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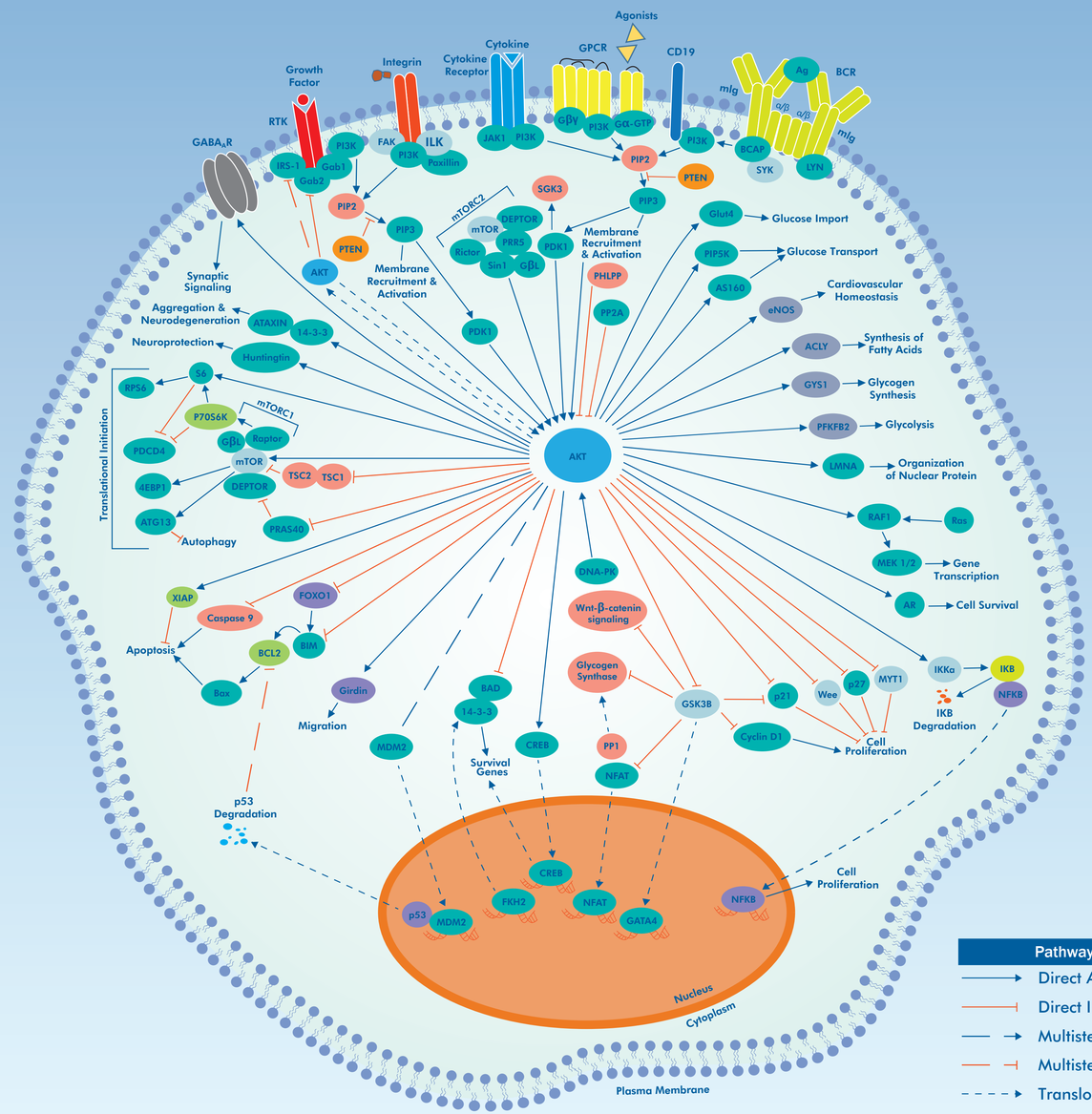
PATHWAYS & KEY MOLECULAR TARGETS

