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## Proceedings of the National Academy of Sciences

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# CD40-CD40 ligand interactions in experimental allergic encephalomyelitis and multiple sclerosis

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## Abstract

We investigated the role of CD40-CD40 ligand (CD40L) interactions in multiple sclerosis (MS) and experimental allergic encephalomyelitis (EAE). Activated helper T cells expressing CD40L (gp39) surface protein were found in MS patient brain sections, but not in brain tissue sections of normal controls or patients with other neurological disease. CD40L-positive cells were co-localized with CD40-bearing cells in active lesions (perivascular infiltrates). Most of these CD40-bearing cells proved to be of the monocytic lineage (macrophages or microglial cells), and relatively few were B cells. To functionally evaluate CD40-CD40L interactions, EAE was elicited in mice by means of proteolipid-peptide immunization. Treatment with anti-CD40L monoclonal antibody completely prevented the development of disease. Furthermore, administration of anti-CD40L monoclonal antibody, even after disease onset, shortly before maximum disability score was reached led to dramatic disease reduction. The presence of helper T cells expressing CD40L in brain tissue of MS patients and EAE animals, together with the functional evidence provided by successful experimental prevention and therapy in an animal model, indicates that blockade of CD40-CD40L-mediated cellular interactions may be a method for interference in active MS.

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J. Immunol. (The Journal of Immunology) 2002 168 (8) 3747-3754

Abstract (<http://www.jimmunol.org/cgi/content/abstract/168/8/3747>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/168/8/3747>) | Full Text (PDF)  
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**Spontaneous formation of germinal centers in autoimmune mice**

J. Leukoc. Biol. (Journal of Leukocyte Biology) 2001 70 (4) 578-584

Abstract (<http://www.jleukbio.org/cgi/content/abstract/70/4/578>) | Full Text (HTML)  
 (<http://www.jleukbio.org/cgi/content/full/70/4/578>) | Full Text (PDF) (<http://www.jleukbio.org/cgi/reprint/70/4/578>)

**Prevention of Experimental Autoimmune Encephalomyelitis in the Common Marmoset (Callithrix jacchus) Using a Chimeric Antagonist Monoclonal Antibody Against Human CD40 Is Associated with Altered B Cell Responses**

J. Immunol. (The Journal of Immunology) 2001 167 (5) 2942-2949

Abstract (<http://www.jimmunol.org/cgi/content/abstract/167/5/2942>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/167/5/2942>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/167/5/2942>)

**CD40 Co-Stimulatory Molecule Expression by Dendritic Cells in Primary Atherosclerotic Lesions in Carotid Arteries and in Stenotic Saphenous Vein Coronary Artery Grafts**

Vascular (Vascular) 2001 9 (4) 329-333

Abstract (<http://vas.sagepub.com/cgi/content/abstract/9/4/329>) | Full Text (PDF)  
 (<http://vas.sagepub.com/cgi/reprint/9/4/329>)

**Blockade of CD40 Ligand Suppresses Chronic Experimental Myasthenia Gravis by Down-Regulation of Th1 Differentiation and Up-Regulation of CTLA-4**

J. Immunol. (The Journal of Immunology) 2001 166 (11) 6893-6898

Abstract (<http://www.jimmunol.org/cgi/content/abstract/166/11/6893>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/166/11/6893>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/166/11/6893>)

**The Clinical Course of Experimental Autoimmune Encephalomyelitis and Inflammation Is Controlled by the Expression of Cd40 within the Central Nervous System**

JEM (Journal of Experimental Medicine) 2001 193 (8) 967-974

Abstract (<http://jem.rupress.org/cgi/content/abstract/193/8/967>) | Full Text (HTML)  
 (<http://jem.rupress.org/cgi/content/full/193/8/967>) | Full Text (PDF) (<http://jem.rupress.org/cgi/reprint/193/8/967>)

**Absence of Monocyte Chemoattractant Protein 1 in Mice Leads to Decreased Local Macrophage Recruitment and Antigen-Specific T Helper Cell Type 1 Immune Response in Experimental Autoimmune Encephalomyelitis**

