POUNDBURY CANCER INSTITUTE
For Personalised Medicine

IHC/ISH

A

AE1/3
ALK
AR

B

BAP1
B-CATENIN
BCC
BCL2
BCL6
BRAF

C

CA125
CAIX
CALRETINIIN
CD10
CD117
CD138
CD1a*
CD2
CD20
CD21
CD23
CD3
CD30
CD31
CD34
CD4
CD45
CD5
CD56
CD68
CD7*
CD79A
CD8
CDX2
CEA
CHROMOGRANIN A
CK20
CK5
CK7
CK8/18
CLAUDIN*
CYCLIN D1

D

D240*
DESMIN
DESMOGLEIN*

E

EBER (ISH)*
E-CADHERIN
EMA
EPCAM (BerEP4)
ER
ERG*

F

FACTOR 13A
FOLR-1*

G

GATA 3

H

HER2
HER2 DDISH
HMB45

K

KI67
Ki67/Melan A*
Kappa/Lambda Dual ISH*

M

MELAN A
MLH1
MNF116
MSH2
MSH6
MUM1
NAPSIN
NKX3.1
NTRK*

P

P16
P16/KI67*
P40
P504s
P53
P63
PAX8
PD-L1 22C3
PD-L1 28.8
PD-L1 SP142
PD-L1 SP263
PHH3*

PIN4*
PMS2
PR
PRAME
PSMA

R

ROS1

S

S100
SMA
SMM
SOX10
SYNAPTOPHYSIN

T

TRSP1*
TTF1

V

VIMENTIN*

W

WT1

Special stains

Alcian Blue*
ABPAS*
Congo Red
Gram
Grocott Hexamine-Silver
MSB
Masson-Fontana
Periodic Acid Schiff/Diastase
Digestion
Perls
Toluidine Blue
Van Gieson
Von Kossa
ZN
EVG
H&E

*Tests NOT ACCREDITED

POUNDBURY CANCER INSTITUTE
For Personalised Medicine

Molecular Pathology Services for Oncology

PCI delivers a comprehensive portfolio of tissue- and blood-based molecular diagnostics to support precision oncology and targeted therapy selection.

PCR-Based Testing

Rapid, targeted molecular assays for clinically actionable biomarkers:

- **Mutation analysis:** EGFR, KRAS, NRAS, BRAF, PIK3CA, ESR1*, AKT1*, POLE*, POLD1*
- **Targeted fusion testing:** ALK*, ROS1*, RET*, NTRK1*, NTRK2*, NTRK3*, MET exon 14 skipping*
- **Microsatellite instability (MSI) testing***

These assays provide **fast turnaround times** and are particularly suited for cases requiring urgent therapeutic decisions.

*Tests NOT ACCREDITED

Next Generation Sequencing (NGS) – Solid Tumours (Tissue-Based) – NOT ACCREDITED

Comprehensive Genomic Profiling (~500+ Genes)

Advanced genomic profiling using large, clinically validated panels to support therapy selection and clinical decision-making.

DNA Mutations (SNVs / INDELs)

Includes a broad range of clinically relevant genes such as:

ABL1	BRCA2	CYSLTR2	FBXW7	KDR	MYCN	POLD1	ROS1	TERT
ABL2	BRIP1	DAXX	FGF7	KEAP1	MYD88	POLE	RPA1	TET2
ABRAXAS1	BTK	DDR2	FGFR1	KIT	MYOD1	POT1	RPL10	TGFBR1
ACVR1	CACNA1D	DDX3X	FGFR2	KLF4	NBN	PPM1D	RPL22	TGFBR2
ACVR1B	CALR	DGCR8	FGFR3	KLF5	NCOR1	PPP2R1A	RPL5	TMEM132D
ACVR2A	CARD11	DICER1	FGFR4	KLHL13	NF1	PPP2R2A	RUNX1	TNFAIP3
ADAMTS12	CASP8	DNMT3A	FLT3	KMT2A	NF2	PPP6C	RUNX1T1	TNFRSF14
ADAMTS2	CBFB	DOCK3	FLT4	KMT2B	NFE2L2	PRDM1	SDHA	TOP1
AKT1	CBL	DPYD	FOXA1	KMT2C	NOTCH1	PRDM9	SDHB	TP53
AKT2	CCND1	DROSHA	FOXL2	KMT2D	NOTCH2	PRKACA	SDHC	TP63
AKT3	CCND2	DSC1	FOXO1	KNSTRN	NOTCH3	PRKAR1A	SDHD	TPMT

