

CURRICULUM VITAE

Greg Plunkett, PhD

Allergy Immunotherapy Consultant
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Work Experience

2017 to present *Independent Contractor Allergy Immunology Consultant*

- Allergen extract and venom expertise; manufacturing, quality control, characterization, stability and FDA and European standardization.
- Immunotherapy practice; patient care, costs, reimbursement, safety, sterile compounding.
- Allergy diagnostics, IgE testing, skin testing, mediator testing.

2001 to 2017 Sr. Scientist, Research Allergy Lab Director, ALK-Abelló, Inc., Round Rock, TX

- Responsible for quality control of allergy biological products; validation of analytical test methods and testing.
- Allergen extract product improvement and new product development; stability of extracts expert.
- Scientific liaison with immunotherapy industry and FDA for allergy product technical issues.
- Responsible for studies and support for allergy related subjects.
- Communication and training with Sales and end users on technology used to characterize and understand allergy products.

1994 to 2001 Sr. Scientist, Product Development Section Head, Bayer Corp and Hollister-Stier Laboratories (name change in 1999), Spokane, WA

- Responsible for biological extract characterization and quality control method development.
- SDS-PAGE, immunoblotting and major allergen studies for well characterization of allergens.
- Developed relationship with Marketing to relay technical information to sales force through participation in training workshops and technical support.

1986 to 1994 Product Development Scientist, Project Leader, Miles Inc (Bayer Corp), Spokane, WA

- Managed group for development of an *in vitro* diagnostic histamine release product for allergy testing.

1979 to 1986 Research Scientist, Miles Inc. (Bayer Corp), Spokane, WA

- Initiated and lead a hybridoma program for production of monoclonal antibodies; anti- IgE, histamine, allergen.
- Purification and characterization of proteins. Proteolysis and modifications of antigens and antibodies.

1983 Part time instructor, Biotechnology, Eastern Washington Univ.

1979 to 1980 Part time Faculty, Spokane Community College

Education

- Washington State University, Pullman, WA PhD in Biochemistry
- California State University, Fullerton, CA BA in Chemistry (with honors)

Honors & Awards

Individual Science & Technology Award, Miles Pharmaceuticals, 1985
Miles Pharmaceutical Group Award, 1985
California Scholarship Federation, Gold Seal Bearer

Patents

"Histamine Derivatives, Immunogens and Antibodies Thereto", Buckler, R., Dailey, F., Ficalora, J., Gavin, J., and Plunkett, G., US Patent 5,112,738, European Patent 0208953 1989.

Association Committees

American Academy of Allergy, Asthma, and Immunology, Standardization Committee 1990 to present
WHO IUIUS Standardization Committee. 2002 to present

Allergen Product Manufacturer Association Scientific Affairs Board Officer, 5 terms: 2007 to present
FDA Allergenics Product Advisory Committee Industry Representative, 2008 – 2011; 2016 – 2019

Publications

"Reduction and Carboxymethylation of Proteinase Inhibitors I and II from Leaves of Wounded Tomato Plants", Gregory Plunkett and Clarence Ryan, *Journal of Biological Chemistry*, 255:2752, 1980.

"Proteinase Inhibitors I and II from Leaves of Wounded Tomato Plants: Purification and Properties", Gregory Plunkett, Donald Seneor, Glen Zuroske and Clarence Ryan, *Archives of Biochemistry and Biophysics*, 213:463, 1982.

"Histamine Release and the Diagnosis of Allergies", G. Plunkett and T. Kordash. *Immunology and Allergy Practice* 12(7):273, 1990.

"Effect of Mixing Allergenic Extracts Containing *Helminthosporium, D. farinae* and Cockroach with Perennial Ryegrass", T. Kordash, M. Amend, S. Williamson, J. Jones, and G. Plunkett. *Annals Allergy* 1993 71:240.

"Stability of Allergen Extracts" Greg Plunkett. *Current Opinion in Otolaryngology & Head and Neck Surgery* 2008, 16:285–291.

