XL IGH Product Family

Break Apart Probe
Translocation Probe

Order No.:

D-5105-100-OG
D-5107-100-OG
D-5108-100-OG
D-5109-100-OG
D-5110-100-OG
D-5111-100-OG
D-5112-100-OG
D-5113-100-OG
D-5125-100-TC

Description

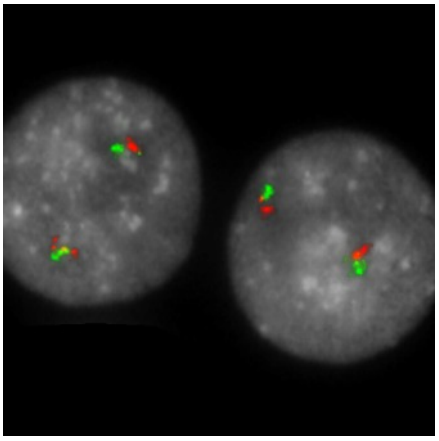
The MetaSystems FISH probe family, specific for the immunoglobulin heavy chain locus (IGH), currently comprises nine different products. Valuable information from our customers has encouraged us to further optimize the design of these probes. To ensure the detection of chromosomal alterations involving the very distal part of the IGH variable region, we have elongated this part significantly by more than 150kb. Furthermore, a gap between the distal and proximal part of the probes covering the FGFR3 gene region in XL t(4;14) FGFR3/IGH DF has been closed, allowing the detection of insertions of this region into the IGH locus or other chromosomal regions.

Clinical Details

Chromosomal translocations involving the IGH locus are recurrent in many types of lymphomas. Around 1% of all cancers and 10% of hematologic malignancies are caused by Multiple Myelomas (MM). Translocations affecting the IGH locus are observed in about 40% of MM cases. The most common MM-associated IGH translocations are t(11;14), t(4;14), t(6;14), t(14;16) and t(14;20) in the order of their occurrence. The consequence of these rearrangements is the dysregulation of the genes juxtaposed to transcriptional enhancers in the IGH locus.

The Follicular lymphoma (FL) is the most common indolent form of the Non-Hodgkin lymphomas (NHL). The reciprocal translocation t(14;18) is observed in about 85% of patients with FL and results in overexpression of the BCL-2 protein which is involved in the regulation of apoptosis.

The Burkitt lymphoma is a rare but fast growing type of NHL. The translocation between the MYC gene locus at 8q24 and the immunoglobulin genes (IG) for the kappa light chain at 2p12 (IGK), for the heavy chain at 14q32 (IGH) or for the lambda light chain at 22q11 (IGL) juxtapose the MYC gene to an IG enhancer. About 80% of Burkitt lymphoma patients have the MYC rearrangement t(8;14) while approximately 10% show a translocation between the MYC gene region and IGK or IGL.



XL IGH BA hybridized to normal lymphocytes. Two normal interphases are shown. The expected signal pattern of XL IGH BA, when hybridized to normal cells, is two orange/green colocalization/fusion signals representing the two non-aberrant IGH loci at chromosomal region 14q32.3. Translocations affecting one IGH locus, separating the IGH constant and the IGH variable gene region, are indicated by one separated orange and green signal plus one fusion signal representing the normal IGH locus. Complete or partial loss of IGHC or IGHV, cryptic insertions into other loci or a trisomy 14q32 may generate other and unexpected signal constellations. Furthermore, somatic deletions associated with V-D-J assembly with diminished green signals on one or both alleles, can further complicate the observed signal patterns.

Literature:

- Freedman (2014) Am J Hematol 89: 429-436
- Rajan and Rajkumar (2015) Blood Canc J 5:1-7
- Nguyen et al (2017) Genes 8:1-23

Clinical Applications:

- ALL
- CLL
- MM
- NHL

FACTSHEET

MetaSystems
Probes

New Product Name	Product Number	Former Product Name	Former Product Number
XL IGH BA	D-5107-100-OG	XL IGH plus	D-5061-100-OG
XL t(4;14) FGFR3/IGH DF	D-5108-100-OG	XL t(4;14)	D-5064-100-OG
XL t(6;14) CCND3/IGH DF	D-5109-100-OG	XL t(6;14)	D-5065-100-OG
XL t(8;14) MYC/IGH DF	D-5110-100-OG	XL t(8;14)	D-5008-100-OG
XL t(8;14) MYC/IGH DF 8cen	D-5125-100-TC	XL IGH/MYC/8cen	D-5094-100-TC
XL t(11;14) MYEOV/IGH DF	D-5111-100-OG	XL t(11;14)	D-5062-100-OG
XL t(14;16) IGH/MAF DF	D-5112-100-OG	XL t(14;16)	D-5072-100-OG
XL t(14;18) IGH/BCL2 DF	D-5113-100-OG	XL t(14;18) IGH/BCL2	D-5080-100-OG
XL t(14;20) IGH/MAFB DF*	D-5105-100-OG	XL IGH/MAFB	D-5051-100-OG

Ordering Information

IGH Product Family

Product	Label	Size	Order No.
XL IGH BA	O/G	100 µl	D-5107-100-OG
XL t(4;14) FGFR3/IGH DF	O/G	100 µl	D-5108-100-OG
XL t(6;14) CCND3/IGH DF	O/G	100 µl	D-5109-100-OG
XL t(8;14) MYC/IGH DF	O/G	100 µl	D-5110-100-OG
XL t(8;14) MYC/IGH DF 8cen	O/G/B	100 µl	D-5125-100-TC
XL t(11;14) MYEOV/IGH DF	O/G	100 µl	D-5111-100-OG
XL t(14;16) IGH/MAF DF	O/G	100 µl	D-5112-100-OG
XL t(14;18) IGH/BCL2 DF	O/G	100 µl	D-5113-100-OG
XL t(14;20) IGH/MAFB DF*	O/G	100 µl	D-5105-100-OG

*available soon

MetaSystems Probes

MetaSystems Probes GmbH (Headquarters)
1. Industriestrasse 7
68804 Altlussheim, Germany
tel +49 6205 2927 60
fax +49 6205 2927 29
info@metasystems-probes.com

MetaSystems Group, Inc.
70 Bridge Street
Newton, MA 02458, USA
tel +1 6179 2499 50 | fax +1 6179 2499 54
info@metasystems.org

MetaSystems S.r.l.
Via Gallarate 80
20151 Milano, Italy
tel +39 0236 7587 51
fax +39 0245 3753 03
info@metasystems-italy.com

MetaSystems India Pvt., Ltd.
No. 1/1, 1st Floor, 1st Main Rd., 2nd cross
Thimmaiah Garden, R T Nagar
Bangalore Karnataka, 560 032, India
tel +91 9535 7788 01
info@metasystems-india.com

MetaSystems Asia Co., Ltd.
Unit 108, 1/F, Bio-Informatics Centre
No. 2 Science Park West Avenue
Hong Kong Science Park
Shatin, New Territories, Hong Kong
tel +852 2587 8333 | fax +852 2587 8334
info@metasystems-asia.com

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