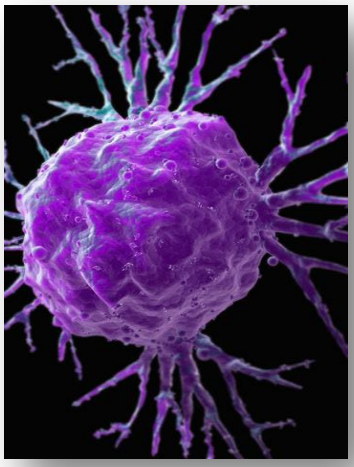
PrimeraDx
The Multiplex PCR Company

Oncology



Use Less Sample. Get More Answers.

A Powerful Platform to Meet Today's Clinical Challenges

Most cancer clinical researchers work with tissues containing a limited amount of biological material, such as FFPE, LCM or FNA samples. However, current cancer research reveals that most malignancies are quite complex and are often comprised of heterogeneous cell types. Multimodal assays are required to fully characterize the complex mixture of genetic alterations that may be represented, such as mutations, expression changes and epigenetic changes.

The ICEPlex Solution

The advanced capabilities of the ICEPlex® system allow researchers to get more information from each sample by combining diverse assays into a single well. The ICEPlex system enables the development of high multiplex, multimodal, quantitative and qualitative assays to simultaneously interrogate dozens of biomarkers in the same reaction. The ICEPlex allows researchers to combine a wide spectrum of assay types in a single test, including:

- Gene Expression (mRNA)
- Point Mutations (SNPs)
- Translocations
- Methylation
- miRNA
- Fusion Genes
- Copy number variation (CNV)
- Insertions/deletions and losses of heterozygosity (LOH)
- Epigenetic changes

Partner With Us

We can support your clinical research by:

- Enabling you to develop your own biomarkers into a custom panel or Laboratory-Developed Test (LDT).
- Partnering with you to design and optimize a Companion Diagnostic test to support the development of therapeutic monitoring.

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*Wide Range of Capabilities Proven Through Customer Collaborations**

cMET Point Mutation Analysis Panel

In the ICEPlex cMET Mutation Panel, PrimeraDx has developed a multiplex PCR assay, which can detect 13 important cMET point mutations in a single reaction on the ICEPlex System:

Amino Acid Change	CDS Mutation
S1058P	c.3172T>C
V1110I	c.3328G>A
H1112Y	c.3334C>T
H1124D	c.3370C>G
G1137V	c.3410G>T

Amino Acid Change	CDS Mutation
M1149T	c.3446T>C
M1268T	c.3803T>C
V1206L	c.3616G>T
L1213V	c.3637C>G
V1238I	c.3712G>A

Amino Acid Change	CDS Mutation
D1246N	c.3736G>A
Y1248C	c.3743A>G
K1262R	c.3785A>G

NRAS/BRAF Point Mutation Analysis Panel

PrimeraDx has developed a multiplex panel, which can detect and discriminate 12 important mutations in *NRAS* and 4 important mutations in *BRAF* genes as shown below:

Amino Acid Change	CDS Mutation
G12D	NRAS c.35 G>A
G12S	NRAS c.34 G>A
G13A	NRAS c.38 G>C
G13D	NRAS c.38 G>A
G13R	NRAS c.37G>C
G13V	NRAS c.38 G>T
G13C	NRAS c.37 G>T
Q61H	NRAS c.183 A>C(H1)

Amino Acid Change	CDS Mutation
Q61R	NRAS c.182 A>G (R1)
Q61R	NRAS c.182_183AA>GG (R2)
Q61L	NRAS c.182 A>T
Q61K	NRAS c. 181 C>A
V600D	BRAF c.1799 1800 TG>AT
V600E	BRAF c.1799 T>A
V600E	BRAF c.1799 1800 TG/AA
V600K	BRAF c.1798 1799 GT>AA

KRAS/BRAF Point Mutation Analysis Panel

Using the ICEPlex system, PrimeraDx was able to develop a multiplex panel for detecting and discriminating 12 targets in 12 mutations in *KRAS* codons 12/13 and four mutations in the *BRAF* gene:

Amino Acid Change	CDS Mutation
G12C	KRAS c.34G>T
G12R	KRAS c.34G>C
G12S	KRAS c.34G>A
G12A	KRAS c.35G>C
G12D	KRAS c.35G>A
G12V	KRAS c.35G>T
G13C	KRAS c.37G>T
G13D	KRAS c.38G>A
Q61L	KRAS c.182A>T

Amino Acid Change	CDS Mutation
Q61R	KRAS c.182A>G
Q61H-T	KRAS c.183A>T
Q61H-C	KRAS c.183A>C
A146T	KRAS c.436G>A
V600E	BRAF c.1799T>A
V600E	BRAF c.1799_1800TG>AA
V600K	BRAF c.1798_1799GT>AA
V600D	BRAF c.1799_1800TG>AT

cMET EGFR CNV Panel

By using the ICEPlex System, we were able to address the current issues faced in the laboratory and created an 5-gene, 18-target , single well, multimodal PCR Panel designed to detect:

- cMET/EGFR gene copy number variation (CNV)
- Chromosomal copy number variation
- Over-expression of cMET mRNA

Research Use Only Kits, including cMET, *KRAS* and *BRAF* are slated for release in late 2013.

Find out more about how we can help you advance your oncology research by visiting www.PrimeraDx.com.

**The ICEPlex system and all collaborative panels are for Research Use Only and have not been approved for in vitro diagnostic use by the FDA.*