

Comprehensive Human Cancer and Normal Tissue Products

Linking Genes and Proteins to Cancer Biology



Cancer Tissue cDNA Arrays
Cancer Tissue Genomic cDNAs
Cancer Tissue Lysates
Cancer Tissue Microarrays
Cancer Tissue Sections & Blocks



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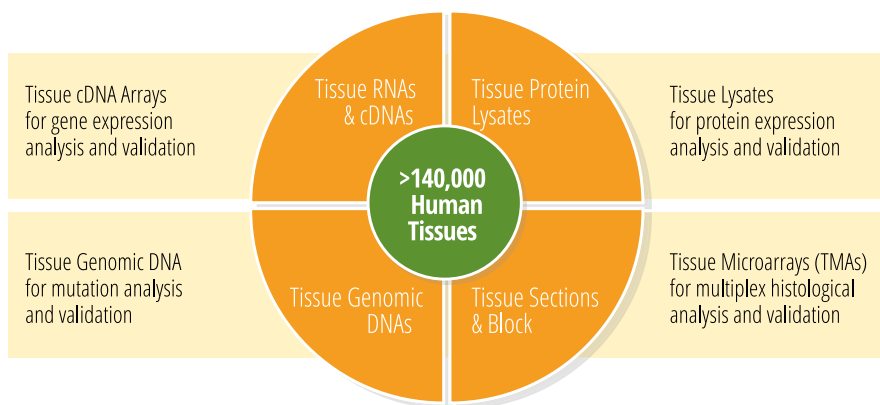
 **ORIGENE**
www.origene.com

Human Cancer and Normal Tissue Products

Linking Genes and Proteins to Cancer Biology Comprehensive Human Tissue Products

OriGene has the comprehensive human cancer and normal tissue products developed from its biorepository of over 140,000 human tissues representing over 12,000 donors.

- TissueScan™ Arrays: cDNA arrays, genomic DNA arrays, protein lysate arrays (RPAs), and tissue microarrays (TMAs)
- TissueFocus™ individual products: total RNAs, genomic DNAs, protein lysates, sections, and blocks
- All products are provided in assay/application ready formats

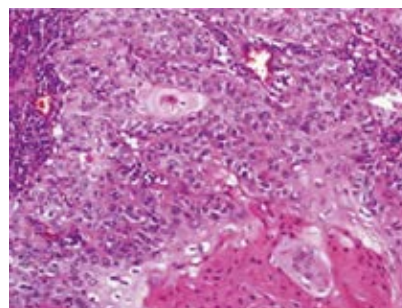
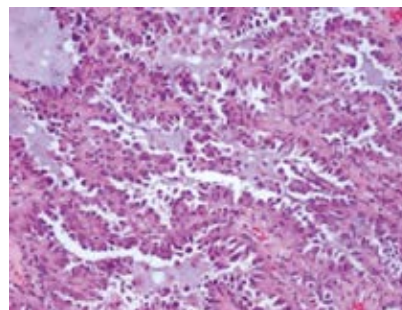


Learn more about our available tissue products at www.origene.com/tissues

Unparalleled Quality of Human Tissue Products

All tissue products are developed from OriGene's high quality tissues, which are banked under strict collection protocols and undergo rigorous quality control to ensure each source block's unparalleled quality.

- Collected from major US institutions under strict IRB and ethical consenting practices
- Maintained in a monitored environment and bar-coded for tracking purposes
- Each tissue source block includes following clinical information
 - Abstracted pathology report
 - Disease staging
 - Digital H&E image
 - Donor's basic demographic information
 - More clinical data available for review through an on-line database

