



von Behring-Röntgen and Leopoldina Symposium

TUFT CELLS

28-30 AUGUST 2023, GIESSEN, GERMANY

KEYNOTE SPEAKER

Robert Margolskee
Philadelphia, USA

Maryam Keshavarz
Augsburg, Germany

ORGANIZING COMMITTEE

Wolfgang Kummer
Giessen, Germany

SPEAKERS

Mark Anderson
San Francisco, USA

Gabriela Krasteva-Christ
Homburg, Germany

Kristin Rattay
Marburg, Germany

Lora Bankova
Boston, USA

Jakob von Moltke
Seattle, USA

Christoph Schneider
Zurich, Switzerland

Noam Cohen
Philadelphia, USA

Alexander Perniss
Boston, USA

Burkhard Schütz
Marburg, Germany

Klaus Deckmann
Giessen, Germany

Kristin Rattay
Marburg, Germany

REGISTRATION

Early-bird registration ends April 30
Registration deadline: July 31

Regular fee (early): 250 €
Regular fee: 350 €
Students fee (early): 150 €
Students fee: 250 €

Abstract submission deadline: June 30

Kathleen DelGiorno
Nashville, USA

Christopher Vakoc
Cold Spring Harbor, USA

VENUE

University Giessen Main Building
Ludwigstrasse 23, 35390 Giessen

Thomas Finger
Denver, USA

Andrew Vaughan
Philadelphia, USA

CONTACT

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Web: www.uni-giessen.de/tuftcell

Philippe Jay
Montpellier, France

Craig Wilen
Yale, USA



**We look forward to welcoming you to the
von Behring-Röntgen and Leopoldina Symposium**

Tuft Cells

The international Von Behring-Röntgen and Leopoldina Symposium Tuft Cells is the 1st symposium focusing on tuft cells.

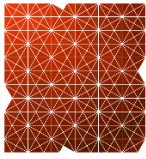
Tuft or brush cells were initially described by electron microscopy in the 1950s as a rare cell type in various mucosal epithelia. Their function remained enigmatic until the past decade. Since then, these epithelial cells have gained significant attention and have been recognized as central players in a wide spectrum of functional networks in physiology and disease. Tuft cells serve as a link between the microbiome, the nervous system, and the immune system, and play a pivotal role in infectious diseases, including parasitic infections. They can also give rise to tumors and are even present in the thymus. This symposium is intended as a forum to bring together for the first time the scientists from various backgrounds who share a fascination for tuft cells.

Full of anticipation,

Wolfgang Kummer, Kristin Rattay, Christoph Schneider, Burkhard Schütz (Organisers)



Main sponsors



von behring|röntgen|
stiftung

The von Behring-Roentgen-Foundation

The von Behring-Roentgen-Foundation was created through the merger and subsequent privatization of the university hospitals of Giessen and Marburg and officially founded on September 8th, 2006. It has taken the State of Hesse only one year to establish this new direction for medical schools in Germany. The University Hospitals of Giessen and Marburg Ltd. was set up at the beginning of 2006. The foundation was legally established under private law with a capital of 100 million euros and is able to promote and support a number of research projects with earnings from its capital. It supports and promotes the medical faculties of the Justus-Liebig-University of Giessen and the Philipps-University of Marburg in their network of life sciences and other academic fields:

1. National and international research cooperation,
2. Development projects for new methods in research and education,
3. Young scientists,
4. Projects related to applied research,
5. Joint Projects combining the medical faculties of the Universities of Giessen and Marburg,
6. Scientific communication through conferences and symposiums.

Since it was set up, the foundation has already approved 23 million euros for 135 projects.



Leopoldina
Nationale Akademie
der Wissenschaften

German National Academy of Sciences Leopoldina

The Leopoldina originated in 1652 as a classical scholarly society and now has 1,600 members from almost all branches of science. In 2008, the Leopoldina was appointed as the German National Academy of Sciences and, in this capacity, was invested with two major objectives: representing the German scientific community internationally, and providing policymakers and the public with science-based advice. The Leopoldina champions the freedom and appreciation of science on both the national and the international level. It is her role to identify and analyse scientific issues of social importance. The Leopoldina presents its policy recommendations in a scientifically qualified, independent, transparent and prospective manner, ever mindful of the standards and consequences of science.

