

## BIOGRAPHICAL SKETCH

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NAME BALLAS, ZUHAIR K.	POSITION TITLE		
eRA COMMONS USER NAME (credential, e.g., agency login) BALLASZ	PROFESSOR		
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
American University of Beirut, Lebanon	B.Sc.	1970	Pre-Med
American University of Beirut, Lebanon	M.D.	1974	Medicine

### Positions and Honors

1973-74 Internship, American University Medical Center, Beirut, Lebanon  
1974-75 Resident, Internal Medicine, Rutgers Medical School, Piscataway, NJ  
1975-76 Resident, Internal Medicine, Thomas Jefferson Univ., Philadelphia, PA  
1976-78 Fellow, Allergy-Immunology, Johns Hopkins University, Baltimore, MD  
1978-80 Research Fellow (Director: C. Henney), University of Washington, Seattle, WA,  
& Research Associate, Fred Hutchinson Cancer Research Ctr  
1980-86 Assistant Prof, Allergy-Immunology Div, Dept Int Med, Univ of Iowa, Iowa City, IA  
1986-93 Associate Prof, Allergy-Immunology Div, Dept Int Med, Univ of Iowa, Iowa City, IA  
1991-Pres Director, Cellular Immunology Diagnostic Lab, University of Iowa, Iowa City, IA  
1991-Pres Director, Flow Cytometry Facility, University of Iowa, Iowa City, IA  
1993-Pres Professor, Allergy-Immunology Division, Dept Int Med, Univ of Iowa, Iowa City, IA  
1993-2004 Director, Clinical and Laboratory Immunol Training Prog, Univ. of Iowa, Iowa City, IA  
1996-1997 Interim Director, Allergy-Immunology Div, Dept Int Med, University of Iowa  
1996-2004 Director, Allergy-Immunology Fellowship Training Prog, Univ of Iowa, Iowa City, IA  
1997-Pres Director, Allergy-Immunology Div, Dept Int Med, University of IA

### Awards & Honors

B.Sc. with distinction; M.D. with distinction; Alpha Omega Alpha 1972, Nimr Tukan Memorial Award 1971; Lange Medical Publications Award 1970, 1972-74; VA Research Associate Career Award 1981-84; VA Clinical Investigator Award 1984-87; Election to the American Society of Clinical Investigation, 1988

### Professional Memberships

1985-89 **Chair**, Committee of Animal Research, Iowa City VA Medical Center  
1991-present Director, University of Iowa Flow Cytometry Facility, Iowa City, IA  
1993-99 **Chair**, HIV Committee, American Academy of Allergy & Immunology (AAAAI)  
1998-99 **Chair**, Iowa City VA R & D Committee  
1998-2002 Assoc Chair, Professional Education Council, AAAAI  
2000-pres Charter Member, NIAID Data and Safety Monitoring Board (DSMB) for the Asthma and Allergic Diseases Component of the Immune Tolerance Network  
2001-2003 Member, Training Program Directors' Executive Council, AAAAI  
2002-2004 **Vice Chair**, Professional Education Council, AAAAI  
2002-2007 Editorial Board, Journal of Allergy and Clinical Immunology  
2002-2003 **Vice-Chair**, BCI Interest Section, AAAAI; **Chair**: 2003-2005  
2003-2008 Member, Board of Directors, American Board of Allergy and Immunology; **Chair**: 2007  
2004-2007 Member, VA Oncology A - Merit Review Subcommittee  
2004-2006 **Chair**, Annual Mtg Program Committee, AAAAI & Chair, Abstracts Subcommittee, AAAAI  
2007-2011 Member, Board of Directors, American Academy of Allergy, Asthma & Immunology  
2008-2011 Member: Co-Certification Committee, American Board of Medical Specialties  
2009-pres Member: Medical Advisory Committee, Immune Deficiency Foundation