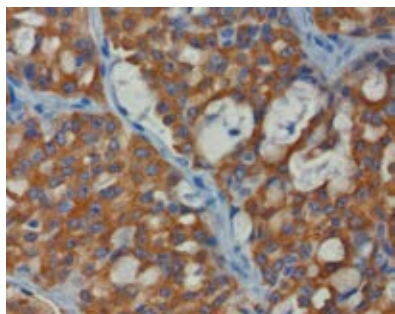


ALK, PD1 & PD-L1 Control Slides

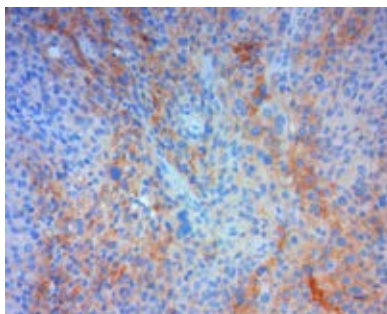
OriGene now offers positive and negative control slides for ALK, PD1 and PDL1 developed specifically for immunohistochemistry are guaranteed to detect the protein target as listed. Control slides are prepared using human tissue that has been collected from major US institutions under strict IRB and ethical consenting practices tracked, maintained and processed with the highest standards.

Features

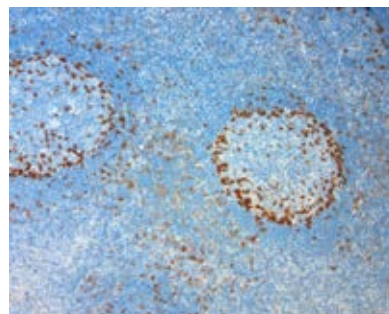
- Both positive and negative tissue 4 um section mounted on unstained slide.
- Available as sets of 2 or 5 slides
- Tissues are placed on SuperFrost® Plus Slides.
- The slides are unbaked. We recommend that you bake the control slides(s) according to your standard laboratory operating protocol.



ALK Positive Control Slide
- Lung Cancer



PD-L1 positive control slide
- Melanoma



PD1 positive control slide
- Tonsil

Description	Cat #
ALK positive tissue 4um section mounted on unstained slide	CS815502
ALK negative tissue 4um section mounted on unstained slide	CS815504
PD1 positive tissue 4um section mounted on unstained slide	CS815506
PD1 negative tissue 4um section mounted on unstained slide	CS815508
PDL1 positive tissue 4um section mounted on unstained slide	CS815510
PDL1 negative tissue 4um section mounted on unstained slide	CS815512

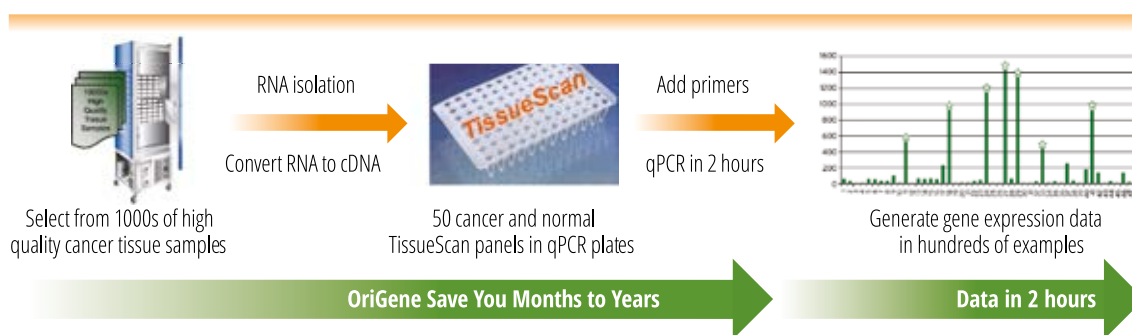
Learn more about our IHC control slides at
www.origene.com/tissue-control-slides-ihc

TissueScan™ Cancer Tissue cDNA Arrays

qPCR Gene Expression Results of Hundreds of Tissues in 2 Hours

TissueScan™ Cancer Tissue cDNA Arrays are developed for differential gene expression analysis and validation among hundreds of different tissues. Tissue cDNAs of each array are synthesized from high quality total RNAs of pathologist-verified tissues, normalized and validated with β -actin in two sequential qPCR analyses, and provided with QC data.

