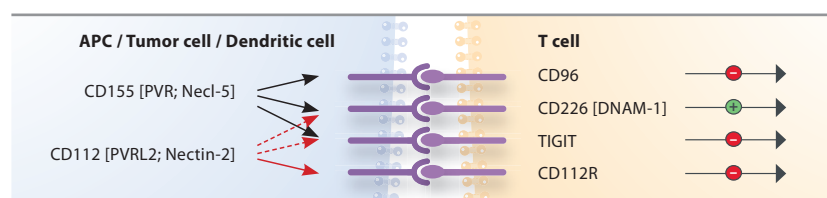


# Advanced Immune-Regulation Reagents

2<sup>nd</sup> Edition

## CD112R – NEW & UNIQUE Immune Checkpoint Receptor

CD112R [PVRIG; Poliovirus receptor-related immunoglobulin domain-containing protein] is a new high affinity receptor of CD112/Nectin-2. It inhibits TCR-mediated signals upon binding to CD112/Nectin-2. CD112R as a new regulator of the immune system may become a new attractive cancer immunotherapy target.



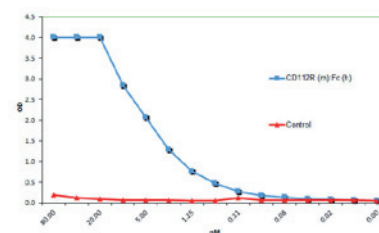
**FIGURE:** Regulation and activation of T lymphocytes depend on signaling by the T cell receptor (TCR) and also by cosignaling receptors of the Poliovirus receptor (PVR)-like proteins that deliver negative (—●→) or positive (—●→) signals.

**NEW**

### CD112R (mouse):Fc (human) (rec.)

AG-40B-0170

10 µg | 3 x 10 µg



**FIGURE:** Binding of CD112R (mouse):Fc (human) (rec.) (AG-40B-0170) to Nectin-2/CD112 (mouse) (rec.).

## LATEST INSIGHT

### CD28/B7 Pathway – Importance in PD-1 Therapy

PD-1–targeted therapies have been a breakthrough for treating certain tumors and can rejuvenate T cells to unleash the anticancer immune response. Recently, it was shown that PD1 inhibits T cell activation by suppressing positive co-stimulation through CD28, instead of TCR itself. CD28 is required for PD-1 therapies to kill cancer cells efficiently and eliminate chronic viral infections in mice and is a critical target for PD-1 blockade.

**LIT:** Rescue of exhausted CD8 T cells by PD-1–targeted therapies is CD28-dependent: A.O. Kamphorst, et al.; Science 355, 1423 (2017) • T cell costimulatory receptor CD28 is a primary target for PD-1–mediated inhibition: E. Hui, et al.; Science 355, 1428 (2017)

#### CD28 (human):Fc (human) (rec.)

CHI-HF-210CD28

200 µg

#### CD28 (mouse):Fc (mouse) (rec.)

CHI-MF-110CD28

200 µg

#### CD80 (human):Fc (human) (rec.)

CHI-HF-210CD80

100 µg

#### CD80 (mouse):Fc (mouse) (rec.)

CHI-MF-110CD80

100 µg

#### CD86 (human):Fc (human) (rec.)

CHI-HF-210CD86

100 µg

#### CD86 (mouse):Fc (mouse) (rec.)

CHI-MF-110CD86

100 µg

#### PD-L1 (human):Fc (human) (rec.) (non-lytic)

CHI-HF-220PDL1

100 µg

#### PD-L1 (mouse):Fc (mouse) (rec.) (non-lytic)

CHI-MF-120PDL1

100 µg

# New Role of IL-33 – Expansion of T Regulatory Cells (Treg)

IL-33 has emerged as a multifunctional protein, with roles in driving potent Type 1 and Type 2 immunity, as well as facilitating profound Treg expansion *in vitro* and *in vivo*. IL-33-expanded Treg express the IL-33 receptor ST2 and classical markers associated with Treg phenotype and suppressor function. IL-33 may potentially be used to promote/maintain organ transplant tolerance or suppress autoimmunity and has been associated with Treg-mediated wound healing.