Further sponsors



Cardio-Pulmonary Institute (CPI)

The Cardio-Pulmonary Institute (CPI) is the excellence cluster funded by the German Research Foundation „DFG“ to better understand cardio-pulmonary diseases and find new treatments. With the CPI we plan to go substantially beyond already established structures with the vision that „precision biology drives precision medicine“.



SFB-TR 84

Transregio SFB-TR 84 “Innate Immunity of the Lung: Mechanisms of Pathogen Attack and Host Defence in Pneumonia“



Science Immunology

Science Immunology publishes original, peer-reviewed, science-based research articles that report critical advances in all areas of immunological research.

Scientific Program

Monday, August 28, 2023

14:00 **Registration opens**

18:00 - 19:00 **Welcome & Opening of the Symposium**

Wolfgang Kummer, Giessen

Norbert Suttrop, Berlin, Representative of the Leopoldina

Gabriele Krombach, Giessen, Vice President of the von Behring-Röntgen Foundation

Till Acker, Vice Dean (Research) of the Faculty of Medicine, JLU Giessen

19:00 - 19:45 **Opening Keynote Lecture**

Chair: Klaus Deckmann

Gingival solitary chemosensory cells serve as immune sentinels to protect against periodontitis

Robert Margolskee, Philadelphia, USA

20:00 **Welcome Reception**

Tuesday, August 29, 2023

- 07:30** **Registration opens**
- 08:30 - 10:00** **Session I: Development and Cancer**
Chair: Yosuke Yamada
- 08:30 - 09:00 Transcriptional master regulators of the tuft cell lineage
Christopher R. Vakoc, Cold Spring Harbor, USA
- 09:00 - 09:30 Metaplasia-derived tuft cells inhibit disease progression in the exocrine pancreas
Kathleen E. DelGiorno, Nashville, USA
- 09:30 - 09:45 **O1** ID2 and TCF7L1 are Novel Regulators of Tuft Cell Differentiation in Mouse Small Intestine
Zinina V, Mainz, Germany
- 09:45 – 10:00 **O2** The Ras Exchange Factor RasGRP1 Drives Tuft Cell Generation in Mouse Small Intestine
Shechtman L, San Francisco, USA
- 10:00 - 10:30** **Coffee break**
- 10:30 - 12:00** **Session II: Type 2 Immunity**
Chair: Michael Howitt
- 10:30 - 11:00 Tuft-cell-derived acetylcholine regulates epithelial fluid secretion
Jakob von Moltke, Seattle, USA
- 11:00 - 11:20 Tuft cell – ILC2 crosstalk in the intestine
Christoph Schneider, Zurich, Switzerland
- 11:20 - 11:35 **O3** - Co-existing Atoh1+ and Atoh1– progenitors contribute to tuft cell expansion during intestinal helminth infection
Feng X, Zürich, CH
- 11:35 - 11:50 **O4** - Liver X receptor controls Tuft cell-ILC2 circuit impairing anti-helminth immunity
Luo X, Stockholm, Sweden
- 12:00 - 13:00** **Lunch**

