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National Natural Toxins Research Center (NNTRC)
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EDUCATION

2010 Ph.D., Medical Microbiology, Chulalongkorn University, Bangkok, Thailand
2001 B.S., Medical Technology, Chulalongkorn University, Bangkok, Thailand

EMPLOYMENT

2018-Present Assistant Professor, National Natural Toxins Research Center (NNTRC),
Department of Chemistry, Texas A&M University-Kingsville (TAMUK)
2015-2018 Research Assistant Professor, NNTRC, TAMUK
2011-2015 Research Scientist, NNTRC, TAMUK
2010-2011 Postdoctoral Fellow, Snake bite and Venom Research Unit, Faculty of Medicine,
Chulalongkorn University, Bangkok, Thailand
2000-2009 Ph.D. Student Researcher, Snake bite and Venom Research Unit, Faculty of
Medicine, Chulalongkorn University, Thailand

HONORS AND PROFESSIONAL MEMBERSHIPS

2018-present Member, American Association for Cancer Research (AACR)
2018-present Member, American Society for Microbiology (ASM)
2012-present Member, International Society on Toxinology (IST)
2013 Member, Society of Toxicology (SOT)
2010 First class honor for Ph.D. poster presentation at the eleventh Royal Golden
Jubilee-Ph.D. Congress, Pattaya, Thailand.
2007-2008 Recipient of Chulalongkorn University 90th Anniversary Fund, Thailand
2000-2005 Recipient of Royal Golden Jubilee Ph.D. Scholarship, Bangkok, Thailand

CERTIFICATIONS

American Medical Technologist (AMT) ID: 2739978
Phlebotomy certification

PUBLICATIONS

1. **Suntravat, M.**, Langlais PR, Sánchez EE, Nielsen VG (2018). CatroxMP-II: a heme-modulated fibrinogenolytic metalloproteinase isolated from *Crotalus atrox* venom. *Biometals*. 14.
2. Martin-Martin, I., Chagas, A.C., Guimaraes-Costa, A.B., Amo, L., Oliveira, F., Moore, I.N., DeSouza-Vieira, T.S., Sanchez, E.E., **Suntravat, M.**, Valenzuela, J.G., Ribeiro, J.M.C., Calvo, E. (2018). Immunity to LuloHya and Lundep, the salivary spreading factors from *Lutzomyia longipalpis*, protects against *Leishmania major* infection. *PLoS Pathog*. 14: e1007006.
3. Sánchez, E.E., González, R., Lucena, S., García, S., Finol, H.J., **Suntravat, M.**, Girón, M.E., Fernández, I., Rodríguez-Acosta, A. (2018). Crotamine-like from Southern Pacific rattlesnake (*Crotalus oreganus helleri*) Venom acts on human leukemia (K-562) cell lines and produces ultrastructural changes on mice adrenal gland. *Ultrastruct Pathol*. 42: 116-123.

