# TRUNGS® Solid Tumor Panel

**(A comprehensive Solid Tumor Assay detecting SNVs, Indels, CNVs and RNA Fusions in 35 Marker Genes and Hotspots in 6 PGx Genes)**

truNGS®

**Comprehensive** — **Bioinformatics Support** — **Platform Agnostic**

**TRUNGS® Solid Tumor Panel** is designed to detect SNVs, Indels, CNVs and RNA fusions in 35 marker genes and hotspots in 6 pharmocogenomics genes associated with solid tumors such as lung, gastro-intestinal/colorectal, breast, liver and ovarian tumors.

## *Gene Panel*

*ALK, BRAF, EGFR, ERBB2, ERBB3, ESR1, FGFR3, HRAS, IDH1, IDH2, KIT, KRAS, MET, MLH1, MSH2, MSH6, NRAS, NTRK1, NTRK2, NTRK3, PDGFRA, PIK3CA, PMS2, POLD1, POLE, PTEN, RET, ROS1, SMAD4, TP53, CTNNB1, TERT, H3F3A, H3F3B, DICER1*

## *Specifications*

**Starting Material:**
50-100 ng of DNA, 300-600 ng RNA
**Sample source:**
FFPE, Fresh-Frozen Tissue
**Target region for DNA Panel:**
117 kb
**Target region for RNA Panel:**
74 kb
**Library preparation time:**
1.5 days
**Bioinformatics Analysis:**
1.5 hrs (from FASTQ to report)

## *Panel Design*

| | | | | | |
|---|---|---|---|---|---|
| ALK ♦●■ | BRAF ♦●■ | CTNNB1 ♦ | DICER1 ♦ | EGFR ♦●■ | ERBB2 ♦●■ |
| ERBB3 ♦ | ESR1 ♦ | FGFR3 ● | H3F3A ♦ | H3F3B ♦ | HRAS ♦ |
| IDH1 ♦ | IDH2 ♦ | KIT ♦ | KRAS ♦■ | MET ♦●■ | MLH1 ♦ |
| MSH2 ♦ | MSH6 ♦ | NRAS ♦■ | NTRK1 ● | NTRK2 ● | NTRK3 ● |
| PDGFRA ♦ | PIK3CA ♦●■ | PMS2 ♦ | POLD1 ♦ | POLE ♦ | PTEN ♦■ |
| RET ♦●■ | ROS1 ♦● | SMAD4 ♦ | TERT ♦■ | TP53 ♦ | |

♦ **SNVs/Indels** ● **Fusions** ■ **CNV**

### PGx Hotspot mutations

UGT1A1: (rs4148323) | CYP2D6: (rs5030655) | MTHFR: (rs1801133)

TPMT: (rs1142345, rs1800460) | CYP2C9: (rs1799853, rs1057910)

DPYD: (rs3918290, rs67376798, rs55886062, rs115232898, rs75017182)

**TRUNGS® Solid Tumor Panel** is carefully curated panel of 35 genes with Clinical Actionability (AACR) mutations especially relevant to lung and colorectal cancers.

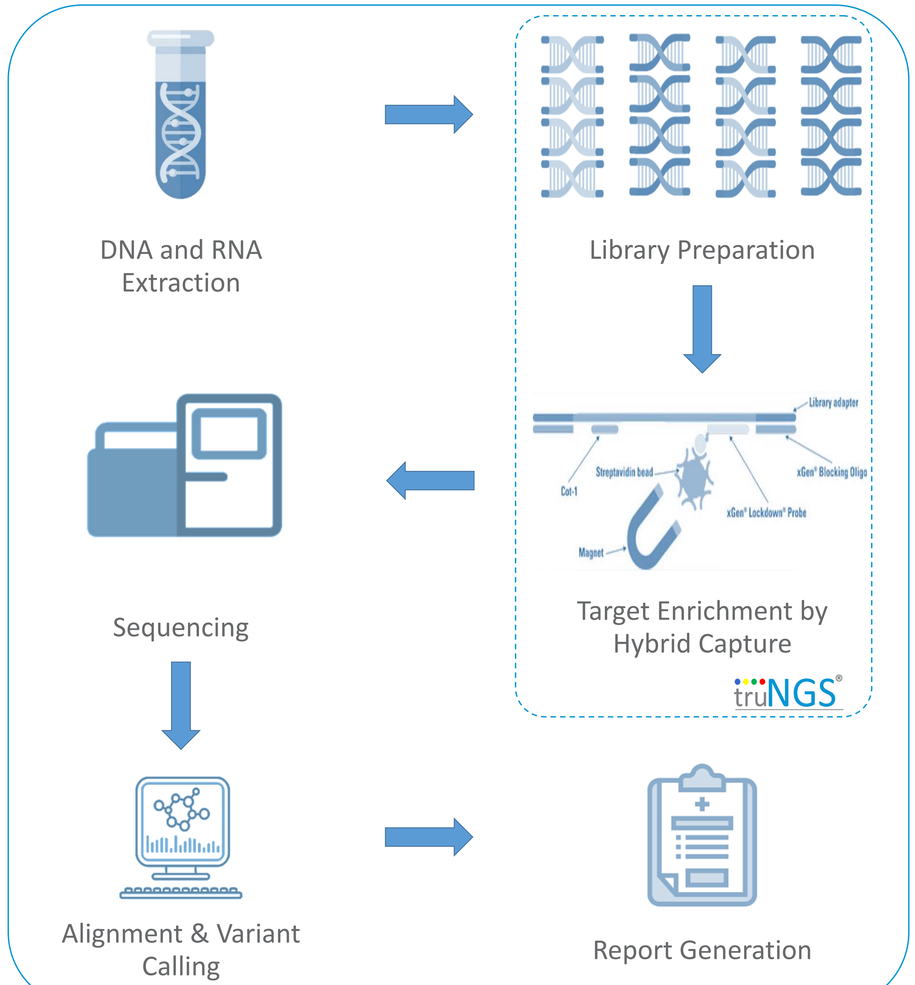
- Designed as per NCCN and ESMO Guidelines
- Detects SNV/INDELS, CNV and RNA Fusions
- Uses of Hybrid Capture technology to ensure full coverage of all exonic regions of each gene and allows for the discovery of novel mutations /alterations
- Includes hotspot for six clinically relevant pharmacogenomics genes: *DPYD, UGT1A1, CYP2D6, MTHFR, TPMT and CYP2C9*
- LoD as low as 3.5% (calculated for SNV using reference material at 500X)

