Paradigm Cancer Diagnostic (PCDx)

Right options. Right now.

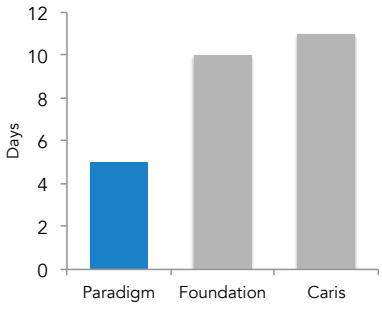
refuse to wait

Every day matters. PCDx is the fastest test available, providing results in 5 days. The PCDx test is designed for smaller batch sizes. This means your specimen is run right away rather than waiting for a large batch of samples to accumulate. Each step in our process is optimized for speed. For example, PCDx uses the Illumina NextSeq, which generates results in 25 hours compared to 3.5 days for a HighSeq.

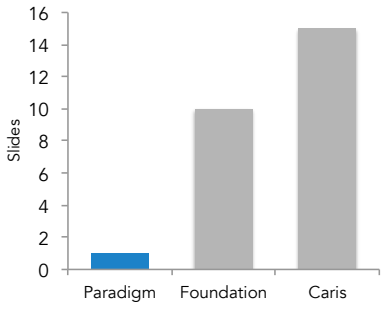
useful answers

We screen for an industry-leading >90 drugs and make your options clear in a simple report tailored to the clinic. Our test is validated on the actual FFPE diagnostic blocks from the tumors characterized by TCGA. If you are a researcher who wants to dig deeper into your patients' results, we provide unprecedented access to literature, data and registry funding.

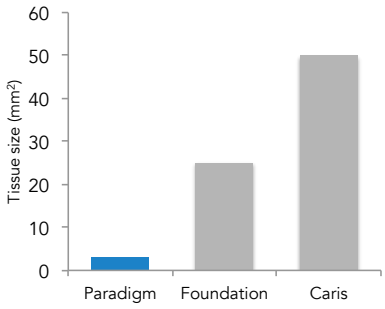
Testing time



NGS slides required



Minimum tissue size



Source: https://www.foundationmedicine.com/genomic-testing/foundation-one-cdx, https://www.carismolecularintelligence.com accessed 9/22/18

get results

We believe it is our job to get you results, not your responsibility to provide perfect specimens. PCDx is one of the most sensitive tests available, and we can make almost any specimen work including a single slide. We accomplish this with a proprietary library technique that converts five fold more DNA strands than other methods when 1.5 ng DNA is available. We use duplex UMI "barcodes" on each strand of DNA, a technique recently developed for low-yield cfDNA samples. Our proprietary informatics leverage the power of UMIs to detect variants with fewer DNA strands. When combined with more effective conversion of DNA, we need much less tissue.

About PCDx

PCDx is a comprehensive genomic profiling test designed to analyze solid tumor alterations to match the best therapies and clinical trials based on the latest clinical evidence in peer-reviewed literature.

Paradigm is able to accept most U.S. insurance plans, including Medicare. 43% of patients receiving therapy as directed by PCDx achieved a progression-free survival ratio of 1.3 compared to only 5% of patients treated by physician directed therapy[1].

[1]Oncotarget, 7(35), 56491-56500.

Indications

PCDx is indicated when a patient has:

a. a solid neoplasm; and
b. recurrent, relapsed, refractory, metastatic or advanced (stage III/IV) cancer; and
c. has not been tested by PCDx for the same cancer; and
d. has decided to seek further treatment

Rejection criteria

A specimen will be rejected when it:

a. contains less than 15% tumor cells after dissection; or
b. is smaller than a grain of rice (3mm^2) in size; or
c. has been decalcified (exception: EDTA); or
d. the specimen is not FFPE

Turnaround time	Sensitivity	Specificity	Drug associations
5 business days	≥99%	≥99%	>90 therapies

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Accuracy

Biomarker	Sensitivity	Specificity
SNVs, indels ≥7.5%	>99%	>99%
SNVs, indels ≥5.0%	>97%	>99%
Amplifications	>90%	>99%
IHC	>94%	>94%

Validation samples:
The original FFPE diagnostic specimens from tumors characterized by TCGA and FFPE cell line mixtures verified by a third party.

TMB cut-off is 10 mutations/MB

Associated Therapies

Abemaciclib	Carboplatin	Enzalutamide	Ketoconazole	Olaparib	Sorafenib
Abiraterone	Carmustine	Epirubicin	Lapatinib	Olaratumab	Streptozocin
Ado-trastuzumab emtansine	Ceritinib	Eribulin	Lenvatinib	Osimertinib	Sunitinib
	Cetuximab	Erlotinib	Letrozole	Oxaliplatin	Talazoparib
Afatinib	Cisplatin	Everolimus	Liposomal Doxorubicin	Paclitaxel	Tamoxifen
Alectinib	Crizotinib	Exemestane		Palbociclib	Temozolomide
Anastrozole	Dabrafenib	Fluorouracil	Lorlatinib	Panitumumab	Temsirolimus
Atezolizumab	Dacarbazine	Flutamide	Medroxy-progesterone	Pazopanib	Topotecan
Avelumab	Dacomitinib	Fulvestrant		Pembrolizumab	Toremifene
Bevacizumab	Dasatinib	Gefitinib	Megestrol	Pemetrexed	Trametinib
Bicalutamide	Diethylstilbestrol	Gemcitabine	Mitomycin	Pertuzumab	Trastuzumab
Binimetinib	Dinutuximab	Idelalisib	Neratinib	Procarbazine	Vandetanib
Brigatinib	Docetaxel	Imatinib	Nilotinib	Regorafenib	Vemurafenib
Cabozantinib	Doxorubicin	Interleukin-2	Nintedanib	Ribociclib	Vincristine
Capecitabine	Durvalumab	Ipilimumab	Niraparib	Rucaparib	Vismodegib
	Encorafenib	Irinotecan	Nivolumab	Sonidegib	Zoledronic acid

