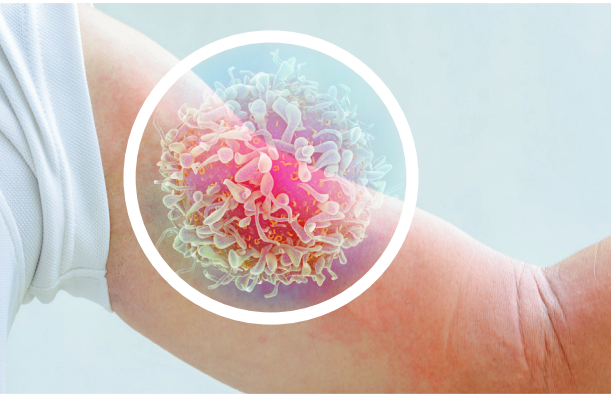
CONSIDERATIONS FOR FUTURE TREATMENT OF INFLAMMATORY SKIN DISEASES

Immune Regulation, Cutaneous Tolerance, and T-cell Plasticity



NOVEMBER 18, 2016

4:00PM – 5:30PM

New York Academy
of Medicine
NYC – Hosack Hall

Co-provided by

USF HEALTH | CME Outfitters

CONSIDERATIONS FOR FUTURE TREATMENT OF INFLAMMATORY SKIN DISEASES

Immune Regulation, Cutaneous Tolerance, and T-cell Plasticity

INSTRUCTIONS FOR INTERACTIVE TECHNOLOGY

If you would like to use your tablet or mobile device to answer polling questions, view the onsite presentations, and submit questions to the faculty, please follow the instructions below:

1. Get Connected

- Please connect to the **CME Outfitters network** with your mobile device or laptop. This network does not have a password.

  ** Please note that this network is a local network and does NOT mean you're connected to the internet.*

- Once you have joined the network, go to **arraylearn.com**
- You are now connected to the symposium. All content and polling questions can be viewed on your device as long as you are connected to the above listed network.

2. Ask a Question to the Faculty

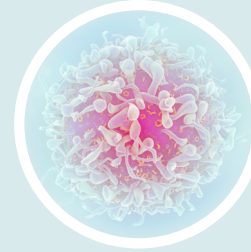
- Please click on "**Ask a Question**" and type your question. Please include the faculty member's name if the question is specifically for them. Your question will be sent to the faculty for the question and answer portion of the session.

3. View and Take Notes on Presentation Slides

- Please click on the "**Take a Slide Note**" button. If you did not enter your email address when you joined the meeting, you will be required to do so for note taking. When the meeting is complete, all your notes will be emailed to you within 5 business days.

OBTAINING CREDIT

In order to receive credit, please complete the evaluation/test form found on your table and turn them in to the CME Outfitters staff on your way out.



PRESENTATION SLIDES

Downloadable resources will be available at **www.CMEOutfitters.com/SkinResources**

CONSIDERATIONS FOR FUTURE TREATMENT OF INFLAMMATORY SKIN DISEASES

Immune Regulation, Cutaneous Tolerance, and T-cell Plasticity

NOVEMBER 18TH AGENDA

4:00PM – 4:10PM | Introduction: Tolerance, Immune Regulation, and Disease Interception

4:10PM – 4:40PM | Tregs, Immune Regulation in the Skin, and Tolerance

4:40PM – 5:10PM | T-cell Plasticity: A Focus on Th-17 T-cells

5:10PM – 5:30PM | Q&A

FACULTY

James G. Krueger, MD, PhD (moderator)
D. Martin Carter Professor in Clinical Investigation
Head of Laboratory for Investigative Dermatology
Co-director, Center for Clinical and Translational Science
The Rockefeller University Hospital
New York, NY

Vijay K. Kuchroo, DVM, PhD
Samuel L. Wasserstrom Professor of Neurology
Harvard Medical School
Director, Evergrande Center for Immunologic Diseases
Harvard Medical School and Brigham and Women's Hospital
Boston, MA

Michael D. Rosenblum, MD, PhD
Assistant Professor
Department of Dermatology
University of California San Francisco
San Francisco, CA

For more information about this no fee symposium visit cmeoutfitters.com/skinCME

This event is neither sponsored by nor endorsed by the Icahn School of Medicine.

#skinCME

CONSIDERATIONS FOR FUTURE TREATMENT OF INFLAMMATORY SKIN DISEASES

Immune Regulation, Cutaneous Tolerance, and T-cell Plasticity

LEARNING OBJECTIVES

- Recognize the role of cutaneous Tregs in tolerance induction and as a therapeutic target in inflammatory skin diseases.
- Describe how pathogenic T-cells may transdifferentiate into regulatory T-cells.
- Illustrate how principles of disease interception apply to mechanisms of current and emerging treatments in psoriasis.