"Maintenance dosing for sublingual immunotherapy by prominent European allergen manufacturers expressed in bioequivalent allergy units" Larenas-Linnemann D, Esch R, Plunkett G, Brown S, Maddox D, Barnes C, Constable D. *Annals Allergy Asthma & Immunology* 2011 107:448.

"Allergen immunotherapy practice in the United States: guidelines, measures, and outcomes" Cox L, Esch RE, Corbett M, Hankin C, Nelson M, Plunkett G. *Annals Allergy Asthma & Immunology* 2011 107:289.

"Immunotherapy preparation guidelines, rules, and regulation", Esch, R. and Plunkett, G. *Curr Allergy Asthma Rep.* 2013 Aug;13(4):406-13.

"Diagnostic utility of concentrated Mus m 1 allergen extract in humans" Allison Norton, Keegan Smith, Kristina James, Aimee Hoskins, Theresa A. Scott, Greg Plunkett, John Fahrenheit, Ryszard Dworski. *Ann Allergy Asthma Immunol* 112 (2014) 383-394.

"Allergen stability of testing/treatment boards and immunotherapy vials with various diluents", Nida A, Leatherman B, Plunkett G, Mire B. *Int Forum Allergy Rhinol.* 2015;XX:1–8.

"Sensitization to a nonnative plant without exposure is a marker of panallergen sensitization", Hogan MB, Allenback GL, Chawla V, Mehta N, Plunkett G, Wilson NW. *J Allergy Clin Immunol Pract.* 2016 Sep-Oct;4(5):982-983.

"Standardization of allergen products: 3. Validation of candidate European Pharmacopoeia standard methods for quantification of major birch allergen Bet v 1", Vieths S, et.al. *Allergy.* 2016 Oct;71(10):1414-24.

"Update: stability of allergen extracts to establish expiration dating", Plunkett, G. *Curr Opin Otolaryngol Head Neck Surg.* 2016 Jun;24(3):261-9.

"Major allergen content consistency of SQ house dust mite sublingual immunotherapy tablets and relevance across geographic regions", Nolte H, Plunkett G, Grosch K, Larsen JN, Lund K, Bollen M. *Ann Allergy Asthma Immunol.* 2016;117(3):298-303.

Abstracts and Presentations

"Suppression of IgE Synthesis by Normal T Cells in Atopics' Lymphocyte Cultures" Dennis Cech, Gregory Plunkett, Joseph Kelley and Randall Krakauer, American Academy of Allergy, March 1983.

"An Immunoassay for Measuring Histamine", G. Plunkett, F. Dailey, J. Ficalora, P. Lally, B. Mueller, D. Naugler, R. Buckler", Abstract in Proceedings of the XII International Congress of Allergology and Clinical Immunology, October 1985.

"Histamine Immunoassay: Examples from a Preliminary Trial" F. Dailey, G. Plunkett, B. Mueller, J. Ficalora, D. Naugler, P. Lally, T. Kordash, R. Stier, Abstract in *Annals of Allergy*, January 1986.

"An Enzyme Linked Monoclonal Antibody Based Assay for Performing Histamine Release", G. Plunkett, F. Dailey, R. Baker, L. Weitz, L. Peterson, Abstract in *J. Allergy and Clinical Immunology* 81:232, 1988.

"Basophil Histamine Release by a New ELISA Method Compared with a Conventional Method", T. Smith, M. Young, G. Plunkett, R. Manner, Abstract in New England Allergy Proceedings for XIII International Congress of Allergology and Clinical Immunology 9, 1988.

"Histamine Release and the Diagnosis of Allergies" Immunology and Allergy Practice 31:271, 1990.

"Basophil Histamine Release and Skin Tests", R. Stier, M. Amend, G. Plunkett, T. Kordash. Abst. in Ped. Asthma Allergy and Immunol. 4:149, 1990.

"Basophil Histamine Release in Whole Blood is Not Suppressed by Physiologic Doses of Antihistamines", T. Kordash, G. Plunkett, F. Dailey, M. Amend, J. Jones, R. Stier, Abstract in J. Allergy Clinical Immunology, 25(1):218, 1990.

"Biological Extract Potency Influences Skin Test Results and their Correlation with RAST and Basophil Histamine Release", T. Kordash, M. Amend, J. Jones, G. Plunkett, R. Stier. Abstract in J. Allergy Clin. Immunol. 87:331, 1991.