JEM (Journal of Experimental Medicine) 2001 193 (6) 713-726

Abstract (<http://jem.rupress.org/cgi/content/abstract/193/6/713>) | Full Text (HTML)  
 (<http://jem.rupress.org/cgi/content/full/193/6/713>) | Full Text (PDF) (<http://jem.rupress.org/cgi/reprint/193/6/713>)

**CD40/CD40 Ligand Interactions Are Critical for Elicitation of Autoimmune-Mediated Fibrosis in the Lung**

J. Immunol. (The Journal of Immunology) 2001 166 (5) 3556-3563

Abstract (<http://www.jimmunol.org/cgi/content/abstract/166/5/3556>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/166/5/3556>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/166/5/3556>)

**CD4+ and CD8+ T Cell Priming for Contact Hypersensitivity Occurs Independently of CD40-CD154 Interactions**

J. Immunol. (The Journal of Immunology) 2001 166 (4) 2323-2332

Abstract (<http://www.jimmunol.org/cgi/content/abstract/166/4/2323>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/166/4/2323>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/166/4/2323>)

**Autoimmune Intervention by CD154 Blockade Prevents T Cell Retention and Effector Function in the Target Organ**

J. Immunol. (The Journal of Immunology) 2001 166 (3) 1547-1553

Abstract (<http://www.jimmunol.org/cgi/content/abstract/166/3/1547>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/166/3/1547>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/166/3/1547>)

**Prolonged Islet Graft Survival in NOD Mice by Blockade of the CD40-CD154 Pathway of T-Cell Costimulation**

Diabetes (Diabetes) 2001 50 (2) 270-276

Abstract (<http://diabetes.diabetesjournals.org/cgi/content/abstract/50/2/270>) | Full Text (HTML)  
 (<http://diabetes.diabetesjournals.org/cgi/content/full/50/2/270>)

**CD40 Ligand--an important target for immunotherapy?**

Lupus (Lupus) 2001 10 (1) 1-3

Full Text (PDF) (<http://lup.sagepub.com/cgi/reprint/10/1/1>)

**Long-term anti-CD154 dosing in nephritic mice is required to maintain survival and inhibit mediators of renal fibrosis**

Lupus (Lupus) 2001 10 (1) 9-22

Abstract (<http://lup.sagepub.com/cgi/content/abstract/10/1/9>) | Full Text (PDF)  
 (<http://lup.sagepub.com/cgi/reprint/10/1/9>)

**Increased T Cell Autoreactivity in the Absence of CD40-CD40 Ligand Interactions: A Role of CD40 in Regulatory T Cell Development**

J. Immunol. (The Journal of Immunology) 2001 166 (1) 353-360

Abstract (<http://www.jimmunol.org/cgi/content/abstract/166/1/353>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/166/1/353>) | Full Text (PDF) (<http://www.jimmunol.org/cgi/reprint/166/1/353>)

**The New Pathology of Multiple Sclerosis**

Mult Scler (Multiple Sclerosis) 2000 6 (6) 409-410

Full Text (PDF) (<http://msj.sagepub.com/cgi/reprint/6/6/409>)

**Amelioration of Experimental Autoimmune Uveoretinitis by Pretreatment with a Pathogenic Peptide in Liposome and Anti-CD40 Ligand Monoclonal Antibody**

J. Immunol. (The Journal of Immunology) 2000 165 (6) 2962-2969

Abstract (<http://www.jimmunol.org/cgi/content/abstract/165/6/2962>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/165/6/2962>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/165/6/2962>)

**Involvement of STAT-1 and Ets Family Members in Interferon- $\gamma$  Induction of CD40 Transcription in Microglia/Macrophages**

J Biol Chem (Journal of Biological Chemistry) 2000 275 (31) 23674-23684

Abstract (<http://www.jbc.org/cgi/content/abstract/275/31/23674>) | Full Text (HTML)  
 (<http://www.jbc.org/cgi/content/full/275/31/23674>) | Full Text (PDF) (<http://www.jbc.org/cgi/reprint/275/31/23674>)

**IFN- $\beta$ -1b Inhibits IL-12 Production in Peripheral Blood Mononuclear Cells in an IL-10-Dependent Mechanism: Relevance to IFN- $\beta$ -1b Therapeutic Effects in Multiple Sclerosis**