**LIT:** Poor repair of skeletal muscle in aging mice reflects a defect in local, interleukin-33-dependent accumulation of regulatory T cells: W. Kuswanto, et al; *Immunity* **44**, 355 (2016) • Expansion of regulatory T cells in vitro and in vivo by IL-33: B.M. Matta & H.R. Turnquist; *Methods Mol. Biol.* **1371**, 29 (2016)

**UNIQUE**

## NEW Highly Active Human IL-33 Proteins

### IL-33 (oxidation resistant) (human) (rec.)

AG-40B-0160	Untagged	10 µg   100 µg
AG-40B-0167	His-Tag	10 µg   100 µg

**LIT:** Oxidation of the alarmin IL-33 regulates ST2-dependent inflammation: E.S. Cohen, et al; *Nat. Commun.* **6**, ID8327 (2015)

**UNIQUE**

## Antibody inhibiting the binding of mouse IL-33 to ST2/IL-1RAcP

### IL-33 (mouse), mAb (rec.) (blocking) (Bondy-1-1)

AG-27B-0013		100 µg
AG-27B-0013PF	Preservative Free	100 µg   500 µg   1mg

**LIT:** Regulation of de novo adipocyte differentiation through crosstalk between adipocytes and pre-adipocytes: T.D. Challa, et al; *Diabetes* **64**, 4075 (2015)

Visit [www.adipogen.com](http://www.adipogen.com) for a **Complete Panel of IL-33 Proteins, Antibodies & ELISA Kits!**

## Highly Active IL-36 Family Proteins

IL-36α, β, γ are members of the IL-1 family with proinflammatory effects and involvement in first-line defence against microorganisms. IL-36γ is associated with skin, lung and bowel inflammation and was shown to be a specific biomarker for psoriasis.

### IL-36α (aa 8-160) (mouse) (rec.) (untagged)

AG-40B-0098 10 µg

### IL-36β (aa 31-183) (mouse) (rec.) (untagged)

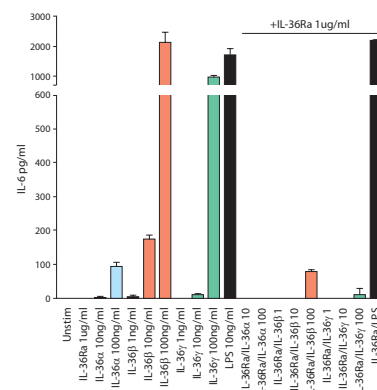
AG-40B-0099 10 µg

### IL-36γ (aa 13-164) (mouse) (rec.) (untagged)

AG-40B-0100 10 µg

### IL-36Ra (aa 3-156) (mouse) (rec.) (untagged)

AG-40B-0096 10 µg | 3 x 10 µg



**FIGURE:** IL-36Ra (aa 3-156) (mouse) (rec.) (AG-40B-0096) inhibits IL-36α, IL-36β, IL-36γ-dependent expression of IL-6 in mouse BMDCs.

## UNIQUE IL-36γ & IL-37 ELISA Kits

### NEW IL-36γ (human) ELISA Kit

AG-45B-0008 96 wells

IL-36γ is a specific marker for Psoriasis. This assay is highly specific for human IL-36γ. Does not cross-react with human IL-36α and IL-36β.

**Sensitivity:** 3 pg/ml

**Range:** 3.9 to 250 pg/ml

**Sample:** Serum, Cell Culture Supernatant

### IL-37 (human) ELISA Kit

AG-45A-0041Y 96 wells | TwinPlex

IL-37 is a new anti-inflammatory cytokine. This assay detects natural and recombinant monomeric and dimeric human IL-37.

**Sensitivity:** 10 pg/ml

**Range:** 16 to 1000 pg/ml

**Sample:** Serum, Plasma

**LIT:** Homodimerization attenuates the anti-inflammatory activity of interleukin-37: A.M. Ellisdon, et al; *Sci. Immunol.* **2**, eaaj1548 (2017)

# Plasma Cell Survival & Proliferation Blocking Antibodies

## **BULK** anti-BAFF (mouse), mAb (blocking) (Sandy-2)

AG-20B-0063 100 µg  
AG-20B-0063PF Preservative Free 100 µg | 500 µg

**Functional Application:** **Depletion of B cells *in vivo***. Inhibition of mouse BAFF binding to BAFF-R and TACI (BCMA not tested); blocks BAFF activity in mice.

