

# XL RARA BA

Break Apart Probe

Order No.:  
D-5087-100-OG

## Description

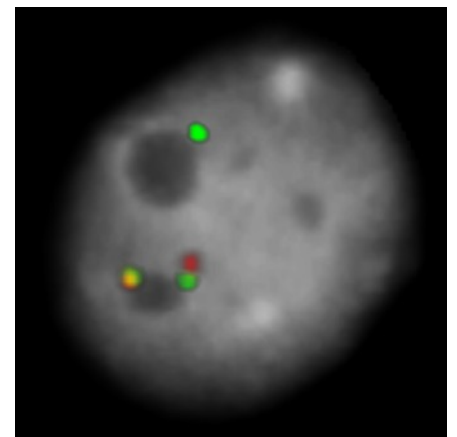
XL RARA BA is designed as a break apart probe. The orange labeled probe hybridizes proximal to the breakpoint in the RARA gene region at 17q21, the green labeled probe hybridizes distal to the breakpoint.

## Clinical Details

Acute promyelocytic leukemia (APL) is considered as a subtype of acute myeloid leukemia (AML) and accounts for about 5-8% of all AML cases. The most frequent aberration in APL is t(15;17) which results in the formation of the promyelocytic leukemia (PML) - retinoic acid receptor alpha (RARA) fusion gene (PML-RARA). Around 98% of all APL cases are characterized by PML-RARA whereas translocations affecting RARA and other genes have been identified in only 1-2% of APL cases. Known fusion genes are ZBTB16-RARA, NPM1-RARA, NUMA1-RARA, STAT5B-RARA, PRKAR1A-RARA, BCOR-RARA and FIP1L1-RARA. ZBTB16-RARA comprises about 0.8% of all APL cases, the other rare fusions occur with lower frequency. Cryptic rearrangements resulting in the PML-RARA fusion gene are observed regularly, but also insertions of RARA into other locations have been found in a minority of APL cases. RARA is a nuclear hormone receptor which forms heterodimers with the retinoid X receptor alpha and is involved in the regulation of promyelocyte differentiation. RARA fusion genes interfere with myeloid differentiation and contribute in the development of APL. The majority of APL patients are responsive to therapeutic doses of all-trans retinoic acid (ATRA) and arsenic trioxide (ATO) associated with chemotherapeutic drug regimen. Patients with ZBTB16-RARA or STAT5B-RARA fusions are resistant to ATRA and ATO. The FISH break apart assay is a valuable tool for the detection of RARA rearrangements independent of the translocation partner.

### Literature:

- Grimwade et al (2000) Blood 15:1297-1308
- Schoch et al (2002) Hematol J 3:259-263
- Adams and Nassiri (2015) Arch Pathol Lab Med 139:1308-1313

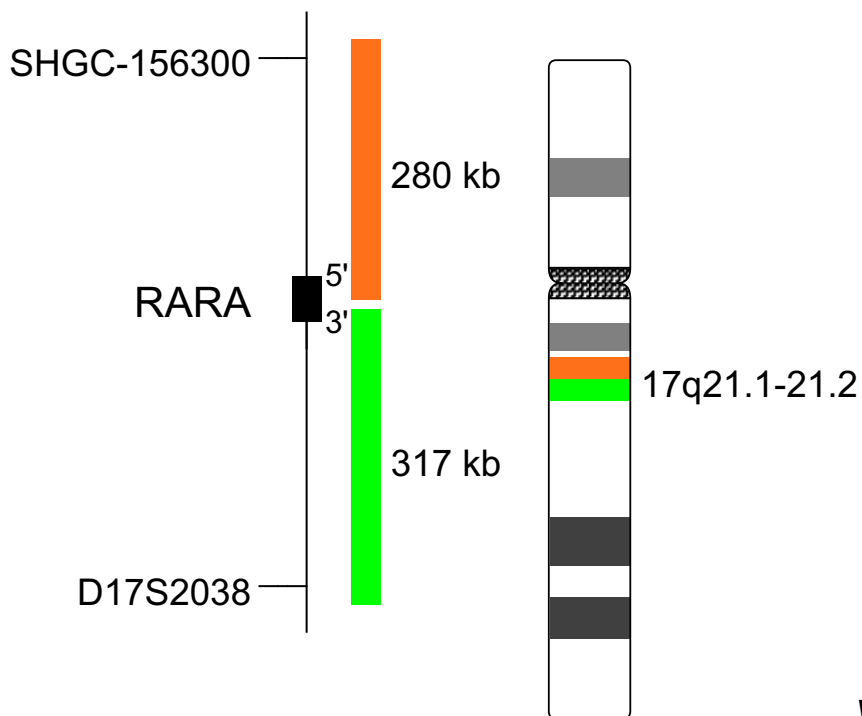


*XL RARA BA hybridized to bone marrow cells, one aberrant cell is shown. The expected normal signal pattern of XL RARA BA is two orange-green colocalization/fusion signals representing the two normal RARA loci. Cells with breakaparts typically have one normal orange-green colocalization/fusion signal plus one orange and one green signal clearly separate from one another. Insertions of RARA into other chromosomal locations are indicated by two orange-green colocalization/fusion signals and one additional green signal as shown above.*

### Clinical Applications:

- AML

# FACTSHEET



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### Related Products

Product	Size	Order No.
XLt(15;17)DF	100 µl	D-5086-100-OG

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