

# Molecular and Translational Medicine

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Alexander Craig Mackinnon, Jr.  
Editor

# Pediatric Neoplasia

Advances in Molecular Pathology  
and Translational Medicine

 Humana Press

*Editor*

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# Preface

The last dozen years have witnessed an exciting and dramatic transformation in the pace, scope, and scale of medically focused research. The driving forces behind these changes are the elucidation of the sequence of the human genome, the development of powerful molecular-based technologies that generate massive quantities of data, and the creation of robust analytical tools required to analyze these vast data sets. Collectively, these developments have ushered us into the era of translational medicine. Translational medicine—and its corollary translational research—is making huge contributions towards our ability to understand, diagnose, and treat human disease, and it represents an incredibly exciting time to be engaged in clinically oriented research.

Translational medicine has strongly impacted virtually every facet of medicine, but its impact has been most noticed in the area of cancer. Within the field of cancer, the subspecialty of pediatric neoplasia has benefited as much as any by the advances brought forth from translational research. Unlike adult cancer, which has seen modest improvements in overall survival during the last 40 years, great improvements in survival and outcomes have been achieved in children with cancer. In fact, numerous researchers now focus on the health issues that arise in survivors of pediatric cancer.

One of the main reasons for the relative improvement in pediatric cancer survival is the ability to apply translational research to identify important prognostic and predictive biomarkers in children with cancer and employ specific treatment regimens centered on these biomarkers. The purpose of this volume is to describe many of these clinically important biomarkers and demonstrate their significance in the routine care of pediatric cancer patients. The authors of each chapter of this volume are leading international experts in their respective fields and able to provide important insights into the current and future direction of translational medicine in pediatric neoplasia. Their knowledge and understanding of the molecular mechanisms driving the formation and progression of pediatric cancer is presented in these chapters and serves as a useful resource for clinicians and scientists searching for a concise review and description of pediatric neoplasia. It has been a pleasure and privilege to work with these authors to develop this volume in the series *Molecular and Translation Medicine*.

Milwaukee, WI, USA

Alexander Craig Mackinnon, Jr.



# Contents

<b>1</b>	<b>Towards Personalized Medicine in Pediatric Cancer: Genome-Wide Strategies to Investigate Cancer Risk and Response to Therapy</b> .....	1
	Navin Pinto and Kenan Onel	
<b>2</b>	<b>Acute Leukemia</b> .....	21
	Zeba N. Singh and Margaret L. Gulley	
<b>3</b>	<b>Molecular Techniques Used in the Evaluation of Pediatric Acute Leukemia</b> .....	53
	Zeba N. Singh and Margaret L. Gulley	
<b>4</b>	<b>Myelodysplasia and Myeloid Proliferations</b> .....	75
	Zeba N. Singh and Margaret L. Gulley	
<b>5</b>	<b>Childhood Lymphoma</b> .....	101
	Zeba N. Singh, Nirali M. Patel, and Margaret L. Gulley	
<b>6</b>	<b>Children Are Not Small Adults: Importance of Molecular Analysis for Diagnosis, Prognosis, and Treatment of Pediatric CNS Tumors</b> .....	125
	Peter Pytel	
<b>7</b>	<b>Pediatric Bone Tumors</b> .....	141
	Roberto A. Leon-Ferre and Eduardo V. Zambrano	
<b>8</b>	<b>Soft Tissue “Small Round Blue Cell Tumors” of Childhood</b> .....	169
	Matthew P. Walters and Eduardo V. Zambrano	
<b>9</b>	<b>Fibroblastic and Myofibroblastic Pediatric Soft Tissue Tumors</b> .....	199
	Matthew P. Walters and Eduardo V. Zambrano	
<b>10</b>	<b>Molecular Analysis in Pediatric Renal Tumors</b> .....	223
	Lawrence Jennings	

**11 Hepatoblastoma: New Insights into the Biology of Embryonal Tumors of the Liver** ..... 243  
Dolores López-Terrada

**Index**..... 259

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