Childhood
Solid Tumor Network

freely sharing resources

hhmi

Sample Name:

SJNBL046_X

THIS PRODUCT IS INTENDED FOR RESEARCH USE ONLY

Safety Precaution

It is recommended that protective gloves, clothing, and facemasks are always worn when handling frozen vials. Some vials leak when submersed in liquid nitrogen and then fill with liquid nitrogen. Thus, the vial may explode or blow off its cap upon thawing. This is dangerous as there may be flying debris.

Unpacking and Storage Instructions

1. Check containers for breakage/leakage
2. Remove frozen cells from dry ice packaging and immediately place below -130°C (preferably liquid nitrogen vapor) until ready for use.
3. When ready for use, standard protocols for thawing of cryo-preserved vials have been included.

Sample Information

Name: SJNBL046_X

Organism: Homo sapiens, human

Disease: Neuroblastoma

Primary Site: Adrenal gland

Known Metastatic Sites: Bone

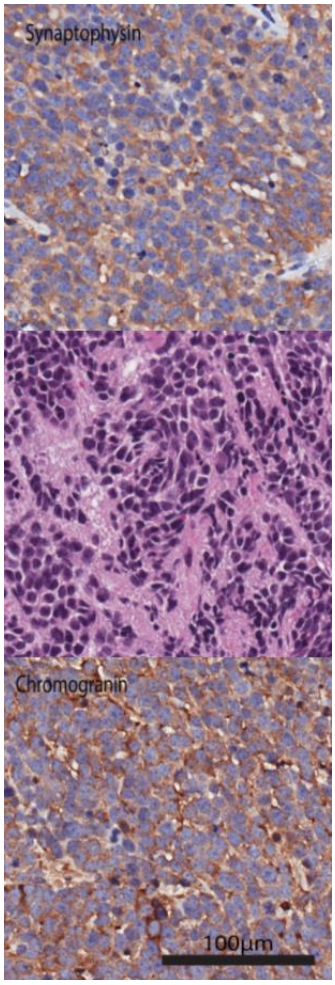
Age: 2 years old

Gender: M

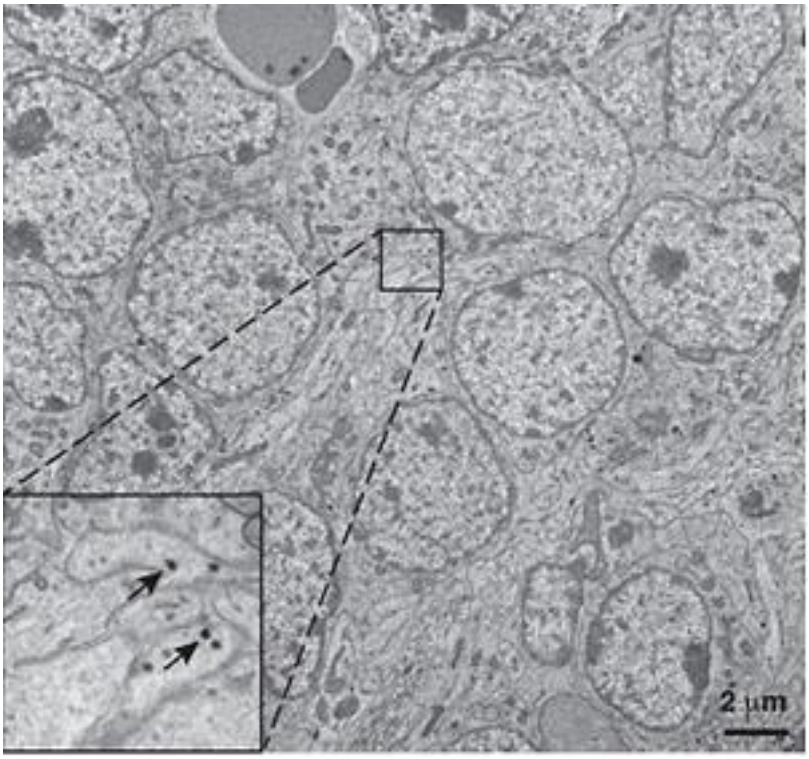
Other Clinical Info: high-risk stage 4, *MYCN* amplified, tumor resected after 4 courses of chemotherapy

Morphology: Schwannian-stroma-poor, poorly differentiated

Histology



Electron Microscopy



Transmission electron micrograph of SJNBL046_X showing dense core vesicles (inset arrows)

