

SIGNAL TRANSDUCTION PATHWAYS, PART D

Inflammatory Signaling Pathways and Neuropathology

Editor

MARC DIEDERICH

This volume is the result of a meeting entitled **Cell Signaling World: Signal Transduction Pathways as Therapeutic Targets**, held January 25–28, 2006, in Luxembourg. Parts A, B, and C can be found in Volumes 1090, 1091, and 1095, respectively.

CONTENTS

Preface. *By* MARC DIEDERICH xxvii

Part I. Inflammatory Signaling Pathways

Targeting Bacterial Endotoxin: Two Sides of a Coin. <i>By</i> HERBERT BOSSHART AND MICHAEL HEINZELMANN	1
Interaction between the <i>Helicobacter pylori</i> CagA and α -Pix in Gastric Epithelial AGS Cells. <i>By</i> HYE YEON BAEK, JOO WEON LIM, AND HYEYOUNG KIM	18
Expression of Suppressors of Cytokine Signaling-3 in <i>Helicobacter</i> <i>pylori</i> -Infected Rat Gastric Mucosal RGM-1 Cells. <i>By</i> BORAM CHA, KYUNG HWAN KIM, HIROFUMI MATSUI, AND HYEYOUNG KIM	24
Role of Proteinase-Activated Receptor-2 on Cyclooxygenase-2 Expression in <i>H. pylori</i> -Infected Gastric Epithelial Cells. <i>By</i> Ji HYE SEO, KYUNG HWAN KIM, AND HYEYOUNG KIM	29
Control of Human Herpes Virus Type 8–Associated Diseases by NK Cells. <i>By</i> MARIA C. SIRIANNI, MASSIMO CAMPAGNA, DONATO SCARAMUZZI, MAURIZIO CARBONARI, ELENA TOSCHI, ILARIA BACIGALUPO, PAOLO MONINI, AND BARBARA ENSOLI	37

Analysis of Tissue Distribution of TNF- α , TNF- α -Receptors, and the Activating TNF- α -Converting Enzyme Suggests Activation of the TNF- α System in the Aging Intervertebral Disc. <i>By</i> BEATRICE E. BACHMEIER, ANDREAS G. NERLICH, CHRISTOPH WEILER, GÜNTHER PAESOLD, MARIANNE JOCHUM, AND NORBERT BOOS	44
Upregulation of Apolipoprotein B Secretion, but Not Lipid, by Tumor Necrosis Factor- α in Rat Hepatocyte Cultures in the Absence of Extracellular Fatty Acids. <i>By</i> NEREA BARTOLOMÉ, LORENA RODRÍGUEZ, MARÍA J. MARTÍNEZ, BEGOÑA OCHOA, AND YOLANDA CHICO	55
Gene Expression Profiling of LPS-Stimulated Murine Macrophages and Role of the NF- κ B and PI3K/mTOR Signaling Pathways. <i>By</i> S. DOS SANTOS, A.-I. DELATTRE, F. DE LONGUEVILLE, H. BULT, AND M. RAES	70
Modification of Proteins by Cyclopentenone Prostaglandins is Differentially Modulated by GSH <i>in vitro</i> . <i>By</i> JAVIER GAYARRE, M. ISABEL AVELLANO, FRANCISCO J. SÁNCHEZ-GÓMEZ, M. JESÚS CARRASCO, F. JAVIER CAÑADA, AND DOLORES PÉREZ-SALA	78
Signaling Pathways Involved in Proteinase-Activated Receptor ₁ -Induced Proinflammatory and Profibrotic Mediator Release Following Lung Injury. <i>By</i> PAUL F. MERCER, XIAOLING DENG, AND RACHEL C. CHAMBERS	86
Signaling Pathway Used by HSV-1 to Induce NF- κ B Activation: Possible Role of Herpes Virus Entry Receptor A. <i>By</i> M. TERESA SCIORTINO, M. ANTONIETTA MEDICI, FRANCESCA MARINO-MERLO, DANIELA ZACCARIA, MARIA GIUFFRÈ, ASSUNTA VENUTI, SANDRO GRELLI, AND ANTONIO MASTINO	89
Melphalan Reduces the Severity of Experimental Colitis in Mice by Blocking Tumor Necrosis Factor- α Signaling Pathway. <i>By</i> GALINA SHMARINA, ALEXANDER PUKHALSKY, VLADIMIR ALIOSHKIN, AND ALEX SABELNIKOV	97

Part II. Neuropathology

Cellular Prion Protein Signaling in Serotonergic Neuronal Cells. <i>By</i> SOPHIE MOUILLET-RICHARD, BENOÎT SCHNEIDER, ELODIE PRADINES, MATHÉA PIETRI, MYRIAM ERMONVAL, JACQUES GRASSI, J. GRAYSON RICHARDS, VINCENT MUTEL, JEAN-MARIE LAUNAY, AND ODILE KELLERMANN	106
Strongly Reduced Number of Parvalbumin-Immunoreactive Projection Neurons in the Mammillary Bodies in Schizophrenia: Further Evidence for Limbic Neuropathology. <i>By</i> HANS-GERT BERNSTEIN, STEPHANIE KRAUSE, DIETER KRELL, HENRIK DOBROWOLNY, MARION WOLTER, RENATE STAUCH, KARIN RANFT, PETER DANOS, GUSTAV F. JIRIKOWSKI, AND BERNHARD BOGERTS	120
Alterations of Synaptic Turnover Rate in Aging May Trigger Senile Plaque Formation and Neurodegeneration. <i>By</i> CARLO BERTONI-FREDDARI, PATRIZIA FATTORETTI, BELINDA GIORGETTI, YESSICA GROSSI, MARTA BALIETTI, TIZIANA CASOLI, GIUSEPPINA DI STEFANO, AND GEMMA PERRETTEA	128

