

**XL t(12;21)
ETV6/RUNX1
DF**
Translocation/Dual Fusion
Probe

Order No.:
D-5115-100-OG

Description

XL t(12;21) ETV6/RUNX1 DF is designed as a dual fusion probe. The orange labeled probe spans the breakpoint at 21q22 (RUNX1), the green labeled probe spans the breakpoint at 12p13 (ETV6).

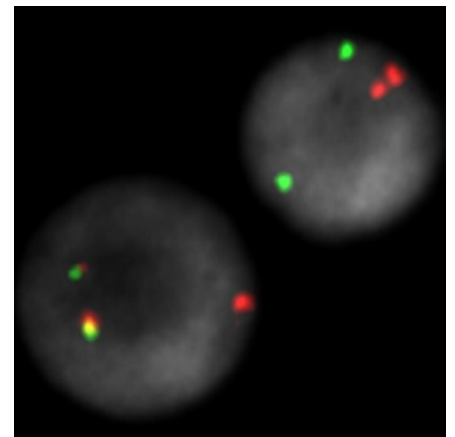
XL t(12;21) ETV6/RUNX1 DFD-5115-100-OG is replacing XL t(12;21) D-5069-100-OG.

Clinical Details

Acute lymphoblastic leukemia (ALL) is a rapidly progressing cancer type characterized by the malignant transformation of lymphoid progenitor cells. It is the most common childhood cancer type and the second most leukemia in adults. Treatment of children usually results in good prognosis whereas the outcome for adults is less optimistic. Most patients show a transformation of precursors of the B-cell type, but also the T-cell phenotype is frequently observed. The most common aberration in pediatric B-cell ALL is t(12;21)(p13;q22) with an incidence of about 25% against <5% in adults. The result of this reciprocal translocation is an ETV6/RUNX1 fusion gene. Scientific data suggest that ETV6/RUNX1 is already established prenatally, but additional chromosomal aberrations are necessary for the development of ALL postnatally. The ETV6/RUNX1 fusion gene is transcriptionally active and is dysregulating a cascade of downstream genes. One study has shown, that all positive t(12;21) cases harbored the ETV6/RUNX1 fusion gene but not the reciprocal gene. This suggests, that ETV6/RUNX1 is involved in the manifestation of ALL, but not RUNX1/ETV6. Since t(12;21) is not detectable by conventional cytogenetic methods, FISH is one of the methods of choice.

Literature:

- Romana et al (1995) Blood 85:3662-3670
- Al-Obaidi et al (2002) Leukemia 16:669-674
- Sun et al (2017) Oncotarget 8:35445-35459

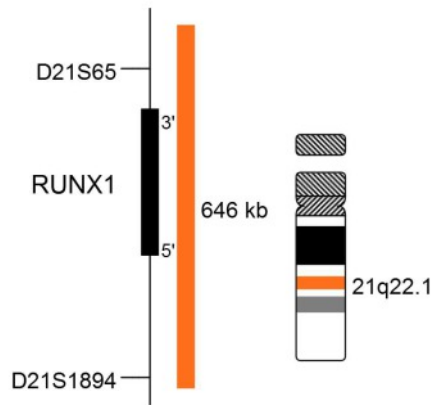
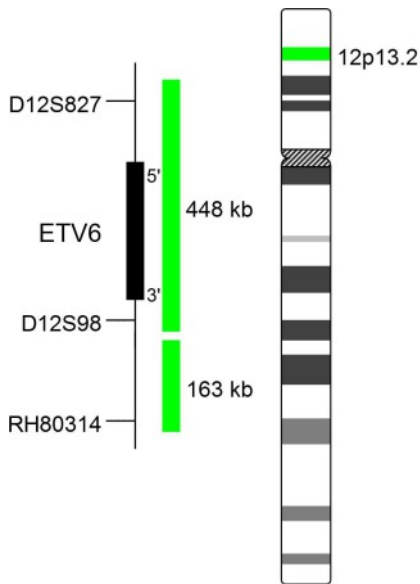


XL t(12;21) ETV6/RUNX1 DF hybridized to lymphocytes. One normal and one aberrant interphase are shown. The expected normal signal pattern of XL t(12;21) ETV6/RUNX1 DF is two orange and two green signals, representing the two normal ETV6 and RUNX1 loci. The reciprocal translocation t(12;21)(p13;q22) is splitting the orange signal on chromosome 21 and the green signal on chromosome 12, resulting in two green/orange colocalization/fusion signals. The ETV6 loci on chromosome 12 is deleted. The remaining copy of RUNX1 is indicated by one orange signal. Deletion of the remaining ETV6 homolog is reported frequently.

Clinical Applications:

- ALL

FACTSHEET



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Related Products

Product	Size	Order No.
XL t(12;21), REPLACED	100µl	D-5069-100-OG
XL ETV6	100µl	D-5073-100-OG
XL RUNX1	100µl	D-5096-100-OG

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