- 13:00 - 14:15** **Session III: Homeostatic and inflammatory circuits**
Chair: Christoph Schneider
- 13:00 - 13:30 A Paneth cell – tuft cell crosstalk controls microbiota and inflammation states in the gut mucosa
Philippe Jay, Montpellier, France
- 13:30 – 13:45 **O5** - Acute tuft cell depletion alters secretory cell lineages and nutrient absorption in mouse small intestine
Kaji I, Nashville, TN, USA
- 13:45 – 14:00 **O6** - WNT signalling promotes tuft cell specification during inflammation
Soshnikova N, Mainz, Germany
- 14:00 – 14:15 **O7** - Tuft cell expression of IL-17RB controls IL-25 availability in the small intestine and prevents chronic activation of ILC2s
Andersson T, Zürich, CH
- 14:15 - 15:15** **Session IV: Acute Paracrine Regulation**
Chair: Jakob von Moltke
- 14:15 - 14:35 Tuft cells as sentinels within the airways
Alexander Perniss, Boston, USA/Giessen, Germany
- 14:35 - 14:55 Paracrine regulation by biliary tuft Cell cotransmitters: Cysteinyl leukotrienes and acetylcholine
Maryam Keshavarz, Augsburg/Giessen, Germany
- 14:55 - 15:10 **O8** - Succinate triggers long-range Ca²⁺ waves via TRPM5-expressing brush cells across the tracheal epithelium
Boonen B, Leuven, Belgium/Homburg, Germany
- 15:15 - 15:45** **Coffee Break**
- 15:45 - 17:20** **Session V: The Neuronal Link**
Chair: Frank Zufall
- 15:45 - 16:15 Epithelial Chemosensory Cells: From Single Cells to Taste Buds
Tom Finger, Philadelphia, USA
- 16:15 - 16:45 Tracheal brush cells exert antimicrobial host defense via communication to sensory neurons
Gabriela Krasteva-Christ, Homburg, Germany

- 16:45 - 17:05 Urethral cholinergic chemosensory cells
Klaus Deckmann, Giessen, Germany
- 17:05 - 17:20 **O9** - Activation of tracheal brush cells induces TRPV1-mediated neurogenic inflammation
Elhawy MI, Homburg, Germany
- 19:00** **Open Public Lecture**
Bürstenzellen – Wächter des Darms
Christoph Schneider, Zürich, CH
- 20:00** **Congress Dinner**

Late breaking abstracts, posters on display in the main lecture hall

P1 – Short-term high fat feeding induces inflammatory responses of tuft cells and mucosal barrier cells in the murine stomach

Widmayer P, Hohenheim, Germany

P2 - Tuft cells mediate lung-gut connection in *Aspergillus fumigatus*-induced allergic lung inflammation

Boussad R, Orleans, France

P3 - Tas2r expression in the murine tracheal epithelium

Wiegand S, Giessen Germany

Wednesday, August 30, 2023

- 07:30 Registration opens**
- 08:30 - 09:45 Session VI: Viral and Protozoan Diseases**
Chair: Claire O’Leary
- 08:30 - 09:00 Tuft cell tropism mediates norovirus immune evasion
Craig Wilen, Yale, USA
- 09:00 - 09:30 Ectopic tuft cells after viral lung injury: function or dysfunction?
Andrew Vaughan, Philadelphia, USA
- 09:30 - 09:45 **O10** - Characterising the role of the microbiota in mediating parasite-tuft cell crosstalk during *Giardia* infection
Sosnowski O, Calgary, Canada
- 09:45 - 10:15 Coffee break**
- 10:15 - 11:20 Session VII: Tuft Cells and Lymphoid Organs**
Chair: Burkhard Schütz
- 10:15 - 10:45 Genetic control of thymic tuft cell development by Ikaros
Mark Anderson, San Francisco, USA
- 10:45 - 11:05 Transcriptional regulation of thymic tuft cell development: similar but different?
Kristin Rattay, Marburg, Germany
- 11:05 - 11:20 **O11** - Trpm5-dependent immune cell dynamics in lymphoid organs during *Pseudomonas aeruginosa* pneumonia
Evers S, Homburg, Germany
- 11:20 - 12:30 General Discussion**
“What’s your name?”, Collaborative efforts, further meetings
- 12:30 - 13:30 Lunch**
- 13:30 - 14:45 Session VIII: New kids on the block**
Chair: Kristin Rattay
- 13:30 – 14:00 Olfactory microvillous cells join the tuft cell family as allergen and danger sensor

Lora G. Bankova, Boston, USA

14:00 - 14:15 **O12** - Whether tuft cells are present in the human breast? The potential relevance to triple-negative breast cancer

Yamada Y, Kyoto, Japan

14:15 - 14:30 **O13** - Marker refinement in murine lower airways: advillin for tuft cells, villin for a neuroendocrine phenotype

