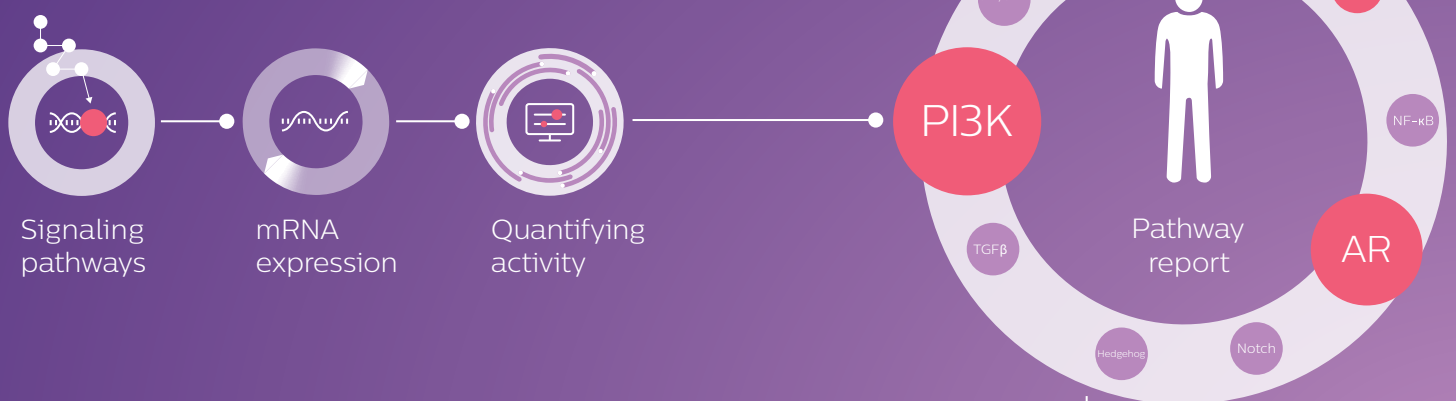


Tumor molecular phenotyping

OncoSignal Pathway Activity Profiling

mRNA-based signaling pathway analysis



Philips Pathway Activity Profiling OncoSignal helps to gain insight into underlying tumor driving cell signaling pathways. mRNA levels transcribed from target genes directly related to the pathway transcription factor are measured and translated via a computational model into quantitative pathway activity scores. The activity scores are reported on a scale from 0 to 100, enabling direct comparison of pathway activity levels between samples.

Applications

OncoSignal Pathway Activity Profiling can be used for:

- Molecular phenotypic characterization
- Model selection for optimal study design
- Determination of drug-pathway interaction
- Predicting and monitoring drug response*
- Patient stratification for clinical trials

Tests are conducted using RNA extracted from fresh frozen (FF) or formalin-fixed paraffin embedded (FFPE) tissue samples, cell cultures or PDX models. For examples on the use of Pathway Activity Profiling, please request the application note.



Drug response monitoring*



Stratification for clinical trials



Cancer research

OncoSignal pathway activity profiling report

Sample Information				Flag	Pathway activity score (CI=95% confidence interval)											
Sample ID	Tissue type	Tumor cell%	QC		ER			AR			PI3K ¹			MAPK ²		
					ER	CI lower	CI upper	AR	CI lower	CI upper	PI3K ¹	CI lower	CI upper	MAPK ²	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

⁽¹⁾ 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.

⁽²⁾ 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.

OncoSignal products and services

Pathway Activity Profiling Service

- ER, AR, PI3K, MAPK, Hedgehog, TGFβ, Notch pathways
- Compatible with FFPE tissue samples and RNA extracted from cell lines and tissue of human origin
- Extensive quality checks on samples, laboratory process and results
- Result overview in dedicated Pathway Activity Profiling Report
- ISO13485 certified

Pathway Activity Profiling Test

- ER, AR, PI3K, MAPK pathways
- Compatible with FFPE samples from human origin
- qPCR testing plates including quality checks on sample input and correct plate filling
- Result overview in dedicated Pathway Activity Profiling Report
- Allows for in-house testing using off-the-shelf laboratory equipment

Pathway Activity Profiling Data Services

- ER, AR, PI3K, MAPK, Hedgehog, TGFβ, Notch, Wnt pathways
- Compatible with Affymetrix Microarray gene expression data and RNA sequencing data
- Extensive quality checks on samples and results
- Result overview in dedicated Pathway Activity Profiling Report

Publications

- 'ER and PI3K Pathway Activity in Primary ER Positive Breast Cancer Is Associated with Progression-Free Survival of Metastatic Patients under First-Line Tamoxifen'; *Cancers*, Mar 2020
- 'Prediction of clinical benefit from androgen deprivation therapy in salivary duct carcinoma patients'; *International Journal of Cancer*, Dec 2019
- 'Estrogen Receptor pathway activity score to predict clinical response or resistance to neo-adjuvant endocrine therapy in primary breast cancer'; *Molecular Cancer Therapeutics*, Nov 2019

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