

# NeoThetis GENES AND GENETIC ALTERATIONS TESTED PER PANEL

## GENES TESTED

The following table indicates the genes tested per panel.

<b>NeoThetis PAN-CANCER</b> 80 genes	AKT1, ALK, APC, AR, ARAF, ATM, ATRX, BARD1, BRAF, BRCA1, BRCA2, BRIP1, CDH1, CDKN2A, CHEK2, CIC, CTNNB1, DDR2, DICER1, EGFR, ERBB2, ERBB3, ERBB4, ESR1, FBXW7, FGFR1, FGFR2, FGFR3, FLT3, FOXA1, FOXL2, FUBP1, GATA3, GNA11, GNAQ, GNAS, H3F3A, IDH1, IDH2, JAK2, KEAP1, KIT, KRAS, MAP2K1, MAP3K1, MET, MLH1, MRE11A, MSH2, MSH6, MTOR, MYC, MYCN, NBN, NF1, NPM1, NRAS, NTRK1, NTRK2, NTRK3, PALB2, PDGFRA, PIK3CA, PIK3CB, PMS2, POLE, PTEN, RAD51C, RAD51D, RAF1, RB1, RET, ROS1, RUNX1, SMAD4, SPOP, STK11, TERT, TMPRSS2, TP53
<b>NeoThetis BREAST / GYNECOLOGICAL</b> 48 genes	AKT1, ATM, BARD1, BRAF, BRCA1, BRCA2, BRIP1, CHEK2, CTNNB1, DICER1, EGFR, ERBB2, ERBB3, ESR1, FBXW7, FGFR1, FGFR2, FGFR3, FOXA1, FOXL2, GATA3, KIT, KRAS, MAP3K1, MET, MLH1, MRE11A, MSH2, MSH6, MTOR, NBN, NRAS, NTRK1, NTRK2, NTRK3, PALB2, PIK3CA, PIK3CB, PMS2, POLE, PTEN, RAD51C, RAD51D, RAF1, RET, RUNX1, SMAD4, TP53
<b>NeoThetis COLORECTAL</b> 34 genes	AKT1, APC, ATM, BRAF, BRCA1, BRCA2, CTNNB1, EGFR, ERBB2, FBXW7, FGFR1, FGFR2, FGFR3, GNAS, KRAS, MET, MLH1, MSH2, MSH6, MTOR, NRAS, NTRK1, NTRK2, NTRK3, PALB2, PDGFRA, PIK3CA, PIK3CB, PMS2, POLE, PTEN, RAF1, SMAD4, TP53
<b>NeoThetis GASTRIC</b> 23 genes	APC, CDH1, EGFR, ERBB2, FGFR1, FGFR2, FGFR3, KIT, KRAS, MET, MLH1, MSH2, MSH6, NF1, NTRK1, NTRK2, NTRK3, PDGFRA, PIK3CA, PMS2, SMAD4, STK11, TP53
<b>NeoThetis MELANOMA</b> 28 genes	AKT1, ALK, BRAF, CTNNB1, ERBB2, FGFR1, FGFR2, FGFR3, GNA11, GNAQ, KIT, KRAS, MAP2K1, MET, MYC, NF1, NRAS, NTRK1, NTRK2, NTRK3, PDGFRA, PIK3CA, POLE, PTEN, RET, ROS1, STK11, TP53
<b>NeoThetis NSCLC</b> 36 genes	AKT1, ALK, APC, ARAF, ATM, BRAF, BRCA2, CTNNB1, DDR2, EGFR, ERBB2, ERBB3, ERBB4, FBXW7, FGFR1, FGFR2, FGFR3, JAK2, KEAP1, KRAS, MAP2K1, MET, NRAS, NTRK1, NTRK2, NTRK3, PDGFRA, PIK3CA, POLE, PTEN, RAF1, RET, ROS1, SMAD4, STK11, TP53
<b>NeoThetis PANCREATIC</b> 26 genes	ALK, ATM, BRAF, BRCA1, BRCA2, CDKN2A, CHEK2, ERBB2, FBXW7, FGFR1, FGFR2, FGFR3, KRAS, MLH1, MSH2, MSH6, MYC, NTRK1, NTRK2, NTRK3, PALB2, PMS2, ROS1, SMAD4, STK11, TP53
<b>NeoThetis PROSTATE</b> 35 genes	AKT1, APC, AR, ATM, BARD1, BRAF, BRCA1, BRCA2, CHEK2, CTNNB1, ERBB2, FGFR1, FGFR2, FGFR3, FOXA1, MLH1, MSH2, MSH6, MYC, MYCN, NRAS, NTRK1, NTRK2, NTRK3, PALB2, PIK3CA, PIK3CB, PMS2, POLE, PTEN, RAD51C, RAD51D, SPOP, TMPRSS2, TP53

## GENETIC ALTERATIONS TESTED

The following table shows the types of genetic alterations and exon coverage for each gene.