- Cancer survey arrays contains over 20 different cancer types from 381 donors
- Cancer specific arrays cover almost all major cancers
- Normal tissue arrays include major tissues from human, mouse, rat, and drosophila



qPCR-READY TissueScan™ cDNA Arrays for Immediate Delivery

	Cancer Survey Panels	Cancer Specific Panels	Normal Panels
Coverage	Adrenal gland, Breast, Cervix, Colon, Endometrium, Esophagus, Gastroesophageal, Kidney, Liver, Lung, Lymphoid, Ovary, Pancreas, Prostate, Stomach, Testis, Thyroid gland, Urinary bladder, Uterus, etc.	Bladder, Brain, Breast, Colon, Crohns, Endometrium, Gastroesophageal, Kidney, Liver, Lung, Lymphoma, Melanoma, Ovarian, Pancreas, Prostate, Sarcoma, Thyroid	Human Normal, Human Brain, Mouse Normal, Mouse Development, Rat Normal, Drosophila
Panels	4	40	6
Format	384- or 96-well	96-well	96-well

Key publications

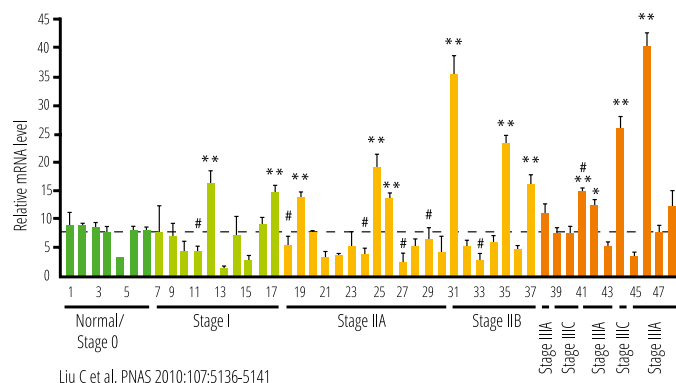
1. Liu Y, et al. (2010). The protein kinase Pak4 disrupts mammary acinar architecture and promotes mammary tumorigenesis. *Oncogene* doi:10.1038/onc.2010.329 Original Article [Cancer Survey Panel]
2. Trimmer C, et al. (2010). CAV1 Inhibits Metastatic Potential in Melanomas through Suppression of the Integrin/Src/FAK Signaling Pathway. *Cancer Res.*, 70: 7489 - 7499 [Melanoma Panel]
3. Noor A, et al. (2010). Disruption at the PTCHD1 Locus on Xp22.11 in Autism Spectrum Disorder and Intellectual Disability. *Science Translational Medicine*, 2: 49ra68 [Brain Normal Panel]
4. Beverly LJ and Varmus HE (2009). MYC-induced myeloid leukemogenesis is accelerated by all six members of the antiapoptotic BCL family. *Oncogene* doi: 10.1038/onc.2008.466

Find more information at
www.origene.com/tissuescan

Discovery of a New Cancer Biomarker for a New Subtype of Breast Cancer

Researchers at Washington University School of Medicine discovered a new cancer biomarker that could define a new subtype of breast cancer as well as offer a potential way to treat it and their work was published in the Proceedings of the National Academy of Sciences.

- LRP6 expression is frequently up-regulated in a subset of human breast cancer tissues and cell lines
- LRP6 was significantly over-expressed in 20-36% of human breast cancer tissue samples
- LRP6 was increased more frequently in triple (ER, HER2 and PR) negative breast tumor samples



