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Research Interest:  
**Peptide and protein chemistry, Toxinology**



### Educational Background

Postdoc and PhD MBB sandwich program  
University of Utah, U.S.A.

PhD Molecular Biology and Biotechnology  
University of the Philippines Diliman

International Postgraduate University Course  
in Chemistry and Chemical Engineering  
Tokyo Institute of Technology, Japan

MS Biochemistry  
University of the Philippines Manila

BS Chemistry  
University of the Philippines Diliman

### Work Experience

Professor Emeritus, University of the Philippines Baguio, November 2010 – present  
Professor 12 starting from Instructor 1, University of the Philippines Baguio, June 1975 – October 2010

### Publications

#### Articles in Scopus/WoS-indexed journals

1. **Jimenez EC** (2022) Peptide antagonists of NMDA receptors: structure-activity relationships for potential therapeutics. *Peptides* 153:170796.
2. **Jimenez EC** (2021) Post-translationally modified conopeptides: Biological activities and pharmacological applications. *Peptides* 139:170525.
3. Cabotage MHR, **Jimenez EC**, Bascos NAD (2020) Modeling of the mechanisms for post-translational D-amino acid incorporation in dermorphin and contryphan-R. *Current Topics in Peptide and Protein Research* 21:1-19.

4. **Jimenez EC** (2020) D-amino acids in peptides from animals, including human: occurrence, structure, bioactivity and pharmacology. *Curr Protein Pept Sci* 21:622-637.
5. **Jimenez EC** (2019) Bromotryptophan and its analogs in peptides from marine animals. *Protein Pept Lett* 26:251-260.
6. Bascos NAD, **Jimenez EC** (2018) Molecular dynamics simulations of a D-tryptophan-containing *Conus* venom peptide and its all-L-amino acid analog. *Curr Topics Pept Protein Res* 19:27-41.
7. Subong BJS, Benico GA, Sulit AKL, Mendoza CO, Cruz LJ, Azanza RV, **Jimenez EC** (2017) Toxicity and protein expression of *Alexandrium* species collected in the Philippine waters. **Phil J Sci** 146:425-436.
8. **Jimenez EC** (2017) D-amino acid-containing peptides in *Conus* venoms. *Phil Sci Lett* 10:72-80.
9. Mendoza CO, Rabanes AC, **Jimenez EC**, Azanza RV, Cortez-Akhunzadah J, Cruz LJ (2013) Detection of ciguatera fish poisoning in the Philippines. *J Envi Sci Management. Special Issue* 1:50-55.
10. **Jimenez EC** (2013) Diversity of *Conus* peptides that target the nicotinic acetylcholine receptors. *Phil Sci Lett* 6:8-15.
11. **Jimenez EC**, Olivera BM (2010) Divergent M- and O-superfamily peptides from venom of fish-hunting *Conus parius*. *Peptides* 31:1678-1683.
12. **Jimenez EC** (2009) Conantokins: from “sleeper” activity to drug development. *Phil Sci Lett* 2:60-66.
13. **Jimenez EC**, Sasakawa N, Kumakura K (2008) Effects of sodium channel-targeted conotoxins on catecholamine release in adrenal chromaffin cells. *Phil J Sci* 137:127-132.
14. Buczek O, **Jimenez EC**, Yoshikami D, Imperial JS, Watkins M, Morrison A, Olivera BM (2008) I<sub>1</sub>-superfamily conotoxins and prediction of single D-amino acid occurrence. *Toxicon* 51:218-229.
15. Teichert RW, **Jimenez EC**, Twede V, Watkins M, Hollmann M, Bulaj G, Olivera BM (2007) Novel conantokins from *Conus parius* venom are specific antagonists of NMDA receptors. *J Biol Chem* 282: 36905-36913.
16. **Jimenez EC**, Olivera BM, Teichert RW (2007) AlphaC-Conotoxin PrXA: a new family of nicotinic acetylcholine receptor antagonists. *Biochemistry* 46:8717-8724.
17. **Jimenez EC** (2007) Contryphans revisited. *Curr Topics Pept Protein Res* 8:11-17.
18. Buczek O, Yoshikami D, Watkins M, Bulaj G, **Jimenez EC**, Olivera BM (2005) Characterization of D-amino-acid-containing excitatory conotoxins and redefinition of the I-conotoxin superfamily. *FEBS J* 272:4178-4188.
19. Corpuz GP, Jacobsen RB, **Jimenez EC**, Watkins M, Walker C, Colledge C, Garrett JE, McDougal O, Li W, Gray WR, Hillyard DR, Rivier J, McIntosh JM, Cruz LJ, Olivera BM (2005) Definition of the M-conotoxin superfamily: characterization of novel peptides from molluscivorous *Conus* venoms. *Biochemistry* 44:8176-8186.
20. Teichert RW, **Jimenez EC**, Olivera BM (2005) AlphaS-conotoxin RVIIIA: A structurally unique conotoxin that broadly targets nicotinic acetylcholine receptors. *Biochemistry* 44:7897-7902.
21. Buczek O, Yoshikami D, Bulaj G, **Jimenez EC**, Olivera BM (2005) Posttranslational amino acid isomerization: A functionally important D-amino acid in an excitatory peptide. *J Biol Chem* 280:4247-4253.
22. **Jimenez EC**, Watkins M, Olivera BM (2004) Multiple 6-bromotryptophan residues in a sleep-inducing peptide. *Biochemistry* 43, 12343-12348.
23. Bulaj G, Buczek O, Goodsell I, **Jimenez EC**, Kranski J, Nielsen JS, Garrett GE, Olivera BM (2003) Efficient oxidative folding of conotoxins and the radiation of venomous cone snails. *Proc Natl Acad Sci U.S.A.* 100 Suppl. 2:14562-14568.
24. **Jimenez EC**, Shetty RS, Lirazan M, Rivier J, Walker C, Abogadie FC, Yoshikami D, Cruz LJ, Olivera BM (2003) Novel excitatory *Conus* peptides define a new conotoxin superfamily. *J Neurochem* 85:610-621.