J. Immunol. (The Journal of Immunology) 2000 165 (1) 548-557

Abstract (<http://www.jimmunol.org/cgi/content/abstract/165/1/548>) | Full Text (HTML)

(<http://www.jimmunol.org/cgi/content/full/165/1/548>) | Full Text (PDF) (<http://www.jimmunol.org/cgi/reprint/165/1/548>)

**Both early and delayed anti-CD40L antibody treatment induces a stable plaque phenotype**

Proc. Natl. Acad. Sci. USA (PNAS) 2000 97 (13) 7464-7469

Abstract (<http://www.pnas.org/cgi/content/abstract/97/13/7464>) | Full Text (HTML) (<http://www.pnas.org/cgi/content/full/97/13/7464>) | Full Text (PDF)

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**Prevention of Experimental Colitis in SCID Mice Reconstituted with CD45RB<sup>high</sup> CD4<sup>+</sup> T Cells by Blocking the CD40-CD154 Interactions**

J. Immunol. (The Journal of Immunology) 2000 164 (11) 6005-6014

Abstract (<http://www.jimmunol.org/cgi/content/abstract/164/11/6005>) | Full Text (HTML)

(<http://www.jimmunol.org/cgi/content/full/164/11/6005>) | Full Text (PDF)

(<http://www.jimmunol.org/cgi/reprint/164/11/6005>)

**The Roles of CD28 and CD40 Ligand in T Cell Activation and Tolerance**

J. Immunol. (The Journal of Immunology) 2000 164 (9) 4465-4470

Abstract (<http://www.jimmunol.org/cgi/content/abstract/164/9/4465>) | Full Text (HTML)

(<http://www.jimmunol.org/cgi/content/full/164/9/4465>) | Full Text (PDF)

(<http://www.jimmunol.org/cgi/reprint/164/9/4465>)

**Visualization of Myelin Basic Protein (Mbp) T Cell Epitopes in Multiple Sclerosis Lesions Using a Monoclonal Antibody Specific for the Human Histocompatibility Leukocyte Antigen (Hla)-Dr2-Mbp 85-99 Complex**

JEM (Journal of Experimental Medicine) 2000 191 (8) 1395-1412

Abstract (<http://jem.rupress.org/cgi/content/abstract/191/8/1395>) | Full Text (HTML)

(<http://jem.rupress.org/cgi/content/full/191/8/1395>) | Full Text (PDF) (<http://jem.rupress.org/cgi/reprint/191/8/1395>)

**Presentation of  $\alpha$ B-Crystallin to T Cells in Active Multiple Sclerosis Lesions: An Early Event Following Inflammatory Demyelination**

J. Immunol. (The Journal of Immunology) 2000 164 (8) 4359-4366

Abstract (<http://www.jimmunol.org/cgi/content/abstract/164/8/4359>) | Full Text (HTML)

(<http://www.jimmunol.org/cgi/content/full/164/8/4359>) | Full Text (PDF)

(<http://www.jimmunol.org/cgi/reprint/164/8/4359>)

**Systemic upregulation of CD40 and CD40 ligand mRNA expression in multiple sclerosis**

Mult Scler (Multiple Sclerosis) 2000 6 (2) 61-65

Abstract (<http://msj.sagepub.com/cgi/content/abstract/6/2/61>) | Full Text (PDF)

(<http://msj.sagepub.com/cgi/reprint/6/2/61>)

**The CD40/CD40 Ligand Interaction Is Required for Resistance to Toxoplasmic Encephalitis**

Infect. Immun. (Infection and Immunity) 2000 68 (3) 1312-1318

Abstract (<http://iai.asm.org/cgi/content/abstract/68/3/1312>) | Full Text (HTML)

(<http://iai.asm.org/cgi/content/full/68/3/1312>) | Full Text (PDF) (<http://iai.asm.org/cgi/reprint/68/3/1312>)

**Functional Maturation of Adult Mouse Resting Microglia into an APC Is Promoted by Granulocyte-Macrophage Colony-Stimulating Factor and Interaction with Th1 Cells**

J. Immunol. (The Journal of Immunology) 2000 164 (4) 1705-1712

Abstract (<http://www.jimmunol.org/cgi/content/abstract/164/4/1705>) | Full Text (HTML)

