

Professor. Lorena Maribel Meneses Olmedo, PhD
Faculty of Exact and Natural Sciences
Interdisciplinary Group in Applied Sciences
Biological Sciences
PUCE Quito
Email: Immeneses@puce.edu.ec



Employment

Faculty of Exact and Natural Sciences
Pontifical Catholic University of Ecuador
22 Feb 2009 → present

Interdisciplinary Group in Applied Sciences
Pontifical Catholic University of Ecuador
19 Sep 2019 → present

Biological Sciences
Pontifical Catholic University of Ecuador
1 Jan 2019 → present

PUCE Quito
Pontifical Catholic University of Ecuador
21 Feb 2009 → present

Research outputs

Ultrasmall gold nanoparticles functionalized with fluoresceinamine: a combined computational and experimental study of cellular uptake and fluorescence enhancement

Guzmán-Cárdenas, K., Meneses, L., Borrero, L., Debut, A., Torres, M., Aluisa, A., Guerrero, S., Pozo-Martínez, J., Moncada-Basualto, M., Santos, J. C. & Pilaquinga, F., Jun 2026, In: Journal of Nanoparticle Research. 28, 6, 162.

Bioactivity of synthetic peptides from Ecuadorian frog skin secretions against *Leishmania mexicana*, *Plasmodium falciparum*, and *Trypanosoma cruzi*

Proaño-Bolaños, C., Morán-Marcillo, G., Espinosa de Los Monteros-Silva, N., Bermúdez-Puga, S., Salazar, M. A., Blasco-Zúñiga, A., Cuesta, S., Molina, C., Espinosa, F., Meneses, L., Rojas-Silva, P., Zapata Mena, S., Rivera I, M., Sáenz, F. E. & Costales, J. A., 6 Aug 2024, In: Microbiology spectrum. 12, 8, p. e0333923

Computational modelling of the antimicrobial peptides Cruzioseptin-4 extracted from the frog *Cruziohyala calcarifer* and Pictuseptin-1 extracted from the frog *Boana picturata*

Rengifo-Lema, M. J., Proaño-Bolaños, C., Cuesta, S. & Meneses, L., 27 Feb 2024, In: Scientific Reports. 14, 1, 4805.

Synthesis and Computational Modeling of the Interaction between Silver Nanoparticles and Trans-Anethole

Pilaquinga, F., Rodríguez, P., Cuesta, S., Debut, A. & Meneses, L., 2023

Unveiling the structure-reactivity relationship involved in the reaction mechanism of the HCl-catalyzed alkyl t-butyl ethers thermal decomposition. A computational study

Cuesta, S. A., Mora, J. R., Meneses, L. M., Márquez, E. A., Flores-Morales, V., Rincón, L., Torres, F. J. & Zambrano, C. H., 9 Apr 2022, In: International Journal of Quantum Chemistry. 122, 14, e26915.

Computational Modeling of the Interaction of Silver Clusters with Carbohydrates

Gallegos, F. E., Meneses, L. M., Cuesta, S. A., Santos, J. C., Arias, J., Carrillo, P. & Pilaquinga, F., 4 Feb 2022, In: ACS Omega. 7, 6, p. 4750-4756 7 p.

APLICAR INTELIGENCIA ARTIFICIAL PARA ACELERAR LA RESOLUCIÓN DE PROBLEMAS CIENTÍFICOS

Meneses OLMEDO, L. M., 1 Oct 2021, In: NUESTRA CIENCIA.

COMPUTATIONAL STUDY OF STEVIOL AND ITS SUGGESTED ANTICANCER ACTIVITY. A DFT AND DOCKING STUDY

MENESES OLMEDO, L. M., 20 Sep 2021, In: Journal of the Chilean Chemical Society.

A computational study of steviol and its suggested anticancer activity. A DFT and docking study

Meneses, L., Cuesta, S., Salgado, G., Muñoz, P., Belhassan, A., Gerli, L. & Mendoza-Huizar, L. H., Sep 2021, In: Journal of the Chilean Chemical Society. 66, 3, p. 5291-5294 4 p.

Determination of antioxidant activity by oxygen radical absorbance capacity (Orac-fl), cellular antioxidant activity (caa), electrochemical and microbiological analyses of silver nanoparticles using the aqueous leaf extract of solanum mammosum l.

Pilaquinga, F., Morey, J., Fernandez, L., Espinoza-Montero, P., Moncada-Basualto, M., Pozo-Martinez, J., Olea-Azar, C., Bosch, R., Meneses, L., Debut, A. & Piña, M. D. L. N., 26 Aug 2021, In: International Journal of Nanomedicine. 16, p. 5879-5894 16 p.

