

STUDIES ON SRC TYROSINE KINASE IN TUMORIGENIC
CELL GROWTH AND INVASION

By

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To my dear friend Sandy Singleton...

...who opened her home and her heart for me

...who was my family since my first day in the United States

...who trusted and supported me

My parents and I are forever grateful for your kindness and generosity.

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LIST OF ABBREVIATIONS

Δ	Delta
γ	Gamma
μ	Micro
Ω	Ohm
ACF	Aberrant Crypt Foci
AJC	Apical Junctional Complex
APC	Adenomatous Polyposis Coli
bp	Base Pairs
CAS	Crk-Associated Substrate
CHO	Chinese Hamster Ovary
Csk	Carboxy-Terminal Src Kinase
DAPI	4',6-Diamidino-2-Phenylindole
DMEM	Dulbecco's Modified Eagle's Medium
DMSO	Dimethylsulfoxide
DNA	Deoxyribonucleic Acid
ECM	Extracellular Matrix
EDTA	Ethylene Diamine Tetraacetic Acid
EMT	Epithelial-To-Mesenchymal Transition
ERK	Extracellular Signal-Regulated Kinase
FACS	Fluorescence Activated Cell Sorting
FAK	Focal Adhesion Kinase

FAP	Familial Adenomatous Polyposis
FBS	Fetal Bovine Serum
FDG	F-18-Deoxyglucose
FITC	Fluorescein Isothiocyanate
GAP	GTPase-Activating Protein
GDP	Guanosine Diphosphate
GEF	Guanine Exchange Factor
GFP	Green Fluorescent Protein
Grb	Growth-Factor-Receptor Bound Protein
GTP	Guanosine Triphosphate
HEPES	N-2-Hydroxyethylpiperazine-N'-2-Ethanesulfonic Acid
HI-FBS	Heat-Inactivated Fetal Bovine Serum
HNPPC	Hereditary Nonpolyposis Colorectal Cancer
IMCE	Immorto-Min Colonic Epithelial
IRES	Internal Ribosomal Entry Site
kDa	kiloDaltons
m	Meter, Milli
M	Molar
MAP	MYH-Associated Polyposis
MDCK	Madin-Darby Canine Kidney
MEK	MAPK/ERK Kinase
MMP	Matrix Metalloproteinase
NP-40	Nonidet P-40

<i>p</i>	Probability
PBS	Phosphate Buffered Saline
PCR	Polymerase Chain Reaction
PDK	PI3K-Dependent Protein Kinase
PET	Positron Emission Tomography
<i>Phoenix A</i>	<i>Phoenix</i> Amphotropic
<i>Phoenix E</i>	<i>Phoenix</i> Ecotropic
PI3K	Phosphatidylinositol-3-OH kinase
PIPES	Piperazine-1,4-Bis-2-Ethanesulfonic Acid
polyHEMA	Polyhydroxymethacrylate
PR	Proline Rich
RNA	Ribonucleic Acid
RIE	Rat Intestinal Epithelial
RIPA	Radio Immunoprecipitation Assay
RPMI	Roswell Park Memorial Institute Medium
RT	Room Temperature
RTK	Receptor Tyrosine Kinase
SBD	Src Binding Domain
SDS-PAGE	Sodium Dodecyl Sulfate Polyacrylamide Gel Electrophoresis
SH	Src Homology
shRNA	Short Hairpin RNA
siRNA	Small Interfering RNA
SrcF	Src Y529F

Shc	Src Homology Containing-Protein
SOS	Son of Sevenless
SV40	Simian Virus 40
TCF	T-Cell Factor
TGF	Transforming Growth Factor
Ts	Temperature Sensitive
Tyr	Tyrosine
U	Units
UV	Ultraviolet
WT	Wild Type
Y	Tyrosine
YAMC	Young Adult Mouse Colonic
YFP	Yellow Fluorescent Protein
YxxP	Tyrosine-X-X-Proline