(<http://www.jimmunol.org/cgi/content/full/164/4/1705>) | Full Text (PDF)

(<http://www.jimmunol.org/cgi/reprint/164/4/1705>)

**Acquired, but Not Innate, Immune Responses to Streptococcus pneumoniae Are Compromised by Neutralization of CD40L**

Infect. Immun. (Infection and Immunity) 2000 68 (2) 511-517

Abstract (<http://iai.asm.org/cgi/content/abstract/68/2/511>) | Full Text (HTML)

(<http://iai.asm.org/cgi/content/full/68/2/511>) | Full Text (PDF) (<http://iai.asm.org/cgi/reprint/68/2/511>)

**Resting B Lymphocytes as APC for Naive T Lymphocytes: Dependence on CD40 Ligand/CD40**

J. Immunol. (The Journal of Immunology) 2000 164 (2) 688-697

Abstract (<http://www.jimmunol.org/cgi/content/abstract/164/2/688>) | Full Text (HTML)

(<http://www.jimmunol.org/cgi/content/full/164/2/688>) | Full Text (PDF) (<http://www.jimmunol.org/cgi/reprint/164/2/688>)

**Pararosaniline Fixation for Detection of Co-stimulatory Molecules, Cytokines, and Specific Antibody**

J Histochem Cytochem (Journal of Histochemistry & Cytochemistry) 2000 48 (1) 95-103

Abstract (<http://jhc.sagepub.com/cgi/content/abstract/48/1/95>) | Full Text (HTML)  
 (<http://jhc.sagepub.com/cgi/content/full/48/1/95>) | Full Text (PDF) (<http://jhc.sagepub.com/cgi/reprint/48/1/95>)

**CD4+ T Cell Responses to CD40-Deficient APCs: Defects in Proliferation and Negative Selection Apply Only with B Cells as APCs**

J. Immunol. (The Journal of Immunology) 1999 163 (10) 5250-5256  
 Abstract (<http://www.jimmunol.org/cgi/content/abstract/163/10/5250>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/163/10/5250>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/163/10/5250>)

**Hyperexpression of CD40 Ligand (CD154) in Inflammatory Bowel Disease and Its Contribution to Pathogenic Cytokine Production**

J. Immunol. (The Journal of Immunology) 1999 163 (7) 4049-4057  
 Abstract (<http://www.jimmunol.org/cgi/content/abstract/163/7/4049>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/163/7/4049>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/163/7/4049>)

**Long-term survival and function of intrahepatic islet allografts in rhesus monkeys treated with humanized anti-CD154**

Proc. Natl. Acad. Sci. USA (PNAS) 1999 96 (14) 8132-8137  
 Abstract (<http://www.pnas.org/cgi/content/abstract/96/14/8132>) | Full Text (HTML) ([/cgi/content/full/96/14/8132](http://www.pnas.org/cgi/content/full/96/14/8132)) | Full Text (PDF)  
 ([/cgi/reprint/96/14/8132](http://www.pnas.org/cgi/reprint/96/14/8132))

**CCR5+ and CXCR3+ T cells are increased in multiple sclerosis and their ligands MIP-1{alpha} and IP-10 are expressed in demyelinating brain lesions**

Proc. Natl. Acad. Sci. USA (PNAS) 1999 96 (12) 6873-6878  
 Abstract ([/cgi/content/abstract/96/12/6873](http://www.pnas.org/cgi/content/abstract/96/12/6873)) | Full Text (HTML) ([/cgi/content/full/96/12/6873](http://www.pnas.org/cgi/content/full/96/12/6873)) | Full Text (PDF)  
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**Mechanisms of IL-10 Production in Human Microglia-T Cell Interaction**

J. Immunol. (The Journal of Immunology) 1999 162 (11) 6819-6828  
 Abstract (<http://www.jimmunol.org/cgi/content/abstract/162/11/6819>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/162/11/6819>) | Full Text (PDF)  
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**Expression of mitogen activated protein kinases in labial salivary glands of patients with Sjogren's syndrome**

Ann Rheum Dis (Annals of the Rheumatic Diseases) 1999 58 (6) 382-385  
 Abstract (<http://ard.bmjournals.com/cgi/content/abstract/58/6/382>) | Full Text (HTML)  
 (<http://ard.bmjournals.com/cgi/content/full/58/6/382>) | Full Text (PDF) (<http://ard.bmjournals.com/cgi/reprint/58/6/382>)