25. **Jimenez EC**, Donevan S, Walker C, Zhou L, Nielsen J, Cruz LJ, Armstrong H, White HS, Olivera BM (2002) Conantokin-L, a new NMDA receptor antagonist: determinants for anticonvulsant potency. *Epilepsy Res* 51:73-78.
26. Lirazan MB, **Jimenez EC**, Craig AG, Olivera BM, Cruz LJ (2002) Conophysin-R, a *Conus radiatus* venom belonging to the neurophysin family. *Toxicon* 40:901-908.
27. **Jimenez EC**, Watkins M, Juszak L, Cruz LJ, Olivera BM (2001) Contryphans from *Conus textile* venom ducts. *Toxicon* 39:803-809.
28. Pallaghy PB, He W, **Jimenez EC**, Olivera BM, Norton RS (2000) Structures of the contryphan family of cyclic peptides. Role of electrostatic interactions in cis-trans isomerism. *Biochemistry* 39:12845-12851.
29. Pallaghy PB, Melnikova AP, **Jimenez EC**, Olivera BM, Norton RS (1999) Solution structure of contryphan-R, a naturally occurring disulfide-bridged octapeptide containing D-tryptophan: comparison with protein loops. *Biochemistry* 38:11553-11558.
30. Jacobsen R, **Jimenez EC**, De la Cruz R, Gray WR, Cruz LJ, Olivera BM (1999) A novel D-leucine-containing *Conus* peptide: diverse conformational dynamics in the contryphan family. *J Peptide Res* 54:93-98.
31. Jacobsen R, **Jimenez EC**, Grilley M, Watkins M, Hillyard D, Cruz LJ, Olivera BM (1998) The contryphans, a D-tryptophan-containing family of *Conus* peptides. *J Peptide Res* 51:173-177.
32. McCabe T, Olivera BM, **Jimenez E**, Cruz LJ, Zhou LM, White HS (1997) Anticonvulsant profile of conantokin-R: A novel and selective antagonist at the NMDAR1-1b/NR2b subunit. *Epilepsia* 38:220.
33. Craig AG, **Jimenez EC**, Dykert J, Nielsen DB, Gulyas J, Abogadie FC, Porter J, Rivier J, Cruz LJ, Olivera BM, McIntosh JM (1997) A novel post-translational modification involving bromination of tryptophan: identification of the residue, L-6-bromotryptophan, in peptides from *Conus imperialis* and *Conus radiatus* venom. *J Biol Chem* 272:4689-4698.
34. **Jimenez EC**, Craig AG, Watkins M, Hillyard DR, Gray WR, Gulyas J, Rivier JE, Cruz LJ, Olivera BM (1997) Bromocontryphan: post-translational bromination of tryptophan. *Biochemistry* 36:989-994.
35. **Jimenez EC**, Olivera BM, Gray WR, Cruz LJ (1996) Contryphan is a D-tryptophan containing *Conus* peptide. *J Biol Chem* 271:28002-28005.
36. **Jimenez EC**, Pocsidio GN (1994) Blood glucose levels of *Oreochromis niloticus* exposed to chloropyriphos. *Phil J Sci* 123:171-175.
37. Shimizu A, **Jimenez EC**, Takagi J, Inada Y, Saito Y (1987) Venom from southern copperhead snake (*Agkistrodon contortrix contortrix*). I. Characterization of a protease that preferentially releases fibrinopeptide B. *Toxicon* 25:751-757.
38. **Jimenez EC**, Olivera BM, Cruz LJ (1983) Localization of enzymes and possible toxin precursors in granules from *Conus striatus* venom. *Toxicon Suppl.* 3:199-202.

