Immunoway

Transcription

Tumorigenesis

Progression of Cell Cycle

p90RSK

ErK1/2

FoxO3

MSK1/2

MAPKAPK2

p90RSK

PEA-15

cdc25

TH

ErK1/2

Catecholamines

cPLA$_2$

MKP-3

endosome H$^+$

JNK3

KSR

Heterodimer

c-Raf

β-arrestin1

MEK

MEK1/2

Synapsins

Src

Erk

IMP

c-Raf

B-Raf

C-TAK1

c-Raf

B-Raf

Ras

Rap1

[cAMP]

Receptor Internalization

Src-like

RasGEF SOS

Ras GAP

Ras GRP

Ras GRF

Syn GAP

EPAC

PKA

PKC

CaMKII,-IV

[Ca2$^+$]

RGS

Dynamin

Src

GRK2

PI3Kγ

β-arrestin

Giβγ

PLCβ

PKC

IP$_3$

Src

GRB2

PYK2

Src

FAK

RGS

PLCβ

Gαs GTP

AC

MP

Gαq GTP

Gj-Coupled Receptor

RTKsB

Inregrins

Gq-Coupled Receptor

Gs-Coupled Receptor