ALK	CCND3	DSC3	FUBP1	KRAS	NOTCH4	PSMB10	SETBP1	TPP2
AMER1	CCNE1	E2F1	GATA2	LARP4B	NRAS	PSMB8	SETD2	TRRAP
APC	CD274	EGFR	GATA3	LATS1	NSD2	PSMB9	SF3B1	TSC1
AR	CD276	EIF1AX	GLI1	LATS2	NT5C2	PTCH1	SIX1	TSC2
ARAF	CD79B	ELF3	GNA11	MAGOH	NTRK1	PTEN	SIX2	TSHR
ARHGAP35	CDC73	ENO1	GNA13	MAP2K1	NTRK2	PTPN11	SLCO1B3	U2AF1
ARID1A	CDH1	EP300	GNAQ	MAP2K2	NTRK3	PTPRD	SLX4	UGT1A1
ARID1B	CDH10	EPAS1	GNAS	MAP2K4	NUP93	PTPRT	SMAD2	USP8
ARID2	CDK12	EPCAM	GPS2	MAP2K7	PALB2	PXDNL	SMAD4	USP9X
ARID5B	CDK4	EPHA2	H2BC5	MAP3K1	PARP1	RAC1	SMARCA4	VHL
ASXL1	CDK6	ERAP1	H3-3A	MAP3K4	PARP2	RAD50	SMARCB1	WAS
ASXL2	CDKN1A	ERAP2	H3-3B	MAPK1	PARP3	RAD51	SMC1A	WT1
ATM	CDKN1B	ERBB2	H3C2	MAPK8	PARP4	RAD51B	SMO	XPO1
ATP1A1	CDKN2A	ERBB3	HDAC2	MAX	PAX5	RAD51C	SNCAIP	XRCC2
ATR	CDKN2B	ERBB4	HDAC9	MDM4	PBRM1	RAD51D	SOCS1	XRCC3
ATRX	CDKN2C	ERCC2	HIF1A	MECOM	PCBP1	RAD52	SOS1	ZBTB20
AURKA	CHD4	ERCC4	HLA-A	MED12	PDCD1	RAD54L	SOX2	ZFHX3
AURKC	CHEK1	ERCC5	HLA-B	MEF2B	PDCD1LG2	RAF1	SOX9	ZMYM3
AXIN1	CHEK2	ERRFI1	HNF1A	MEN1	PDGFRA	RARA	SPEN	ZNF217
AXIN2	CIC	ESR1	HRAS	MET	PDGFRB	RASA1	SPOP	ZNF429
AXL	CIITA	ETV6	ID3	MGA	PDIA3	RASA2	SRC	ZRSR2
B2M	CREBBP	EZH2	IDH1	MITF	PGD	RB1	SRSF2	
BAP1	CSF1R	FAM135B	IDH2	MLH1	PHF6	RBM10	STAG2	
BARD1	CSMD3	FANCA	IKBKB	MLH3	PIK3C2B	RECQL4	STAT1	
BCL2	CTCF	FANCC	IL6ST	MPL	PIK3CA	RET	STAT3	
BCL2L12	CTLA4	FANCD2	IL7R	MRE11	PIK3CB	RGS7	STAT5B	
BCL6	CTNNB1	FANCE	INPP4B	MSH2	PIK3CD	RHEB	STAT6	
BCOR	CUL1	FANCF	IRF4	MSH3	PIK3CG	RHOA	STK11	
BCR	CUL3	FANCG	IRS4	MSH6	PIK3R1	RICTOR	SUFU	
BLM	CUL4A	FANCI	JAK1	MTAP	PIK3R2	RIT1	TAF1	

