

# ER AR PI3K MAPK

The Philips Pathway Activity Profiling OncoSignal Test for measuring ER, AR, PI3K and MAPK pathway activity is now available for research use in your molecular biology laboratory. The OncoSignal Test is performed using an RT-qPCR testing plate to measure mRNA levels of selected pathway target genes and includes access to a secure cloud-based environment for calculation and reporting of pathway activity scores.

OncoSignal is based on a unique knowledge-based approach and helps users gain insight into underlying tumor driving cell signaling pathways. The OncoSignal Test quantitatively measures the activity of the hormonal estrogen receptor (ER) and androgen receptor (AR) pathways, as well as the activity of PI3K and MAPK growth factor signal transduction pathways simultaneously in a single sample, using RNA from FFPE tissue of human origin.

## OncoSignal Testing Plates

mRNA levels transcribed from target genes regulated by the pathway transcription factor are measured by means of the OncoSignal Testing Plates. The 96-well PCR testing plates are packaged in a box of six, for testing of six samples. Each testing plate contains carefully designed and optimized primers and probes for reliable detection of mRNA levels of the pre-selected signaling pathway target genes. Upon adding the sample RNA and one-step RT-qPCR mix to the testing plate, the test is run on a thermocycler under a specified PCR cycling program. Detailed protocols are provided in the Instructions for Use.



## OncoSignal Report

PCR gene expression data are translated via a computational model into quantitative pathway activity scores. Each PCR data file uploaded in the cloud-based Philips ISPM OncoSignal portal undergoes a thorough quality check (QC) (e.g. controls for the quantity and quality of the RNA, and detection of correct plate filling), to ensure high-quality results. The OncoSignal Report presents an overview of the pathway activity scores per sample on a scale of 0-100 with respective 95% confidence intervals. The report provides insights into the tumor driving pathways in the samples tested and enables a direct comparison of pathway activities between samples.

| Sample Information |                     |             |    | Flag   | Pathway activity score (CI=95% confidence interval) |          |          |    |          |          |                     |          |          |                     |          |          |
|--------------------|---------------------|-------------|----|--------|---|----------|----------|----|----------|----------|---------------------|----------|----------|---------------------|----------|----------|
| Sample ID          | Tissue type         | Tumor cell% | QC |        | ER  | CI lower | CI upper | AR | CI lower | CI upper | PI3K <sup>(1)</sup> | CI lower | CI upper | MAPK <sup>(2)</sup> | CI lower | CI upper |
| 102369             | pre-treatment       | Breast      | 60 | Passed | 57  | 55       | 61       | 20 | 18       | 22       | 75                  | 70       | 80       | 11                  | 10       | 14       |
| 102370             | post-treatment (AI) | Breast      | 65 | Passed | 23  | 21       | 25       | 26 | 24       | 28       | 82                  | 79       | 85       | 11                  | 9        | 14       |
| 102371             | pre-treatment       | Breast      | 50 | Passed | 85  | 83       | 88       | 36 | 30       | 42       | 38                  | 35       | 41       | 43                  | 40       | 45       |
| 102372             | post-treatment (AI) | Breast      | 80 | Passed | 16  | 13       | 18       | 35 | 33       | 38       | 32                  | 30       | 33       | 47                  | 40       | 44       |
| 102373             | pre-treatment       | Breast      | 80 | Passed | 28  | 26       | 30       | 17 | 15       | 18       | 17                  | 15       | 18       | 55                  | 53       | 30       |
| 102374             | post-treatment (AI) | Breast      | 80 | Passed | 26  | 24       | 28       | 11 | 10       | 13       | 19                  | 18       | 21       | 50                  | 44       | 56       |

<sup>(1)</sup> The PI3K score is derived from the inverse activity reading of the FOXO transcription factor. Please be aware that oxidative stress can induce FOXO activity, which may inadvertently lead to a low PI3K activity score. <sup>(2)</sup> The MAPK score is derived from the activity reading of the AP-1 transcription factor.