MODELAMIENTO COMPUTACIONAL DE LA CRUZIOSEPTINA CC-17 EXTRAÍDA DE LA RANA *Cruziohyla calcarifer*

Damaris, R. D., Sebastián, C. H., Proaño-Bolaños, C. & Lorena, M. O., 28 Jul 2021, In: infoANALÍTICA.

MODELAMIENTO MOLECULAR DE LA CRUZIOSEPTINA CC-16 EXTRAÍDA DE LA RANA *Cruziohyla calcarifer*

Morales, F., Sebastián, C. H., Proaño-Bolaños, C. & Lorena, M. O., 28 Jul 2021, In: infoANALÍTICA.

The role of organic small molecules in pain management

Cuesta, S. A. & Meneses, L., 1 Jul 2021, In: Molecules. 26, 13, 4029.

Novel antimicrobial cruzioseptin peptides extracted from the splendid leaf frog, *Cruziohyla calcarifer*

Cuesta, S. A., Reinoso, C., Morales, F., Pilaquinga, F., Morán-Marcillo, G., Proaño-Bolaños, C., Blasco-Zúñiga, A., Rivera, M. & Meneses, L., 3 May 2021, In: Amino Acids. 53, 6, p. 853-868 16 p.

Computational study of the binding mode, action mechanism and potency of pregabalin through molecular docking and quantum mechanical descriptors

Meneses, L., Cuesta Hoyos, S., Salgado Morán, G., Muñoz C., P., Gerli Candia, L., Mendoza-Huizar, L. H. & Belhassan, A., May 2021, In: Computational and Theoretical Chemistry. 1199, 113200.

INSIGHTS ON THE MECHANISM, REACTIVITY AND SELECTIVITY OF FRUCTOSE AND TAGATOSE DEHYDRATION INTO 5-HYDROXYMETHYLFURFURAL: A DFT STUDY: A DFT study

Meneses-Olmedo, L. M., Cuesta Hoyos, S., Salgado Moran, G., Cardona Villada, W., Gerli Candia, L. & Mendoza-Huizar, L. H., 15 Nov 2020, In: Computational and Theoretical Chemistry. 1190, 113009.

Origen probable y transmisión entre especies del SARS-CoV-2

Alvaro Ortiz, J., Meneses, L. & Idrovo Espín, F., 17 Jul 2020, In: infoANALÍTICA.

ANÁLISIS POR ESPECTROSCOPIA DE INFRARROJOS (FTIR) DEL EXUDADO DEL ÁRBOL DE ALGARROBO PROSOPIS JULIFLORA (FABACEAE)

MENESES OLMEDO, L. M., 2 Jul 2020, In: INFOANALITICA.

THEORETICAL INVESTIGATION OF THE MOLECULAR STRUCTURE AND MOLECULAR DOCKING OF ETORICOXIB

Sadasivam, K., Salgado Moran, G., Mendoza-Huizar, L. H., Cardona Villada, W., Gerli Candia, L., Meneses-Olmedo, L. M. & Cuesta Hoyos, S., Jun 2020, In: Journal of the Chilean Chemical Society. 65, 2, p. 4804-4806 3 p.

SYNTHESIS OF SILVER NANOPARTICLES USING AQUEOUS LEAF EXTRACT OF MIMOSA ALBIDA

(MIMOSOIDEAE): CHARACTERIZATION AND ANTIOXIDANT ACTIVITY: Characterization and antioxidant activity

Pilaquinga, F., Amaguaña, D., Morey, J., Moncada-Basualto, M., Pozo-Martínez, J., Olea-Azar, C., Fernández, L., Espinoza-Montero, P., Jara-Negrete, E., Meneses, L., López, F., Debut, A. & Piña, N., 21 Jan 2020, In: Materials. 13, 3, 503.

Molecular modeling of four Dermaseptin-related peptides of the gliding tree frog *Agalychnis spurrelli*

Cuesta, S., Gallegos, F., Arias, J., Pilaquinga, F., Blasco-Zúñiga, A., Proaño-Bolaños, C., Rivera, M. & Meneses, L., 17 Aug 2019, In: Journal of Molecular Modeling. 25, 9, 260.

Síntesis verde de nanopartículas de plata usando el extracto acuoso de las hojas de ajo (*Allium sativum*)

Pilaquinga Flores, M. F., Pazmiño, K., Robalino, A., Jara Negrete, E. N., López F, F., Meneses, L., Vizúete, K. & Debut, A., 15 Jul 2019, In: infoANALÍTICA.

MODELAMIENTO MOLECULAR DE LA DERMASEPTINA SP2 EXTRAÍDA DE *AGALYCHNIS SPURRELLI*

MENESES OLMEDO, L. M. & RIVERA IÑIGUEZ, M. R., 17 Jan 2019, In: INFOANALITICA.