"Increase in Total IgE Levels During Immunotherapy May be Associated with Systemic Reactions J. Jones, G. Plunkett, L. Freshwater, R. Stier, T. Kordash, ", American Academy of Allergy and Immunology Newsletter, Abstract (June, 1991). Presented at the Annual Meeting of the American Academy of Allergy and Immunology, San Francisco, California, 1991.

"Histamine ELISA in Microwell Strips for Performing Allergen Induced Histamine Release", G. Plunkett, R. Baker, F. Dailey. Abstract in J. Allergy Clin. Immunol. 89(1 part 2):354, 1992.

"A Histamine Release ELISA for Determining Sensitivity to Patients' Environmental House Dust", R. Wyrick and G. Plunkett. Abstract in J. Allergy Clin. Immunol. 89(1, part 2):358, 1992.

"Use of the Histamine Release Test (HRT) as a Screening Test to Diagnose Allergy", M. Amend, L. Freshwater, G. Plunkett, J. Jones, and T. Kordash. Abstract in J. Allergy Clin. Immunol. 89(1, part 2):355, 1992.

"Monoclonal anti-IgE Inhibition of Allergen Induced Histamine Release", R. Wyrick and G. Plunkett, American College of Allergy, November, 1992.

"Is There Grass Allergen in Smoke from Burning Grass Field Stubble" R. Stier and G. Plunkett. J. Allergy Clin Immunol. 93:174, 1994.

"Manufacture and Analysis of 100,000 BAU/mL and 10,000 BAU/mL Standardized Grass Pollen Extracts" P. Lally, L. Featherstone, B. Thompkins, J. King, L. Weitz, L. Baldwin, G. Plunkett. J. Allergy Clin Immunol. 97:208, 1996.

"Factors Affecting the Inhibition ELISA for Determining Potency of Dermatophagoides Mite Extracts" G Plunkett, F. Dailey, L. Baldwin. J. Allergy Clin Immunol. 97:208, 1996.

"Manufacture of Diafiltered and Lyophilized German and American Cockroach Extracts" L. Baldwin. G. Plunkett, M Soto-Aguilar, M. Amend, T. Kordash. Abstract presented at American Academy Allergy, 1997

"Cockroach Reactivity Patterns Differ between African American and Caucasian Individuals" MC Soto-Aguilar, RD deShazo, T. Kordash, B. Morse, M. Amend, G. Plunkett, L. Baldwin, L. Freshwater. Abstract presented at American Academy Allergy 1997.

"Analysis of Standardized Grass Pollen Extracts by IgE ELISA Inhibition and Immunoblotting" G. Plunkett and L. Baldwin. Abstract presented at American Academy Allergy 1998.

"SDS-Polyacrylamide Gel Electrophoresis for Routine Analysis of allergen Extracts: Reproducibility and Performance. G. Plunkett, L. Baldwin, J. Eddy, F. Dailey, D. Naugler. J. Allergy Clin Immunol. 103, S30, 1999.

"Analysis of Dog Hair and Epithelial Extracts by Immunoblotting and ELISA. L. Baldwin, G. Plunkett, J. Eddy, F. Dailey, D. Naugler. J. Allergy Clin Immunol. 103, S30, 1999.

"SDS-Polyacrylamide Gel Electrophoresis (SDS-PAGE) Analysis of Allergenic Extracts." GA Plunkett, LD Baldwin, RE Baker, LM Featherstone. J. Allergy Clin Immunol. 105, S329, 2000.

"Allergen Activity of Dog, House Dust Mite and Cockroach Extracts by Major Allergen Content" GA Plunkett, SL Williamson, TR Kordash J. Allergy Clin Immunol. J. Allergy Clin Immunol., 2001.

"Validation of an ELISA for Determining Cat Major Allergen Fel d 1" GA Plunkett, WT Caples, LA Sparks, KM Poppe, J. Allergy Clin Immunol. 109, S331, 2002

"Validation of an ELISA for Determining Dust Mite D. pteronyssinus (Dpt) Major Allergen Der p 1" GA Plunkett, WT Caples, and KM Poppe, ACAAI annual meeting, 2002.