| | | | |
|---|---|---|---|
| Sensitivity | 100% | Accuracy | 100% |
| Reproducibility | 99.99 | Precision | 100% |
| Repeatability | 100% | Coverage uniformity | 98% |

## *Sequencing and Sample Multiplexing*

| Illumina Flowcell | No. of Samples Recommended/Run |
|---|---|
| iSeq 100 | 8 |
| MiSeq Reagent Kit v2 | 32 |
| MiSeq Reagent Kit v2 Micro | 8 |
| MiniSeq System Mid-Output Kit | 14 |

## *NGS Workflow*

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## *Clinical Actionability*

| Disease | Gene | Drug(s) | Level of Evidence |
|---|---|---|---|
| Non-Small Cell Lung Cancer | ALK | Alectinib<br>Ceritinib<br>Crizotinib | Level 1 |
| | EGFR | Afatinib<br>Afatnib<br>Erlotinib<br>Gefitinib<br>Gefitnib<br>Osimertinib | Level 1 |
| | ROS1 | Crizotinib | Level 1 |
| | BRAF | Dabrafenib<br>Dabrafenib+Trametinib<br>Vemurafenib | Level 2A |
| | MET | Crizotinib | Level 2A |
| | RET | Cabozantinib | Level 2A |
| | ALK | Brigatinib | Level 3A |
| | EGFR | Dacomitinib | Level 3A |
| | ERBB2 | Lapatinib | Level 3A |
| | MET | Cabozatinib<br>Capmatinib<br>Crizotinib | Level 3A |
| | RET | Vandetanib | Level 3A |
| | ROS1 | Cabozantinib | Level 3A |
| Breast Cancer | ERBB2 | Ado-trastuzumab emtansine<br>Lapatinib<br>Pertuzumab+Trastuzumab<br>Trastuzumab | Level 1 |
| | ERBB2 | Neratinib<br>Trastuzumab+Lapatinib | Level 3A |
| | PIK3CA | Alpelisib | Level 3A |
| Colorectal Cancer | KRAS | Cetuximab<br>Panitumumab<br>Regorafenib | Level 1 |
| | BRAF | Panitumumab+Vemurafenib | Level 3A |

| Disease | Gene | Drug(s) | Level of Evidence |
|---|---|---|---|
| Gastrointestinal Stromal Tumor | KIT | Imatinib<br>Regorafenib<br>Sunitinib | Level 1 |
| | KIT | Dasatinib<br>Nilotinib<br>Sorafenib | Level 2A |
| | PDGFRA | Dasatinib<br>Imatinib | Level 2A |
| Melanoma | BRAF | Cobimetinib+Vemurafenib<br>Dabrafenib<br>Dabrafenib+Trametinib<br>Trametinib<br>Vemurafenib | Level 1 |
| | KIT | Imatinib | Level 2A |
| | BRAF | Trametinib | Level 3A |
| | NRAS | Binimetinib<br>Binimetinib+ribociclib | Level 3A |
| Salivary Gland Cancer | NTRK1 | Entrectinib | Level 3A |
| | NTRK2 | Entrectinib<br>LOXO-101 | Level 3A |
| | NTRK3 | Entrectinib<br>LOXO-101 | Level 3A |
| Multiple Cancers | ALK | Ceritinib<br>Crizotinib | Level 2A |
| | BRAF | Vemurafenib | Level 2A |
| | BRAF | Paclitaxel+Selumetinib | Level 3A |
| | ERBB2 | Trastuzumab | Level 1 |
| | FGFR3 | JNJ-42756493 | Level 3A |
| | IDH1 | AG-120 | Level 3A |
| | KIT | Sunitinib<br>Sorafenib | Level 2A |
| | NRAS | Selumetinib+Radioiodine | Level 3A |
| | NTRK1 | LOXO-101 | Level 3A |

## *Bioinformatics Analysis*

Illumina Sequencing

FASTQ

FastQ Upload (CLI or Portal)

Alignment & Variant Calling

Report Generation

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