<b>AKT1</b> Exon 4 (NM_001382430.1)	<b>ALK</b> Exons 18-20, 22-23 (NM_004304.5)	<b>APC</b> Full exonic coverage (NM_000038.6)	<b>AR</b> Exons 1-2, 4-8 (NM_000044.6)	<b>ARAF</b> Exon 7 (NM_001654.5)	<b>ATM</b> Full exonic coverage (NM_000051.4)
▲	Selected non-coding regions covered ▲ ■	Selected non-coding regions covered ▲	Selected non-coding regions covered ▲ ●	▲	Selected non-coding regions covered ▲
<b>ATRX</b> Exons 5, 7, 9, 11, 13-14, 17, 20-22, 29-31, 35 (NM_000489.6)	<b>BARD1</b> Full exonic coverage (NM_000465.4)	<b>BRAF</b> Exons 9-12, 15 (NM_004333.6)	<b>BRCA1</b> Full exonic coverage (NM_007294.4)	<b>BRCA2</b> Full exonic coverage (NM_000059.4)	<b>BRIP1</b> Full exonic coverage (NM_032043.3)
▲	Selected non-coding regions covered ▲	Selected non-coding regions covered ▲ ■	Selected non-coding regions covered ▲	Selected non-coding regions covered ▲	Selected non-coding regions covered ▲
<b>CDH1</b> Full exonic coverage (NM_004360.5)	<b>CDKN2A</b> Full exonic coverage (NM_000077.5) (NM_058195.4)	<b>CHEK2</b> Exons 1-10 (NM_007194.4)	<b>CIC</b> Exons 19, 21 (NM_0015125.4)	<b>CTNNB1</b> Exon 3 (NM_001904.4)	<b>DDR2</b> Exon 17 (NM_006182.4)
Selected non-coding regions covered ▲	Selected non-coding regions covered ●	Selected non-coding regions covered ▲	▲	▲	▲
<b>DICER1</b> Exons 2-26 (NM_177438.3)	<b>EGFR</b> Exons 2-5, 8-10, 12, 14-15, 17-24, 27-28 (NM_005228.5)	<b>ERBB2</b> Exons 3-4, 7-8, 10, 19-24 (NM_004448.4)	<b>ERBB3</b> Exons 3, 6-11, 20-21 (NM_001982.4)	<b>ERBB4</b> Exons 7, 15, 19, 23 (NM_005235.3)	<b>ESR1</b> Exons 2-5, 7-8 (NM_000125.4)
▲	▲ ●	Selected non-coding regions covered ▲ ●	▲	▲	Selected non-coding regions covered ▲ ●
<b>FBXW7</b> Exons 6-7, 9-14 (NM_001349798.2)	<b>FGFR1</b> Exon 5-9, 12-13, 16, 18 (NM_023110.3)	<b>FGFR2</b> Exons 2-9, 11, 13-18 (NM_000141.5)	<b>FGFR3</b> Exons 4, 7-8, 11-12, 16-18 (NM_000142.5)	<b>FLT3</b> Exon 20 (NM_004119.3)	<b>FOXA1</b> Exon 2 (NM_004496.5)
▲	Selected non-coding regions covered ●	Selected non-coding regions covered ●	Selected non-coding regions covered ● ■	▲	▲
<b>FOXL2</b> Exon 1 (NM_023067.4)	<b>FUBP1</b> Exon 14 (NM_003902.5)	<b>GATA3</b> Exons 5-6 (NM_001002295.2)	<b>GNA11</b> Exons 4-5 (NM_002067.5)	<b>GNAQ</b> Exons 5, 7 (NM_002072.5)	<b>GNAS</b> Exon 8 (NM_000516.7)
▲	▲	▲	▲	▲	▲
<b>H3F3A</b> Exon 2 (NM_002107.7)	<b>IDH1</b> Exon 4 (NM_005896.4)	<b>IDH2</b> Exon 4 (NM_002168.4)	<b>JAK2</b> Exon 14 (NM_004972.4)	<b>KEAP1</b> Exons 2-4 (NM_203500.2)	<b>KIT</b> Exons 2-21 (NM_000222.3)
▲	▲	▲	▲	▲	▲ ●