## Selected Peer-reviewed Publications

1. Ballas ZK, Krieg AM, Warren T, Rasmussen W, Davis HL, Waldschmidt M, Weiner GJ. Divergent therapeutic and immunologic effects of oligodeoxynucleotides with distinct CpG motifs. *J Immunol* **167**:4878-4886, 2001. PMID12045264
2. Orange JS, Brodeur SR, Jain A, ...Ballas, Z, et al. Deficient natural killer cell cytotoxicity in patients with IKK- $\gamma$ /NEMO mutations. *J Clin Invest* **109**:1501-1509, 2002. PMID12045264
3. Vollmer J, Janosch A, Laucht M, Ballas ZK, et al. Highly immunostimulatory CpG-free oligodeoxynucleotides for activation of human leukocytes. *Antisense Nucleic Acid Drug Dev* **12**:165-175, 2002. PMID12162699
4. Goldman FD, Vibhakar R, Puck JM, Straus SE, Ballas ZK, et al. Aberrant T-cell antigen receptor-mediated responses in autoimmune lymphoproliferative syndrome. *Clin Immunol* **104**:31-39, 2002. PMID12139945
5. Lenert P, Rasmussen W, Ashman RB, Ballas ZK. Structural characterization of the inhibitory DNA motif for the type A (D)-CpG-induced cytokine secretion and NK-cell lytic activity in mouse spleen cells. *DNA Cell Biol* **22**:621-631, 2003. PMID14611683
6. Orange JS, Jain A, Ballas ZK, Schneider LC, Geha RS, Bonilla FA. The presentation and natural history of immunodeficiency caused by nuclear factor KB essential modulator mutation. *J Allergy Clin Immunol* **113**:725-733, 2004. PMID15100680
7. Knudson, M, Kulkarni, S, Ballas, Z, Bessler, M, and Goldman, F: Association of Immune Abnormalities with Telomere Shortening in Autosomal Dominant Dyskeratosis Congenita. *Blood* **105**:682-688, 2005. PMID15238429
8. Casale, TB, Busse, WW, Kline, JN, Ballas, ZK, et al. Omalizumab Pretreatment Decreases Acute Reactions after Rush Immunotherapy for Ragweed-Induced Seasonal Allergic Rhinitis. *J Allergy Clin Immunol* **117**:134-140, 2006. PMID16387596
9. Link, BK, Ballas, ZK, Weisdorf, D, Wooldridge, JE, Bossler, AD, Shannon, M, Rasmussen, WL, Krieg, AM and Weiner, GJ: Oligodeoxynucleotide CpG 7909 Delivered as Intravenous Infusion Demonstrates Immunologic Modulation in Patients with Previously Treated Non-Hodgkin Lymphoma. *J Immunother* **29**:558-568, 2006. PMID16971811
10. Cook, RT, Schlueter, AJ, Coleman, RA, Tygrett, L, Ballas, ZK, Jerrell, TR, Nashelsky, MB, Ray, NB, Haugen, TH, and Waldschmidt, TJ: Thymocytes, Pre-B Cells, and Organ Changes in a Mouse Model of Chronic Ethanol Ingestion-Absence of Subset-Specific Glucocorticoid-Induced Immune Cell Loss. *Alcoholism Clin Exp Res* **31**:1-13, 2007. PMID17681030
11. Svensson, RU, Shey, MR, Ballas, ZK, Dorkin, JR, Goldberg, M, Akine, A, Langer, R, Anderson, DG, Bumcrot, D, and Henry, MD: Assessing siRNA Pharmacodynamics in a Luciferase-Expressing Mouse. *Mol Ther* **16**:1995-2001, 2008. PMID18781145
12. Azar, A.E., and Ballas, Z.K. Reversible Panhypogammaglobulinemia Associated with the Antiepileptic Agent Levetiracetam. *Ann Allergy Asthma Immunol* **101**:108-1009, 2008. (Ltr to Ed) PMID 18681095
13. Shey, M.R., and Ballas, Z.K.: Assessment of Natural Killer (NK) and NKT Cells in Murine Spleens and Livers. *Methods Mol Biol* **447**:259-276, 2008. PMID 18369924
14. Dowden A.M., Ballas, Z.K.: Eosinophilic Fasciitis Masquerading as Angioedema. *Ann Allergy Asthma Immunol* **102**:258-259, 2009. PMID 19354076
- 15.. Hare, ND, Smith, BJ, and Ballas, ZK: Antibody Response to Pneumococcal Vaccination as a Function of Preimmunization Titer. *J. Allergy Clin Immunol* **123**:195-200, 2009. PMID18951616
16. Moore, J.C., and Ballas, Z.K.: A Novel Therapy for Lymphedema. *Arch Intern Med* **169**:201-202, 2009. PMID 19171818
17. Dowden, A.M., Rullo, O.J., Aziz, N., Fasano, M.B., Chatila, T., and Ballas, Z.K.: Idiopathic Systemic Capillary Leak Syndrome: Novel Therapy for Acute Attacks. *J Allergy Clin Immunol* **124** (5):1111-1113, 2009. PMID: 19703708
18. Moore, J.C., and Ballas, Z.K.: Hypereosinophilia: A Case with an Elusive Etiology. *Ann Allergy, Asthma Immunol* **103**:176-177, 2009 (Ltr). PMID 19739434
19. Kelso, J.M., Li, J.T., Nicklas, R.A., Blessing-Moore, J., Cox, L., Lang, D.M., Oppenheimer, J., Portnoy, J.M., Randolph, C., Schuller, D.E., Spector, S.L., Tilles, S., Wallace, D., Ballas, Z.K., Baker, J.R., Bellanti, J.A., Ein, D., Grammer, L.C.: Joint Task Force on Practice Parameters. *Practice*

