Jerry Simecka, PhD
Pharmaceutical Sciences
UNT System College of Pharmacy
Email: Jerry.Simecka@unthsc.edu

Area of Expertise

Pre-Clinical Services evaluate new therapies against infections using animal models. These studies are done in collaboration with pharmaceutical and academic researchers, and several of these therapies are now being used clinically to treat patients.

Qualifications

PhD in Microbiology, University of Alabama

BS in Biology, University of California at Irvine

Recent Publications

Restoring TB-specific Immunity in Early HIV Infection—the Dual Promise of Early Antiretroviral and TB Preventive Treatment
Moonan, P. K., Mathew, S. O., Simecka, J. W. & Weis, S. E., 15 May 2026, In: Journal of Infectious Diseases. 233, 5, p. 809-811 3 p.

Mycoplasma: Serological Methods
Waites, K. B., Brown, M. B. & Simecka, J. W., 1 Jan 2024, *Manual of Molecular and Clinical Laboratory Immunology, 9th Edition: Volume 1-2.* wiley, Vol. 1. p. 433-437 5 p.

Mycoplasma: Immunologic and molecular diagnostic methods
Waites, K. B., Brown, M. B. & Simecka, J. W., 1 Jun 2022, *Manual of Molecular and Clinical Laboratory Immunology: 7th edition.* John Wiley and Sons Inc., p. 510-517 8 p.

Immunopotentiation by Lymph-Node Targeting of a Malaria Transmission-Blocking Nanovaccine
Howard, G. P., Bender, N. G., Khare, P., López-Gutiérrez, B., Nyasembe, V., Weiss, W. J., Simecka, J. W., Hamerly, T., Mao, H. Q. & Dinglasan, R. R., 27 Aug 2021, In: Frontiers in Immunology. 12, 729086.

Epidemic ribotypes of Clostridium (now Clostridioides) difficile are likely to be more virulent than non-epidemic ribotypes in animal models
Vitucci, J. C., Pulse, M., Tabor-Simecka, L. & Simecka, J., 5 Feb 2020, In: BMC Microbiology. 20, 1, 27.

Primary care clinics can be a source of exposure to virulent Clostridium (now Clostridioides) difficile: An environmental screening study of hospitals and clinics in Dallas-Fort Worth region
Simecka, J. W., Fulda, K. G., Pulse, M., Lee, J. H., Vitucci, J., Nguyen, P., Taylor, P., Filipetto, F., Espinoza, A. M. & Sharma, S., 1 Aug 2019, In: PLoS ONE. 14, 8, e0220646.

Clotam enhances anti-proliferative effect of vincristine in Ewing sarcoma cells
Shelake, S., Sankpal, U. T., Eslin, D., Bowman, W. P., Simecka, J. W., Raut, S., Ray, A. & Basha, R., 15 Feb 2019, In: Apoptosis. 24, 1-2, p. 21-32 12 p.

Copper-tolfenamic acid: evaluation of stability and anti-cancer activity
Hurtado, M., Sankpal, U. T., Chhabra, J., Brown, D. T., Maram, R., Patel, R., Gurung, R. K., Simecka, J., Holder, A. A. & Basha, R., 15 Feb 2019, In: Investigational New Drugs. 37, 1, p. 27-34 8 p.

Interleukin-17A exacerbates disease severity in BALB/c mice susceptible to lung infection with Mycoplasma pulmonis
Mize, M. T., Sun, X. L. & Simecka, J. W., 1 Sep 2018, In: Infection and Immunity. 86, 9, e00292-18.

Activity of meropenem-vaborbactam against carbapenem- resistant enterobacteriaceae in a murine model of pyelonephritis
Weiss, W. J., Pulse, M. E., Nguyen, P., Peterson, K., Silva, J., Simecka, J. W., Valtierra, D., Sabet, M. & Griffith, D. C., Jan 2018, In: Antimicrobial agents and chemotherapy. 62, 1, e01439.

Sponsored Projects

A Biosensor Technology Platform with Integrated Micro/Nano MEMS Resonator for Early Detection of Bacteria Biofilm Formation in Medical Settings
Simecka, J. (PI)
Intramural Research(TxMRC)
1/06/14 → 31/12/15

ASM Robert D. Watkins Graduate Fellowship Program (For: Maximillion Mize)
Simecka, J. (PI)
American Society for Microbiology
31/07/15 → 31/08/18

Clostridium Difficile (C-Diff) Environmental Research Project
Fulda, K. (PI), Simecka, J. (CoI), Lee, J.-H. (CoI) & Filipetto, F. (CoI)
Dallas-Fort Worth Hospital Council
9/05/14 → 9/12/14