**CD28 Costimulation Is Crucial for the Development of Spontaneous Autoimmune Encephalomyelitis**

J. Immunol. (The Journal of Immunology) 1999 162 (8) 4490-4495  
 Abstract (<http://www.jimmunol.org/cgi/content/abstract/162/8/4490>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/162/8/4490>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/162/8/4490>)

**Regulation of Interleukin (IL)-12 Receptor {beta}2 Subunit Expression by Endogenous IL-12: A Critical Step in the Differentiation of Pathogenic Autoreactive T Cells**

JEM (Journal of Experimental Medicine) 1999 189 (6) 969-978  
 Abstract (<http://jem.rupress.org/cgi/content/abstract/189/6/969>) | Full Text (HTML)  
 (<http://jem.rupress.org/cgi/content/full/189/6/969>) | Full Text (PDF) (<http://jem.rupress.org/cgi/reprint/189/6/969>)

**CD40 Signaling of Monocyte Inflammatory Cytokine Synthesis through an ERK1/2-dependent Pathway: A TARGET OF INTERLEUKIN (IL)-4 AND IL-10 ANTI-INFLAMMATORY ACTION**

J Biol Chem (Journal of Biological Chemistry) 1999 274 (9) 5835-5842  
 Abstract (<http://www.jbc.org/cgi/content/abstract/274/9/5835>) | Full Text (HTML)  
 (<http://www.jbc.org/cgi/content/full/274/9/5835>) | Full Text (PDF) (<http://www.jbc.org/cgi/reprint/274/9/5835>)

**CD40 Activation Boosts T Cell Immunity In Vivo by Enhancing T Cell Clonal Expansion and Delaying Peripheral T Cell Deletion**

J. Immunol. (The Journal of Immunology) 1999 162 (4) 2024-2034  
 Abstract (<http://www.jimmunol.org/cgi/content/abstract/162/4/2024>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/162/4/2024>) | Full Text (PDF)  
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**CD40-CD154 Interaction and IFN-{gamma} Are Required for IL-12 But Not Prostaglandin E2 Secretion by Microglia During Antigen Presentation to Th1 Cells**

J. Immunol. (The Journal of Immunology) 1999 162 (3) 1384-1391



Abstract (<http://www.jimmunol.org/cgi/content/abstract/162/3/1384>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/162/3/1384>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/162/3/1384>)

#### Induction of Immunologic Tolerance for Transplantation

Physiol. Rev. (Physiological Reviews) 1999 79 (1) 99-141

Abstract (<http://physrev.physiology.org/cgi/content/abstract/79/1/99>) | Full Text (HTML)  
 (<http://physrev.physiology.org/cgi/content/full/79/1/99>) | Full Text (PDF)  
 (<http://physrev.physiology.org/cgi/reprint/79/1/99>)

#### Immune Invasion of the Central Nervous System Parenchyma and Experimental Allergic Encephalomyelitis, But Not Leukocyte Extravasation from Blood, Are Prevented in Macrophage-Depleted Mice

J. Immunol. (The Journal of Immunology) 1998 161 (7) 3767-3775

Abstract (<http://www.jimmunol.org/cgi/content/abstract/161/7/3767>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/161/7/3767>) | Full Text (PDF)  
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#### Antitumor Effect of CD40 Ligand: Elicitation of Local and Systemic Antitumor Responses by IL-12 and B7

J. Immunol. (The Journal of Immunology) 1998 161 (4) 1901-1907

Abstract (<http://www.jimmunol.org/cgi/content/abstract/161/4/1901>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/161/4/1901>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/161/4/1901>)

#### Kinetics of Expression of Costimulatory Molecules and Their Ligands in Murine Relapsing Experimental Autoimmune Encephalomyelitis In Vivo

J. Immunol. (The Journal of Immunology) 1998 161 (3) 1104-1112

Abstract (<http://www.jimmunol.org/cgi/content/abstract/161/3/1104>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/161/3/1104>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/161/3/1104>)