4. Cantu Jr., M, Mallela, S., Nyguen, M., Baez, R., Parra, V., Johnson, R., Wilson, R., **Suntravat, M.**, Lucena, S., Rodriguez-Acosta, A., Sanchez, E. (2017). The binding effectiveness of anti-r-disintegrin polyclonal antibodies against disintegrins and PII and PIII metalloproteases: An immunological survey of type A, B and A + B venoms from Mohave rattlesnakes. *Comparative Biochemistry and Physiology, Part C*. 191: 168-176.
5. Rodríguez-Acosta, A., Lucena, S., Alfonso, A., Goins, A., Walls, R., Guerrero, B., **Suntravat, M.**, Sánchez, E.E. (2016). Biological and biochemical characterization of venom from the broad-banded copperhead (*Agkistrodon contortrix laticinctus*): isolation of two new dimeric disintegrins. *Anim Biol Leiden Neth*. 66: 173-187.
6. **Suntravat, M.**, Helmke, T.J., Atphaisit, C., Cuevas, E., Lucena, S.E., Uzcátegui, N.L., Sánchez, E.E., Rodríguez-Acosta, A. (2016). Expression, purification, and analysis of three recombinant ECD disintegrins (r-colombistatins) from P-III class snake venom metalloproteinases affecting platelet aggregation and SK-MEL-28 cell adhesion. *Toxicon*. 122: 43-49.
7. Komives, C.F., Sanchez, E.E., Rathore, A.S., White, B., **Suntravat, M.**, Balderrama, M., Cifelli, A., Joshi, V. (2016). Opossum peptide that can neutralize rattlesnake venom is expressed in *Escherichia coli*. *Biotechnol Prog*. 7.
8. Borja, M., Galan, J.A., Cantu, E., Zugasti-Cruz, A., Rodríguez-Acosta, A., Lazcano, D., Lucena, S., **Suntravat, M.**, Sánchez, E.E. (2016). Morulustatin, a disintegrin that inhibits ADP-induced platelet aggregation, isolated from the Mexican Tamaulipan Rock Rattlesnake (*Crotalus lepidus morulus*). *Revista Científica, FCV-LUZ* 86-94.
9. **Suntravat, M.**, Uzcátegui, N.L., Atphaisit, C., Helmke, T.J., Lucena, S.E., Sánchez, E.E., Rodríguez-Acosta, A. (2016). Erratum to: Gene expression profiling of the venom gland from the Venezuelan mapanare (*Bothrops colombiensis*) using expressed sequence tags (ESTs). *BMC Mol Biol*. 17: 13.
10. Margres, M.J., Walls, R., **Suntravat, M.**, Lucena, S., Sánchez, E.E., Rokyta, D.R. (2016). Functional characterizations of venom phenotypes in the eastern diamondback rattlesnake (*Crotalus adamanteus*) and evidence for expression-driven divergence in toxic activities among populations. *Toxicon*. 119: 28-38.
11. Lucena, S., Rodríguez-Acosta, A., Grilli, E., Alfonso, A., Goins, A., Ogbata, I., Walls, R., **Suntravat, M.**, Uzcátegui, N.L., Guerrero, B., Sánchez, E.E. (2016). The characterization of trans-pecos copperhead (*Agkistrodon contortrix pictigaster*) venom and isolation of two new dimeric disintegrins. *Biologicals*. 44: 191-197.
12. **Suntravat, M.**, Barret, H.S., Jurica, C.A., Lucena, S.E., Perez, J.C., Sánchez, E.E. (2015). Recombinant disintegrin (r-Cam-dis) from *Crotalus adamanteus* inhibits adhesion of human pancreatic cancer cell lines to laminin-1 and vitronectin. *J Venom Res*. 6: 1-10.
13. Lucena, S.E., Castro, R., Lundin, C., Hofstetter, A., Alaniz, A., **Suntravat, M.**, Sánchez, E.E. (2015). Inhibition of pancreatic tumoral cells by snake venom disintegrins. *Toxicon*. 93, 136-143.
14. Lucena, S.E., Romo, K., **Suntravat, M.**, Sánchez, E.E. (2014). Anti-angiogenic activities of two recombinant disintegrins derived from the Mohave and Prairie rattlesnakes. *Toxicon*. 78, 10-17.
15. **Suntravat, M.**, Jia, Y., Lucena, S.E., Sánchez, E.E., Pérez, J.C. (2013). cDNA cloning of a novel snake venom metalloproteinase from eastern diamondback rattlesnake (*Crotalus adamanteus*), and expression of its disintegrin domain with anti-platelet effects. *Toxicon*. 64: 43-54.
16. Khunsap, S., Pakmanee, N., Khow, O., Chanhom, L., Sitprijia, V., **Suntravat, M.**, Lucena, S.E., Pérez, J.C., Sánchez, E.E. (2011). Purification of a phospholipase A₂ from *Daboia russelii siamensis* venom with anticancer effects. *J Venom Res*. 2: 42-51.
17. **Suntravat, M.**, Yusuksawad, M., Sereemasapun, A., Pérez, J.C., Nuchprayoon, I. (2011). Effect of Russell's viper venom-factor X activator (RVV-X) on DIC, renal hemodynamics and function, and histopathology. *Toxicon*. 58(3): 230-238.