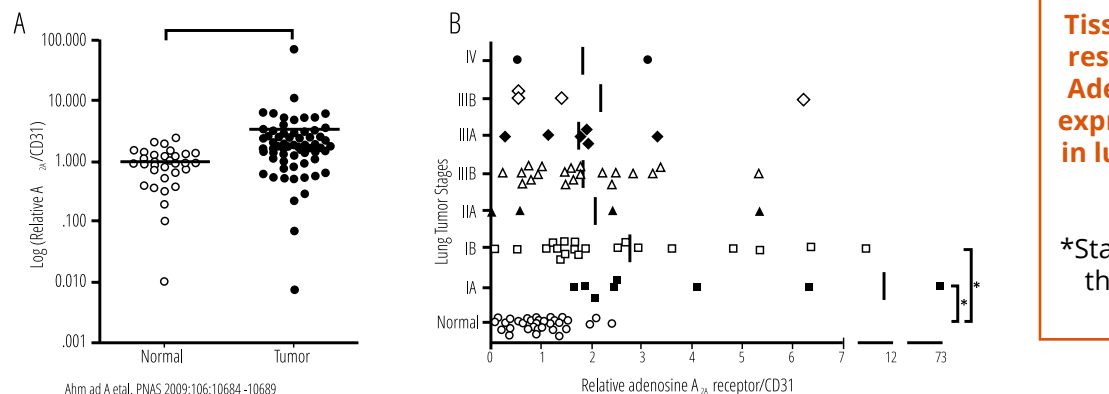
TissueScan™ cDNA Array results clearly indicated LRP6 expression was up-regulated in a subset of human breast cancer tissues.

** P < 0.01.

Discovery of a New Prognosis Biomarker for Lung Cancer

Scientists at National Jewish Health have discovered the Adenosine A_{2A} (ADORA2A) receptor as a prognosis and companion diagnostic marker for lung cancer and their work was published in the Proceedings of the National Academy of Sciences.

- ADORA2A receptor was significantly over-expressed during the early stages of tumor growth
- ADORA2A receptor was expressed only in response to HIF-2alpha activation
- A potential new target for an anti-angiogenic approach to treating lung cancer



TissueScan™ cDNA Array results clearly indicated Adenosine A_{2A} receptor expression was increased in lung tumor samples at different stages.

*Statistically different from the normal lung tissue.

TissueFocus™ Tissue Derivative Products

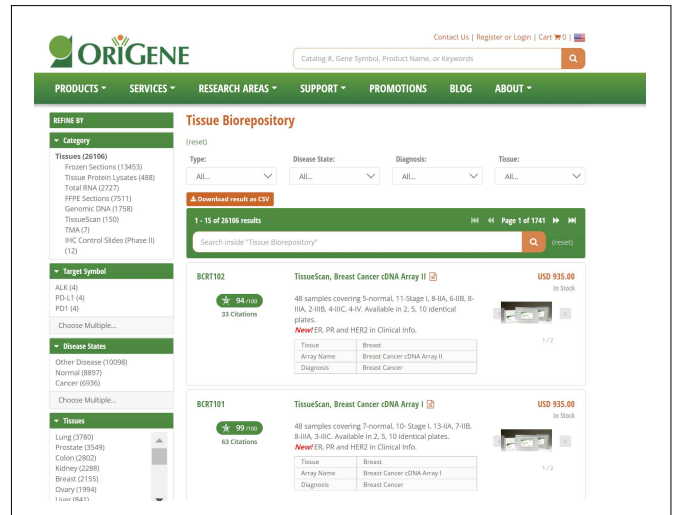
Tissue Total RNAs, Genomic DNAs, and Protein Lysates

OriGene's TissueFocus™ tissue total RNA, genomic DNA, and protein lysate samples are produced from our pathologist-verified high quality tissue blocks and undergo rigorous quality control testing to ensure the sample integrity and preservation.

Tissue Total RNAs and Genomic DNAs

A proprietary set of standard operating procedures is utilized to extract RNA or DNA from tissues to ensure intact total RNA, genomic DNA, free of protein contamination.