BMP5	CUL4B	FANCL	JAK2	MTOR	PIM1	RNASEH2A	TAP1	
BMPR2	CYLD	FANCM	JAK3	MTUS2	PLCG1	RNASEH2B	TAP2	
BRAF	CYP2C9	FAS	KDM5C	MUTYH	PMS1	RNASEH2C	TBX3	
BRCA1	CYP2D6	FAT1	KDM6A	MYC	PMS2	RNF43	TCF7L2	

RNA-Based Fusions – NOT ACCREDITED

Detection of clinically actionable gene rearrangements, including:

AKT1	CDKN2A	ETV4	MTAP	NTRK1	PRKACA	RSPO2
AKT2	EGFR	ETV5	MYB	NTRK2	PRKACB	RSPO3
AKT3	ERBB2	FGFR1	MYBL1	NTRK3	RAF1	STAT6
ALK	ERBB4	FGFR2	NOTCH1	NUTM1	RARA	TERT
AR	ERG	FGFR3	NOTCH2	PIK3CA	RELA	TFE3
BRAF	ESR1	MAP3K8	NOTCH3	PIK3CB	RET	TFEB
BRCA1	ETV1	MET	NRG1	PPARG	ROS1	YAP1

Copy Number Variations (CNVs) – NOT ACCREDITED

Assessment of gene amplifications and deletions, including:

ABCB1	BCOR	CUL3	FANCD2	IGF1R	MGA	PDGFRA	RAD54L	SRC
ABL1	BLM	CUL4A	FANCE	IKBKB	MITF	PDGFRB	RAF1	STAG2
ABL2	BMPR2	CUL4B	FANCF	IL7R	MLH1	PDIA3	RARA	STAT3
ABRAXAS1	BRAF	CYLD	FANCG	INPP4B	MLH3	PGD	RASA1	STAT6
ACVR1B	BRCA1	CYP2C9	FANCI	JAK1	MPL	PHF6	RASA2	STK11
ACVR2A	BRCA2	DAXX	FANCL	JAK2	MRE11	PIK3C2B	RB1	SUFU
ADAMTS12	BRIP1	DDR1	FANCM	JAK3	MSH2	PIK3CA	RBM10	TAP1
ADAMTS2	CARD11	DDR2	FAT1	KDM5C	MSH3	PIK3CB	RECQL4	TAP2
AKT1	CASP8	DDX3X	FBXW7	KDM6A	MSH6	PIK3R1	RET	TBX3
AKT2	CBFB	DICER1	FGF19	KDR	MTAP	PIK3R2	RHEB	TCF7L2
AKT3	CBL	DNMT3A	FGF23	KEAP1	MTOR	PIM1	RICTOR	TERT
ALK	CCND1	DOCK3	FGF3	KIT	MUTYH	PLCG1	RIT1	TET2