CUBRC 2016-01: Pharmacokinetics / Pharmacodynamics of TP-271 in the Mouse Pneumonia Model with Select Methicillin-Resistant Staphylococcus aureus
Simecka, J. (PI) & Weiss, W. (CoI)
CUBRC, Inc.
3/03/16 → 28/02/17

Dendritic cells & immunity in mycoplasma pneumonia
Simecka, J. (PI) & SIMECKA, J. (CoPI)
15/02/04 → 31/01/10

Dendritic cells &immunity in mycoplasma pneumonia
Simecka, J. (PI) & SIMECKA, J. W. (PI)
National Heart, Lung, and Blood Institute
15/02/04 → 31/01/10

Development and Evaluation of Test Articles in a Cutaneous Fungal Model with Aspergillus Fumigatus
Simecka, J. (PI) & Weiss, W. (CoI)
Fox Chase Chemical Diversity Center, Inc
31/10/18 → 30/10/19

Development and Validation of a Chronic Murine Lung Infection Model with P. aeruginosa
Simecka, J. (PI) & Weiss, W. (CoI)
Janssen Pharmaceuticals
18/04/19 → 30/06/21

Development and Validation of a Chronic Murine Lung Infection Model with S. Aureus
Simecka, J. (PI) & Weiss, W. (CoI)
Janssen Pharmaceuticals
17/10/19 → 16/10/20

Efficacy and Pharmacokinetics/Pharmacodynamics of TP-271 vs Acinetobacter Baumannii
Simecka, J. (PI) & Weiss, W. (CoI)
Tetraphase Pharmaceuticals Inc.
11/09/15 → 31/05/16

Efficacy of Ceftibut3en + VNRX-5236 in the murine UTI model
Simecka, J. (PI)
VenatoRx Pharmaceuticals, Inc.
1/06/18 → 31/01/19

Efficacy of TP-271 Formulation in the Mouse Lung Infection Model with Streptococcus Pneumoniae
Simecka, J. (PI) & Weiss, W. (CoI)
Tetraphase Pharmaceuticals Inc.
4/12/12 → 3/12/13

FCCDC 2019-02: Model Development and Test Article Efficacy in a Disseminated Aspergillus and Cutaneous Fungal Infection (Aspergillus & Fusarium) Models
Simecka, J. (PI) & Weiss, W. (CoI)
Fox Chase Chemical Diversity Center, Inc
22/10/19 → 21/10/20

Fluorescent activated cell sorter for UNTHSC
Simecka, J. (PI) & SIMECKA, J. W. (PI)
National Center for Research Resources
1/01/05 → 31/12/05

Fluorescent activated cell sorter for UNTHSC
Simecka, J. (PI) & SIMECKA, J. (CoPI)
1/01/05 → 31/12/05

FLUORESCENT ACTIVATED CELL SORTER FOR UNTHSC: CARDIOVASCULAR
Simecka, J. (PI)
1/01/05 → 31/12/05

FLUORESCENT ACTIVATED CELL SORTER FOR UNTHSC: EYE RESEARCH
Simecka, J. (PI)
1/01/05 → 31/12/05

FLUORESCENT ACTIVATED CELL SORTER FOR UNTHSC: INFECTIOUS DISEASES
Simecka, J. (PI)
1/01/05 → 31/12/05

FLUORESCENT ACTIVATED CELL SORTER FOR UNTHSC: MOLECULAR BIOLOGY
Simecka, J. (PI)
1/01/05 → 31/12/05

FLUORESCENT ACTIVATED CELL SORTER FOR UNTHSC: NEUROSCIENCE
Simecka, J. (PI)
1/01/05 → 31/12/05

HHS-NIH-NIAID-DMID-NIHAI2017088: Therapeutics Testing in Murine Models of Bacterial Thigh and Lung Infections
Simecka, J. (PI)
NIAID: Allergy and Infectious Diseases
8/09/17 → 7/09/18

Humanized Mouse Model of Human Mycoplasma Pneumonia for Vaccine Development and Immunopathogenesis
Simecka, J. (PI)
Intramural Research(UNTHSC)
1/04/14 → 31/08/15

Modulation of cytokine networks in mycoplasma pneumonia
Simecka, J. (PI) & SIMECKA, J. W. (PI)
National Institute of Allergy and Infectious Diseases
1/07/03 → 30/06/06

Modulation of cytokine networks in mycoplasma pneumonia
Simecka, J. (PI)
1/07/03 → 30/06/04

Mycoplasma pneumoniae activation of airway epithelium
Simecka, J. (PI) & SIMECKA, J. W. (PI)
National Institute of Allergy and Infectious Diseases
1/03/07 → 28/02/10

Mycoplasma pneumoniae activation of airway epithelium
Simecka, J. (PI)
1/03/07 → 28/02/10