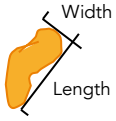
Specimen requirements

Preferred method

1. Verify tissue is as large as a grain of rice (3mm^2)

(actual size)

2. Send whole block



Alternate method

1. Measure tissue (length x width) in mm
area = _____ (Width) X _____ (Length) = _____ mm^2
2. If < 25mm^2, send whole block
3. If ≥ 25mm^2, send 4µm-5µm slides

Immuno

TMB ~ 1Mb

PD-L1 TILs

PD-L1 tumor

MMR

Legacy mRNA panel

AR	DCK	KIT	RELA
AREG	DHFR	LRP6	RPS6KB1
ARID1A	DPYD	MET	RRM1
BAD	EPHA2	MGMT	SLC29A1
BAX	ERBB2	MITF	SSTR2
BCL2	ERBB3	MTOR	TNFSF13
BIRC5	ERCC1	NFKB1	TOP2A
BRCA1	EREG	PARP1	TUBB3
CA9	ESR1	PDGFRB	TYMP
CDA	EZH2	PGR	TYMS
CDH1	FGFR1	PTEN	VEGFA
CES2	IGF1R	PTGS2	
CHUK	KDR	PTPN6	

Immunohistochemistry

ALK	IDO	PD1	ROS1
AR	MET	PD-L1	TOPO1
CAIX	MGMT	PMS2	TP
ER	MLH1	PR	TRKpan
hENT1	MSH2	PTEN	TS
HER2/neu	MSH6	RET	TUBB3

PCDx IHC Panels

Breast	AR, PD-L1, TP, TOPO1, MMR, TRKpan
Colorectal	MMR, PD-L1, TRKpan, HER2
NSCLC	PD-L1, ALK, ROS1, hENT1, TRKpan, MMR
Other	hENT1, HER2, MMR, PD-L1, TRKpan

MMR includes MLH1, MSH2, MSH6 and PMS2

234 gene NGS panel

ABCB1	APC	B2M	CCNE1	CSF1R	EPCAM	FANCA	FGFR3	HNF1A	KRAS	MRE11A	NOTCH3	PIK3R1	RBM10	SMAD4	TSC1
ABCC1	APLNR	BAP1	CD274	CTLA4	EPHA5	FANCC	FGFR4	HRAS	MAF	MSH2	NPM1	PLCB4	RECQL	SMARCA4	TSC2
ABCC2	AR	BARD1	CDA	CTNNB1	EPHA7	FANCD2	FLT3	HSD3B1	MAP2K1	MSH6	NRAS	PLCG1	RET	SMARCB1	TSHR
ABL1	ARAF	BCOR	CDC73	CYP19A1	ERBB2	FANCE	FLT4	IDH1	MAP2K2	MTHFR	NTRK1	PMS2	RHEB	SMO	TYMS
ADAMTS1	AREG	BNIP3	CDH1	CYP1A1	ERBB3	FANCF	FOXL2	IDH2	MAP3K1	MTOR	NTRK2	POLD1	RICTOR	SOCS1	VEGFA
ADAMTS16	ARID1A	BRAF	CDK12	CYP2D6	ERBB4	FANCG	FUBP1	IGF1R	MAPK1	MUTYH	NTRK3	POLE	RIT1	SPOP	VHL
ADAMTS18	ARID1B	BRCA1	CDK4	CYP3A4	ERCC1	FANCM	GATA3	IKZF1	MAPK3	MYC	PALB2	PPP2R1A	RNF43	STAG2	WT1
ADAMTS6	ARID2	BRCA2	CDK6	CYSLTR2	ERCC2	FAT1	GLI1	JAK1	MAPKAPK5	MYCN	PBRM1	PTCH1	ROS1	STAT3	XRCC1
ADAMTS9	ATM	BRIP1	CDKN2A	DCK	ERCC3	FBXW7	GNA11	JAK2	MDM2	MYOD1	PDCD1LG2	PTEN	RPTOR	STK11	YES1
ADAMTSL1	ATR	BTK	CHEK1	DDR2	ERRFI1	FCGR2A	GNAQ	JAK3	MDM4	NBN	PDGFRA	PTPN11	RRM1	SUFU	
AKT1	ATRX	BUB1B	CHEK2	DICER1	ESR1	FGD4	GNAS	KDM5C	MED12	NF1	PDGFRB	RAD50	SDHB	TERT-p	
AKT2	AURKA	CBL	CHFR	DNMT3A	ESR2	FGF3	GSTP1	KDM6A	MEN1	NF2	PIK3CA	RAD51C	SDHC	TGFBR2	
AKT3	AURKB	CCND1	CHKA	EGFR	EWSR1	FGF4	GSTT1	KDR	MET	NFE2L2	PIK3CB	RAD51D	SETD2	TNFAIP3	
ALK	AXIN1	CCND2	CIC	EMSY	EZH2	FGFR1	HDAC2	KEAP1	MGMT	NOTCH1	PIK3CD	RAF1	SF3B1	TOP2A	
AMER1	AXL	CCND3	CREBBP	EP300	FAM175A	FGFR2	HGF	KIT	MLH1	NOTCH2	PIK3CG	RB1	SMAD2	TP53	

Genetic structures tested: single nucleotide variants (SNVs) and insertions/deletions up to 40bp in coding regions of genes listed above. UTRs and splice junctions when actionable (e.g., MET exon 14 skipping). Mutation burden (SNVs, insertions, deletions) based on ~1 megabase.