CURRICULUM VITAE

STUART A. GREEN, MD

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Born: Memphis, Tennessee USA Citizenship:
USA

EDUCATION

Doctor of Medicine (MD) **1988**
University of Tennessee Center for the Health Sciences, Memphis, Tennessee USA
Graduate with High Honors
Alpha Omega Alpha Honor Society

Bachelor of Science in Chemistry (BS) **1984**
Duke University, Durham, NC USA
Graduate Magna Cum Laude
Graduate with Distinction in Chemistry
Phi Lambda Upsilon Chemistry Society

POST DOCTURAL TRAINING

Fellow, Pulmonary and Critical Care Medicine **1991-1994**
Laboratory of Stephen B Liggett; Molecular Pharmacology, Structure and Function of Beta2-Adrenergic Receptors

University of Cincinnati Medical Center, Cincinnati OH USA *1993-1994*
Division of Pulmonary and Critical Care Medicine
Duke University Medical Center, Durham, NC USA *1991-1993*
Division of Allergy, Critical Care, and Respiratory Medicine

Resident, Internal Medicine **1988-1991**
Duke University Medical Center, Durham, NC USA Department
of Medicine

BOARD CERTIFICATIONS

Internal Medicine 1991-2001

Pulmonary Medicine 1993-2003

Critical Care Medicine 1994-2004

MEDICAL LICENSURE

North Carolina, USA (inactive)
Ohio, USA (inactive)

EMPLOYMENT HISTORY

Merck Research Laboratories, New Jersey, USA
Vice President, Clinical Research, Respiratory and Immunology **March 2012 – present**

- *Clinical Therapeutic Area Head / Therapeutic Area Development Lead/Immunology Section Head for all late stage (Phase IIa and beyond) development in Respiratory and Immunology. Major responsibilities include clinical development plans, strategies and regulatory submissions across Asthma, COPD, Allergic Disorders, Dermatology, Gastroenterology, Rheumatology, Inflammatory Pain, Urology, and Oncology Supportive Care.*

Acting Therapeutic Area Head, Respiratory and Immunology **March 2011 – March 2012**
Section Head, Anemia, Urology and Inflammatory Pain **August 2010- March 2012**
Senior Director, Clinical Research **July 2006 – March 2011**

Other Relevant Experience

Industry Representative, FDA Pulmonary-Allergy Drugs Advisory Committee 2016-
Deputy Topic Lead, ICH Expert Working Group for Multi-Region Clinical Trials (E17) 2014-

Chief, Medical Intensive Care/Cardiac Care Unit 1999-2000

Veterans Administration Medical Center, Cincinnati, OH USA

Assistant Professor of Pathobiology and Molecular Medicine University of Cincinnati, Cincinnati, OH USA 1996-2000

Assistant Professor of Medicine 1994-2000

University of Cincinnati, Cincinnati OH USA

PUBLICATIONS AND PAPERS

Original Publications:

1. Solomon SS, Palazzolo MR, Green SA, Raghow R. Expression of calmodulin gene is down-regulated in diabetic BB rats. Biochem Biophys Res Comm 168:1007-1012, 1990.

2. Green SA, Holt BD, Liggett SB. β1- and β2-adrenergic receptors display subtype-specific coupling to Gs. Mol Pharmacol 41:889-893, 1992.

3. Green SA, Cole G, Jacinto M, Innis M, Liggett SB. A polymorphism of the human β2-adrenergic receptor within the fourth transmembrane domain alters ligand binding and functional properties of the receptor. J Biol Chem 268:23116-23121, 1993.

4. Green SA, Turki J, Innis M, Liggett SB. Amino-terminal polymorphisms of the human ??-adrenergic receptor impart distinct agonistpromoted regulatory properties. Biochemistry 33:9414-9419, 1994.

5. Green SA and Liggett SB. A proline-rich region of the third intracellular loop imparts phenotypic β1- versus β2-adrenergic receptor coupling and sequestration. J Biol Chem 269:26215-26219, 1994.

