Positive Bioscience

#1

India's Best Selling
Cancer Genomics Test

PositiveSelect™

Precision treatment for every Cancer Patient

Patient Guide

- ✓ PositiveSelect is India's widely used Cancer Genomics test with every 8 out of 10 patients opting for PositiveSelect
- ✓ PositiveSelect is available as 4 different tests offering solutions for every type of cancer patient
- ✓ Genomics is finally affordable to every patient

Positive Bioscience

Dear Valued Customer,

We understand the pain and suffering cancer causes you and your family. At Positive Bioscience our job is to provide you, our customer, with the very best and highest quality test. The goal of PositiveSelect is to help you get on the best treatment.

Positive Bioscience was established with the goal of providing the best possible technology at an affordable price. We are proud to be **India's Leading Cancer Genomics Testing Company.**

Positive Bioscience thanks you for considering our testing and we look forward to serving you.

Yours Sincerely,

Dr. Sandhya Iyer

Senior Scientific Officer

Dr. Gowhar Shafi

Chief Scientific Officer

Key benefits of PositiveSelect

1

Aids routine molecular diagnostics

- PositiveSelect aids routine molecular diagnostics in Lung, Colorectal cancer (CRC), Melanoma, Gastric and Ovarian Cancer
- It covers >80% of routine molecular diagnostics in Breast, Head and Neck, Prostate and Pancreatic cancer

2

Improve Treatment Outcome by upto 300%

- PositiveSelect checks millions of data points and hundreds of treatment options to select the best one
- Treatment recommendations are tailored to the patient's genetic profile

3

Cut Treatment Costs

- PositiveSelect removes the trial and error approach
- Getting on the best treatment quickly saves money

4

Reduce Side Effects

- PositiveSelect helps to avoid dangerous and toxic side effects
- Treatments selected based on genetic profiling minimize side effects

5

Most Comprehensive Test

- PositiveSelect tests for hundreds of genes on Next Generation Sequencing (NGS)
- Every gene is tested 1000 times to ensure accuracy
- Tests for all types of genomic alterations, mutations, insertions, deletions, translocations and amplifications

6

All Cancer types Covered

- PositiveSelect can test every cancer type and stage
- If tumor is not available we test on blood (Ct-DNA)

PositiveSelect™ Ultimate

- Most comprehensive Cancer Genomics test available
- Matched NGS analysis on Tumour and Normal sample, testing 350 genes
- Only cancer genomics test in the world which covers:
  - Pathway Analysis
  - Tumour Mutation Burden (TMB)
  - Microsatellite Instability (MSI)
  - True Somatic Mutations
  - True Germline Mutations
  - Targeted Therapy
  - Chemotherapy
  - Clinical Trial
  - Hereditary testing for HBOC and Lynch Syndrome

Ideal for aggressive/rare cancers and patients with no treatment options

Benefits of PositiveSelect Ultimate

- Provides the best chance of beating cancer
- Provides a 3D view of genomic profiling by accurately determining True Somatic, True Germline and True Driver mutations
- Provides treatment solution based on cancer pathways increasing the odds of beating cancer manyfold
- Immunotherapy options based on Microsatellite instability and Tumour Mutation Burden
- Expert commentary with every report
- Expert consultation with treating doctor to analyse and treat patients in a holistic manner

PositiveSelect™ Ultimate

PositiveSelect Ultimate Technical Specification

Genes Analyzed	350
Sequencing Method	Illumina Next Generation Sequencing
Bioinformatics	Use of our trademark TEST (Targeted Enrichment Sequencing for Therapeutics) pipeline for analysis and annotation
Assay Sensitivity	>90%
Assay Specificity	>90%
Sequencing Coverage	1000x
Turnaround Time	4 weeks
Sample Types	Blood in Streck tubes and in EDTA tube or Tumour and Whole Blood in EDTA tube
Sample Requirements	6-8 ml of blood each in 2 'Streck' tubes and 3-4 ml of blood in EDTA tube or FFPE sample and 3-4 ml of blood in EDTA tube
DNA Input Required	300 – 500 ng

