2a2, b3a2, e1a2)	50 Copies/ul

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

Procedure:

Researchers are advised to optimize the use of these standards in any application. DNA standards should be tested utilizing the same conditions as utilized for test samples. The volume of DNA standard 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.

For Investigational Use Only. The performance characteristics of this product have not been established.