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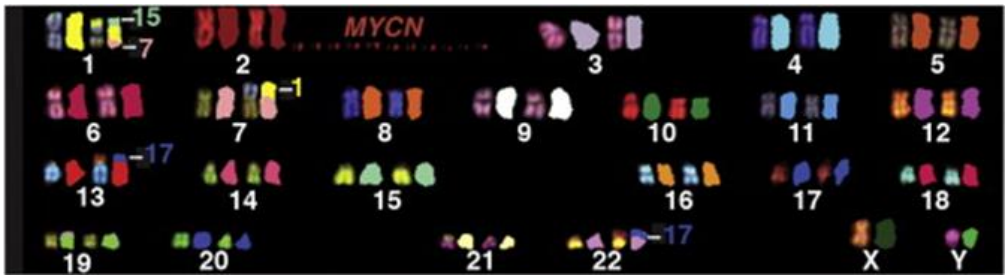
High through-put Screening

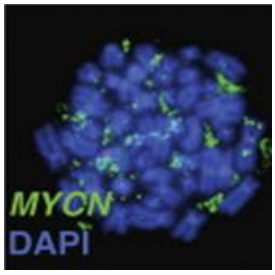
384 Plating Density: 1750 cells/ 25 uL

Media: cells are resuspended in matrigel and plated manually on ice at a volume of 5µL/well. Plates are centrifuged at 750 rpm for 1 minute at 4°C. Place plates into an incubator at 37°C to allow the matrigel to polymerize for 10 minutes. The plates are removed from the incubator and 20uL/well DMEM/10% FBS is added to each well (total volume 25 uL/well)

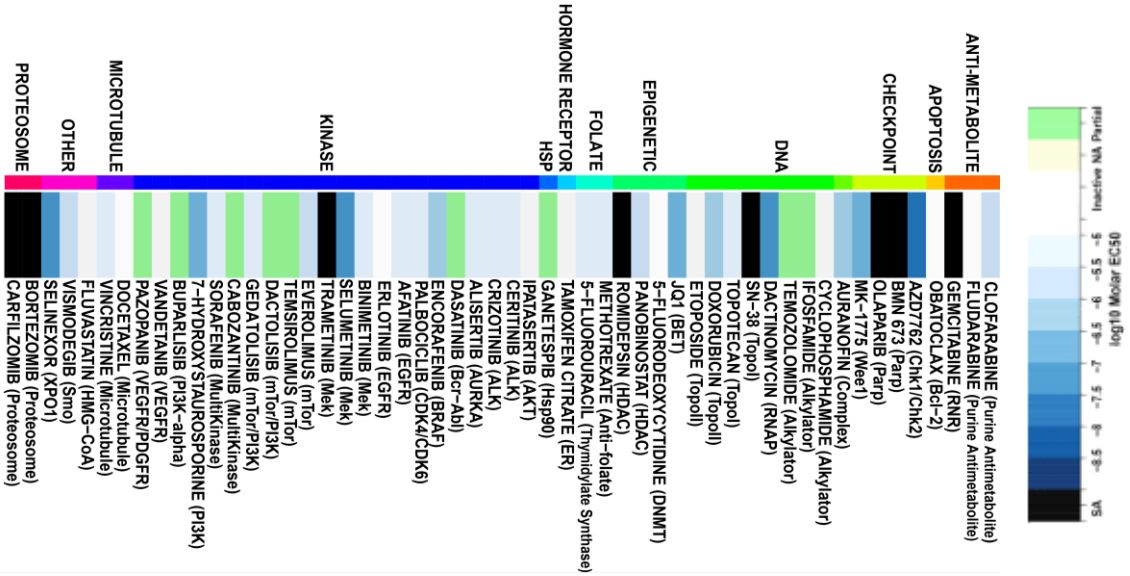
Additional Characterization



Spectral karyotype analysis of SJNBL046_X showing the MYCN amplification on a double minute fragment and several translocations, losses and gains



Fluorescence in situ hybridization for MYCN



DNA Profile

Amelogenin: X, Y
CSF1PO: 11, 12
D13S317: 12
D16S539: 12, 13
D5S818: 11
D7S820: 11, 12
THO1: 9, 9.3
TPOX: 8, 9
vWA: 16, 19

HTS using primary cultures in 384 well plates, read out by cell titer glow at 72 hours post-drugging

