

Product Data Sheet PML-RARa Controls

Cat. #: PR-HC, PR-LC

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:

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 PML-RARa bcr1 and bcr2 primer sets as well as the primer set for the endogenous ABL gene. Note that while this sample only contains RNA for ABL and the PML-RARa bcr1 fusions, successful amplification with the bcr2 primer set should be observed. Negative results are expected for the PML-RARa bcr3 primer set.

Product Specifications:

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

Cat #	Item	Assay Targets Included	Concentration
PR-HC	PML-RARa High Control	ABL, PML-RARa (bcr1, bcr2)	3ng/ul
PR-LC	PML-RARa Low Control	ABL, PML-RARa (bcr1, bcr2)	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. 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.

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