"Major Allergen Determination in Mite, Grass, and Cat Hair/Pelt Allergenic Extracts". Plunkett GA, Caples WT, Lankow RK, and Hauck PR, ACAAI annual meeting, 2002.

"The Stability of Major Allergens in Mite and Grass Allergenic Extracts". WT Caples and GA Plunkett, AAAAI 2003 annual meeting 2003.

"Determination of Major Allergen Protein, Ole e 1, in Aqueous and Glycerinated Allergenic Extracts". GA Plunkett, WT Caples, KM Poppe, AAAAI 2003 annual meeting 2003.

"Determination of Major Allergen Bet v 1 in Birch Extracts". GA Plunkett, WT Caples, KM Jagger, ACAAI annual meeting 2003.

"The Stability of Major Allergens in Mite, Grass, Olive, and Birch Allergenic Extracts". GA Plunkett and WT Caples, ACAAI annual meeting 2003.

"Quality Control of Non-Standardized Allergenic Extracts: Major Allergen and IgE Binding of Birch, English plantain and Olive Pollen". Greg Plunkett, Jason Gaswin, Nipattra Noieam, AAAAI annual meeting 2004.

"Activity of Alum-Adsorbed Allergenic Extracts (Center-AI®): Major Allergen and IgE Binding" GA Plunkett, ACAAI November 2004 Boston Abstract P176.

"Major Allergen Content of Standardized Mite and Grass Allergenic Extracts" G. Plunkett, N. Noieam, J. Gaswint, R. Lankow, AAAAI March 2005 Abstract 652, JACI 115 .No. 2 S163 (2005).

"Stability of Major Allergen Proteins in Extract Mixes", G A Plunkett, ACAAI November 2005 Anaheim, Annals of Allergy Asthma and Immunol 96, 230 P242.

“Group 1 Major Allergen, Art v 1, in Artemisia Species Found in the United States”, G. Plunkett, L. Jimeno, AAAAI March 2006 Miami Abstract 846, JACI (2006).

“Stability of Major Allergen Proteins in Extract Mixes”, G A Plunkett, ACAAI November 2006 Philadelphia, Annals of Allergy Asthma and Immunol 98, A108 P284 (2007).

“Stability of Major Allergen Proteins in Extract Mixes Diluted in Human Serum Albumin (HSA), Normal Saline (NSP), or Glycerin (GLY)”, G. Plunkett, AAAAI February 2007 San Diego Abstract 414, JACI (2007).

“Characterization of Active Allergen Ingredients in Non-Standardized Allergenic Extracts”, G. Plunkett, ACAAI November 2007 Dallas P64.

“Stability of Allergenic Extracts in Multi-Test II® and Duotip-Test® Skin Testing Wells”, G. Plunkett, M. Schell, JACI 121, No. 2 676 (2008).

“Characterization of US Cat Hair Allergenic Extracts: Fel d 1 content and protein profile”, G. Plunkett and M. Schell, ACAAI November 2008 Seattle Abstract P36,

“Standardization and Characterization of US House Dust Mite Extracts”, G. Plunkett and M. Schell, JACI 123, (2)S881 (2009)

“Characterization of US Standardized and Non-Standardized Grass Pollen Allergenic Extracts” G. Plunkett and M. Schell. Annals of Allergy Asthma and Immunology 103, Supplement 3, 2009

“Allergen Extract Stability Following Short Term Temperature Variations” G. Plunkett and M. Schell. AAAAI Abstract 145, JACI S145 (2010)

“Stability of Allergen Extracts Diluted in Saline or Human Serum Albumin Solutions” G. Plunkett and M. Schell. Annals of Allergy Asthma & Immunology Vol 5 Issue 6 Suppl Abstract 23A, 2010.