The following learning objectives pertain only to those requesting CNE credit:

- Recognize the role of cutaneous Tregs in tolerance induction and as a therapeutic target in inflammatory skin diseases.
- Describe how pathogenic T-cells may transdifferentiate into regulatory T-cells.
- Illustrate how principles of disease interception apply to mechanisms of current and emerging treatments in psoriasis.

TARGET AUDIENCE

Dermatologists, physician assistants, nurse practitioners, nurses, pharmacists, and other healthcare providers with an interest in psoriasis and psoriatic arthritis.

COMMERCIAL SUPPORTER STATEMENT

Supported by educational grants from Janssen Biotech, Inc., administered by Janssen Scientific Affairs, LLC. and Novartis Pharmaceuticals Corporation.

ACCREDITATION STATEMENTS

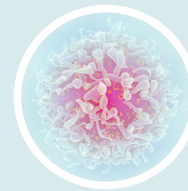
CME Credit: USF Health is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

USF Health designates this live activity for a maximum of 1.5 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

CNE Credit: Provider approved by the California Board of Registered Nursing, Provider Number CEP 15510, for 1.5 contact hours

Note to Nurse Practitioners and Clinical Nurse Specialists: the content of this activity pertains to pharmacology. Earn up to 1.5 contact hours of pharmacotherapeutic contact hours.

CPE Credit: CME Outfitters, LLC, is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.
1.5 contact hours (0.15 CEUs)



Universal Activity Number: 0376-0000-16-032-L01-P **Type:** knowledge-based

CONSIDERATIONS FOR FUTURE TREATMENT OF INFLAMMATORY SKIN DISEASES

Immune Regulation, Cutaneous Tolerance, and T-cell Plasticity

James G. Krueger, MD, PhD

The Rockefeller University Hospital
New York, NY

Biography

Dr. Krueger is Head of the Laboratory for Investigative Dermatology at the Rockefeller University. He also serves as a physician and Co-director of the Center for Clinical and Translational Science at the Rockefeller University Hospital, and Chief Executive Officer of the Rockefeller University Hospital in New York City.

Dr. Krueger earned his bachelor's degree from Princeton University and a PhD in virology and cell biology from the Rockefeller University. He received a MD from Cornell University Medical College, where he also completed an internship in internal medicine and residency in dermatology. Dr. Krueger is certified by the American Board of Dermatology.

His research group at Rockefeller was the first to conduct clinical trials with specific, targeted immune antagonists in psoriasis and this work established that elimination of pathogenic T-cells from skin lesions could reverse the full pathological phenotype of psoriasis. Since then his group has used immune-based therapeutics to dissect inflammatory pathways in psoriasis and to conduct parallel pharmacogenomic studies that define mechanisms of targeted therapeutics in human populations. A more recent focus has been definition of new inflammatory pathways, as well as new types of inflammatory cells in psoriasis lesions that are now being targeted with new biologic drugs. He has been an advocate of bidirectional translational research (bench to bedside and back) in humans using psoriasis as a model inflammatory disease to dissect pathogenic pathways that cannot be studied in animal models.

CONSIDERATIONS FOR FUTURE TREATMENT OF INFLAMMATORY SKIN DISEASES

Immune Regulation, Cutaneous Tolerance, and T-cell Plasticity

Vjay K. Kuchroo, DVM, PhD

Harvard Medical School and Brigham and Women's Hospital
Boston, MA

Biography

Dr. Vijay Kuchroo is the Samuel L. Wasserstrom Professor of Neurology at Harvard Medical School, Senior Scientist at Brigham and Women's Hospital, and Co-Director of the Center for Infection and Immunity, Brigham Research Institutes, Boston. Vijay Kuchroo is also an associate member of the Broad Institute and a participant in a Klarman Cell Observatory project that focuses on T cell differentiation. He was just named the Director of the newly formed Evergrande Center for Immunologic Diseases at Harvard Medical School and Brigham and Women's Hospital. His major research interests include autoimmune diseases - particularly the role of co-stimulation - the genetic basis of experimental autoimmune encephalomyelitis and multiple sclerosis, and cell surface molecules and regulatory factors that regulate induction of T cell tolerance and dysfunction. His laboratory has made several transgenic mice that serve as animal models for human multiple sclerosis. Dr. Kuchroo first described the inhibitory receptor TIM-3, which is being exploited as a target for cancer immunotherapy. He was first to describe the development of highly pathogenic Th17 cells, which has been shown to induce multiple different autoimmune diseases in humans. He has published over 325 original research papers in the filed of immunology and a paper describing development of Th17 has been one of the highest cited papers in immunology.

Dr. Kuchroo came to the United States in 1985 and was at the National Institutes of Health, Bethesda as Fogarty International Fellow for a year before joining the department of pathology at Harvard Medical School as a research fellow. He later joined the Center for Neurologic Diseases at Brigham and Women's Hospital as a faculty member in 1992.