#### Popular science articles in Scopus/WoS-indexed journals

1. **Jimenez EC** (2022) The cone snail that delivered the Golden Goose. *Scienggj (PopSci, Science for Society)* 15(2), 88-89.
2. **Jimenez EC** (2020) Beyond the stench, bromine bodes well. *Philippine Science Letters (PopSci, Science for Society)* 13(1), 23-24.

#### Book chapters

1. **Jimenez EC**, Cruz LJ (2016) Conotoxins as tools in research on nicotinic receptors, in: **Toxins and Drug Discovery**, Gopalakrishnakone P (ed). The Netherlands: Springer, pp. 1-17.
2. Teichert RW, **Jimenez EC**, Olivera BM (2009) Biology and pharmacology of conotoxins, in: *Botulinum Toxin: Therapeutic Clinical Practice and Science*. Jankovic J, Albanese A, Atassi MZ, Dolly JO, Hallett M, Mayer N (eds) Philadelphia: Elsevier, pp. 446-464.

3. Cruz LJ, **Jimenez EC** (2004) *Conus* venom neuropeptides, in: Encyclopedia of Neuroscience, 3<sup>rd</sup> ed. (CD-ROM version). Adelman G, Smith BH (eds) Amsterdam and New York: Elsevier.

#### Book essays:

1. **Jimenez EC** (2017) Cellular respiration and dieting. In: Science Philippines, Essays on Science by Filipinos, vol. IV, Concepcion GP (ed) Quezon City: UP Press, pp. 146-149.
2. **Jimenez EC** (2017) Fats in us. In: Science Philippines, Essays on Science by Filipinos, vol. IV, Concepcion GP (ed) Quezon City: UP Press, pp. 150-154.
3. **Jimenez EC** (2017) My notes on collagen. In: Science Philippines, Essays on Science by Filipinos, vol. IV, Concepcion GP (ed) Quezon City: UP Press, pp. 157-159.
4. **Jimenez EC** (2017) A trendy substance called glutathione. In: Science Philippines, Essays on Science by Filipinos, vol. IV, Concepcion GP (ed) Quezon City: UP Press, pp. 160-162.
5. **Jimenez EC** (2017) Botulinum toxin: from poison to cosmetics and medication. In: Science Philippines, Essays on Science by Filipinos, vol. IV, Concepcion GP (ed) Quezon City: UP Press, pp. 163-165.
6. **Jimenez EC** (2017) Protein, first...and when it goes awry. In: Science Philippines, Essays on Science by Filipinos, vol. III, Concepcion GP (ed) Quezon City: UP Press, pp. 113-117.
7. **Jimenez EC** (2017) The tale of insulin and the episodes of hyperglycemia and hypoglycemia. In: Science Philippines, Essays on Science by Filipinos, vol. III, Concepcion GP (ed) Quezon City: UP Press, pp. 127-129.
8. **Jimenez EC** (2017) On love darts and poison darts. In: Science Philippines, Essays on Science by Filipinos, vol. III, Concepcion GP (ed) Quezon City: UP Press, pp. 154-156.
9. **Jimenez EC** (2016) The scientific method: when science is done well. In: Towards Excellence in Science Research: A UP Research Guidebook, version 1, Almoro PF, Dimalanta CB, Morta AT, (eds) Quezon City: University of the Philippines, pp. 31-37.
10. **Jimenez EC** (2013) Beyond aspirin and morphine, snail toxins for pain. In: Science Philippines, Essays on Science by Filipinos, vol. II, Concepcion GP (ed) Quezon City: UP Press, pp. 158-160.
11. **Jimenez EC**, Patacsil MC (2012) To D or not to D: an amino acid mystery unveiled. In: Science Philippines, Essays on Science by Filipinos, vol. I, Concepcion GP (ed) Quezon City: UP Press, pp. 123-125.
12. **Jimenez EC** (2008) Protein modification: To D or not to D. In: Selected Essays on Science and Technology for Securing a Better Philippines, vol. 1, Concepcion GP, Padlan EA, Saloma C (eds) Quezon City: UP Press, pp. 266-268.

#### Membership in National/International Organizations

Member, Philippine-American Academy of Science and Engineering

Member, National Research Council of the Philippines

Member, Philippine Society for Biochemistry and Molecular Biology