ON THE REACTION MECHANISM OF THE 3,4-DIMETHOXYBENZALDEHYDE FORMATION FROM 1-(3',4'-DIMETHOXYPHENYL)PROPENE

MENESES OLMEDO, L. M., 14 Feb 2018, In: REVISTA.

Estudio de biodegradabilidad aeróbica de HDPE con aditivos degradables mediante compostaje

Terán, M. J., Romero Estevez, D. F. & Meneses Olmedo, L. M., 12 Jan 2018, In: infoANALÍTICA. 6, 1, p. 67-82 16 p.

Computational Modeling of the Interaction of Silver Nanoparticles with the Lipid Layer of the Skin

Fabara, A., Cuesta, S., Pilaquinga, F. & Meneses, L., 2018, In: Journal of Nanotechnology. 2018, 4927017.

Experimental and computational characterization of silver nanoparticles using matico (*piper aduncum*) leaves extract as reducing agent

Santorum, N., Fabara, A., Pilaquinga, F., Ampudia, S., Jara, E. & Meneses, L., 2018, In: Periodico Tche Quimica. 15, 29, p. 309-318 10 p.

On the reaction mechanism of the 3,4-dimethoxybenzaldehyde formation from 1-(3',4'-Dimethoxyphenyl)Propene

Cuesta, S., Arias, J., Gallegos, F., Alzate-Morales, J. & Meneses, L., 2018, In: Molecules. 23, 2, 412.

Preparation of a degradable hydrocolloid film with silver nanoparticles synthesized with aqueous garlic extract (*allium sativum*)

Pilaquinga, F., Escobar, V., Cueva, G. & Meneses, L., 2018, In: Periodico Tche Quimica. 15, 29, p. 266-275 10 p.

Synthesis of silver nanoparticles functionalized with aqueous extract (*bursera graveolens*) and antimicrobial evaluation in *Escherichia coli*, *staphylococcus aureus* and *klebsiellapneumoniae*

Ganchala, D., Gu Coronado, J. L., Jara, E., Meneses, L., Granda, E. & Pilaquinga, F., 2018, In: Periodico Tche Quimica. 15, 29, p. 282-291 10 p.

Computational study of vicarious nucleophilic substitution reactions

Meneses, L., Morocho, S., Castellanos, A. & Cuesta, S., 1 Oct 2017, In: Journal of Molecular Modeling. 23, 10, 301.

MODELACIÓN MOLECULAR DE LA INTERACCIÓN DEL PARACETAMOL Y EL 4-AMINOFENOL CON LAS ENZIMAS CICLOOXIGENASA 1 Y 2

MENESES OLMEDO, L. M., 1 Jan 2017, In: REVISTA.

ESTUDIO COMPUTACIONAL DE LA ELECTROFILIA GLOBAL DE 35 DERIVADOS DE NITROBENCENO QUE PARTICIPAN EN REACCIONES DE SUSTITUCIÓN NUCLEOFÍLICA DE VICARIUS.

MENESES OLMEDO, L. M. & PILAQUINGA FLORES, M. F., 1 Dec 2016, In: REVISTA.

THEORETICAL CHARACTERIZATION OF THE MECHANISM OF ALDER-ENE REACTIONS
MENESES OLMEDO, L. M. & PILAQUINGA FLORES, M. F., 1 Dec 2016, In: REVISTA.

AISLAMIENTO Y CARACTERIZACIÓN EXPERIMENTAL Y COMPUTACIONAL DE EUGENOL EN ALBAHACA DE SAL (OCIMUM BASILICUM L.) Y ALBAHACA DE DULCE (OCIMUM AMERICANUM)
MENESES OLMEDO, L. M., 1 Nov 2015

CARACTERIZACION POR ESPECTROFOTOMETRÍA INFRARROJA DE LOS PRODUCTOS INTERMEDIOS EN LA RUTA SINTÉTICA DE IBUPROFENO
MENESES OLMEDO, L. M., 1 Nov 2015

ESTUDIO ESPECTROCÓPICO COMPUTACIONAL DE RESONANCIA MAGNÉTICA NUCLEAR DEL IBUPROFENO Y SUS PRINCIPALES PRECURSORES QUÍMICOS.
MENESES OLMEDO, L. M. & PILAQUINGA FLORES, M. F., 1 Sep 2015, In: REVISTA.

DETERMINACIÓN COMPUTACIONAL DE LA AFINIDAD Y EFICIENCIA DE ENLACE DE ANTIFLAMATORIOS NO ESTEROIDEOS INHIBIDORES DE LA CICLOOXIGENASA-2.
MENESES OLMEDO, L. M., 28 Aug 2015, In: REVISTA.

ESTUDIO ESPECTROCÓPICO EXPERIMENTAL Y COMPUTACIONAL DE IBUPROFENO Y SUS PRECURSORES DE SINTESIS
MENESES OLMEDO, L. M., 29 Jun 2015, In: REVISTA.

