

Precision oncology

## Oncomine Dx Target Test—the right choice for your patients

Analyze all key biomarkers for *EGFR*, *ALK*, *BRAF*, and *ROS1* kinase inhibitors, and many more currently in clinical trials, from one sample, in one report, in 4 days

The Ion Torrent™ Oncomine™ Dx Target Test is the first CE-IVD solid-tumor biomarker test, based on targeted next-generation sequencing (NGS), which detects key biomarkers that are relevant to currently approved and investigative targeted therapies in solid tumors.

## The only solid tumor biomarker test, which can:

- Detect 46 cancer driver gene variants, including EGFR mutations (including L858R, T790M, and exon 19 deletions); BRAF, KRAS, ERBB2, and MET exon 14 skipping mutations; and ALK, ROS1, RET, and NTRK1/2/3 fusions
- Deliver an all-in-one report to support treatment decisions—including multiple drug indication options—enabling time and cost savings
- Deliver results even for challenging small samples, meaning more patients can potentially access targeted therapies
- Enable faster treatment decisions by generating laboratory results in 4 days

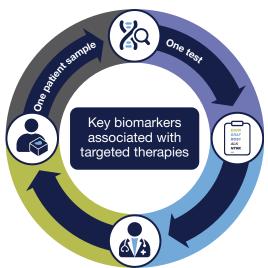


Figure 1: Oncomine Dx Target Test delivers key biomarkers associated with targeted therapies from one sample, in one test workflow, and one report.



