Revision 1

#14979 Store at -20C

IRGM Antibody

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	M R	Endogenous	40	Rabbit	#Q60766	15944

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

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

Specificity / Sensitivity

IRGM Antibody recognizes endogenous levels of total IRGM protein in mouse and rat.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Arg215 of mouse IRGM protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Immunity-related GTPase family M protein 1 (IRGM, LRG-47) belongs to the p47 family of immunity related guanosine triphosphatases (IRGs) that regulate innate immune responses to intracellular pathogens (1-3). Research studies indicate that IRGM plays a role in autophagy during clearance of intracellular bacteria (4). Expression of IRGM in mice, but not in humans, is induced by inflammatory signals that include interferon and LPS (2,3). Polymorphisms in the corresponding *IRGM* gene are associated with some cases of tuberculosis (5-7), Crohn's disease (8,9), and severe sepsis (10). Additional studies indicate that IRGM functions through regulation of autophagy (4). Mitochondrial IRGM plays a role in mitochondrial fission, membrane polarization, and mitophagy (11). Knockout mice for IRGM show increased susceptibility to infection as well as intestinal inflammation and Paneth cell abnormalities (12,13). Knockout mice against IRGM are also resistant to neuronal autophagy following stroke (14). RNA viruses commonly target IRGM in order to suppress autophagy and enhance infection (15).

Background References

1. Kim, B.H. et al. (2012) *Cell Host Microbe* 12, 432-44.
2. Gilly, M. and Wall, R. (1992) *J Immunol* 148, 3275-81.
3. Sorace, J.M. et al. (1995) *J Leukoc Biol* 58, 477-84.
4. Singh, S.B. et al. (2006) *Science* 313, 1438-41.
5. Che, N. et al. (2010) *Clin Chim Acta* 411, 1645-9.
6. Intemann, C.D. et al. (2009) *PLoS Pathog* 5, e1000577.
7. King, K.Y. et al. (2011) *PLoS One* 6, e16317.
8. Parkes, M. et al. (2007) *Nat Genet* 39, 830-2.
9. McCarroll, S.A. et al. (2008) *Nat Genet* 40, 1107-12.
10. Kimura, T. et al. (2014) *PLoS One* 9, e91522.
11. Singh, S.B. et al. (2010) *Nat Cell Biol* 12, 1154-65.
12. Feng, C.G. et al. (2004) *J Immunol* 172, 1163-8.
13. Liu, B. et al. (2013) *Am J Physiol Gastrointest Liver Physiol* 305, G573-84.
14. He, S. et al. (2012) *Autophagy* 8, 1621-7.
15. Grégoire, I.P. et al. (2011) *PLoS Pathog* 7, e1002422.

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

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

Trademarks and Patents

Limited Uses