Tsc1-Flox

Nomenclature	C57BL/6Smoc-*Tsc1*$^{tm1(flox)Smoc}$
Cat. NO.	NM-CKO-200231
Strain State	Repository Live

Gene Summary

Gene Symbol **Tsc1**	**Synonyms**	-
	NCBI ID	64930
	MGI ID	1929183
	Ensembl ID	ENSMUSG00000026812
	Human Ortholog	TSC1

Model Description

These mice carry loxP sites flanking exon 17-18 of Tsc1 gene. When crossed with a Cre recombinase-expressing strain, this strain is useful in eliminating tissue-specific conditional expression of Tsc1 gene.

Research Application: Research on mTOR signal transduction and respiratory electron transport, ATP synthesis produced by chemical permeation coupling, and heat produced by protein uncoupling

*Literature published using this strain should indicate: Tsc1-Flox mice (Cat. NO. NM-CKO-200231) were purchased from Shanghai Model Organisms Center, Inc..

Disease Connection

Tuberous Sclerosis	**Phenotype(s)**	MGI:3802545 Note: The expected phenotype(s) may be observed in the above-mentioned mice that bred with Syn1-cre mice.
	Reference(s)	Meikle L, Pollizzi K, Egnor A, Kramvis I, Lane H, Sahin M, Kwiatkowski DJ, Response of a neuronal model of tuberous sclerosis to mammalian target of rapamycin (mTOR) inhibitors: effects on mTORC1 and Akt signaling lead to improved survival and function. J Neurosci. 2008 May 21;28(21):5422-32
Autism Spectrum Disorder	**Phenotype(s)**	MGI:5641483 Note: The expected phenotype(s) may be observed in the above-mentioned mice that bred with Pcp2-cre mice.
	Reference(s)	Tsai PT, Hull C, Chu Y, Greene-Colozzi E, Sadowski AR, Leech JM, Steinberg J, Crawley JN, Regehr WG, Sahin M, Autistic-like behaviour and cerebellar dysfunction in Purkinje cell Tsc1 mutant mice. Nature. 2012 Aug 30;488(7413):647-51
Tuberous Sclerosis	**Phenotype(s)**	MGI:3588988 Note: The expected phenotype(s) may be observed in the above-mentioned mice that bred with Myl2-Cre mice.
	Reference(s)	Meikle L, McMullen JR, Sherwood MC, Lader AS, Walker V, Chan JA, Kwiatkowski DJ, A mouse model of cardiac rhabdomyoma generated by loss of Tsc1 in ventricular myocytes. Hum Mol Genet. 2005 Feb 1;14(3):429-35
Anterior Segment Dysgenesis	**Phenotype(s)**	MGI:6295837 Note: The expected phenotype(s) may be observed in the above-mentioned mice that bred with Lhx2-cre mice.
	Reference(s)	Hagglund AC, Jones I, Carlsson L, A novel mouse model of anterior segment dysgenesis (ASD): conditional deletion of Tsc1 disrupts ciliary body and iris development. Dis Model Mech. 2017 Mar 01;10(3):245-257

Tuberous Sclerosis	**Phenotype(s)**	MGI:3802584 Note：The expected phenotype(s) may be observed in the above-mentioned mice that bred with GFAP-cre mice.
	Reference(s)	Zeng LH, Ouyang Y, Gazit V, Cirrito JR, Jansen LA, Ess KC, Yamada KA, Wozniak DF, Holtzman DM, Gutmann DH, Wong M, Abnormal glutamate homeostasis and impaired synaptic plasticity and learning in a mouse model of tuberous sclerosis complex. Neurobiol Dis. 2007 Nov;28(2):184-96

Validation Data

No data