Nano-G: Rescuing grepafloxcin by Mitigating its QT Prolongation for Faster Clinical Translation
Ranjan, A. (PI) & Simecka, J. (CoI)
Intramural Research(UNTHSC)
1/06/17 → 31/05/18

Pharmacokinetic Profiling in Sprague-Dawley Rats and Golden Syrian Hamsters and Mice
Simecka, J. (PI)
CUBRC, Inc.
17/02/14 → 17/02/15

Pharmacokinetics/Pharmacodynamics of TP-271 in the MRSA Pneumonia Model (RA-13-6071)
Simecka, J. (PI)
Tetraphase Pharmaceuticals Inc.
10/06/13 → 9/06/14

Pharmacokinetics/Pharmacodynamics of TP-271 in the Streptococcus Pneumoniae Pneumonia Model
Simecka, J. (PI)
CUBRC, Inc.
10/07/13 → 9/07/14

PK/PD of Novel Test Article(s) in the Murine Thigh Infection Model with Klebsiella pneumoniae isolates
Simecka, J. (PI) & Weiss, W. (CoI)
Melinta Therapeutics, Inc.
28/08/18 → 27/08/19

Pre-Clinical Services Agreements
Simecka, J. (PI) & Weiss, W. (CoI)
Pre-Clinical Services Funding Pool
1/09/12 → 31/08/14

Pre-Clinical Services Agreements
Simecka, J. (PI) & Weiss, W. (CoI)
Pre-Clinical Services Funding Pool
1/09/13 → 31/08/15

Pre-Clinical Services Agreements
Simecka, J. (PI) & Weiss, W. (CoI)
Pre-Clinical Services Funding Pool
1/09/11 → 31/08/14

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Simecka, J. (PI) & Weiss, W. (CoI)
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1/09/16 → 31/08/18

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Simecka, J. (PI)
Pre-Clinical Services Funding Pool
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Pre-Clinical Services Agreements
Simecka, J. (PI)
Pre-Clinical Services Funding Pool
1/09/18 → 31/08/20

Pre-Clinical Services Agreements
Simecka, J. (PI) & Weiss, W. (CoI)
Pre-Clinical Services Funding Pool
1/09/14 → 31/08/16

Pre-Clinical Services Agreements
Simecka, J. (PI) & Weiss, W. (CoI)
Pre-Clinical Services Funding Pool
1/09/15 → 31/08/16

Pre-Clinical Services Agreements
Simecka, J. (PI) & Weiss, W. (CoI)
Pre-Clinical Services Funding Pool
1/09/19 → 31/08/21

Proteomic Analysis of Nasal Washes from Desert Tortoises for Detection of Microbial Pathogens
Simecka, J. (PI) & Prokai, L. (CoI)
San Diego Zoo
1/08/13 → 31/12/16

Pyruvate: Powerful Brain Protection after Cardiac Arrest
Mallet, R. (PI), Yurvati, A. (CoI), Yurvati, A. (CoI), Simecka, J. (CoI) & Yang, S. (CoI)
NINDS: Neurological Disorders & Stroke
1/08/11 → 31/07/16

Stress Hormones and Lung Microbiota as Mediators of Respiratory Health
Jones, H. (PI), Simecka, J. (CoI) & Allen, M. (CoI)
Intramural Research(UNTHSC)
1/06/17 → 31/05/19

T cell subsets in murine mycoplasma respiratory disease
Simecka, J. (PI)
1/07/99 → 31/01/12

T CELL SUBSETS IN MURINE MYCOPLASMA RESPIRATORY DISEASE
Simecka, J. (PI) & SIMECKA, J. W. (PI)
National Institute of Allergy and Infectious Diseases
1/07/99 → 31/01/12

Tetraphase 2012-04 Efficacy of TP-271 in the Mouse Lung Infection Model with Acinetobacter Baumanii
Simecka, J. (PI)
Tetraphase Pharmaceuticals Inc.
18/10/12 → 17/10/13

Texas Center of Minority Health, Education, Research and Outreach - Admin/Development Core
Vishwanatha, J. (PI), Jones, H. (CoI), He, J. (CoI), Basha, R. (CoI), Nandy, K. (CoI), Mallet, R. (CoI), Krishnamoorthy, R. (CoI) & Simecka, J. (CoI)
NIMHD: Natl Institute on Minority Health
23/09/17 → 31/05/22

Therapeutics Testing in Murine Models of Bacterial Thigh & Lung Infect
Simecka, J. (PI) & Weiss, W. (CoI)
NIAID: Allergy and Infectious Diseases
1/06/15 → 31/05/16

TP-6076 Single Dose Pharmacokinetic Study in Mice for Ex Vivo Plasma Protein Binding
Simecka, J. (PI) & Weiss, W. (CoI)
Tetraphase Pharmaceuticals Inc.
1/10/18 → 30/09/19