6. Solomon SS, Palazzolo MR, Elam MB, Green SA, Raghow R. Regulation of calmodulin gene expression by insulin is both transcriptional and post-transcriptional. J Lab Clin Med 124:348-58, 1994.

7. Yatani A, Wakamori M, Niidome T, Yamamoto S, Tanaka I, Mori Y, Katayama K, Green S. Stable expression and coupling of Ca2+ L-type calcium channels with β1-adrenergic receptors. Circ Research 76:335-342, 1995.

8. Turki J, Pak J, Green SA, Martin RJ, Liggett SB. Genetic polymorphisms of the β2-adrenergic receptor in nocturnal and non-nocturnal asthma: evidence that Gly16 correlates with the nocturnal phenotype. J Clin Invest 95:1635-1641, 1995.

9. Green SA, Turki J, Bejarano P, Hall IP, Liggett SB. Influence of β2-adrenergic receptor genotypes on signal transduction in human airway smooth muscle cells. Am J Resp Cell Mol Biol 13:25-33, 1995.

10. Turki J, Green SA, Newman KB, Meyers MA, Liggett SB. Lung cell β2-adrenergic receptors desensitize in response to in vivo administered β2-agonist in humans. Am J Physiol:Lung Cell Mol Physiol 269 (Lung Cell Mol Physiol 13): L709-L714, 1995.

11. Masaki H, Green SA, Heiny JA, Yatani A. β2-adrenergic receptor-mediated regulation of the cardiac L-type calcium channel expressed in a fibroblast cell line. Receptor 5:219-231, 1995.

12. Turki J, Lorenz JN, Green SA, Donelly ET, Jacinto M, Liggett SB. Myocardial signaling defects and impaired cardiac function of a human β2adrenergic receptor polymorphism expressed in transgenic mice. Proc Natl Acad Sci USA 93:10483-01488, 1996.

13. Green SA, Spasoff AP, Coleman RA, Johnson M, Liggett SB. Sustained activation of a G protein-coupled receptor via "anchored" agonist binding: molecular localization of the salmeterol exosite within the β2-adrenergic receptor. J Biol Chem 271:24029-24035, 1996.

14. Gao T, Yatani A, Dell'Acqua ML, Sako H, Green SA, Dascal N, Scott JD, Hosey MM. cAMP-dependent regulation of cardiac L-type Ca2+ channels requires membrane targeting of PKA and phosphorylation of channel subunits. Neuron 19:185-196, 1997.

15. Sako H, Green SA, Kranias EG, Yatani A. Modulation of cardiac Ca2+ channels by isoproterenol studied in transgenic mice with altered SR Ca2+ content. Am J Physiol 273 (Cell Physiol 42): C1666-C1672, 1997.

16. McGraw DW, Donnelly ET, Eason EG, Green SA, Liggett SB. Role of βARK in long-term agonist-promoted desensitization of the β2adrenergic receptor. Cell Signalling 10:197-204, 1998.

17. Gondo N, Ono K, Mannen K, Yatani A, Green SA, Arita M. Four conductance levels of cloned L-type Ca2+ channel α1 and α1/β subunits. FEBS Letters 423:86-92, 1998.

18. Yatani A, Tajima Y, Green SA. Coupling of β-adrenergic receptors to cardiac L-type Ca2+ channels: preferential coupling of the β1 versus β2 subtype and evidence for PKA-independent activation of the channel. Cell Signalling 11:337-342, 1999.

19. Mason DA, Moore JD, Green SA, Liggett SB. A gain-of-function polymorphism in a G-protein coupling domain of the human β1-adrenergic receptor. J Biol Chem 274:12670-12674, 1999.

20. Moore JD, Mason DA, Green SA, Hsu J, Liggett SB. Racial differences in the frequencies of cardiac beta(1)-adrenergic receptor polymorphisms: Analysis of c145A>G and c1165G>C. Human Mutation 14:271, 1999.

21. Green SA, Rathz DA, Schuster AJ, Liggett SB. The Ile164 β2-adrenoceptor polymorphism alters salmeterol exosite binding and conventional agonist coupling to Gs. Eur J Pharm 421:141-147, 2001.

