



Ion AmpliSeq™ Colon and Lung Cancer Panel

A community panel designed and verified with the OncoNetwork Consortium

Designed with leading researchers from the OncoNetwork Consortium, the **Ion AmpliSeq™ Colon and Lung Cancer Panel** contains primer pairs to analyze hotspot and targeted regions of 22 genes implicated in colon and lung cancers. The OncoNetwork Consortium comprises eight cancer research groups from different translational research institutions with many years of experience in adopting the latest DNA sequencing and genotyping technologies to pioneer colon and lung cancer therapy research. Collaborating with Life Technologies, the consortium combined the potential of Ion AmpliSeq™ technology and the affordability of Ion semiconductor sequencing to develop a screening solution that meets the following goals:

- **Selective gene content**—targets regions of a comprehensive set of genes implicated in colon and lung cancer, including known hotspot regions
- **Low input DNA requirement**—provides FFPE sample compatibility, requiring as little as 10 ng of DNA, which is critical for cancer research
- **Adoptable by any research lab**—accurate, economical, and easy-to-implement end-to-end solution that can be widely adopted

Performance verification of the Ion AmpliSeq™ Colon and Lung Cancer Panel was completed with the OncoNetwork Consortium using 155 unique FFPE samples—including control samples and samples previously screened using orthogonal technologies.

| Ion AmpliSeq™ Colon and Lung Panel | |
|------------------------------------|---|
| Targets | Hotspots and targeted regions (totaling 14.6 kb) in 22 genes implicated in colon and lung cancer |
| Genes | <i>KRAS, EGFR, BRAF, PIK3CA, AKT1, ERBB2, PTEN, NRAS, STK11, MAP2K1, ALK, DDR2, CTNNB1, MET, TP53, SMAD4, FBXW7, FGFR3, NOTCH1, ERBB4, FGFR1, FGFR2</i> |
| Amplicon length | 90 amplicons with an average length of 162 bp (ideal for FFPE samples) |
| Primer pool | 90 pairs of primers in a single pool |
| Input DNA required | 10 ng |
| Recommended multiplexing | 8 samples per Ion 316™ Chip with at least 500x sequencing coverage |

“The advantage of the Ion AmpliSeq™ technology is that you can get results on tens of genes by using 10 ng of DNA from FFPE tissue.”

Dr. Nicola Normanno, MD, Chief

*Laboratory of Pharmacogenomics
 Centro Ricerche Oncologiche
 Mercogliano, Avellino*

OncoNetwork Consortium members include these researchers:

Aldo Scarpa¹
 Ludovic Lacroix²
 Marjolijn Ligtenberg³
 Bastiaan Tops³
 Christoph Noppen⁴
 Henriette Kurth⁴
 Nicola Normanno⁵
 Pierre Laurent-Puig⁶
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⁷Warwick University Medical School, United Kingdom

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Panel content and primers designed for high utility

The OncoNetwork Consortium selected the genomic content for the panel based on universal interest and clinical research relevance. The entire panel is contained in a single pool of primers and is designed to cover the regions of interest with performance of at least 500x sequence coverage for 8 samples on one Ion 316™ Chip. The primer pool was designed, assembled, and optimized by Life Technologies using the Ion AmpliSeq™ Designer Pipeline and requires only 10 ng of input DNA, accommodating the scarcity that is typical of FFPE starting material.

Tested and verified with the consortium using 155 unique samples

To evaluate the quality of the panel, the consortium labs performed three phases of testing using 155 samples that included FFPE colon and lung cancer control samples and previously characterized samples. In phase 1, all labs tested the same 5 control samples. In phase 2, each lab selected 10 samples previously characterized using orthogonal platforms, and these were blindly tested by another lab from the consortium. In phase 3, each lab selected and tested 15 of their own samples. All of the resulting sequences were analyzed using Ion Reporter™ Software. Based on those results, Life Technologies further optimized the panel and tested the panel using a variety of FFPE samples; this dataset is available for download in the dataset section of the Ion Community at ioncommunity.lifetechnologies.com.

With this verification process, the consortium members demonstrated that detection accuracy of sequence variants using the Ion AmpliSeq™ Colon and Lung Cancer Panel was equal to or better than that obtained using existing methodologies. This panel, combined with the Ion PGM™ System, enables easy, rapid, and economical multigene screening of colon and lung cancer mutations using just 10 ng of DNA per

sample. See what consortium members say about this panel in a video posted at lifetechnologies.com/ampliseqcommunity.

By choosing the Ion AmpliSeq™ Colon and Lung Cancer Panel, many labs have access to rapid deployment of a predesigned, preverified colon and lung cancer mutation screening solution.

“To have a well-tested panel available commercially is tremendously beneficial—now every laboratory can afford performing comprehensive mutational screening using a gene panel.”

Orla Sheils, Ph.D.

Professor of Molecular Pathology

Trinity College Dublin, Ireland

Expanded offering of Ion AmpliSeq™ Panels for your targeted DNA and RNA sequencing

Ion AmpliSeq™ technology delivers simple and fast library construction for affordable targeted sequencing of specific human or mouse genes or genomic regions. Based on ultrahigh-multiplex PCR, Ion AmpliSeq™ DNA and RNA panels comprise target-specific primers for regions of interest, enabling routine sequencing of FFPE samples on Ion PGM™ systems. With a wide variety of preselected and community-designed panels and custom options, Ion AmpliSeq™ technology provides a flexible, customizable solution to meet your specific research needs.

| | Human DNA | Human RNA | Mouse DNA |
|---------------------|-----------|-----------|-----------|
| Custom panels | ✓ | ✓ | ✓ |
| Ready-to-use panels | ✓ | ✓ | |
| Community panels | ✓ | | |

Ordering information

| Product | Cat. No. |
|---|-------------------------------------|
| Ion AmpliSeq™ Colon and Lung Panel design is available for review and order at ampliseq.com | |
| Ion AmpliSeq™ Library Kit 2.0 | 4475345, 4478378, 4478379 |
| Ion Xpress™ Barcode Adapters Kits | 4474517, 4471250, 4474009, 4474518, |
| AcroMetrix® KRAS FFPE Process Controls | 950450 |
| Ion PGM™ 200 Sequencing Kit and Template Kit | 4474004, 4480285 |
| Ion 316™ Chip (4 pack) | 4466616 |

Developed with the community, available to the community

Learn more at lifetechnologies.com/ampliseqcommunity

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