NSCLC Colon Melanoma Ovarian Gastric  AKT1 ALK ALK ALK AKT1 ALK ALK BRAF BRAF BRAF EGFR BRAF EGFR GNA11 FGFR3 ERBB2 DDR2 ERBB2 GNAQ GNA11 ERBB3 EGFR ERBB3 HRAS GNAQ FGFR2 ERBB2 HRAS KIT HRAS FGFR3 ERBB3 IDH1 KRAS KRAS MET FGFR2 KRAS MAP2K1 MAP2K1 NTRK1 FGFR3 NRAS NRAS NRAS NTRK2 GNA11 NTRK1 NTRK1 NTRK1 NTRK1 NTRK3 GNAQ NTRK2 NTRK2 NTRK2 PIK3CA HRAS NTRK3 NTRK3 NTRK3 KIT PIK3CA RAF1 KRAS ROS1 ROS1 MAP2K1 NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA		M		619	١
ALK         BRAF         BRAF         BRAF         EGFR           BRAF         EGFR         GNA11         FGFR3         ERBB2           DDR2         ERBB2         GNAQ         GNA11         ERBB3           EGFR         ERBB3         HRAS         GNAQ         FGFR2           ERBB2         HRAS         KIT         HRAS         FGFR3           ERBB3         IDH1         KRAS         KRAS         MET           FGFR2         KRAS         MAP2K1         MAP2K1         NTRK1           FGFR3         NRAS         NRAS         NRAS         NTRK2           GNA11         NTRK1         NTRK1         NTRK3         NTRK3         NTRK2         PIK3CA           HRAS         NTRK3         NTRK3         NTRK3         NTRK3         NTRK3         NTRK3           KIT         PIK3CA         RAF1         KRAS         ROS1         ROS1           MAP2K1         MTRK2         NTRK3         NTRK1         NTRK3           NTRK3         NTRK4         NTRK5         NTRK5           NTRK3         NTRK4         NTRK5         NTRK5           NTRK5         NTRK5         NTRK5         NTRK5	NSCLC	Colon	Melanoma	Ovarian	Gastric
BRAF         EGFR         GNA11         FGFR3         ERBB2           DDR2         ERBB2         GNAQ         GNA11         ERBB3           EGFR         ERBB3         HRAS         GNAQ         FGFR2           ERBB2         HRAS         KIT         HRAS         FGFR3           ERBB3         IDH1         KRAS         KRAS         MET           FGFR2         KRAS         MAP2K1         MAP2K1         NTRK1           FGFR3         NRAS         NRAS         NRAS         NTRK2           GNA11         NTRK1         NTRK1         NTRK3         NTRK3         NTRK2         PIK3CA           HRAS         NTRK3         NTRK3         NTRK3         NTRK3         NTRK3         NTRK3           KIT         PIK3CA         RAF1         KRAS         ROS1         ROS1           MAP2K1         MTRK1         NTRK3         NTRK3         NTRK1         NTRK2           NTRK1         NTRK3         NTRK3         NTRK3         NTRK3         NTRK3           NTRK3         PDGFRA         PIK3CA         PIK3CA         PIK3CA	AKT1	ALK	ALK	AKT1	ALK
DDR2         ERBB2         GNAQ         GNA11         ERBB3           EGFR         ERBB3         HRAS         GNAQ         FGFR2           ERBB2         HRAS         KIT         HRAS         FGFR3           ERBB3         IDH1         KRAS         KRAS         MET           FGFR2         KRAS         MAP2K1         MAP2K1         NTRK1           FGFR3         NRAS         NRAS         NRAS         NTRK2           GNA11         NTRK1         NTRK1         NTRK3         NTRK3           GNAQ         NTRK2         NTRK2         NTRK2         PIK3CA           HRAS         NTRK3         NTRK3         NTRK3         NTRK3           KIT         PIK3CA         RAF1         KRAS         ROS1           MAP2K1         MET         MTOR         NTRK3         NTRK3           NTRK1         NTRK2         NTRK3         NTRK3         NTRK3           NTRK4         NTRK4         NTRK4         NTRK4         NTRK5           NTRK3         NTRK3         NTRK3         PDGFRA         PIK3CA	ALK	BRAF	BRAF	BRAF	EGFR
EGFR         ERBB3         HRAS         GNAQ         FGFR2           ERBB2         HRAS         KIT         HRAS         FGFR3           ERBB3         IDH1         KRAS         KRAS         MET           FGFR2         KRAS         MAP2K1         MAP2K1         NTRK1           FGFR3         NRAS         NRAS         NRAS         NTRK2           GNA11         NTRK1         NTRK3         NTRK3         NTRK2         PIK3CA           HRAS         NTRK3         NTRK3         NTRK3         NTRK3           KIT         PIK3CA         RAF1         KRAS         ROS1           MAP2K1         MET         MTOR         NRAS           NTRK1         NTRK2         NTRK3         NTRK1           NTRK3         NTRK1         NTRK3         NTRK3           NTRK1         NTRK3         NTRK3         NTRK3           NTRK3         PDGFRA         PIK3CA	BRAF	EGFR	GNA11	FGFR3	ERBB2
ERBB2         HRAS         KIT         HRAS         FGFR3           ERBB3         IDH1         KRAS         KRAS         MET           FGFR2         KRAS         MAP2K1         MAP2K1         NTRK1           FGFR3         NRAS         NRAS         NTRK2         NTRK2           GNA11         NTRK1         NTRK3         NTRK3         NTRK2         PIK3CA           HRAS         NTRK3         NTRK3         NTRK3         NTRK3         NTRK3         NTRK3           KIT         PIK3CA         RAF1         KRAS         ROS1         ROS1           MAP2K1         MET         MTOR         NRAS         NTRK1         NTRK1           NTRK1         NTRK2         NTRK3         PDGFRA         PIK3CA	DDR2	ERBB2	GNAQ	GNA11	ERBB3
ERBB3         IDH1         KRAS         KRAS         MET           FGFR2         KRAS         MAP2K1         MAP2K1         NTRK1           FGFR3         NRAS         NRAS         NRAS         NTRK2           GNA11         NTRK1         NTRK1         NTRK3         NTRK2         PIK3CA           HRAS         NTRK3         NTRK4         NTRK1         NTRK2         NTRK4         NTRK4         NTRK4         NTRK3         PDGFRA         PIK3CA         PIK3CA         PDGFRA         PIK3CA         PDGFRA         PIK3CA         PDGFRA         PDGFRA </th <th>EGFR</th> <td>ERBB3</td> <td>HRAS</td> <td>GNAQ</td> <td>FGFR2</td>	EGFR	ERBB3	HRAS	GNAQ	FGFR2
FGFR2         KRAS         MAP2K1         MAP2K1         NTRK1           FGFR3         NRAS         NRAS         NRAS         NTRK2           GNA11         NTRK1         NTRK1         NTRK3         NTRK2         PIK3CA           HRAS         NTRK3         NTRK3         NTRK3         NTRK3           KIT         PIK3CA         RAF1         KRAS         ROS1         ROS1           MAP2K1         MET         MTOR         NRAS         NTRK1         NTRK2         NTRK3           NTRK1         NTRK2         NTRK3         PDGFRA         PIK3CA	ERBB2	HRAS	KIT	HRAS	FGFR3
FGFR3         NRAS         NRAS         NRAS         NTRK2           GNA11         NTRK1         NTRK1         NTRK3         NTRK2         PIK3CA           HRAS         NTRK3         NTRK3         NTRK3         NTRK3           KIT         PIK3CA         RAF1         KRAS         ROS1           MAP2K1         MET         MTOR         NRAS           NTRK1         NTRK2         NTRK1           NTRK2         NTRK3         PDGFRA           PIK3CA         PIK3CA	ERBB3	IDH1	KRAS	KRAS	MET
GNA11 NTRK1 NTRK1 NTRK1 NTRK3 GNAQ NTRK2 NTRK2 PIK3CA HRAS NTRK3 NTRK3 NTRK3 KIT PIK3CA RAF1 KRAS ROS1 ROS1 MAP2K1 MET MTOR NRAS NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA	FGFR2	KRAS	MAP2K1	MAP2K1	NTRK1
GNAQ NTRK2 NTRK2 PIK3CA HRAS NTRK3 NTRK3 NTRK3 KIT PIK3CA RAF1 KRAS ROS1 ROS1 MAP2K1 MET MTOR NRAS NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA	FGFR3	NRAS	NRAS	NRAS	NTRK2
HRAS NTRK3 NTRK3 NTRK3 KIT PIK3CA RAF1 KRAS ROS1 ROS1 MAP2K1 MET MTOR NRAS NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA	GNA11	NTRK1	NTRK1	NTRK1	NTRK3
KIT PIK3CA RAF1 KRAS ROS1 ROS1 MAP2K1 MET MTOR NRAS NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA	GNAQ	NTRK2	NTRK2	NTRK2	PIK3CA
KRAS ROS1 ROS1 MAP2K1 MET MTOR NRAS NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA	HRAS	NTRK3	NTRK3	NTRK3	
MAP2K1 MET MTOR NRAS NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA	KIT	PIK3CA	RAF1		
MET MTOR NRAS NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA	KRAS	ROS1	ROS1		
MTOR NRAS NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA					
NRAS NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA	MET				
NTRK1 NTRK2 NTRK3 PDGFRA PIK3CA					
NTRK2 NTRK3 PDGFRA PIK3CA					
NTRK3 PDGFRA PIK3CA					
PDGFRA PIK3CA					
PIK3CA					
DAE1					
	RAF1				
RET					
ROS1	ROS1				

