Revision 3

Store at -20C

#70358

TSPO (D1N7Z) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P, IF-IC	H	Endogenous	18	Rabbit IgG	#P30536	706

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunohistochemistry (Paraffin)	1:50 - 1:200
Immunofluorescence (Immunocytochemistry)	1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

TSPO (D1N7Z) Rabbit mAb recognizes endogenous levels of total TSPO protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly160 of human TSPO protein.

Background

Translocator protein (TSPO) is an 18 kDa mitochondrial drug- and cholesterol-transporting protein involved in steroid hormone synthesis and mitochondrial homeostasis in various cell types (1,2). Originally thought to play a role exclusively in steroid synthesis in steroidogenic cells, subsequent research studies have implicated TSPO in a variety of pathologies in a broad range of tissues, including progression of breast cancer, neuroinflammation, and neurological disorders (1,3-5). TSPO was first identified by its ability to bind benzodiazepines in peripheral tissues and glial cells, hence its alternate name, Peripheral Benzodiazepine Receptor (PBR).

TSPO has been shown to modulate an array of cellular functions; it is critical for steroidogenesis, modulates mitochondrial function and metabolism, and plays a role in both cell proliferation and apoptosis (2,6,7). TSPO is found in the outer mitochondrial membrane where it coordinates with Steroidogenic Acute Regulatory Factor (StAR) to transport cholesterol into the mitochondria and is critical for steroidogenesis and tumor progression (8,9). This is illustrated by studies that show the non-aggressive, hormone-dependent cell line, MCF7, expresses low levels of TSPO whereas the more aggressive, metastatic, and hormone-independent cell line, MDA-MB-231, expresses high levels of TSPO (9). This study, and others, suggest that TSPO may be an important regulator of hormone-dependent tumor progression. Numerous investigations have concluded that due to its high affinity for pharmacological compounds and upregulation in disease, TSPO is an attractive target for diagnosis and treatment of tumor progression, neuroinflammation, neurodegeneration, and neurological/psychiatric disorders (10-14).

Background References

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12. Venneti, S. et al. (2013) *Glia* 61, 10-23.
13. Politis, M. et al. (2012) *Front Pharmacol* 3, 96.
14. Calabresi, P.A. and Bohnen, N.I. (2012) *Neurology* 79, 496-7.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human

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Limited Uses