AMER1	CCND2	DPYD	FGF4	KLF5	MYC	PMS1	RNASEH2A	TGFBR2
APC	CCND3	DSC1	FGF9	KMT2A	MYCL	PMS2	RNASEH2B	TNFAIP3
AR	CCNE1	DSC3	FGFR1	KMT2B	MYCN	POLD1	RNF43	TNFRSF14
ARAF	CD274	EGFR	FGFR2	KMT2C	MYD88	POLE	ROS1	TOP1
ARHGAP35	CD276	EIF1AX	FGFR3	KMT2D	NBN	POT1	RPA1	TP53
ARID1A	CDC73	ELF3	FGFR4	KRAS	NCOR1	PPM1D	RPS6KB1	TP63
ARID1B	CDH1	EMSY	FLT3	LARP4B	NF1	PPP2R1A	RPTOR	TPMT
ARID2	CDH10	ENO1	FLT4	LATS1	NF2	PPP2R2A	RUNX1	TPP2
ARID5B	CDK12	EP300	FOXA1	LATS2	NFE2L2	PPP6C	SDHA	TSC1
ASXL1	CDK4	EPCAM	FUBP1	MAGOH	NOTCH1	PRDM1	SDHB	TSC2
ASXL2	CDK6	EPHA2	FYN	MAP2K1	NOTCH2	PRDM9	SDHD	U2AF1
ATM	CDKN1A	ERAP1	GATA2	MAP2K4	NOTCH3	PRKACA	SETBP1	USP8
ATR	CDKN1B	ERAP2	GATA3	MAP2K7	NOTCH4	PRKAR1A	SETD2	USP9X
ATRX	CDKN2A	ERBB2	GLI3	MAP3K1	NRAS	PTCH1	SF3B1	VHL
AURKA	CDKN2B	ERBB3	GNA13	MAP3K4	NTRK1	PTEN	SLCO1B3	WT1
AURKC	CDKN2C	ERBB4	GNAS	MAPK1	NTRK3	PTPN11	SLX4	XPO1
AXIN1	CHD4	ERCC2	GPS2	MAPK8	PALB2	PTPRT	SMAD2	XRCC2
AXIN2	CHEK1	ERCC4	H3-3A	MAX	PARP1	PXDNL	SMAD4	XRCC3
AXL	CHEK2	ERRFI1	H3-3B	MCL1	PARP2	RAC1	SMARCA4	YAP1
B2M	CIC	ESR1	HDAC2	MDM2	PARP3	RAD50	SMARCB1	YES1
BAP1	CREBBP	ETV6	HDAC9	MDM4	PARP4	RAD51	SMC1A	ZFHX3
BARD1	CSMD3	EZH2	HLA-A	MECOM	PBRM1	RAD51B	SMO	ZMYM3
BCL2	CTCF	FAM135B	HLA-B	MEF2B	PCBP1	RAD51C	SOX9	ZNF217
BCL2L12	CTLA4	FANCA	HNF1A	MEN1	PDCD1	RAD51D	SPEN	ZNF429
BCL6	CTNND2	FANCC	IDH2	MET	PDCD1LG2	RAD52	SPOP	ZRSR2

Additional Genomic Signatures – NOT ACCREDITED

- Microsatellite Instability (MSI)
- Tumour Mutational Burden (TMB)
- Homologous Recombination Deficiency (HRD/HRR)

This approach provides comprehensive genomic profiling across 500+ cancer-associated genes, enabling identification of actionable alterations, resistance mechanisms, and eligibility for targeted therapies and clinical trials.

Next-Generation Sequencing (NGS) – Liquid Biopsy (CTNA: ctDNA + ctRNA) – NOT ACCREDITED

Targeted Panel (~50+ Genes)

Non-invasive genomic profiling using circulating tumour nucleic acids (CTNA) from peripheral blood, integrating both circulating tumour DNA (ctDNA) and circulating tumour RNA (ctRNA):

- Detection of clinically actionable DNA mutations and RNA gene fusions using targeted NGS panels (50+ genes)
- Supports evidence-based therapy selection and identification of resistance mechanisms
- Enables monitoring of disease progression and treatment response through serial sampling

Includes a broad range of clinically relevant alterations:

DNA Mutations (ctDNA)					RNA Fusions (ctRNA)		CNVs	
AKT1	EGFR	GNA11	MAP2K2	RAF1	ALK	NTRK2	ALK	MET
AKT2	ERBB2	GNAQ	MET	RB1	AR	NTRK3	AR	PIK3CA
AKT3	ERBB3	GNAS	MTOR	RET	BRAF	NUTM1	CD274	PTEN
ALK	ERBB4	H3-3A	NRAS	ROS1	EGFR	RET	CDKN2A	
AR	ESR1	HRAS	NTRK1	SMARCA4	ESR1	ROS1	EGFR	
ARAF	FGFR1	IDH1	NTRK2	SMO	FGFR1	RSPO2	ERBB2	
BRAF	FGFR2	IDH2	NTRK3	STK11	FGFR2	RSPO3	ERBB3	
CDK4	FGFR3	KEAP1	PDGFRA	TERTp	FGFR3		FGFR1	
CDKN2A	FGFR4	KIT	PIK3CA	TP53	MET		FGFR2	
CHEK2	FLT3	KRAS	PTEN		NRG1		FGFR3	
CTNNB1	FOXL2	MAP2K1	POLE		NTRK1		KRAS	

This integrated molecular testing portfolio enables comprehensive characterisation of cancer, supporting evidence-based treatment selection, resistance monitoring, and access to targeted therapies and clinical trials across the patient journey.