- Paired normal and cancer total RNAs and genomic DNAs from same patients
- Over 5,000 searchable tissue RNAs and genomic DNAs available for immediate delivery
- Agilent Bioanalyzer 28S/18S ratio, Electropherogram, A260/A280 ratio and PCR images
- Abstracted pathology report for each sample



Tissue Protein Lysates

OriGene's tissue protein lysates are obtained from frozen OCT-embedded tissue samples in the Biorepository. Lysates are routinely generated using a modified RIPA buffer (no SDS) in the presence of protease and phosphatase inhibitors. Protein quantification is performed using the BCA protein assay.

- Paired normal and cancer tissue protein lysates from same patients
- Qualification data provided
 - A PAGE gel image visualized by SYPRO Ruby
 - A Western Blot image using a beta-Actin monoclonal antibody

Customized TissueScan™ cDNA, Genomic DNA, and Protein Lysate Arrays

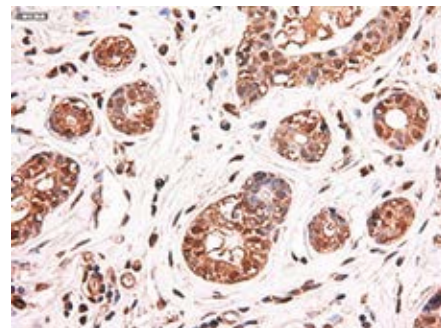
OriGene has built a state-of-the-art facility to quickly turn our TissueFocus™ derivative products into customized TissueScan™ cDNA, genomic DNA, protein lysate arrays upon request.

Tissue Sections and Blocks / Cancer Tissue Microarray (TMAs)

Quality Tissues for Your Research Needs

OriGene's high quality tissues are banked under strict and rigorous collection protocols and are available in either formalin-fixed, paraffin embedded (FFPE) or frozen, OCT-embedded formats.

- >140,000 cancer, normal and other diseased tissues available for immediate delivery
- All sections and blocks include pathology verification data, clinical annotation, abstracted pathology reports and digital H&E images of the source block
- Ideal for immunohistochemistry (IHC), in-situ hybridization (ISH), laser capture microscopy (LCM) and RNA/DNA/Protein extractions

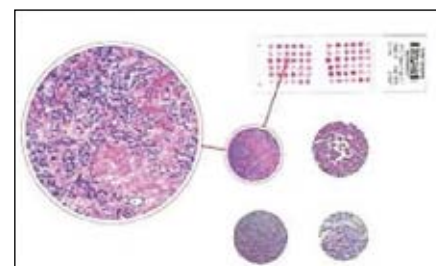


www.origene.com/tissue-blocks

Quality Tissue Microarrays for Your High-Throughput Molecular Analysis

Tissue microarrays (TMAs) are developed from formalin-fixed paraffin-embedded (FFPE) tissue samples selected from the OriGene's tissue biorepository of over >140,000 tissue samples, which represent hundreds of pathology diagnoses.

- Sample cores selected by board-certified pathologists
- TMA Datasheet/Map includes H&E images and detailed pathology reports
- Fully qualified for IHC analysis and suitable for in situ hybridization (ISH) analysis
- TMA sections freshly-cut prior to shipment



Available TMAs for Immediate Delivery

Cancer Survey Tissue Microarray: FFPE, 165 x 1 mm cores, 110 tumors and 55 normals, Covering 11 cancer types: Breast, Colon, Lung, Kidney, Ovarian, Endometrial, Stomach, Prostate, Melanoma, Liver, Lymphoma. (5 um section x 1 slide)

Breast Cancer Tissue Microarray: FFPE, 42 x 1 mm cores, 36 tumors and 6 normals. (5 um section x 1 slide)

Ovarian Cancer Tissue Microarray: FFPE, 48 x 1 mm cores, 41 tumors and 7 normals. (5 um section x 1 slide)

OriGene, Your Partner in Research, Diagnostics and Beyond

- cDNA Clones/Lenti Particles
- CRISPR/Cas9/sgRNA
- Recombinant Proteins
- Antibodies
- RNAi
- Normal & Cancer Tissues



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