22. Camargo CA, Smithline HA, Malice M-P, Green SA, Reiss, TF. A Randomized Controlled Trial of Intravenous Montelukast in Acute Asthma. Am J Resp Crit Care Med 167(4):528-533, 2003.

23. Green SA, Malice M-P, Tanaka W, Tozzi CA, Reiss TF. Elevation of Urinary Leukotriene LTE4 Levels in Acute Asthma: Correlation with Airflow Limitation. Thorax 59:100-104, 2004.

24. Mialet-Perez J, Green SA, Miller WE, Liggett SB. A primate-dominant glycosylation site of the β2-adrenergic receptor routes receptors to degradation during agonist regulation. J Biol Chem 279:38603-38607, 2004.

25. Lu S, Parekh DD, Kuznetsova O, Green SA, Tozzi CA, Reiss TF. Lack of improved therapeutic margin using an oral, selective M3 anticholinergic receptor antagonist in COPD. Eur Resp J 28:772-780, 2006.

26. Green SA, Alon A, Ianus JA, McNaughton K, Tozzi CA, Reiss TF. Efficacy and safety of an NK-1 receptor antagonist in postmenopausal women with urge urinary incontinence. J Urol 176: 2535-40, 2006.

27. Camargo CA, Gurner DM, Smithline HA, Chapela R, Fabbri LM, Green SA, Malice M-P, Legrand C, Dass SB, Knorr BA, Reiss TF. A randomized placebo-controlled study of intravenous montelukast for the treatment of acute asthma. J Allergy Clinical Immunology, 125: 374-80, 2010.

28. Morris CR, Becker AA, Piñeiro A, Massaad R, Green SA, Smugar SS, Gurner DM. A randomized placebo-controlled study of intravenous montelukast in children with acute asthma. Ann Allergy Asthma Immunol 104:161-71, 2010.

29. Frenkl TL; Zhu H; Reiss T; Seltzer O; Rosenberg E; Green S. A multicenter, double-blind, randomized, placebo controlled trial of a neurokinin1 receptor antagonist for overactive bladder. J Urol 184: 616-22, 2010.

30. Chapell GP, Xiao X, Pica-Mendez A, Varnell T, Green S, Tanaka WK, Laterza O. Quantitative Measurement of Cysteinyl Leukotrienes and Leukotriene B4 in Human Sputum Using Ultraperformance Liquid Chromatography-Tandem Mass Spectrometry. J Chromatography B 879: 277284, 2011.

31. Frenkl TL, Railkar RA, Palcza JS, Scott B, Alon A, Green SA, Schaefer W. Variability of urodynamic parameters in patients with overactive bladder. Neurourology and Urodynamics, 30:1565-9, 2011.

32. Kang HJ, Loftus S, Taylor A, DiCristina C, Green S, Zwaan CM. Aprepitant for the prevention of chemotherapy-induced nausea and vomiting in children: a randomised, double-blind, phase 3 trial. Lancet Oncol 16: 385-394, 2015.

33. Weinstein C, Jordan K, Green S, Camacho E, Khanani S, Beckford-Brathwaite E, Vallejos W, Liang LW, Rapoport BL. Single-dose fosaprepitant for the prevention of chemotherapy-induced nausea and vomiting associated moderately emetogenic chemotherapy: results of a randomized, double-blind phase III trial. Ann Oncology 2015; published online ahead of print 08 October 2015.

34. Edmondson SD, Zhu C, Kar NF, Di Salvo J, Nagabukuro H, Sacre-Salem B, Dingley K, Berger R, Goble SD, Morriello G, Harper B, Moyes CR, Shen D-M, Wang L, Ball R, Fitzmaurice A, Frenkl T, Gichuru LN, Ha S, Hurley AL, Jochnowitz N, Levorse D, Mistry S, Miller RR, Ormes J, Salituro GM, Sanfiz A, Stevenson AS, Villa K, Zamlynny B, Green S, Struthers M, Weber AE. Discovery of vibegron: a potent and selective β3 adrenergic receptor agonist for the treatment of overactive bladder. J Med Chem. 2016 Jan 28;59(2):609-23, 2016 .