#### Anti-CD40L Accelerates Renal Disease and Adenopathy in MRL-lpr Mice in Parallel with Decreased Thymocyte Apoptosis

J. Immunol. (The Journal of Immunology) 1998 161 (2) 729-739

Abstract (<http://www.jimmunol.org/cgi/content/abstract/161/2/729>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/161/2/729>) | Full Text (PDF) (<http://www.jimmunol.org/cgi/reprint/161/2/729>)

#### Therapy with antibodies against CD40L (CD154) and CD44-variant isoforms reduces experimental autoimmune encephalomyelitis induced by a proteolipid protein peptide

Mult Scler (Multiple Sclerosis) 1998 4 (3) 147-153

Abstract (<http://msj.sagepub.com/cgi/content/abstract/4/3/147>) | Full Text (PDF)  
 (<http://msj.sagepub.com/cgi/reprint/4/3/147>)

#### Microglia Are More Efficient Than Astrocytes in Antigen Processing and in Th1 But Not Th2 Cell Activation

J. Immunol. (The Journal of Immunology) 1998 160 (10) 4671-4680

Abstract (<http://www.jimmunol.org/cgi/content/abstract/160/10/4671>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/160/10/4671>) | Full Text (PDF)  
 (<http://www.jimmunol.org/cgi/reprint/160/10/4671>)

#### CD40 ligand (CD154) stimulation of macrophages to produce HIV-1-suppressive {beta}-chemokines

Proc. Natl. Acad. Sci. USA (PNAS) 1998 95 (9) 5205-5210

Abstract (<http://www.pnas.org/cgi/content/abstract/95/9/5205>) | Full Text (HTML) (<http://www.pnas.org/cgi/content/full/95/9/5205>) | Full Text (PDF) (<http://www.pnas.org/cgi/reprint/95/9/5205>)

#### CD40 Ligand Is Not Essential for Induction of Type 1 Cytokine Responses or Protective Immunity after Primary or Secondary Infection With Histoplasma capsulatum

JEM (Journal of Experimental Medicine) 1998 187 (8) 1315-1324

Abstract (<http://jem.rupress.org/cgi/content/abstract/187/8/1315>) | Full Text (HTML)  
 (<http://jem.rupress.org/cgi/content/full/187/8/1315>) | Full Text (PDF) (<http://jem.rupress.org/cgi/reprint/187/8/1315>)

#### Anti-CD40 Ligand Antibody Treatment of SNF1 Mice with Established Nephritis: Preservation of Kidney Function

J. Immunol. (The Journal of Immunology) 1998 160 (5) 2158-2165

Abstract (<http://www.jimmunol.org/cgi/content/abstract/160/5/2158>) | Full Text (HTML)  
 (<http://www.jimmunol.org/cgi/content/full/160/5/2158>) | Full Text (PDF)  
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Proc. Natl. Acad. Sci. USA (PNAS) 1997 94 (2) 599-603

[Abstract \(/cgi/content/abstract/94/2/599\)](#) | [Full Text \(HTML\) \(/cgi/content/full/94/2/599\)](#) | [Full Text \(PDF\) \(/cgi/reprint/94/2/599\)](#)**Requirement for CD40 Ligand in Costimulation Induction, T Cell Activation, and Experimental Allergic Encephalomyelitis**

Science (Science) 1996 273 (5283) 1864-1867

[Abstract \(http://www.sciencemag.org/cgi/content/abstract/273/5283/1864\)](#) | [Full Text \(HTML\) \(http://www.sciencemag.org/cgi/content/full/273/5283/1864\)](#)**Involvement of STAT-1 and Ets Family Members in Interferon-(gamma) Induction of CD40 Transcription in Microglia/Macrophages**

J Biol Chem (Journal of Biological Chemistry) 2000 275 (31) 23674-23684

[Abstract \(http://www.jbc.org/cgi/content/abstract/275/31/23674\)](#) | [Full Text \(HTML\) \(http://www.jbc.org/cgi/content/full/275/31/23674\)](#) | [Full Text \(PDF\) \(http://www.jbc.org/cgi/reprint/275/31/23674\)](#)**Ligation of CD40 Stimulates the Induction of Nitric-oxide Synthase in Microglial Cells**

J Biol Chem (Journal of Biological Chemistry) 2001 276 (48) 44527-44533

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