

#### OncoSignal

# Validation of signaling pathway models

#### ER pathway



preast cancer cell line is asso reduction of ER activity.



by estrogen. ER pathway activity inhibited by fulvestrant.

by estrogen. ER pathway activity inhibited by tamoxifen.





### **AR pathway**



LuCaP35 prostate tumor implanted in mice. Androgen deprivation induced by mice compared to control mice.



AR pathway activity increased in in-vitro LNCaP cell line upon exposure to dihydrotestosterone (DHT) (left) and decreased in castration. Lower AR activity in castrated presence of anti-androgen bicalutamide (right).



Philips OncoSignal qPCR kits are in development, not available for sale. OncoSignal pathway analysis is already available through our dedicated service lab for Research Purposes Only. Not for use in diagnostic procedures.

reast cancer cells from ER negative cell lines BT20, HCC1806) and the ER positive cell line MCF / transplanted into the mammary fatpad (-FP) or intraductal (MIND) in the mouse. High ER pathway activity score only for MCF7, irrespective of transplanted location.



 $PIP_2 PIP_3 \rightarrow PIP_3 \rightarrow mS$ pAKT mTORC2 FOXO – PI3K regulated target gene expression FOXO – Oxidative stress regulate target gene expression Translation machinery more efficient (Also for other protein pathways) 

Growth factor + receptor

pathway activity in breast cancer cell lines representing triple-negative (BT20), ER by knocking down HER2 expression. positive (MCF7), and HER2 positive breast cancer (MDA-MB-453).

**PI3K/FOXO** pathway



AR pathway activity in prostate cancer is high in androgen dependent growth, and low in castrate induced regression and castrate resistant regrowth.



# Wnt pathway



Wnt inhibitor decreases Wnt pathway activity in colon cancer PDX mouse model. Colon cancer PDX mice treated with antiRSPO3 (Wnt inhibitor) and/or chemotherapy (irinotecan).





Dathway in preast cancer cell line (BI-4/4)



pathway activity in HER2-overexpressing cell lines HB4a (luminal normal mammary cell line), C5.2 (HB4a transfected with HER2), and SKBR3 (HER2 amplification).



-R. MEK. and PI3K inhibitors reduce PI3K pathwa activity in a lung cancer cell line with mutated EGF Lung cancer cell line HCC82/ treated with vehicle (DMSO), erlotinib (EGFR inhibitor), AZD6244 (selumetinib, inhibitor of MEK1/MEK2) or BEZ235 (dual inhibitor of PI3K/mTOR).





High Wnt pathway activity in colon adenoma and carcinoma.



High Wnt pathway activity in medulloblastoma with an activating beta-catenin mutation. Two independent data sets.



#### HH pathway

Left: Calibration on patient set with basal cell carcinoma, versus healthy skin.

Right: Validation on independent patient set with basal cell carcinoma, versus healthy skin.

0.018

n = 64

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Tissue 🛱 Normal skin 븜 Basal cell carcinoma \_\_\_\_

measured in the Sonic Hedgehog (SHH) subgroup of patients with medulloblastoma.



## **TGF-ß pathway**



treatment with dexamethasone, samples from five independent donors

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Treatment ᄇ Control ᄇ TGF-ß 24h Dex control 🛑 Dex TGF-ß 3h

📙 Dex TGF-ß 24h

Immortalized ovarian surface epithelial epithelial cells incubated with TGF-ß-1.



TGF-ß induces TGF-ß pathway activity in TGF-ß induces TGF-ß pathway activity in TGF-ß induces TGF-ß pathway activity in an ER negative breast cancer cell line cells (IOSE) derived from normal ovarian (MDA-MB-231), both in control and mutant depleted p53 cells.