Figure 2. Examples of genes with cancer driver variants associated with different tumor types.

	All genes included in the Oncomine Dx Target Test					
DNA panel, hotspot genes	AKT1 ALK AR BRAF CDK4 CTNNB1 DDR2 EGFR ERBB2 ERBB3 ERBB4 ESR1	FGFR2 FGFR3 GNA11 GNAQ HRAS IDH1 IDH2 JAK1 JAK2 JAK3 KIT KRAS	MAP2K1 MAP2K2 MET MTOR NRAS PDGFRA PIK3CA RAF1 RET ROS1 SMO			
RNA panel, fusion drivers	ABL1 ALK AXL BRAF ERBB2 ERG ETV1	ETV4 ETV5 FGFR1 FGFR2 FGFR3 MET NTRK1	NTRK2 NTRK3 PDGFRA PPARG RAF1 RET ROS1			

Figure 3. All genes covered by the Oncomine Dx Target Test.

## With the Oncomine Dx Target Test, you and your care team are ready for the future

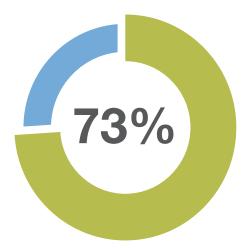


Figure 4. 73% of oncology drugs in development are personalized medicines.\*

In oncology, most of the drugs in development are precision medicines associated with molecular testing. As such, fast, broad, and accessible genomic profiling is becoming one of the key factors to ensure patients' access to the therapies they could potentially benefit from.

The 46 gene targets included in the Oncomine Dx Target Test are cancer driver genes which, based on their role in cancer pathogenesis, have the potential to be therapy targets. Many of them are already targets of approved or investigational therapies for solid tumors.

The Oncomine Dx Target Test can help ensure that your lab will be ready to provide you with all of these biomarkers as they become relevant, without the need for additional resources to implement new and emerging tests.



 $<sup>^{\</sup>star}$  The Personalized Medicine Report by PMC (Personalized Medicine Coalition, 2017).