PRODUCT INFORMATION

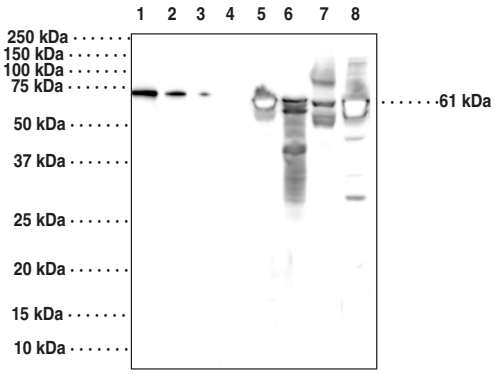
Hsp60 (HspD1) Monoclonal Antibody (Clone 10C3)

Item No. 25693

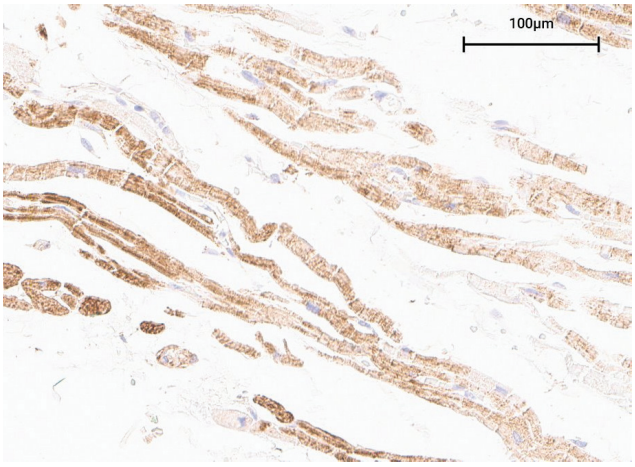
Overview and Properties

Contents:	This vial contains 100 µg of protein G-purified monoclonal antibody.
Synonyms:	60 kDa Chaperonin, Chaperonin 60, Cpn60, Heat Shock Protein 60, Mitochondrial Matrix Protein P1, P60 Lymphocyte Protein
Immunogen:	Full length human recombinant Hsp60 (HspD1) protein
Cross Reactivity:	(-) Hsp27
Species Reactivity:	(+) Human, mouse, and rat Hsp60 (HspD1)
Uniprot No.:	P10809
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	10C3
Host:	Mouse
Isotype:	IgG1
Applications:	ELISA, IHC, and Western blot (WB); the recommended starting dilution is 1:1000 for ELISA and WB and 1:200 for IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Lane 1: Hsp60 Recombinant Protein (0.02 µg)
Lane 2: Hsp60 Recombinant Protein (0.005 µg)
Lane 3: Hsp60 Recombinant Protein (0.001 µg)
Lane 4: Hsp27 Recombinant Protein (0.1 µg) (negative
Lane 5: A549 Cell Lysate (50 µg)
Lane 6: THP-1 Cell Lysate (50 µg)
Lane 7: Mouse Kidney Lysate (40 µg)
Lane 8: Rat Intestine Lysate (40 µg)



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human heart tissue after heat induced antigen retrieval in pH 6.0 citrate buffer. After incubation with HSP60 (HspD1) Monoclonal Antibody (Clone 10C3) (Item No. 25693) at a 1:200 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).

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Description

Heat shock protein 60 (Hsp60), also known as heat shock protein family D member 1 (HspD1), is an approximately 60 kDa protein that functions as a molecular chaperone.[1] It belongs to the type I subclass of chaperonins and is found in eubacteria, mitochondria, and chloroplasts where its expression is induced by stress. Hsp60 primarily exists as a heptameric ring that it is converted to a tetradecameric double-ring structure in the presence of ATP.[2] Within mitochondria, it associates with its co-chaperone, Hsp10, to form a barrel-like structure and refold proteins that have been shuttled to the mitochondria in an ATP-dependent manner.[2,3] Hsp60 also has extramitochondrial functions such as the production of proinflammatory cytokines in human leukocytes and activation of innate immune receptors.[4,5] Hsp60 expression is increased in the serum and saliva of patients with type 2 diabetes mellitus and mutations in HSPD1 lead to neurodegenerative diseases.[5,6] Cayman's Hsp60 (HspD1) Monoclonal Antibody can be used for ELISA, IHC, and WB applications. The antibody recognizes Hsp60 (HspD1) at 61 kDa from human, mouse, and rat samples.

References

1. Levy-Rimler, G., Bell, R.E., Ben-Tal, N., *et al.* Type I chaperonins: Not all are created equal. *FEBS Lett.* **529(1)**, 1-5 (2002).
2. Okamoto, T., Yamamoto, H., Kudo, I., *et al.* HSP60 possesses a GTPase activity and mediates protein folding with HSP10. *Sci. Rep.* **7(1)**, 16931 (2017).
3. Nisemblat, S., Parnas, A., Azem, A., *et al.* Crystallization and structure determination of a symmetrical 'football' complex of the mammalian mitochondrial Hsp60-Hsp10 chaperonins. *Acta Crystallogr. F Struct. Biol. Commun.* **70(Pt 1)**, 116-119 (2013).
4. Osterloh, A., Meier-Stiegen, F., Veit, A., *et al.* Lipopolysaccharide-free heat shock protein 60 activates T cells. *J. Biol. Chem.* **279(46)**, 47906-47911 (2004).
5. Juwono, J. and Martinus, R.D. Does Hsp60 provide a link between mitochondrial stress and inflammation in diabetes mellitus? *J. Diabetes Res.* **2016:8017571** (2016).
6. Bross, P. and Fernandez-Guerra, P. Disease-associated mutations in the HSPD1 gene encoding the large subunit of the mitochondrial HSP60/HSP10 chaperonin complex. *Front. Mol. Biosci.* **3(49)**, 1-7 (2016).

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