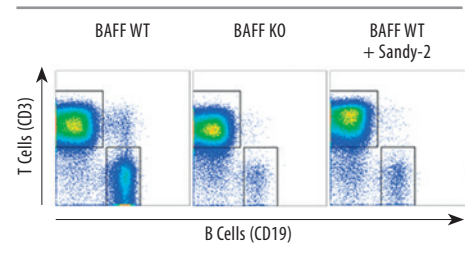
**LIT:** The B cell-stimulatory cytokines BlyS and APRIL are elevated in human periodontitis and are required for B cell-dependent bone loss in experimental murine periodontitis: T. Abe, et al.; J. Immunol. 195, 1427 (2015)

## **BULK** anti-APRIL (mouse), mAb (rec.) (blocking) (Apry-1-1)

AG-27B-0001 100 µg  
AG-27B-0001PF Preservative Free 100 µg  
AG-27B-0001B Biotin 100 µg

**Functional Application:** **Depletion of plasma cells**. Inhibits binding of mouse APRIL to mouse BCMA and TACI.

**LIT:** Production of the plasma-cell survival factor APRIL peaks in myeloid precursor cells from human bone marrow: T. Matthes, et al.; Blood 118, 1838 (2011)



**FIGURE:** anti-BAFF (mouse), mAb (Sandy-2) (Prod. No. AG-20B-0063) blocks the action of endogenous BAFF *in vivo*.

**METHOD:** Wild type C57BL/6 mice were treated at day 0 (single administration) with monoclonal antibody anti-BAFF (mouse), mAb (Sandy-2) (at 2mg/kg). Lymph nodes were prepared at week 2 and analyzed by FACS for the presence of T (CD3) and B (CD19) cells. Untreated BAFF WT and KO mice were analyzed in parallel.

# Multimeric & Mutant Cytokines with Increased Activity

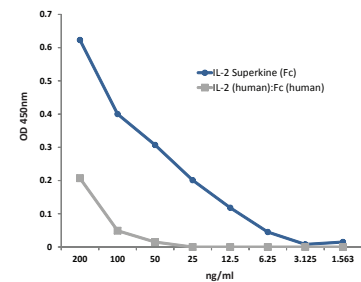
## IL-2 Superkine (Fc)

AG-40B-0111 10 µg | 3 x 10 µg

Compared to IL-2, IL-2 Superkine does not require CD25 to be active and induces superior expansion of cytotoxic CD8<sup>+</sup> T and NK cells, leading to improved antitumor responses *in vivo*. IL-2 Superkine activates only poorly T regulatory cells (Tregs), meaning less toxic effects *in vivo*.

**LIT:** Exploiting a natural conformational switch to engineer an interleukin-2 'superkine': AM. Levin, et al.; Nature 484, 529 (2012)

**FIGURE:** Binding of IL-2 Superkine (Fc) (Prod. No. AG-40B-0111) to IL-2Rβ (human) is increased 10 fold compared to IL-2 (human):Fc (human).



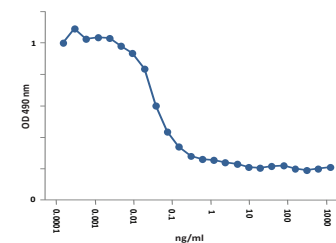
## BAFF, Soluble (human) (60-mer) (rec.) (highly active)

AG-40B-0112 10 µg | 3 x 10 µg

**Biological Activity:** Increases B cell survival/proliferation. Increases CD21/CD23 expression on B cells *in vivo*. **Activates BAFF-R, TACI and BCMA receptors**. Works at concentrations <20ng/ml.