“Antigen 5 Allergen Content in Vesputa and Polistes US Venom Extracts” G. Plunkett, R. Monsalve, and M. Schell. Journal of Allergy and Clinical Immunology Vol. 125, Issue 2, Supplement 1, Page AB37 2011

“Allergen Stability in Dilute Solutions: Effect of Serum Albumin, Normal Saline and Phenol” G. Plunkett. Annals of Allergy Asthma & Immunology 2011

“Histamine Skin Prick Test (SPT) Titration Following Antihistamine Administration: Wheal Comparison of Histamine Strength Using Different Devices”. G. Plunkett, J. Young, R. Erskine, S. Young. AAAAI Abstract 903. 2012 JACI

“Effect of Histamine Strength and Devices on Skin Prick Test (SPT) Response Following Antihistamine Inhibition” G. Plunkett, J. Young, R. Erskine. ACAAI Abstract P69 Annals of Allergy Asthma & Immunology 2012

“Prevalence of IgE Specific to Profilin in a Texas and California Population” Greg Plunkett, Domingo Barber, Eliseo Villalobos, Joshua Jacobs, Jeffrey Hallett., Tara Mostofi, Agustin Galan Nieto and Tricia Moore. AAAAI Abstract 2013

“Positive Skin Prick Test (SPT) Control: Effect of Histamine (H) Strength, Device and Method for Measuring Wheal Size” G. Plunkett, J. Young, T. Moore. Abstract ACAAI 2013

“Extractability of Tree Nuts – A Comparison of Methods” G. Plunkett and T. Moore. Abstract ACAAI 2013

“Characterization and Protein Composition of Food Allergen Extracts” Tricia Moore and Greg Plunkett AAAAI 2014

“How Stable are Allergen Extracts?” Greg Plunkett and Brad Mire. AAAAI 2015

“Extract consumption with skin prick test (SPT) devices” Brad Mire and Greg Plunkett. Abstract Canadian Society of Allergy and Clinical Immunology 2015

“Diagnostic Extract Use with Skin Prick Test (SPT) Devices” Greg Plunkett and Brad Mire. Abstract ACAAI 2015

“Determining potency of allergen extracts used for immunotherapy using major allergen (MA) assays” G. Plunkett, Mire, B, Moore, T. Oral Abstract at North American Veterinary Dermatology Forum, Nashville TN April 2015

“Major Allergen Content of SQ-House Dust Mite SLIT-Tablets is Consistent and in Concordance with Patient Sensitivity Profiles in North America and Europe” H. Nolte, G. Plunkett, M. Bollen, K. Grosch, J. N. Larsen, K. Lund Abstract AAAAI2016

“Evaluation of Walnut Food Allergenic Extracts” G. Plunkett and B. Mire. Abstract AAAAI2016

“Evaluation of mite IgE binding protein in extracts used for testing dogs with atopic dermatitis using ELISA and immunoblotting” M. Bolner, S. Keese, T. Moore, G. Plunkett. Abstract at the 8th World Congress of Veterinary Dermatology, Bordeaux, France, May 2016

“Stability of allergen extracts diluted in normal saline phenol (NSP), human serum albumin (HSA) or glycerin” G. Plunkett and M. Bolner. Abstract at ACAAI Nov 2016 San Francisco

“Defining the allergenic cross-reactivity between mold species” M. Bolner, S. Keese, G. Plunkett. Abstract 2017 AAAAI meeting in Atlanta.

“Aqueous dust mite extracts exhibit protein degradation as a consequence of storage diluent” M. Bolner, S. Keese, G. Plunkett. Abstract at the North American Veterinary Dermatology Forum Orlando, 2017

Selective invited presentations:

“What’s in the Vial” Presented at the Southwest Allergy Forum, Puerto Vallarta, Mexico, 2007

“Allergen Extracts: Stability, Mixing and Degradation” Workshop presented at AAOA 2010.

“Methods for determining SLIT dosing” Presented at AAOA 2011 San Francisco.

“FDA classification of allergen extracts” ALK special webinar, 2012

“Venom Immunotherapy” Presentation to the British Columbia Allergy Society, Vancouver, BC March 2015

“Venom Immunotherapy” Presentation at British Beekeepers Spring Conference, Birmingham, Britain April 2016

“Allergy Extracts and Immunotherapy” Conference Online Allergy Program, (COLA) Allergy Fellows summer lectures. 2013 through 2017.