<b>KRAS</b> Exons 2-4 (NM_004985.5)	<b>MAP2K1</b> Exons 2-3, 6-7 (NM_002755.4)	<b>MAP3K1</b> Exons 5-6, 16-18 (NM_005921.2)	<b>MET</b> Exons 2-21 (NM_000245.4)	<b>MLH1</b> Full exonic coverage (NM_000249.4)	<b>MRE11A</b> Exons 1-18, 20 (NM_005591.4)
▲ ●	▲	▲	▲ ●	Selected non-coding regions covered ▲	Selected non-coding regions covered ▲
<b>MSH2</b> Full exonic coverage (NM_000251.3)	<b>MSH6</b> Full exonic coverage (NM_000179.3)	<b>MTOR</b> Exons 43, 47, 53, 56 (NM_004958.4)	<b>MYC</b> Exons 1, 3 (NM_002467.6)	<b>MYCN</b> Exon 3 (NM_005378.6)	<b>NBN</b> Full exonic coverage (NM_002485.5)
Selected non-coding regions covered ▲	▲	▲	●	●	▲
<b>NF1</b> Exons 6, 12, 17-18, 21-22, 25, 27-28, 34, 37, 40, 44-47, 49, 53 (NM_001042492.3)	<b>NPM1</b> Exon 11 (NM_002520.7)	<b>NRAS</b> Exons 2-4 (NM_002524.5)	<b>NTRK1</b> Exons 7-15 (NM_002524.4)	<b>NTRK2</b> Exons 10-11, 13-14 (NM_006180.6)	<b>NTRK3</b> Exons 14-15 (NM_001012338.3)
▲	▲	▲	Selected non-coding regions covered ▲ ■	Selected non-coding regions covered ■	Selected non-coding regions covered ■
<b>PALB2</b> Full exonic coverage (NM_024675.4)	<b>PDGFRA</b> Exon 18 (NM_006206.6)	<b>PIK3CA</b> Exons 2-6, 8, 10, 15-17, 19-21 (NM_006218.4)	<b>PIK3CB</b> Exons 13, 15, 24 (NM_006219.3)	<b>PMS2</b> Exons 6-8, 10 (NM_000535.7)	<b>POLE</b> Exons 2-49 (NM_006231.4)
Selected non-coding regions covered ▲	▲	▲ ●	▲	▲	Selected non-coding regions covered ▲
<b>PTEN</b> Full exonic coverage (NM_000314.8)	<b>RAD51C</b> Full exonic coverage (NM_058216.3)	<b>RAD51D</b> Full exonic coverage (NM_002878.4)	<b>RAF1</b> Exon 7 (NM_002880.4)	<b>RB1</b> Exons 1-13, 16-27 (NM_000321.3)	<b>RET</b> Full exonic coverage (NM_020975.6)
Selected non-coding regions covered ▲	Selected non-coding regions covered ▲	Selected non-coding regions covered ▲	▲	Selected non-coding regions covered ▲	Selected non-coding regions covered ▲ ■
<b>ROS1</b> Exons 32-37 (NM_001378902.1)	<b>RUNX1</b> Exon 5 (NM_001754.5)	<b>SMAD4</b> Full exonic coverage (NM_005359.6)	<b>SPOP</b> Exons 4-5 (NM_001007228.2)	<b>STK11</b> Full exonic coverage (NM_000455.5)	<b>TERT</b> Exon 1 (NM_198253.3)
Selected non-coding regions covered ■	▲	Selected non-coding regions covered ▲	▲	Selected non-coding regions covered ▲	Selected non-coding regions covered ▲
<b>TMPRSS2</b> Exons 2-4 (NM_005656.4)	<b>TP53</b> Full exonic coverage (NM_000546.6)				
Selected non-coding regions covered ■	Selected non-coding regions covered ▲				

Selected non-coding regions which are covered by the test are indicated above.

NT\_PNC\_ET\_3

▲ Single Nucleotide Variant / Indels

● Copy Number Alterations

■ Rearrangements