He obtained his degree in veterinary medicine from the College of Veterinary Medicine, Hisar, India. Subsequently, he specialized in pathology at the University of Queensland, Brisbane (Australia) where he obtained a PhD in 1985. He received the Fred Z. Eager Research Prize and Medal for his PhD research work at the University of Queensland. Based on his contributions, he was awarded the Javits Neuroscience Award by the National Institutes of Health in 2002 and the Ranbaxy Prize in Medical Research from the Ranbaxy Science Foundation in 2011. He was named Distinguished Eberly lecturer in 2014 and obtained Nobel Laureate Peter Doherty Lecture and Prize in 2014.

Dr. Kuchroo has 25 patents and has founded 6 different biotech companies. He also serves on the scientific advisory boards of a number of big pharmaceutical companies including Pfizer, Novartis, Sanofi/Genzyme and Glaxo-Smith-Klein (GSK).

CONSIDERATIONS FOR FUTURE TREATMENT OF INFLAMMATORY SKIN DISEASES

Immune Regulation, Cutaneous Tolerance, and T-cell Plasticity

Michael D. Rosenblum, MD, PhD

University of California San Francisco (UCSF)
San Francisco, CA

Biography

Dr. Rosenblum, scientifically, is a formally trained basic immunologist. Clinically, he is a board-certified dermatologist. He completed his residency in dermatology at UCSF followed by a post-doctoral research fellowship at UCSF. He is currently an Assistant Professor in the UCSF Department of Dermatology. He dedicates 85% of his time to basic research and the remaining time taking care of patients with specific inflammatory and autoimmune skin diseases. The central focus of his laboratory is to understand the fundamental mechanisms of how immune responses are regulated in skin, and how this knowledge can be exploited for therapeutic benefit.

DISCLOSURE DECLARATION

It is the policy of USF Health and CME Outfitters, LLC, to ensure independence, balance, objectivity, and scientific rigor and integrity in all of their CME/CE activities. Faculty must disclose to the participants any relationships with commercial companies whose products or devices may be mentioned in faculty presentations, or with the commercial supporter of this CME/CE activity. USF Health and CME Outfitters, LLC, have evaluated, identified, and attempted to resolve any potential conflicts of interest through a rigorous content validation procedure, use of evidence-based data/research, and a multidisciplinary peer review process. The following information is for participant information only. It is not assumed that these relationships will have a negative impact on the presentations.

Dr. Krueger has disclosed that he has received research and grant support from Amgen Inc.; Boehringer Ingelheim; Bristol-Myers Squibb Company; Dermira, Inc.; Innovaderm Research Inc.; Janssen Pharmaceuticals, Inc.; Kadmon Corporation, LLC; Kyowa Hakko Kirin Co., Ltd.; LEO Pharma Inc.; Novartis; PAREXEL International Corporation; Pfizer Inc.; Regeneron Pharmaceuticals, Inc.; and Vitae Pharmaceuticals, Inc. He serves as a consultant for AbbVie Inc.; Baxter; Biogen Idec; Boehringer Ingelheim; Bristol-Myers Squibb Company; Dermira, Inc.; Janssen Pharmaceuticals, Inc.; Kadman Corporation, LLC; Kineta, Inc.; Eli Lilly and Company, Merck & Co.. Inc.; Novartis; Pfizer Inc.; sanofi-aventis U.S. LLC; EMD Serono, Inc.; and XenoPort, Inc.

Dr. Kuchroo has disclosed that he has received research and grant support from NIH/National Institute of Neurological Disorders and Stroke (NINDS); NIH/National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); NIH/National Institute of Allergy and Infectious Diseases; Crohn's and Colitis Foundation of America; Guthy Jackson Charitable Foundation; and Sanofi/Genzyme Corporation.

Dr. Rosenblum has disclosed that he has received grant support from AbbVie Inc. and is a stock shareholder of Delinia, Inc.

Jeffrey Helfand, DO, MS (peer reviewer) has nothing to disclose.

Kimberley Murray, RN, MS (peer reviewer) has nothing to disclose.

Daniela V. DiBiase, MS (planning committee) has nothing to disclose.

Sharon Tordoff, CHCP (planning committee) has nothing to disclose.

Disclosures were obtained from the CME Outfitters, LLC staff: Nothing to disclose.

Disclosures were obtained from the USF Health staff: Nothing to disclose.

CME Outfitters, LLC, USF Health, the faculty, Jansen Biotech, Inc., and Novartis Pharmaceutical Corporation do not endorse the use of any product outside of the FDA labeled indications. Medical professionals should not utilize the procedures, products, or diagnosis techniques discussed during this activity without evaluation of their patient for contraindications or dangers of use.

NOTES

CONSIDERATIONS FOR FUTURE TREATMENT OF INFLAMMATORY SKIN DISEASES

Immune Regulation, Cutaneous Tolerance, and T-cell Plasticity