Theoretical studies of reactivity and selectivity in some organic reactions

Meneses, L., Araya, A., Pilaquinga, F., Espín, M., Carrillo, P. & Sánchez, F., 5 Nov 2010, In: International Journal of Quantum Chemistry. 110, 13, p. 2360-2370 11 p.

Relationship between the electrophilicity and σ_p Hammett constant in Baeyer-Villiger reactions

Meneses, L., Araya, A., Pilaquinga, F. & Fuentealba, P., 20 Jul 2008, In: Chemical Physics Letters. 460, 1-3, p. 27-30 4 p.

Local hardness: An application to electrophilic additions

Meneses, L., Araya, A., Pilaquinga, F., Contreras, R. & Fuentealba, P., 26 Sep 2007, In: Chemical Physics Letters. 446, 1-3, p. 170-175 6 p.

On the variations of electronic chemical potential and chemical hardness induced by solvent effects

Meneses, L., Fuentealba, P. & Contreras, R., 29 Dec 2006, In: Chemical Physics Letters. 433, 1-3, p. 54-57 4 p.

Relationship between the electrophilicity of substituting agents and substrate selectivity in Friedel-Crafts reactions

Meneses, L., Fuentealba, P. & Contreras, R., 24 Jan 2005, In: Tetrahedron. 61, 4, p. 831-836 6 p.

A proposal for a new local hardness as selectivity index

Meneses, L., Tiznado, W., Contreras, R. & Fuentealba, P., 1 Jan 2004, In: Chemical Physics Letters. 383, 1-2, p. 181-187 7 p.

Projects

ACTIVIDAD ANTIPARASITARIA DE PÉPTIDOS SINTÉTICOS DERIVADOS DE LA PIEL DE ANFIBIOS CONTRA MALARIA, CHAGAS Y LEISHMANIASIS

BOHORQUEZ TIMISARAY, K. P. (Principal Investigator), Meneses Olmedo, L. M. (Principal Investigator), RIVERA IÑIGUEZ, M. R. (Principal Investigator), SALAZAR SALAZAR, M. A. (Principal Investigator), Sáenz Calderón, F. E. (Principal Investigator) & Costales Cordero, J. A. (Director)

1/01/21 → 31/12/21

ESTUDIO DE DESCRIPTORES MECANO-CUÁNTICOS PARA ESTABLECER POSIBLES MECANISMOS DE ACCIÓN DE PÉPTIDOS EXTRAÍDOS DE LA PIEL DE RANAS DE LA FAMILIA HYLIDAE

Valverde Arias, P. J. (Principal Investigator), GUERRERO DUYMOVIC, A. I. (External Researcher) & Meneses Olmedo, L. M. (Director)

1/03/22 → 28/02/23

ESTUDIO DE PÉPTIDOS DE INTERÉS BIOLÓGICO EXTRAÍDOS DE LA PIEL DE LA RANA AGALYNCHNIS SPURRELLI POR MÉTODOS EXPERIMENTALES Y COMPUTACIONALES

Pilaquinga Flores, M. F. (Principal Investigator), Rivera Íñiguez, M. R. (Principal Investigator), ARIAS DE, P. E. J. (Student), GALLEGOS PERALTA, F. E. (Student) & Meneses Olmedo, L. M. (Director)

15/02/18 → 14/02/19

ESTUDIO DE PÉPTIDOS DE INTERÉS BIOLÓGICO EXTRAÍDOS DE LA PIEL DE RANAS DE LA FAMILIA HYLIDAE POR MÉTODOS EXPERIMENTALES Y COMPUTACIONALES

Cevallos Vallejo, A. S. (Principal Investigator), PROAÑO BOLAÑOS, C. D. C. (Principal Investigator), Pilaquinga Flores, M. F. (Principal Investigator), Rivera Íñiguez, M. R. (Principal Investigator), Valverde Arias, P. J. (Principal Investigator), MORALES PAZMIÑO, J. F. (Student), REINOSO DÁVILA, D. C. (Student) & Meneses Olmedo, L. M. (Director)

1/04/19 → 30/11/21

SÍNTESIS, CARACTERIZACIÓN Y MODELAMIENTO COMPUTACIONAL DE NANOPARTÍCULAS DE PLATA USANDO EXTRACTOS DE PLANTAS NATIVAS DE LA PROVINCIA DE IMBABURA

Jara Negrete, E. N. (Principal Investigator), LÓPEZ FLORES, M. F. (Principal Investigator), Meneses Olmedo, L. M. (Principal Investigator), GRANJA MOREANO, S. C. (Student) & Pilaquinga Flores, M. F. (Director)

15/02/18 → 14/02/20