Ideal for aggressive/rare cancers and patients with no treatment options

PositiveSelect Ultimate: Testing Process

PositiveSelect™ Ultimate

Sample Required

FFPE sample or 6-8ml of Blood each in 2 Streck tubes & 4ml in EDTA tube

Biomarkers Tested

350 cancer driving genes on tumour and normal sample at 1000x

Bioinformatics

Mapping for treatment options and clinical trials

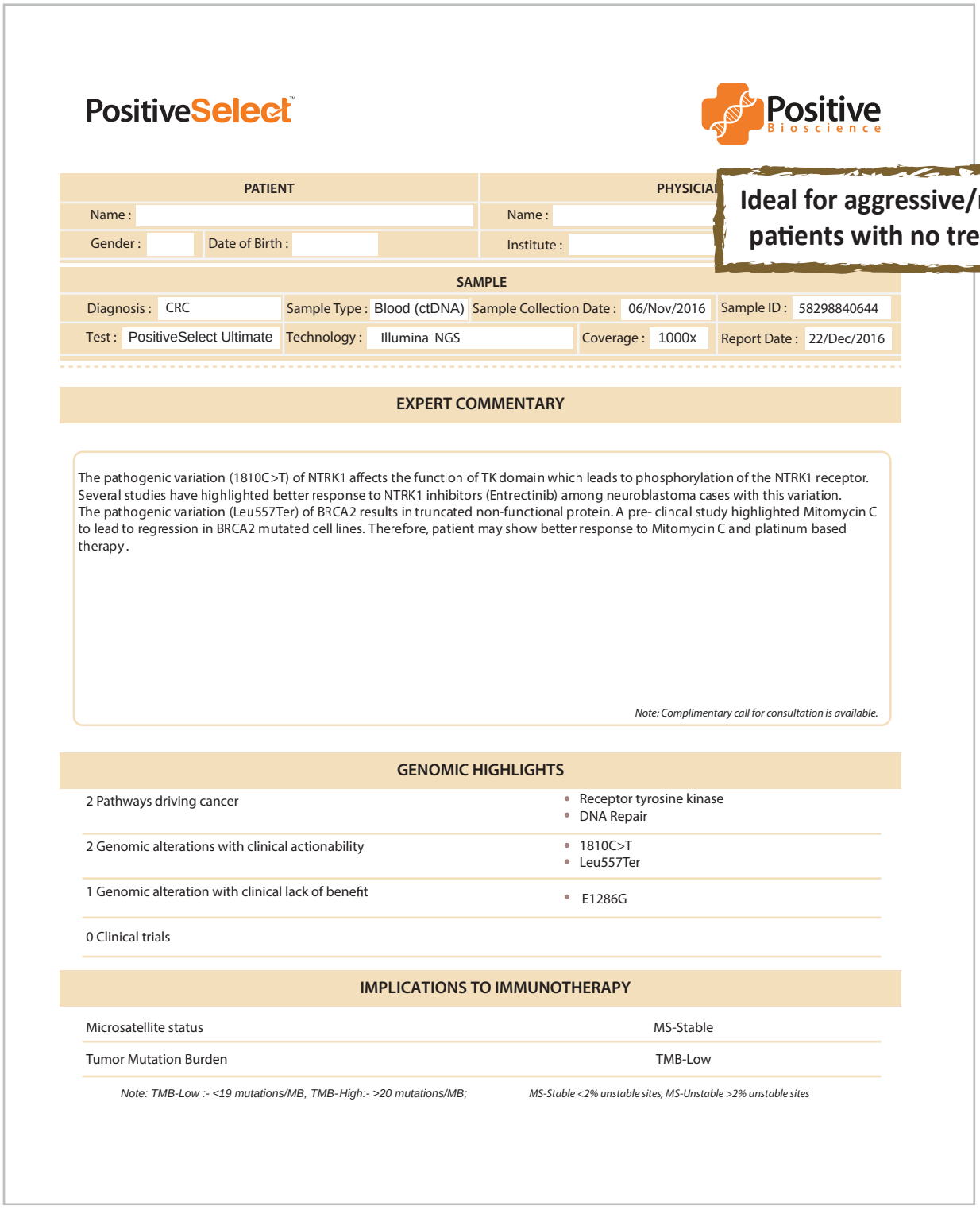
Reporting

Most comprehensive Cancer Genomics report

PositiveSelect™ Ultimate

First Page of Report: Expert Commentary and Summary

- Simple easy to understand report format
- Expert summary, genomic highlights and response to immunotherapy given on first page
- First page helps summarise the report for quick reference
- All important points highlighted on the first page makes the report more meaningful



PositiveSelect™

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PATIENT			PHYSICIAN
Name :			Name :
Gender :		Date of Birth :	Institute :

