

Jerry Simecka, PhD  
Pharmaceutical Sciences  
UNT System College of Pharmacy  
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## 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

### **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.

### **Immunopotentiality 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.

### **Association of Sp1 and survivin in epithelial ovarian cancer: Sp1 inhibitor and cisplatin, a novel combination for inhibiting epithelial ovarian cancer cell proliferation**

Sankpal, U. T., Ingersoll, S. B., Ahmad, S., Holloway, R. W., Bhat, V. B., Simecka, J. W., Daniel, L., Kariali, E., Vishwanatha, J. K. & Basha, R., 1 Oct 2016, In: *Tumor Biology*. 37, 10, p. 14259-14269 11 p.

**Thiopurine prodrugs mediate immunosuppressive effects by interfering with Rac1 protein function**

Shin, J. Y., Wey, M., Umutesi, H. G., Sun, X., Simecka, J. & Heo, J., 24 Jun 2016, In: Journal of Biological Chemistry. 291, 26, p. 13699-13714 16 p.

## **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 → 30/06/18

**Clostridium Difficile (C-Diff) Environmental Research Project**

Fulda, K. (PI), Simecka, J. (Col), Lee, J.-H. (Col) & Filipetto, F. (Col)

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. (Col)

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. (Col)

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. (Col)

Janssen Pharmaceuticals

18/04/19 → 17/04/20

**Development and Validation of a Chronic Murine Lung Infection Model with S. Aureus**

Simecka, J. (PI) & Weiss, W. (Col)

Janssen Pharmaceuticals

17/10/19 → 16/10/20

**Efficacy and Pharmacokinetics/Pharmacodynamics of TP-271 vs Acinetobacter Baumanni**

Simecka, J. (PI) & Weiss, W. (Col)

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. (Col)

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. (Col)

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 grepafloxacin by Mitigating its QT Prolongation for Faster Clinical Translation**

Ranjan, A. (PI) & Simecka, J. (Col)  
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. (Col)  
Melinta Therapeutics, Inc.  
28/08/18 → 27/08/19

**Pre-Clinical Services Agreements**

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

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1/09/16 → 31/08/18

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1/09/15 → 31/08/16

**Pre-Clinical Services Agreements**  
Simecka, J. (PI) & Weiss, W. (Col)  
Pre-Clinical Services Funding Pool  
1/09/19 → 31/08/20

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

**Pyruvate: Powerful Brain Protection after Cardiac Arrest**  
Mallet, R. (PI), Yurvati, A. (Col), Yurvati, A. (Col), Simecka, J. (Col) & Yang, S. (Col)  
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. (Col) & Allen, M. (Col)  
Intramural Research(UNTHSC)  
1/06/17 → 31/05/18

**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 Baumannii**

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. (Col), He, J. (Col), Basha, R. (Col), Nandy, K. (Col), Mallet, R. (Col), Krishnamoorthy, R. (Col) & Simecka, J. (Col)  
NIMHD: Natl Institute on Minority Health  
23/09/17 → 31/05/22

**Therapeutics Testing in Murine Models of Bacterial Thigh & Lung Infection**

Simecka, J. (PI) & Weiss, W. (Col)  
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. (Col)  
Tetraphase Pharmaceuticals Inc.  
1/10/18 → 30/09/19