**LIT:** Mutation of the BAFF furin cleavage site impairs B-cell homeostasis and antibody responses: C. Bossen, et al.; Eur. J. Immunol. 41, 787 (2011)

**FIGURE:** BAFF, Soluble (human) (60-mer) (Prod. No. AG-40B-0112) binds and activates BCMA receptor.



# TNF Ligands Multimeric Proteins

## APRIL (human) (multimeric) (rec.)

AG-40B-0017 10 µg | 3 x 10 µg

Binds to human and mouse BCMA and TACI. Binds to proteoglycans. Stimulates B cell proliferation.

## APRIL (human) (H98) (multimeric) (rec.)

AG-40B-0088 10 µg | 3 x 10 µg

Binds to human and mouse BCMA and TACI. Does not bind to proteoglycans. Stimulates B cell proliferation.

## Fc (human):OX40L, Soluble (human) (rec.)

AG-40B-0172 10 µg | 3 x 10 µg

Binds to human OX40 [CD134] and activates T cell proliferation.

## CD40L (human) (multimeric) (rec.)

AG-40B-0010 10 µg | 3 x 10 µg

Potent B cell activator.

## FasL (human) (multimeric) (rec.) [MegaFasL™]

AG-40B-0130 10 µg | 3 x 10 µg

Induces apoptosis of human Jurkat T cells at <0.2ng/ml.

**For a Complete Overview see our  
TNF Ligands Multimeric Proteins Product Flyer!**

## Highly Active hIDO1 *For Enzymatic Assays & Inhibitor Screenings*

### IDO1 (human) (rec.) (His) (highly active)

AG-40B-0161

50 µg

**Specific Activity:** >100'000U/mg protein with L-tryptophan as substrate (activity assay with catalase). One unit is defined as the amount of enzyme that produces 1nmol of N-formylkynurenine (NFK) per hour.

### Potent Triazole IDO1 Inhibitor: MMG-0358

AG-CR1-3630

1 mg | 5 mg

Shows IC<sub>50</sub> values of 2nM in a cellular assay on mIDO1, 80nM in a cellular assay on hIDO1, 330nM in an enzymatic assay on hIDO1 at pH 6.5, and 71nM in an enzymatic assay on hIDO1 at pH 7.4. Active *in vivo*.

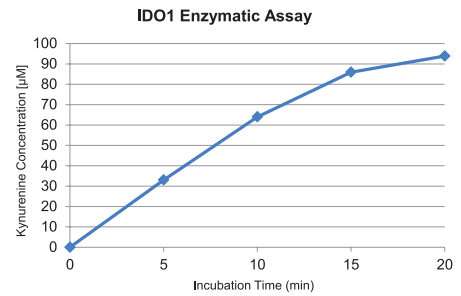
**LIT:** Rational design of 4-aryl-1,2,3-triazoles for indoleamine 2,3-dioxygenase 1 inhibition: U.F. Roehrig, et al.; J. Med. Chem. 55, 5270 (2012)

### **NEW** IDO1 (human) Enzyme + Inhibitor Set

AG-44B-0006

1 Set

Includes 1x50 µg of Prod. No. AG-40B-0161 and 1x100 µg of Prod. No. AG-CR1-3630.



**FIGURE:** Enzymatic activity assay of IDO (human) (rec.) (His) (highly active) (Prod. No. AG-40B-0161).

**UNIQUE**

## Highly Active DLL4 Mutant Protein

### **NEW** DLL4 (human):Fc (human) (rec.) (highly active mutant)

AG-40B-0176

10 µg | 100 µg

Interacts with human Notch1 with >20 fold increase in affinity relative to WT DLL4 (as confirmed by ELISA).

Visit [www.adipogen.com](http://www.adipogen.com) for a **Complete Panel of Notch-related Reagents!**


**BULK**

### *In vivo* Inflammasome Inhibitor

#### MCC950 . sodium salt (>98%)

AG-CR1-3615

1 mg | 5 mg | 10 mg

**BULK**

### From the Manufacturer of iNKT Stimulators

#### α-Galactosylceramide (>96%) [KRN 7000]

AG-CN2-0013

250 µg | 1 mg

**THE STANDARDS**

## Potent Immunosuppressants

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