Ideal for aggressive/rare cancers and patients with no treatment options

SAMPLE			
Diagnosis : CRC	Sample Type : Blood (ctDNA)	Sample Collection Date : 06/Nov/2016	Sample ID : 58298840644
Test : PositiveSelect Ultimate	Technology : Illumina NGS	Coverage : 1000x	Report Date : 22/Dec/2016

EXPERT COMMENTARY

The pathogenic variation (1810C>T) of NTRK1 affects the function of TK domain which leads to phosphorylation of the NTRK1 receptor. Several studies have highlighted better response to NTRK1 inhibitors (Entrectinib) among neuroblastoma cases with this variation.
The pathogenic variation (Leu557Ter) of BRCA2 results in truncated non-functional protein. A pre- clincal study highlighted Mitomycin C to lead to regression in BRCA2 mutated cell lines. Therefore, patient may show better response to Mitomycin C and platinum based therapy.

Note: Complimentary call for consultation is available.

GENOMIC HIGHLIGHTS

2 Pathways driving cancer	• Receptor tyrosine kinase • DNA Repair
2 Genomic alterations with clinical actionability	• 1810C>T • Leu557Ter
1 Genomic alteration with clinical lack of benefit	• E1286G
0 Clinical trials	

IMPLICATIONS TO IMMUNOTHERAPY

Microsatellite status	MS-Stable
Tumor Mutation Burden	TMB-Low

Note: TMB-Low :- <19 mutations/MB, TMB-High:- >20 mutations/MB; MS-Stable <2% unstable sites, MS-Unstable >2% unstable sites

Expert Commentary helps understand the genetic basis of the disease to take more actionable clinical decisions

Genomic Highlights: Summarises the pathways driving cancer in the patient. Once pathway is identified it can be targeted.

Response to Immunotherapy: Summarises status of Tumour Mutation Burden and Microsatellite Instability

PositiveSelect™ Ultimate

✓ Genes Covered in PositiveSelect Ultimate

POINT MUTATIONS (>99% Sensitivity)

ABCB1	BCL2	CDKN1A	DNMT3B	FGF3	IDH2	MAP2K2	MYD88	PDGFRA	RAD51B	SF3B1	TNFRSF14
ABCC1	BCL2L1	CDKN1B	DOT1L	FGF4	IFNGR1	MAP2K4	MYOD1	PDGFRB	RAD51C	SH2D1A	TOP1
ABCC2	BCL2L11	CDKN2A	E2F3	FGFR1	IGF1	MAP3K1	NBN	PDPK1	RAD51D	SLC22A1	TP53
ABCC4	BCL6	CDKN2B	EGFL7	FGFR2	IGF1R	MAP3K13	NCOR1	PGR	RAD52	SMAD2	TP63
ABCG2	BCOR	CDKN2C	EGFR	FGFR3	IGF2	MAPK1	NF1	PIK3C2G	RAD54L	SMAD3	TRAF7
ABL1	BCR	CHEK1	EML4	FGFR4	IKBKE	MAX	NF2	PIK3C3	RAF1	SMAD4	TSC1
AKT1	BLM	CHEK2	EP300	FH	IKZF1	MCL1	NFE2L2	PIK3CA	RARA	SMARCA4	TSC2
AKT2	BRAF	CREBBP	EPCAM	FLCN	IL10	MDC1	NKX2-1	PIK3CB	RASA1	SMARCB1	TSHR
AKT3	BRCA1	CRKL	EPHA3	FLT1	IL7R	MDM2	NKX3-1	PIK3CD	RB1	SMO	TSPY4
ALK	BRCA2	CRLF2	EPHA5	FLT3	INSR	MDM4	NOTCH1	PIK3CG	RECQL4	SOCS1	TTTY23
ALOX12B	BRD4	CSF1R	EPHB1	FLT4	IRF4	MED12	NOTCH2	PIK3R1	REL	SOX17	TYMS
AMELY	BRIP1	CTCF	ERBB2	FOXA1	IRS1	MEF2B	NOTCH3	PIK3R2	RET	SOX2	U2AF1
APC	BTK	CTLA4	ERBB3	FOXL2	IRS2	MEN1	NOTCH4	PIK3R3	RFWD2	SOX9	USP9Y
AR	CARD11	CTNNB1	ERBB4	FOXP1	JAK1	MET	NPM1	PIM1	RHOA	SPOP	VHL
ARAF	CASP8	CUL3	ERCC2	FUBP1	JAK2	MITF	NR1I2	PLK2	RICTOR	SRC	WT1
ARID1A	CBFB	CYP19A1	ERCC3	GATA1	JAK3	MLH1	NRAS	PMAIP1	RIT1	SRY	XIAP
ASXL1	CBL	CYP1A1	ERCC4	GATA2	JUN	MLL	NSD1	PMS1	RNF43	STAG2	XPO1
ASXL2	CCND1	CYP1A2	ERCC5	GATA3	KDM5A	MLL2	NTRK1	PMS2	ROS1	STK11	YAP1
ATM	CCND2	CYP1B1	ERG	GNA11	KDM5C	MLL3	NTRK2	PNRC1	RPS4Y2	STK40	YES1
ATR	CCND3	CYP2A4	ESR1	GNAQ	KDM5D	MPL	NTRK3	POLE	RPS6KA4	SUFU	ZFY
ATRX	CCNE1	CYP2A6	ETV1	GNAS	KDM6A	MSH2	NUTM1	PPP2R1A	RPS6KB2	SYK	
AURKA	CD274	CYP2B6	ETV6	GSK3B	KDR	MSH6	PAK1	PRDM1	RPTOR	TBX3	
AURKB	CD276	CYP2E1	EWSR1	GSTA1	KEAP1	MTHFD1	PAK7	PRKAR1A	RUNX1	TERT	
AXIN1	CD79B	DAXX	EZH2	GSTP1	KIT	MTHFD1L	PALB2	PRKY	RYBP	TET1	
AXIN2	CDC73	DAZ1	FAM123B	HGF	KLF4	MTHFR	PARK2	PTCH1	SDHA	TET2	
AXL	CDH1	DDR2	FANCA	HIF1A	KRAS	MTOR	PARP1	PTEN	SDHAF2	TGFBR1	
B2M	CDK12	DICER1	FANCC	HIST1H3B	LATS1	MUTYH	PAX5	PTPN11	SDHB	TGFBR2	
BAP1	CDK4	DIS3	FAT1	HNF1A	LATS2	MYC	PAX8	RAC1	SDHC	TMEM127	
BARD1	CDK6	DNMT1	FBXW7	HRAS	LMO1	MYCL1	PBRM1	RAD50	SDHD	TMPRSS2	
BBC3	CDK8	DNMT3A	FGF19	IDH1	MAP2K1	MYCN	PDCD1	RAD51	SETD2	TNFAIP3	