Mahmoud W, Irbid, Jordan/Giessen. Germany

14:30 - 14:45 **O14** – LRMP⁺ chemosensory cells in the human respiratory tract

Hamarsheh D, Giessen, Germany

14:45 – 15:00 **O15** - Tuft cells inhibit pancreatic injury through IL-25 synthesis and secretion

Ruelas A, Nashville, USA

15:00 - 15:30 Coffee break

15:30 - 16:45 Session IX: Bacterial Triggers

Chair: Maryam Keshavarz

15:30 - 16:00 Bittersweet Regulation of Tuft Cell Antimicrobial Defenses

Noam Cohen, Philadelphia, USA

16:00 - 16:15 **O16** – The Role of the Aryl hydrocarbon Receptor (AhR) in Tuft Cell-mediated Intestinal Immunity

Mayer M, Bonn, Germany

16:15 - 16:30 **O17** - Tracheal brush cells modulate immune responses during airways inflammation through TRPM5 channel activation

Abdel Wadood N, Homburg, Germany

16:30 - 16:45 **O18** - Tracheal brush cells contribute positively to the phagocytosis of *Pseudomonas aeruginosa* by dendritic cells

Elhawy MI, Homburg, Germany

16:45 - 17:00 Closing remarks and awards

Burkhard Schütz, Marburg

Alphabetical list of speakers

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Social Event

Welcome Reception

- Monday, August 28, 2023
- 20:00 h
- Justus-Liebig University Main Building
- Snacks and drinks, included in the registration fee

Congress Dinner

- Tuesday, August 29, 2023
- 20:00 h
- Restaurant Schlosskeller Giessen

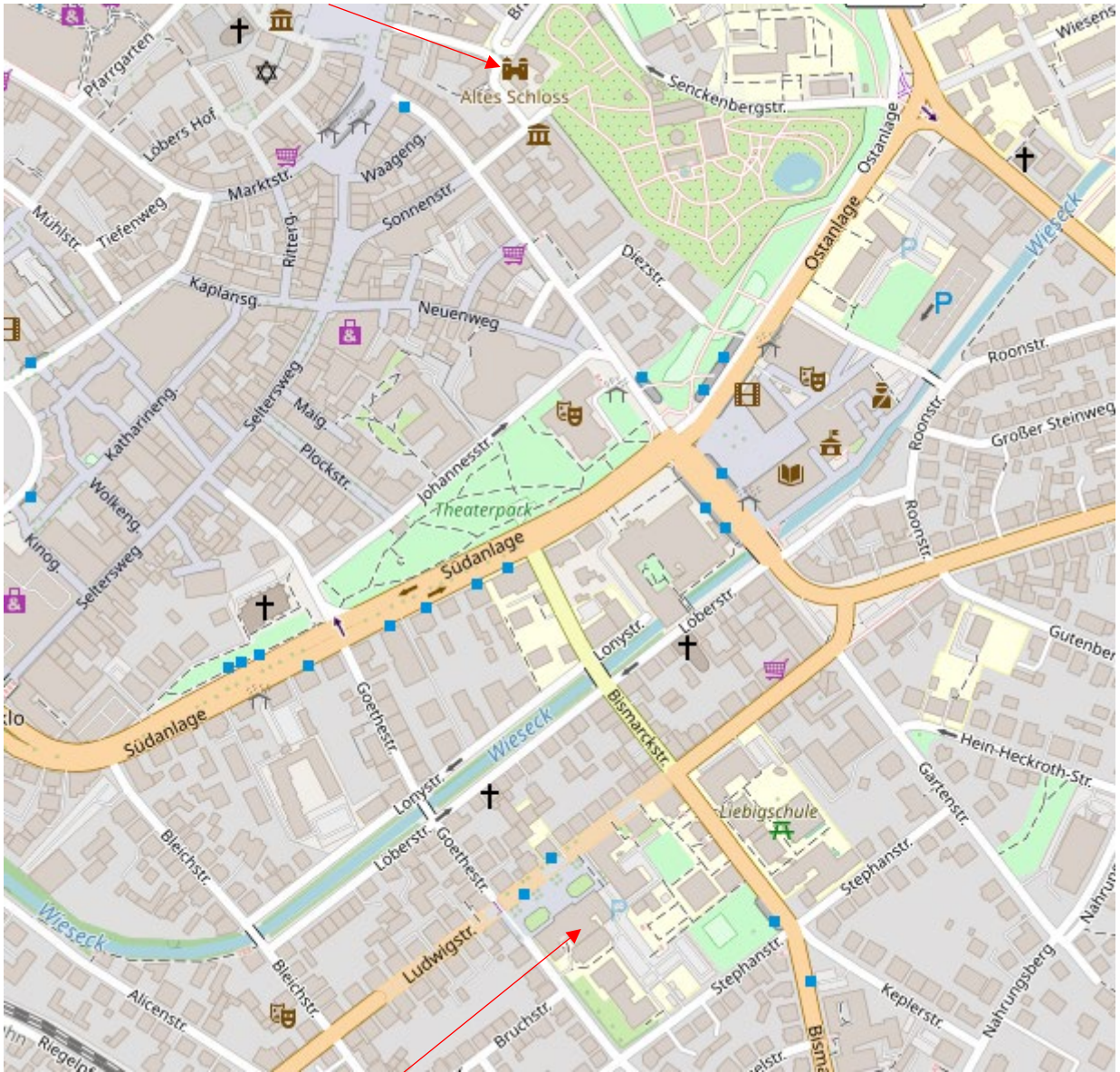
The Congress Dinner will take place in the „Restaurant Schlosskeller“. The restaurant is located in the old castle of Giessen. The historic building was built from 1330 by Count Ludwig II of Hesse. It was built to strengthen the medieval city fortifications. The restaurant is in the old cellar vault of the Castle and provides Baden specialties and seasonal dishes. In summer you may dine under old trees on the idyllic castle terrace. The castle terrace is next to the botanical garden...a unique combination.

