AdipoGen® LIFE SCIENCES

PRODUCT DATA SHEET

AG-27B-6000PF 15-Jul-2015

anti-ADAM17 (human), mAb (rec.) (blocking) (D1(A12)) (preservative free)

[TNF-α-converting Enzyme; Disintegrin and Metalloproteinase Domain-containing Protein 17; CD156b]

AG-27B-6000PF-C100	100 µg
Conjugates/Labels	Preservative Free
Clone	D1(A12)
Isotype	Human IgG1
Immunogen	Recombinant human ADAM17 (TACE) ectodomain tagged to biotin.

Handling / Storage

Shipping	BLUE ICE
Short Term Storage	+4°C
Long Term Storage	-20°C

Avoid freeze/thaw cycles.

Use / Stability

Stable for at least 1 year after receipt when stored at -20°C.

MSDS available at www.adipogen.com or upon request.

Product Specifications

Specificity	Recognizes the catalytic and non-catalytic domain of human ADAM17 (TACE) through its variable light (VL) domain and variable heavy (VH) domain, respectively. Does not bind recombinant mouse ADAM17 ectodomain.
Species Crossreactivity	Human
Application	**FUNC (Blocking):** Inhibits ADAM17 activity at 15µg/ml (200nm). Optimal conditions should be determined individually for each application.
Purity	≥95% (SDS-PAGE)
Formulation	Liquid. In PBS.
Concentration	1mg/ml
Endotoxin Content	<0.001EU/µg

Other Product Data

This cross-domain human antibody is a selective ADAM17 (TACE) antagonist and provides a unique alternative to small molecule metalloprotease inhibition. ADAM multidomain topology was exploited by first isolating an inhibitory human antibody (D1) that bound ADAM17-specific non-catalytic regions exclusively through its variable heavy (VH) domain. A D1-VH biased scFv phage-display library was then used to selectively isolate a new variable light (VL) chain that could simultaneously bind to the ADAM17 catalytic domain.

WARNING: Intended for research use only. This product is not intended or approved for human, diagnostics, therapeutic or veterinary use. Use of this product for human or animal testing is extremely hazardous and may result in disease, severe injury, or death. **MATERIAL SAFETY DATA:** Review the complete Material Safety Data Sheet before use.

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Product Description

ADAM17 (Disintegrin and metalloproteinase domain-containing protein 17), also called TACE (Tumor necrosis factor-α-converting enzyme) is the prototype of the ADAM family of ectodomain shedding proteases (sheddase). ADAM17 is understood to be involved in the processing of TNF-α at the surface of the cell and from within the intracellular membranes of the trans-Golgi network. This process involves the cleavage and release of a soluble ectodomain from membrane-bound pro-proteins (such as pro-TNF-α) and is of known physiological importance. ADAM17 is responsible for the processing of a diverse variety of membrane-anchored cytokines, cell adhesion molecules, receptors, ligands and enzymes, including cleaving epidermal growth factor receptor (EGFR) ligands and extracellular Notch1. The proteolytic cleavage is an indispensable activation event for many of these substrates, ADAM17 has emerged as an attractive therapeutic target for the treatment of inflammatory diseases (e.g. rheumatoid arthritis) or inflammation associated cancer.

Product Specific References

1. Cross-domain inhibition of TACE ectodomain: C.J. Tape, et al.; PNAS **108,** 5578 (2011)
2. Anti-tumour effects of a specific anti-ADAM17 antibody in an ovarian cancer model in vivo: F.M. Richards, et al.; PLoS One **e40597** (2012)
3. iRHOM2 is a critical pathogenic mediator of inflammatory arthritis: P.D. Issuree, et al.; J. Clin. Invest. **123,** 928 (2013)
4. NK cell CD16 surface expression and function is regulated by a disintegrin and metalloprotease-17 (ADAM17): R. Romee, et al.; Blood **121,** 3599 (2013)
5. Development of a 'mouse and human cross-reactive' affinity-matured exosite inhibitory human antibody specific to TACE (ADAM17) for cancer immunotherapy: H.F. Kwok, et al.; Protein Eng. Des. Sel. **27,** 179 (2014)
6. Targeting the sheddase activity of ADAM17 by an anti-ADAM17 antibody D1(A12) inhibits head and neck squamous cell carcinoma cell proliferation and motility via blockage of bradykinin induced HERs transactivation: Y. Huang, et al.; Int. J. Biol. Sci. **10,** 702 (2014)
7. Targeting ADAM-17 with an inhibitory monoclonal antibody has antitumour effects in triple-negative breast cancer cells: F. Caiazza, et al.; Br. J. Cancer **112,** 1895 (2015)
8. Recent advances in the field of anti-cancer immunotherapy: H. Neves & H.F. Kwok; BBA Clinical **3,** 280 (2015) (Review)

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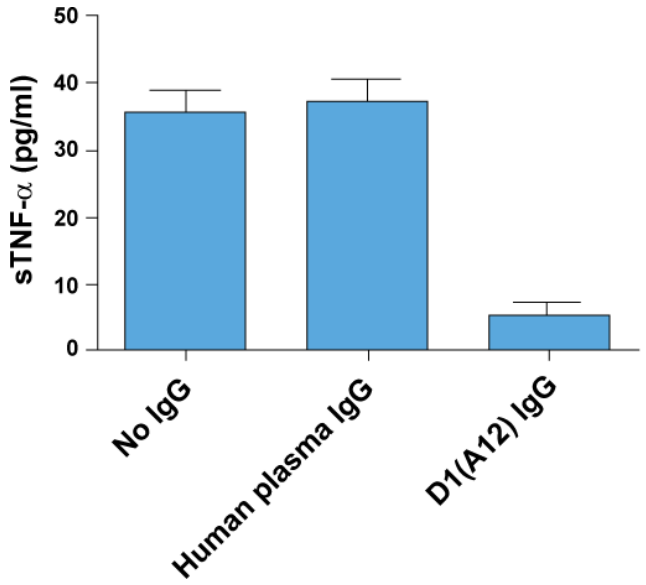

Figure 1: D1(A12) IgG inhibits constitutive shedding of TNF-α from IGROV1 (human ovarian cancer cell line) into culture medium. Medium was collected after 48 hours of incubation with or without IgGs at 200nM.

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