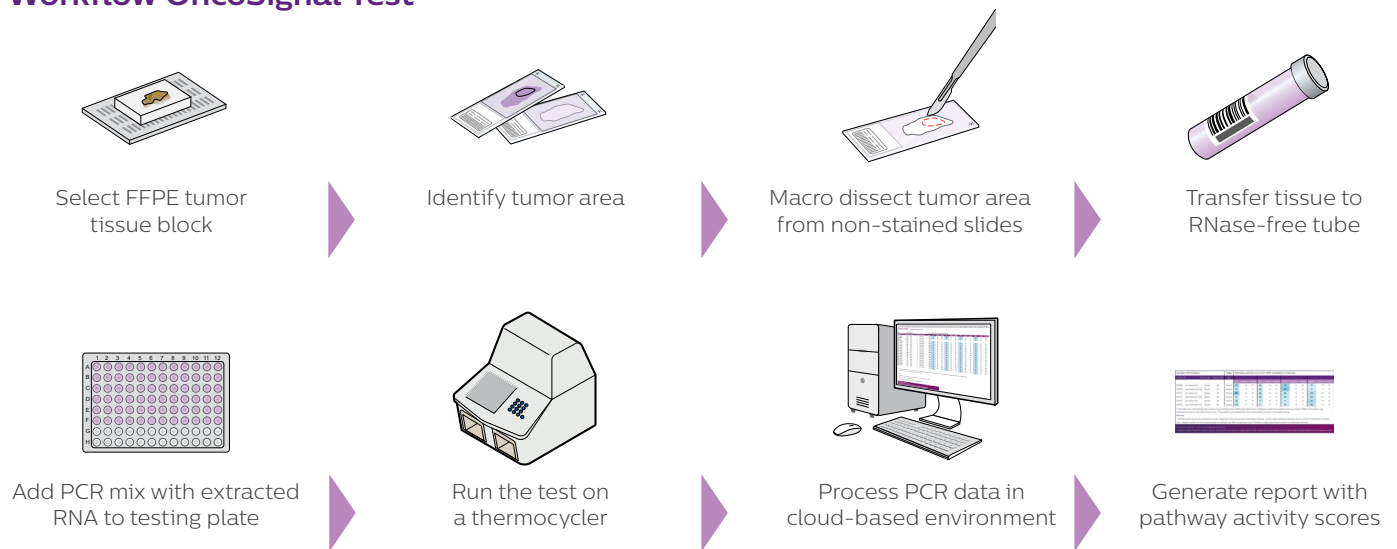
#### Remarks:

- Pathway activity scores are presented on a scale ranging from 0 (lowest activity) to 100 (highest activity). - A color scale is applied on pathway activity scores for visualization purposes only. - Please be aware that the biological range per pathway may differ among tissue types. Therefore, a single result always requires an established reference.

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## Workflow OncoSignal Test



### Features

- AR, ER, PI3K and MAPK pathway activity
- Highly reproducible quantitative pathway activity scores on a scale of 0-100 with confidence intervals
- Translation of RT-qPCR data into pathway activity scores in a secure cloud-based environment
- Report providing pathway activity profile per sample
- Easy to implement in molecular biology laboratory
- Requires only 25 mm<sup>3</sup> FFPE tissue per sample
- Fast turn-around-time (105 minutes)

### Box with OncoSignal Testing Plates contains

- Six OncoSignal Pathway Activity Profiling Testing Plates (96-wells plates with pre-designed and spotted qPCR assays)
- Six (+one spare) clear, adhesive PCR plate foils
- Quick Reference Guide

### Additional reagents and equipment needed

- RNeasy FFPE Kit (Qiagen, cat. no. 73504)
- SuperScript III Platinum One-Step qRT-PCR Kit (ThermoFisher Scientific, cat.no. 11732088)
- Bio-Rad CFX96 (Touch) Real-Time PCR Detection System
- Plate centrifuge

### Applications

For information about example experimental designs, and interpretation of the OncoSignal Report, please request the application note.

### Order information

Please send your request to [oncosignal@philips.com](mailto:oncosignal@philips.com).

More information about the OncoSignal Pathway Activity Profiling Test can be found at [www.philips.com/oncosignal-test](http://www.philips.com/oncosignal-test)

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