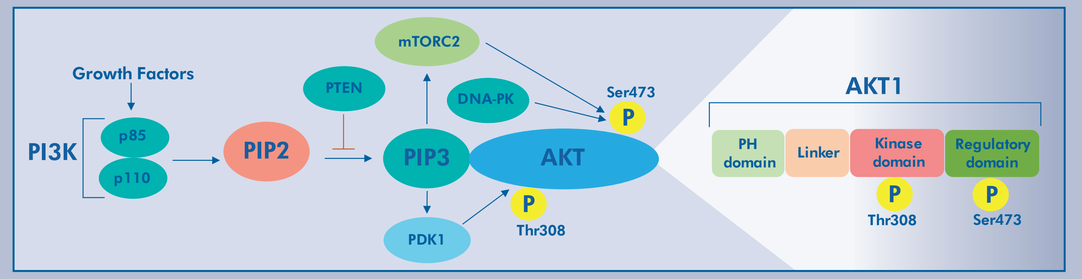
PI3K-AKT Signaling



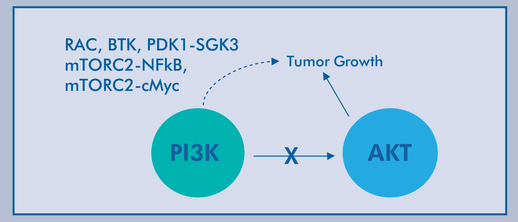
Pathway Key

- Direct Activation
- Direct Inhibition
- Multistep Activation
- Multistep Inhibition
- Translocation
- Independant Activation

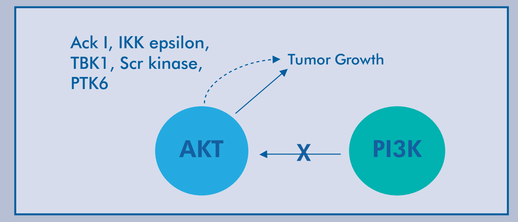
Mechanism of Activation and Major Phosphorylation Sites of AKT1



AKT Independent PI3K Activity



PI3K Independent AKT Activity



PI3K-AKT Signaling: Processes & Targets*

Cell proliferation	Survival signaling
Cyclin D1 p21/Cip p27/Kip Myt1 Wee1	Bad MDM2/p53 FOXO1 Bcl-2 Bax
Metabolism	**Translational Control**
GSK-3 PFKFB2 PIP5K AS160 TBC1D4 PDE3B	S6 kinase RPS6 TSC1 mTOR PDCD4
Neuronal Function	**Immunity**
Huntingtin Ataxin-1 GABAA receptor NFkB	TSC-mTORC1 FOXO1 GSK3β ACLY
Invasion/Migration	**Others**
Palladin Girdin Rac/GTP	WNK1 eNOS LMNA

Small Molecule Inhibitors of AKT*

Akt (PKB)	Akti-1/2, API-1, API-2, 10-DEBC hydrochloride, FPA 124, GSK 690693, Perifosine, SC 66
Akt and PDK1	PHT 427
mTOR	Rapamycin, Torin 1, AZD 3147, eCF 309
PDK1	GSK 2334470, BX 795, OSU 03012
PIP3	PIT 1
PI3K	LY 294002, Wortmannin, PI 828
PI3K p110α	A66
PI3Kβ	AZD 6482
PI3K p110δ	PI 3065
PI3K γ	AS 605240

Other molecules for AKT Signaling*

Small molecule	Description
SC 79	Activator of Akt
740 YP	Cell permeable activator of PI3K
Akt/SKG Substrate Peptide	Synthetic substrate of Akt/PKB
AKTide-2T	Peptide substrate for Akt/PKB

PI3K-AKT Signaling in Diseases

Overgrowth syndromes, cancer (growth, angiogenesis and metastasis), cardiovascular diseases, glucose metabolism related disorders (insulin resistance and diabetes), autoimmune diseases and inflammation, and neurodegeneration related disorders.

*Visit www.novusbio.com, www.rndsystems.com and www.tocris.com to learn more.

PS-PM_AKT_23311