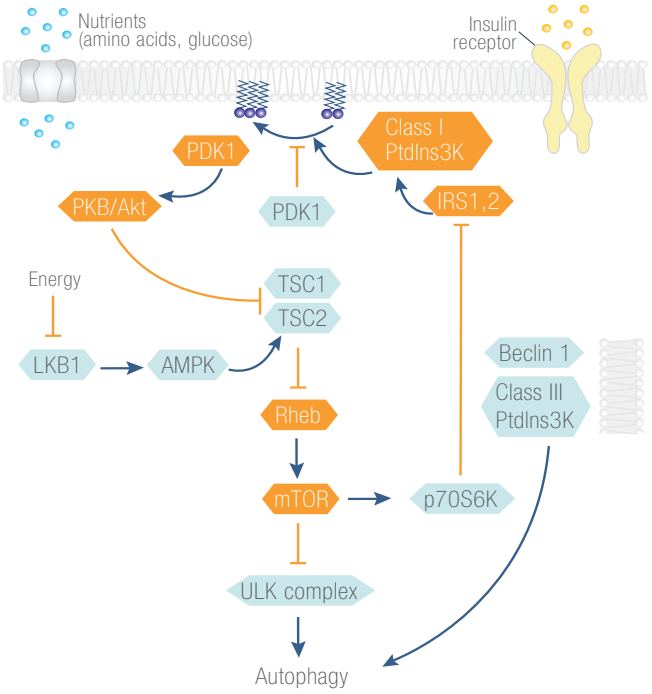
Crown insight

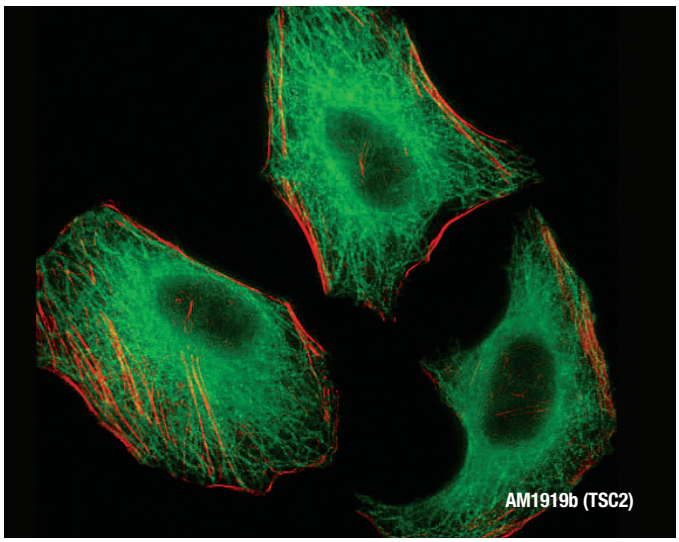
OCTOBER 2013 :

TSC2

Introduction

Mutation in TSC2 gene coding for Tuberin protein is known to lead to tuberous sclerosis in humans. Moreover, its gene product is believed to be a tumor suppressor and is able to stimulate specific GTPases playing important role in regulation of autophagy signaling pathway. Tuberin interacts with hamartin (TSC1) creating a heterodimeric complex that inhibit the mammalian target of rapamycin (mTOR) complex 1 (TORC1), which includes protein such as mTOR and Raptor. TORC1 further integrates mitogenic signals and nutrient availability with protein synthesis via substrates including p70 S6 kinase (S6K). Tuberin inhibits TORC1 via the Ras homologue Rheb, which is a key target of tuberin's highly conserved guanosine triphosphatase activating protein (GAP) domain. Tuberin stimulates the conversion of Rheb–guanosine triphosphate (active) to Rheb–guanosine diphosphate (inactive), thereby inhibiting TORC1 and regulating autophagy process.





Fluorescent image of Hela cell stained with TSC2 Antibody(Cat#AM1919b). Hela cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with TSC2 primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C.Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). TSC2 is localized to microtubules in cytoplasm.

Selected Abgent Products

CAT. #	TARGET NAME
AM1977a	TSC1 Antibody (Ascites)
AP6378c	RHEB Antibody (Center)
AP6273c	mTOR (FRAP1) Antibody (S2481)
AJ1679a	Raptor Antibody
AM2018a	AKT1S1 Antibody(Ascites)
AP3289a	PTEN Antibody (N-term)
AP8436a	ATG4B Antibody (C-term)
AP1802a	LC3 Antibody (APG8B) (N-term)
AP1805a	Cleaved LC3A Antibody
AP7260a	AMPK alpha (PRKAA1) Antibody (S487)
AP7046a	AMPK beta2 (PRKAB2) Antibody (N-term)
AP19250c	ULK1 Antibody (Center S317)
AP19789c	ATG13 Antibody (Center S355.)
AP1827a	LAMP3 Antibody (N-term)

Visual categorization

Target associated (orange)

Autophagy Stem Cell Neurodegeneration

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