Parameter: Adverse Reactions to Vaccines. Ann Allergy Asthma Immunol 103(4 Suppl 2):S1-14, 2009. PMID 19886402

20. Guseva, N.V., Fullenkamp, C.A., Naumann, P.W., Shey, M.R., Ballas, Z.K., Houtman, J.C., Forbes C.A., Scalzo, A.A., and Heusel, J.W.: Glycosylation Contributes to Variability in Expression of Murine Cytomegalovirus m157 and Enhances Stability of Interaction with the NK-Cell Receptor Ly49H. Eur J Immunol 40: 2618-2631, 2010. [Epub: 7-12-10] PMID 20662096
21. Alqudah, M., Graham, S.M., and Ballas, Z.K.: High Prevalence of Humoral Immunodeficiency Patients with Refractory Chronic Rhinosinusitis". Am J Rhinol Allergy 24(6): 409-412, 2010.

## Research Support

### Ongoing Research Support

#### Ongoing:

#### Dates Approved Project

#### VA Merit Review Award (Ballas)

10/01/08-9/30/12

Title: "Oligodeoxynucleotides as Cancer Immunotherapeutic Agents"

Goals: The major goals of this project are...Examine: 1) induction of NK and LAK activity *in vivo* and *in vitro*; 2) possible synergy of CpG ODN with other cytokines in the induction of LAK activity; and 3) ability of CpG ODN to inhibit the growth of newly introduced tumors and their ability induce regression of established tumors in a murine model. Overlap: None

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#### 1 P30 CA086862 (G. Weiner, P.I.)

7/1/05-3/31/11

NIH:NCI

a) Flow Cytometry Core. Director:: Zuhair K. Ballas, M.D.

b) Program Leader of the Cancer Immunology and Immunotherapy Program

Title: "Cancer Center Support Grant"

Support as Director of Cancer Center Core Facility (Flow Cytometry) and support as program Leader for cancer immunology and immunotherapeutics. Overlap: None

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#### 2 P50 CA 097274-06 (G. Weiner, PI)

9/15/07 – 6/30/12

NIH:NCISEP

Project One: Co-Investigator: Zuhair K. Ballas

SPORE Program Title: "Lymphoma Specialized Program of Research Excellence"

The major goal of this project is to study the effect of various anti-B cell antibodies on NHL with emphasis on complement-mediated vs ADCC mediated mechanisms. Overlap: None

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#### 1R01 AA014418-06 (G. Weiner, PI)

7/01/09-6/30/13

NIH / Role: Co-investigator (Ballas)

Title: Monoclonal Antibody-Induced NK Cell Activation and Complement"

Evaluate the hypothesis that complement can block monoclonal antibody-induced NK cell activation and antibody dependent cellular cytotoxicity and limit the efficacy of therapy, as well as evaluate strategies designed to overcome this effect, *in vitro*, *in animal models* and in clinical correlative studies.

Overlap: None

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#### NIH/NCRR: S10 (Z. Ballas, PI)

4/01/10-3/31/11

Flow Cytometry Cell Sorter

Shared Instrumentation Grant for purchase of state-of-the-art flow cytometry instrument.

Overlap: None

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**COMPLETED**

**1 R01 AA014418-04 (Z. Ballas, PI)**

5/15/04-2/28/10

NIH:NIAAA

Title: "Killer Cells and Alcohol"

Using a mouse model of chronic alcoholism, this proposal examined the effect of acute and chronic alcohol ingestion in NK and NKT cell function.

Overlap: None

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