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Complement 4d (C4d) (Acute Humoral Rejection Marker) Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone TDM16]
Catalog # AH12463

Product Information

Application	IF, E
Primary Accession	P0C0L4
Other Accession	720, 721, 534847, 720022, P0C0L5
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG1
Clone Names	TDM16
Calculated MW	192785

Additional Information

Gene ID	720;721
Other Names	Complement C4-A, Acidic complement C4, C3 and PZP-like alpha-2-macroglobulin domain-containing protein 2, Complement C4 beta chain, Complement C4-A alpha chain, C4a anaphylatoxin, C4b-A, C4d-A, Complement C4 gamma chain, C4A, CO4, CPAMD2
Application Note	IF~~1:50~200 E~~N/A
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	Complement 4d (C4d) (Acute Humoral Rejection Marker) Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	C4A {ECO:0000303|PubMed:6546707, ECO:0000312|HGNC:HGNC:1323}
Function	Precursor of non-enzymatic components of the classical, lectin and GZMK complement pathways, which consist in a cascade of proteins that leads to phagocytosis and breakdown of pathogens and signaling that strengthens the adaptive immune system.
Cellular Location	Secreted. Synapse Cell projection, axon. Cell projection, dendrite [Complement C4b-A]: Secreted. Cell surface. Note=Covalently associated with the surface of pathogens: the internal thioester bond reacts with carbohydrate antigens on the target surface to form amide or ester bonds.

Tissue Location	Complement component C4 is expressed at highest levels in the liver, at moderate levels in the adrenal cortex, adrenal medulla, thyroid gland, and the kidney, and at lowest levels in the heart, ovary, small intestine, thymus, pancreas and spleen (PubMed:11367523). The extra-hepatic sites of expression may be important for the local protection and inflammatory response (PubMed:11367523).

Background

This MAb is specific to Complement 4d (C4d) and it reacts with the secreted as well as cell-bound C4d. C4d is a degradation product of the activated complement factor C4b. Complement 4b is typically activated by binding of Abs to specific target molecules. Following activation and degradation of the C4 molecule, thio-ester groups are exposed, which allow transient, covalent binding of the degradation product Complement 4d to endothelial cell surfaces and extracellular matrix components of vascular basement membranes near the sites of C4 activation. The presence of C4d in peritubular capillaries is a key indicator for acute humoral (i.e. antibody-mediated) rejection of kidney, heart, pancreas and lung allografts. As an established marker of antibody-mediated acute renal allograft rejection and its proclivity for endothelium, this component can be detected in peritubular capillaries in chronic renal allograft rejection as well as hyperacute rejection, acute vascular rejection, acute cellular rejection, and borderline rejection. It has been shown to be a significant predictor of transplant kidney graft survival. Anti-C4d, combined with anti-C3d, can be utilized as a tool for diagnosis of allograft rejection that may warrant a prompt and aggressive anti-rejection treatment.

References

Collins AB et. al. J Am Soc Nephrol. 1999;10(10):2208-14. | Racusen LC et. al. Am J Transplant. 2003;3(6):708-14. | Sacks SH et. al. Curr Opin Nephrol Hypertens. 2002;11(6):627-8

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