ARUP Laboratories
500 Chipeta Way – Salt Lake City, UT 84108
(800)522-2787 - www.aruplab.com
Julio C. Delgado, M.D. M.S., Director of Laboratories

*****Example Report*****

Patient Age/Gender: Unknown Male
Printed: 13-Dec-18 16:22:36

Procedure	Result	Units	Ref Interval	Accession	Collected	Received	Reported/ Verified
1p Result	Not Deleted			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17
19q Result	Not Deleted f			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17
1p/1q Ratio	1.00			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17
Chromosome 1 Polysomy	Not Detected			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17
19q/19p Ratio	1.00			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17
Chromosome 19 Polysomy	Not Detected			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17
1p19q FISH Reference Number	S18-123			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17
1p19q FISH Source	Tissue			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17
Total Cell Count	40			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17
Scoring Method	Manual			18-346-900170	12-Dec-18 10:24:00	12-Dec-18 10:24:00	13-Dec-18 16:15:17

12-Dec-18 10:24:00 19q Result:
Controls were run and performed as expected. This result has been reviewed and approved by Dan Albertson, M.D.

12-Dec-18 10:24:00 19q Result:
METHODOLOGY AND TEST INFORMATION:

Fluorescence in situ hybridization (FISH) analysis was performed on a section from a paraffin embedded tissue block using differentially labeled fluorescent probes targeting 1p36/1q25 and 19p13/19q13 (Abbott Molecular). Cells were evaluated from regions of tumor identified on histopathologic review of a matching hematoxylin and eosin stained section. Controls performed appropriately.

This assay evaluates the average ratios of 1p to 1q and 19q to 19p, as well as the percentage of cells with a signal pattern consistent with a deletion (individual cell 1p/1q and 19q/19p ratios of 0.5 or lower). Based on the validation of this assay, 1p deletion is defined as a 1p/1q ratio below 0.80 combined with a deleted pattern in 24 percent or more of the scored cells, and 19q deletion is defined as a 19q/19p ratio below 0.80 combined with a deleted pattern in 26 percent or more of the scored cells.

Co-deletion of 1p and 19q as the result of an unbalanced translocation is characteristic of oligodendrogliomas and a diagnostic feature according to the WHO Classification of

Tumours of the Central Nervous System, Revised 4th Edition (2016). Co-deletion is also predictive of a favorable response to combination chemotherapy. Isolated deletions of 1p or 19q are neither diagnostic nor predictive in a similar fashion. Polysomy, defined in this context as three or more signals for 1q and/or 19p in 30 percent or more of the tumor cells, suggests a less-favorable outcome in oligodendrogliomas. Correlation with other laboratory data, especially histopathologic findings, is recommended for optimal risk stratification.

References:
1. Jenkins RB et al. A t(1;19)(q10;p10) Mediates the Combined Deletions of 1p and 19q and Predicts a Better Prognosis of Patients with Oligodendroglioma. Cancer Res 66 (20): 9852-9861, 2006.
2. Snuderl M et al. Polysomy for chromosomes 1 and 19 predicts earlier recurrence in anaplastic oligodendrogliomas with concurrent 1p/19q loss. Clin Cancer Res 15(20):6430-6437, 2009.
3. Wiens et al. Polysomy of chromosomes 1 and/or 19 is common and associated with less favorable clinical outcome in oligodendrogliomas: fluorescent in situ hybridization analysis of 84 consecutive cases. J Neuropathol Exp Neurol 71(7):618-624, 2012.
4. Clark K et al. How molecular testing can help (and hurt) in the workup of gliomas. Am J Clin Pathol 139(3):275-288, 2013.
5. Senetta R et al. A "weighted" fluorescence in situ hybridization strengthens the favorable prognostic value of 1p/19q codeletion in pure and mixed oligodendroglial tumors. J Neuropathol Exp Neurol 72(5):432-41, 2013.
6. Eckel-Passow JE et al. Glioma Groups Based on 1p/19q, IDH, and TERT Promoter Mutations in Tumors. N Engl J Med 25;372(26):2499-508, 2015.
7. Louis DN, Ohgaki H, Wiestler OD, Cavenee WK, Ellison DW, Figarella-Branger D, Perry A, Reifenberger G, von Deimling A, Eds. WHO Classification of Tumours of the Central Nervous System, Revised 4th Edition. Lyon, France: International Agency for Research on Cancer, 2016.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement A: aruplab.com/CS.