FUSIONS (>99% Sensitivity)
ALK
FGFR2
FGFR3
RET
ROS1
NTRK1

AMPLIFICATIONS	
AR	BRAF
CCNE1	CDK4
CCND1	CDK6
CCND2	EGFR
ERBB2	FGFR1
FGFR2	KIT
KRAS	MET
PIK3CA	PDGFRA
MYC	RAF1
PD-L1	

INSERTION/DELETIONS (INDELS) (>95% Sensitivity)		
ATM	GATA3	SMAD4
APC	KIT	STK11
ARID1A	MET	TP53
BRCA1	MLH1	TSC1
BRCA2	MTOR	VHL
CDH1	NF1	
CDKN2A	PDGFRA	
EGFR	PTEN	
ERBB2	RB1	

Ideal for aggressive/rare cancers and patients with no treatment options

PositiveSelect™

PositiveSelect is India's # 1 Cancer Genomics Test

- ✓ Ideal for patients with aggressive cancers, rare cancers and who have exhausted all treatment options
- ✓ PositiveSelect can be done on tissue or blood
- ✓ PositiveSelect is India's # 1 Cancer Genomics test with every 8 out of 10 patients selecting it for deciding on their treatment

Features of Product

Features	PositiveSelect Ultimate
	Most advanced test for advanced cancers
Tests performed	Tumour Sample + Normal Sample
Universal Molecular Diagnostics	✓
Sample Requirement (FFPE/Blood)	✓
Patient profile	Aggressive /rare cancer/patients with no treatment options as per guidelines
Genes	350 + 350
Industry leading coverage	1000x + 1000x
Indels/ Base Substitutions/ Amplifications/ Rearrangements/ Fusions	✓ ✓
Sensitivity	>90%
Specificity	>90%
Pharmacogenomics	✓
Off Label Drugs	✓
True Somatic Mutations	✓
True Germline Mutations	✓
Pathway Analysis	✓
Tumour Mutation Burden	✓
MSI	✓
Driver Mutations	✓ 31% more accurate
Expert Commentary	✓
Expert Consultation	✓

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