Lab Dept: Anatomic Pathology

Test Name: TARGETED ONCOLOGY MICROARRAY ANALYSIS WILMS TUMOR or NEUROBLASTOMA

General Information

Lab Order Codes: LOHW

Synonyms: LOH, SNP micorarray, cancer microarray, cancer array, cancer SNP microarray, Wilms tumor microarray, Neuroblastoma microarray, Neuroblastoma segmental aneuploidy, Neuroblastoma segmental loss of heterozygosity, Neuroblastoma loss of heterozygosity 1p and 11q, Wilms Tumor loss of heterozygosity 1p and 16q, genome oncology array, cancer oncology genome array, Wilms tumor segmental loss of heterozygosity, cancer genome microarray, Neuroblastoma LOH, Tumor SNP array, Wilms Tumor LOH, Tumor SNP microarray, Wilms tumor 1q gain, NBL segmental aberrations, Cancer chromosomal microarray, oncology chromosomal microarray, oncology microarray, oncology snp microarray, oncology genome array, Cancer genome array, Neuroblastoma array, Wilms tumor array, cancer oncology microarray, Neoplastic SNP microarray, Neoplastic array, neoplastic genome array

CPT Codes: 81277 – Cytogenomic neoplasma (genome-wide) micro array analysis, interrogation of genomic regions for copy number and loss-of-heterozygosity variants for chromosomal abnormalities.

Test Includes:

Neuroblastoma:

This array evaluates for the following clinically significant aberrations within the cancer genome for Neuroblastoma:

●Losses of 1p, 3p, 4p and 11q
●Gains of 1q, 2p and 17q
●Loss of Heterozygosity involving 1p, 3p, 4p and 11q
●Gains of whole chromosomes will also be detected with the assay.

Information regarding other chromosome regions will not be reported, as their clinical significance in neuroblastoma is currently unknown

Wilms Tumor:

This array evaluates for the following clinically significant aberrations within the cancer genome for Wilms Tumor:

●Losses of 1p and 16q
●Gains of 1q
●Loss of Heterozygosity involving 1p and 16q

Information regarding other chromosome regions will not be reported, as their clinical significance in Wilms tumor is currently unknown.

Logistics

Test Indications:	Genome-wide microarray analysis for Neuroblastoma and Wilms Tumor with copy number and LOH reported for targeted regions of interest.
Lab Testing Sections:	Anatomic Pathology - Sendouts
Referred to:	Nationwide Children's Hospital – (NWC Test: TONCMA)
Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	Monday - Friday
Turnaround Time:	3 weeks
Special Instructions:	Please include a completed request form with the sample to the laboratory. Nationwide Order Form, Click on Specimen Requirement tab, See the bottom of this page and open the Lab Form Link pdf.

Specimen

Specimen Type:

Submission of a normal sample (containing 0% tumor) is recommended but not required.

Tissue (Snap-frozen) [0.05g in Tissue cassette preferred or in Cryogenic tube]
Freeze immediately after collection. Keep frozen, stable up to 24hours. Protect from heat. Transport to lab as soon as possible.
Tumor sample must contain a minimum of 40% tumor.

Tissue scrolls (FFPE) [in sterile container]
Must accompany H&E slide from the same tissue bock used to make FFPE scrolls. Protect from heat. Keep at room temperature, stable up to 6 months.

Peripheral blood [4mL in Purple tube (EDTA)]
Do not centrifuge. Do not freeze. Transport to laboratory as soon as possible. Stable 2 days at room temp and 1 week refrigerated.

Bone marrow [4mL in Purple tube (EDTA)]
Do not centrifuge. Do not freeze. Transport to laboratory as soon as possible. Stable 2 days at room temp and 1 week refrigerated.

Tissue (Fresh) [0.05 g in sterile container with saline]
Transport to lab on ice immediately after collection. Keep at room temperature, stable for 24 hours.

Paraffin-embedded tissue [in Paraffin block]
Keep at room temperature, stable up to 6 months. Protect from heat.

	OCT-embedded tissue [0.05g in tissue cassette or in cryogenic tube] Freeze immediately after collection. Keep frozen, stable up to 24 hours. Protect from heat.Transport to lab as soon as possible. **NOTE:** Submission of a tumor sample containing at least 40% tumor is required. Please submit snap-frozen (preferred), paraffin-embedded, or OCT-embedded tumor tissue. Submission of a normal samples is also recommended (but not required). For the normal (germline) sample, peripheral blood sample in EDTA tubes (preferred), snap-frozen, paraffin-embedded, or OCT-embedded normal tissue can be submitted.
Container:	Sterile container required
Draw Volume:	At least 40% tumor must be present in the submitted tumor sample. A tumor percentage <40% may be reported as unsatisfactory (no results reported). The normal germline sample
Processed Volume:	Same as Draw Volume
Collection:	See specific information under Specimen Type above.
Special Processing:	Lab Staff: Please call 1-614-722-2866 prior to shipping and provide tracking number. Ship for overnight delivery. Saturday deliveries are accepted. Please check “Saturday Delivery” on shipment label. Send snap-frozen and OCT-embedded specimens on dry ice. Send Bone marrow and peripheral blood refrigerated. Send tissue scrolls and paraffin-embedded tissue at room temperature.
Patient Preparation:	None
Sample Rejection:	Delayed or improper handling; inadequate tissue; tissue degradation; insufficient tumor content in tumor sample; wrong type of specimen; post-treatment tumor specimen, all specimens must be labeled with at least two patient identifiers; mislabeled or unlabeled specimen

Interpretive

Reference Range:	An interpretive report will be provided
Critical Values:	N/A
Limitations:	A tumor percentage <40% may be reported as unsatisfactory (no results reported). Tumor sample collected during or after treatment (e.g. post-chemotherapy) CANNOT be accepted. An FFPE tissue block is preferred over FFPE tissue scrolls.

Samples submitted under a COG study protocol can also be used in most cases (some cases may require approval from the COG study chair); please call the laboratory to confirm sample availability in the COG bank.

Methodology: Targeted oncology microarray analysis is performed on the Affymetrix OncoScanTM CNV platform to detect clinically significant chromosomal aberrations in the tumor to aid in prognosis and treatment assessment. We only accept neuroblastoma and Wilms tumor samples at this time.

References:

Nationwide Children's Laboratory (February 2020)