Preservation of Mitochondrial Volume Homeostasis at the Early Stages of Age-Related Synaptic Deterioration. <i>By</i> CARLO BERTONI-FREDDARI, PATRIZIA FATTORETTI, BELINDA GIORGETTI, YESSICA GROSSI, MARTA BALIETTI, TIZIANA CASOLI, GIUSEPPINA DI STEFANO, AND GEMMA PERRETTA	138
Immunohistochemical Evidence for Impaired Neuregulin-1 Signaling in the Prefrontal Cortex in Schizophrenia and in Unipolar Depression. <i>By</i> IRIS BERTRAM, HANS-GERT BERNSTEIN, UWE LENDECKEL, ALICJA BUKOWSKA, HENRIK DOBROWOLNY, GERBURG KEILHOFF, DIMITRIOS KANAKIS, CHRISTIAN MAWRIN, HENDRIK BIELAU, PETER FALKAI, AND BERNHARD BOGERTS	147
Dysregulation of GABAergic Neurotransmission in Mood Disorders: A Postmortem Study. <i>By</i> HENDRIK BIELAU, JOHANN STEINER, CHRISTIAN MAWRIN, KURT TRÜBNER, RALF BRISCH, GABRIELA MEYER-LOTZ, MICHAEL BRODHUN, HENRIK DOBROWOLNY, BRUNO BAUMANN, TOMASZ GOS, HANS-GERT BERNSTEIN, AND BERNHARD BOGERTS	157
Release of β -Amyloid from High-Density Platelets: Implications for Alzheimer's Disease Pathology. <i>By</i> TIZIANA CASOLI, GIUSEPPINA DI STEFANO, BELINDA GIORGETTI, YESSICA GROSSI, MARTA BALIETTI, PATRIZIA FATTORETTI, AND CARLO BERTONI-FREDDARI	170
The Role of Selenite on Microglial Migration. <i>By</i> LISA DALLA PUPPA, NICOLAI E. SAVASKAN, ANJA U. BRÄUER, DIETRICH BEHNE, AND ANTONIOS KYRIAKOPOULOS	179
Altered Subcellular Distribution of the Alzheimer's Amyloid Precursor Protein Under Stress Conditions. <i>By</i> SARA C.T.S. DOMINGUES, ANA GABRIELA HENRIQUES, WENJUAN WU, EDGAR F. DA CRUZ E. SILVA, AND ODETE A.B. DA CRUZ E. SILVA	184
Differential Distribution of Alzheimer's Amyloid Precursor Protein Family Variants in Human Sperm. <i>By</i> MARGARIDA FARDILHA, SANDRA I. VIEIRA, ALBERTO BARROS, MÁRIO SOUSA, ODETE A.B. DA CRUZ E. SILVA, AND EDGAR F. DA CRUZ E. SILVA	196
The Effect of Repeated Physical Exercise on Hippocampus and Brain Cortex in Stressed Rats. <i>By</i> DRAGANA FILIPOVIĆ, LJUBICA GAVRILOVIĆ, SLADJANA DRONJAK, AND MARIJA B. RADOJČIĆ	207
Prion Protein Aggregation and Neurotoxicity in Cortical Neurons. <i>By</i> JOANA BARBOSA MELO, PAULA AGOSTINHO, AND CATARINA RESENDE OLIVEIRA	220
Intensive Remodeling of Purkinje Cell Spines after Climbing Fibers Deafferentation Does Not Involve MAPK and Akt Activation. <i>By</i> JELENA M. MILAŠIN, ANNALISA BUFFO, DANIELA CARULLI, AND PIERGIORGIO STRATA	230
Immunomorphological Analysis of RAGE Receptor Expression and NF- κ B Activation in Tissue Samples from Normal and Degenerated Intervertebral Discs of Various Ages. <i>By</i> ANDREAS G. NERLICH, BEATRICE E. BACHMEIER, ERWIN SCHLEICHER, HELMUT ROHRBACH, GUENTHER PAESOLD, AND NORBERT BOOS	239

Amyloid Precursor Protein and Presenilin 1 Interaction Studied by FRET in Human H4 Cells. *By* MARIO NIZZARI, VALENTINA VENEZIA, PAOLO BIANCHINI, VALENTINA CAORSI, ALBERTO DIASPRO, EMANUELA REPETTO, STEFANO THELLUNG, ALESSANDRO CORSARO, PIA CARLO, GENNARO SCETTINI, TULLIO FLORIO, AND CLAUDIO RUSSO 249

Amino-Terminally Truncated Prion Protein PrP90-231 Induces Microglial Activation *in vitro*. *By* STEFANO THELLUNG, ALESSANDRO CORSARO, VALENTINA VILLA, VALENTINA VENEZIA, MARIO NIZZARI, MICHELA BISAGLIA, CLAUDIO RUSSO, GENNARO SCETTINI, ANTONIO ACETO, AND TULLIO FLORIO 258

Activation and Endocytic Internalization of Melanocortin 3 Receptor in Neuronal Cells. *By* S.J.M. WACHIRA, B. GURUSWAMY, L. URADU, C.A. HUGHES-DARDEN, AND F.J. DENARO 271

Index of Contributors 287