Restaurant Schlosskeller: Brandpl. 2, 35390 Gießen

Botanical Garden (Botanischer Garten), the oldest botanical garden in Germany which is still situated in its original location. For citizens and visitors the Botanical Garden is a place of relaxation and recreation in the heart of the city. The garden was a gift from Count Ludwig V of Hessen in 1609, on the occasion of the foundation of the university. Originally, it was used to raise medicinal herbs (hortus medicus). In 1802 a forestry part was added. A 200 year-old ginkgo tree dating from this period still stands here today.

Old Castle (Altes Schloss), another important historical building that was brought back to its former beauty in 1976, after it burnt down completely through a bombardment. The old Castle is the main seat of the Regional Museum (Oberhessisches Museum) containing the painting gallery, the crafts department and temporary exhibitions. The castle tower can be visited during the opening hours of the museum. The only remaining part of the original building is the so-called Heathens' Tower which served as a dungeon for robbers until the 18th century.

Congress Dinner



Congress Venue

Travel information

How to get to Giessen?

Giessen is easy to reach!



One of the biggest airports in Europe, Frankfurt am Main (FRA), is only 70 km away. There are two train stations - "Regionalbahnhof" for local trains, "Fernbahnhof" for long distance trains - directly in the airport. From there, it takes 1:15 h to 1:30 h to reach Giessen with one change at Frankfurt main station ("Frankfurt(Main)Hbf"). You can check for connections from "Frankfurt(M)Flughafen" to "Gießen" with the Deutsche Bahn. Please click "Fastest connections" AND "local transport" and check the "Important information in the connection details!" as there are major construction works going on at the track. Trains leave in intervals of 30 min at maximum. ICE trains are a little more expensive than local transport. Depending on the type of train, it will cost 17,40 € to 19,90 € (roughly the same in US Dollar; one way; cheapest fare). You can buy a ticket online in advance or at a ticket machine on the platform or nearby.

