# Accepted Manuscript


Integrating RNA sequencing into neuro-oncology practice

David S. Rogawski, Nicholas A. Vitanza, Angela C. Gauthier, Vijay Ramaswamy, Carl Koschmann

PII: S1931-5244(17)30229-3

DOI: 10.1016/j.trsl.2017.06.013

Reference: TRSL 1170

To appear in: *Translational Research*

Received Date: 31 March 2017

Revised Date: 27 May 2017

Accepted Date: 30 June 2017

Please cite this article as: Rogawski DS, Vitanza NA, Gauthier AC, Ramaswamy V, Koschmann C, Integrating RNA sequencing into neuro-oncology practice, *Translational Research* (2017), doi: 10.1016/j.trsl.2017.06.013.

# Integrating RNA sequencing into neuro-oncology practice

**Authors:** David S. Rogawski[a], Nicholas A. Vitanza[b], Angela C. Gauthier[c], Vijay Ramaswamy[d], and Carl Koschmann[a*]

**Affiliations:** [a]Department of Pediatrics, University of Michigan School of Medicine, Ann Arbor, MI 48109, USA; [b]Department of Pediatrics, Seattle Children's Hospital, Seattle, WA 98105, USA; [c]Yale School of Medicine, 333 Cedar Street, New Haven, CT 06510; [d]Division of Haematology/Oncology, Department of Pediatrics, Hospital for Sick Children, Toronto, ON, M5G 1X8, Canada

***Correspondence to:**
Carl Koschmann, M.D.
Assistant Professor/Pediatric Neuro-Oncology
Division of Pediatric Hematology-Oncology
University of Michigan
CS Mott Children's Hospital Floor 7
1540 E Hospital Dr SPC 4257
Ann Arbor, MI 48109, USA
ckoschma@med.umich.edu
Phone: +1-734-936-9814
Fax: +1-734-615-0464

**Running Head:** Integrating RNA-seq into neuro-oncology

**Abbreviations:** CNS = central nervous system; RNA-seq = RNA sequencing; qRT-PCR = quantitative reverse transcription polymerase chain reaction; NGS = next generation sequencing; GBM = glioblastoma; SNPs = single nucleotide polymorphisms; exRNAs = extracellular RNAs; lncRNAs = long non-coding RNAs; miRNAs = microRNAs; CNS-PNET = primitive neuroectodermal tumors of the CNS; CNS NB-FOXR2 = CNS neuroblastoma with FOXR2 activation; CNS EFT-CIC = CNS Ewing sarcoma family tumor with CIC alteration; CNS HGNET-MN1 = CNS high-grade neuroepithelial tumor with MN1 alteration; CNS HGNET-BCOR = CNS high-grade neuroepithelial tumor with BCOR alteration; ATRT = atypical teratoid rhabdoid tumors; CIMP = CpG island methylator phenotype; RTK = receptor tyrosine kinase; ADME = absorption, distribution, metabolism and excretion; GSEA = Gene Set Enrichment Analysis; ssGSEA = single-sample Gene Set Enrichment Analysis; IGSA = Individual Gene Sets Analysis; CSC = cancer stem cells

**Keywords:** 1) RNA sequencing 2) Brain tumor; 3) Neuro-Oncology 4) Precision Medicine; 5) Microarray; 6) Nanostring