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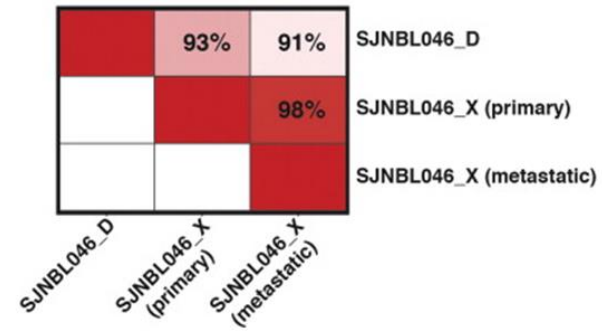
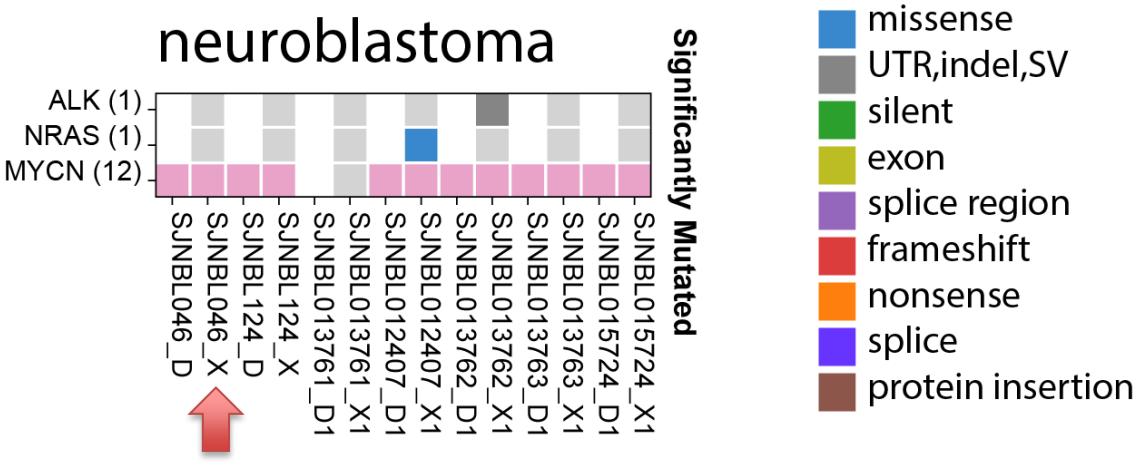
Circos plot showing the coding region single nucleotide variations (SNV) across SJNBL046_D (patient sample) and SJNBL046_X (xenograft sample). Those genes with SNVs in both the SJNBL046_D and SJNBL046_X samples are shown in black and those unique to SJNBL046_X are in blue.



Heat map of correlation of DNA methylation (Illumina 450K) across SJNBL046_D and two SJNBL046_X samples (primary and metastatic)

Mutation Heatmap



Clonal evolution
SJNBL046_X is in Group 4

Group 1: O-PDX recapitulates the clonal distribution in the patient tumor
Group 2: O-PDX recapitulates the clonal distribution in the patient tumor but continued to evolve in mice and acquired new SNVs
Group 3: O-PDX represents the major clone of the patient tumor but not all clones; all Group 3 O-PDX tumors continued to evolve in mice and acquired new SNVs
Group 4: O-PDX represents a minor clone (<10% of patient tumor) and continued

For a visual description please see
https://www.stjude.org/content/dam/en_US/shared/www/research/cstn-clonal-evolution.pdf

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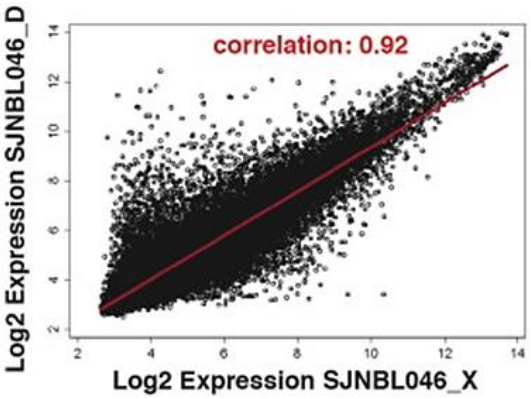

Scatterplot of correlation in gene expression arrays for SJNBL046_D (patient sample) and SJNBL046_X (xenograft sample) with a 0.92 correlation coefficient

**Additional characterization is available upon request including WGS, Exome, RNA-Seq, WGBS

Citation of CSTN Resources:

Please acknowledge the Childhood Solid Tumor Network and cite this reference in publications: **SJNBL**

Stewart E, Federico S, Karlstrom A, Shelat A, Sablauer A, Pappo A, Dyer MA., 2016, *The Childhood Solid Tumor Network: A new resource for the developmental biology and oncology research communities*. Dev Biol 411:287-93

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Learn More:

www.stjude.org/CSTN