35. Reich K, Papp KA, Blauvelt A, Tyring SK, Sinclair R, Thaçi D, Nograles K, Mehta A, Cichanowitz N, Li Q, Liu K, La Rosa C, Green S, B Kimball AB. Tildrakizumab versus placebo or etanercept for chronic plaque psoriasis (reSURFACE 1 and reSURFACE 2): results from two randomised controlled, phase 3 trials. Lancet 2017; 15;390(10091):276-288.

36. Blauvelt A, Reich K, Papp KA, Kimball AB, Gooderham M, Tyring SK, Sinclair R, Thaci D, Li Q, Cichanowitz N, Green S, La Rosa C. Safety of Tildrakizumab for Moderate-to-Severe Plaque Psoriasis: Pooled Analysis of Three Randomised Controlled Trials. Br J Dermatol 2018; 179:615-22.

37. Kang HJ, Loftus S, DiCristina C, Green S, Pong A, Zwaan CM. Aprepitant for the prevention of chemotherapy-induced nausea and vomiting in paediatric subjects: an analysis by age group. Pediatric Blood & Cancer 2018; Early Online (DOI) - 10.1002/pbc.27273.

38. Weinstein C, Jordan K, Green SA, Camacho E, Khanani S, Beckford-Brathwaite E, Pong A, Noga SJ, Rapoport BL. Evaluation of factors contributing to the response to fosaprepitant in a heterogeneous, moderately emetogenic chemotherapy population: an exploratory analysis of a randomized phase III trial. Support Care Cancer 2018; 26:3773-3780.

39. Mitcheson HD, Samanta S, Muldowney K, Pinto CA, Rocha B, Green S, Bennett NA, Mudd PN, Frenkl TL. Vibegron (RVT-901/MK-4618/KRP114V) Administered Once-Daily as Monotherapy or Concomitantly with Tolterodine in Patients With an Overactive Bladder: A Multicenter, Phase IIb, Randomized, Double-blind, Controlled Trial. European Urology 2019; 75:274-282.

40. Papp K et al Efficacy of Tildrakizumab for Moderate-to-Severe Plaque Psoriasis: Pooled Analysis of Three Randomised Controlled Trials at Weeks 12 and 28. 2018, J Eur Acad Derm Venereol 2019; 33:1098-1106.

41. Muccino D, Green S. Update on the clinical development of gefapixant, a P2X3 receptor antagonist for the treatment of refractory chronic cough. Pulm Pharmacol Ther 2019; 56:-75-78.

Reviews:

1. *Green SA, Turki J, and Liggett SB. Implications of Genetic Variability of Human β2-Adrenergic Receptor Structure on Airway Pharmacology and Clinical Interventions. Pulm Pharmacol 8:1-10, 1995.*
2. *Green SA and Liggett SB. G protein coupled signalling in the lung. In: The Genetics of Asthma. Liggett, S. and Meyers, D., eds. Marcel Dekker Inc., New York , 1996 pp67-90.*
3. *Liggett SB and Green SA. Molecular biology of the β2-adrenergic receptor: focus on the interactions of agonist with receptor. In: Beta2Agonists in Asthma Treatment. R. Pauwels and P O'Byrne, eds. Marcel Dekker, Inc. New York, 1997 pp19-34.*

4. Green SA. Adrenergic receptors. In: Allergy: Principles and Practice, Fifth Edition. Adkinson NF, Busse WW, Ellis EF, Middleton E, Reed CE, Yunginger JW, eds. Mosby, St. Louis, 1997 pp571-576.

5. Green SA. Site-directed mutagenesis in investigation of β-adrenoreceptor exosite. In: Methods in Molecular Medicine- Asthma: Mechanisms and Protocols. Chung KF and Adcock I, eds. Humana Press, Inc., Totowa, NJ, 2000 pp241-252.