18. **Suntravat, M.**, Nuchprayoon, I. (2011). Recombinant Russell's viper venom-factor X activator (RVV-X)-specific antibody: neutralization and cross-reactivity with *Cryptelytrops albolabris* and *Calloselasma rhodostoma* venoms. *Asain Biomedicine*. 5(3): 371-379.
19. **Suntravat, M.**, Nuchprayoon, I., Pérez, J.C. (2010). Comparative study of anticoagulant and procoagulant properties of 28 snake venoms from families Elapidae, Viperidae, and purified Russell's viper venom-factor X (RVV-X) activator. *Toxicon*. 15; 56(4): 544-553.
20. Nuchprayoon, S., Sanprasert, V., **Suntravat, M.**, Kraivichian, K., Saksirisampant, W., Nuchprayoon, I. (2003). Study of specific IgG subclass antibodies for diagnosis of *Gnathostoma spinigerum*. *Parasitol Res*. 91(2): 137-143.

INVITED ORAL PRESENTATIONS

1. Venom Week VI. The Acute Effects Of Snake Venom CRiSP Toxins On Blood And Lymphatic Endothelial Cell Permeability: New Insights Into The Pathophysiology Of Snakebite. Texas A&M University-Kingsville, TX, March 14-17, 2018.
2. The 19th European Section-International Society on Toxinology (EU-IST). The acute effects of snake venom CRiSP toxins on blood and lymphatic endothelial cell permeability: new insights into the pathophysiology of snakebite. Yerevan, Armenia, September, 22-26, 2018.

RESEARCH AND CREATIVE ACTIVITIES

Ongoing Research Support

1R15HL137134-01 (PI: M. Suntravat)
NIH/NHLBI

04/01/2017- 03/31/2020

"The acute effects of snake venom CRiSP toxins on blood and lymphatic endothelial cell permeability: new insights into the pathophysiology of snakebite"

This is an NIH Academic Research Enhancement Award (AREA) Program (R15) to support the research projects to expose undergraduate and graduate students to research, and to strengthen the research environment of the National Natural Toxins Research Center (NNTRC) at Texas A&M University – Kingsville. Funding from this award supports studies directed toward the characterization of the effects of a specific family of snake venom toxins, the svCRiSPs (snake venom Cysteine-Rich Secretory Proteins), on the function of blood and lymphatic endothelial cells that will provide new insights into the pathophysiology of snakebite.

\$412,735

5 P40 OD010960 (PI: E. Sanchez)
NIH/NCATS

05/01/2014 - 04/30/2019

"Viper Resource Center at Texas A&M University - Kingsville (TAMUK)"

This is an NIH Animal and Biological Material Resource Center Grant (P40) to support the operation of the National Natural Toxin Research Center (NNTRC) at Texas A&M University – Kingsville. Funding from this award supports the operation of the Perez Serpentarium, the collection and distribution of snake venoms and snake venom-derived reagents to academic and commercial researchers world-wide. The award also supports studies directed toward the characterization of the biological activity of certain snake venom toxins.

\$2,984,946

Completed Research Support

Suntravat (PI) 01/29/2018-07/16/2018
TAMUK Council for Undergraduate Research (TCUR), Texas A&M University-Kingsville
“Antibacterial activity of 22 snake venoms from families Viperidae and Elapidae”
\$4,980

Suntravat (PI) 09/01/2012-12/01/2012
Cisne Enterprises, Inc., Odessa, TX
“Neutralization of local hemorrhagic activity and lethality of Western Diamondback Rattlesnake (Crotalus atrox) venom with silicon dioxide (LIPH)”
\$19,121

Suntravat (PI) 09/01/2012-08/31/2013
University Research Awards, Texas A&M University-Kingsville
“Study a Novel Venom Recombinant Disintegrin for Anti-Pancreatic Cancer”
\$14,960

Suntravat (PI) 10/15/2011-05/01/2012
TAMUK Council for Undergraduate Research (TCUR), Texas A&M University-Kingsville
“Cloning, expression, and characterization of recombinant novel RGD-disintegrin and its shorter peptides from Crotalus adamanteus”
\$1,000

Suntravat (PI) 09/01/2010-08/31/2011
Research and Scholarly Activity Awards program, College of Arts and Sciences, Texas A&M University-Kingsville
“Purification, cloning, and expression of disintegrins from Crotalus adamanteus cDNA libraries”
\$1,500