Venue

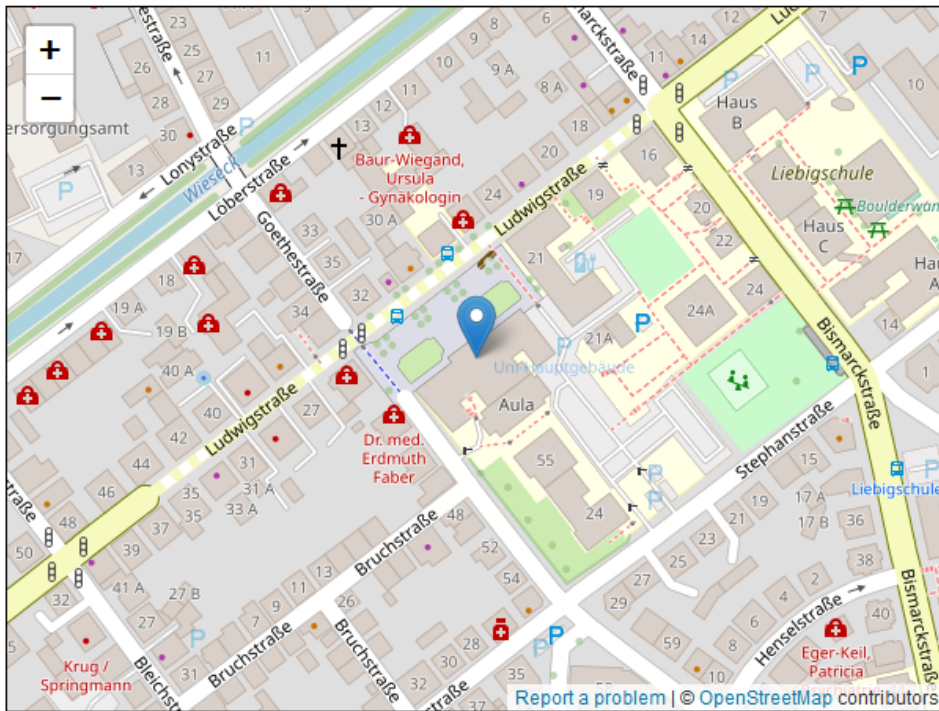
University Giessen Main Building

Ludwigstrasse 23

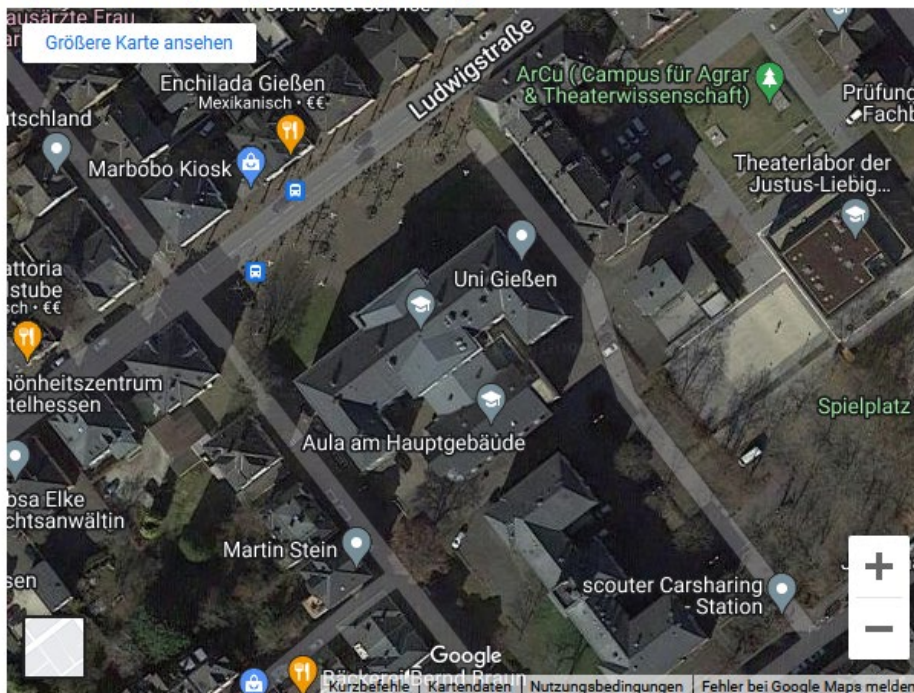
35390 Giessen

Map of Giessen

a) Visit the OpenStreetMap for route planning.



b) Visit the Google Map for route planning.



Contact

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