



CURRICULUM VITAE



NAME: *OCTAVIO CARVAJAL ZARRABAL*

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Place and date of birth: Tlacojalpan, Ver. México, 060162

NATIONALITY: Mexican

ACADEMIC STUDIES:

UNDERGRADUATE: **University of Veracruz, Xalapa Region
Pharmaceutical Chemical Biologist
June 12, 1987.**

MASTER SCIENCE STUDIES: **Graduate Center, Technological Institute of Veracruz
Veracruz, Ver. México.
Master Degree in Food Science
May 26 1995.**

DOCTOR STUDIES: **Kyushu University, Fukuoka Japan.
Ph.D. in Agricultural Sciences
Specialty: Food Science and Technology
March 27, 2000.**

PROFESSIONAL EXPERIENCE: **Research-Professor
Lab. Advanced Biochemistry
University of Veracruz
From April 2000 to Date.**

AWARDS AND ACHIEVEMENT: **Member of the National System of Researchers (SNI Spanish
abbreviations), Number 25850, from January 2001 to Date.**

Level I File 25850
Scientific Area: Biology and Chemistry
Discipline: Biochemistry
Subdiscipline: Chemistry of Natural Products
Specialty Nutrition Chemistry, Fermentation technology,
 Environmental science

Teacher Enhancement Program with desirable profile.

Coordinator for the Master Science Program in Biological Chemistry.

Member of the Editorial Board of the Magazine International Biotechnology Color Journal Universidad del Papaloapan UNPA, Mexico; Unacar-TECHNOSCIENCE Universidad Autónoma del Carmen Campeche, Mexico.

General Coordination of the Research Line: Biological chemistry of bioactive compounds and their relationship with environmental health and energy; Nutrition Chemistry and Natural Products with Therapeutic Activity.

Member of the National Academic of the Environmental Sciences.

RESEARCH STAYS:

Necfer Laboratory, Kurume-shi, Fukuoka-ken Japan. Chemical characterization and development of biotic products with potential applications in problems related to the field of health, agriculture, environment and industry, June-August 2008. Kyushu University

Universiti Malaysia Sarawak. Department of Molecular Biology, Faculty of Science and Technology Resources. Isolation and screening of microorganisms Producing native enzymes in solid state fermentation. January to July 2011. Kota Samarah, Sarawak Malaysia.

Universiti Malaysia Sarawak. Department of Molecular Biology, Faculty of Science and Technology Resources. Senior Research Fellow. Hydrolysis of cellulose for the production of biofuel, and production of food preservatives and lactic acid from starch fermentation. Octubre 30th 2012 a April 2013. Kota Samarahan, Sarawak Malaysia

Universiti Malaysia Sarawak. Faculty of Engineering. Department of Chemical Engineering and Energy Sustainability. Kota Samarahan, Sarawak, Malaysia. Isolation, characterization and identification of a lactic acid over-producing thermophilic lactic acid bacteria using sago starch. Sabbatical Year August 2016-July 2017.

Universiti Malaysia Sarawak. Faculty of Engineering. Department of Chemical Engineering and Energy Sustainability. Kota Samarahan, Sarawak, Malaysia. Characterization of aqueous solvent extract of *Anthurium schlechtendalii* kunth Kunth by GC/MS spectrophotometry. March 15th 2018 to April 15th 2018.

SCIENTIFIC PRODUCTION:

Indexed Articles:

Carvajal, O., Angulo., O., (1997). Effect of n-3 polyunsaturated fatty acids on the lipidic Profile of healthy Mexican volunteers. *Salud Pública México* Vol. 39, 221-224.

Octavio Carvajal, Masanobu Sakono, Hirofumi Sonoki, Masahiro Nakayama, Taiji Kishi, Masao Sato, Ikuo Ikeda, Michihiro Sugano, and Katsumi Imaizumi., (2000). Structured Triacylglycerol Containing Medium Chain fatty acids in sn-1(3) Facilitates the Asorption of Dietary Long-Chain Fatty Acids in Rats. *Bioscience, Biotechnology and Biochemical*, 64 (4), 793-798.

Octavio Carvajal, Masahiro Nakayama, Taiji Kishi, Masao Sato, Ikuo Ikeda, Michihiro Sugano, and Katsumi Imaizumi., (2000). Effect of Medium-Chain Fatty Acids Positional Distribution in Dietary Triacylglycerol on Lymphatic Lipid Transport and Chylomicron Composition in Rats. *Lipids*. Vol.35 No.12, 1345-1351.

Octavio Carvajal, Hiroko Tomoyori, Masahiro Nakayama, Taiji Kishi, Masao Sato, Ikuo Ikeda, and Katsumi Imaizumi., (2002).

Lymphatic Transport of Dietary Cholesterol Oxidation Products, Cholesterol and triacylglycerols in Rats. *Bioscience, Biotechnology and Biochemical*., 66 (4), 828-834.

Octavio Carvajal, Taiji Kishi, Hiroko Tomoyori, Ikuo Ikeda, Michihiro Sugano, and Katsumi Imaizumi., (2002). Structured triacylglycerides containing mrdium-chain fatty acids and linoleic acid differently influence clearance rate in serum of triacylglycerides in rats. *Nutrition Research*., 22 1343-1351.

Stefan M. Waliszewski, Rosa M. Infanzon, **Octavio Carvajal**, and Mary Maxwell., (2003). “ Removing t-Fluvalinate Residues from Press-Extracted Honey.” *Journal of the Science of Food and Agriculture*, Vol. 83, 1225-1227.

S.M. Waliszewski, **O. Carvajal**, R.M. Infanzon, P. Trujillo, M.M. Hart., (2004). “Compartition Ratios of Persisten Organochlorine Pesticides Between Human Adipose Tissue and Blood Serum Lipids”. *Bll. Environ. Contam. Toxicol.*, Vol. 73, 732-738.

S.M. Waliszewski, S. Gomez-Arrollo, R.M. Infanzon, **O. Carvajal**, R. Villalobos-Petrini, P.Trujillo and M. Maxwell, (2004). “Persistent Organochlorine Pesticide Levels in Bovine Fat from Mexico”. *Food Aditives and Contaminants*, Vol. 21, 774-780.

Stefan M. Waliszewski, **Octavio Carvajal**, Rosa M. Infanzon, Patricia Trujillo, Angel Aguirre and Mary Maxwell, (2004). “Levels of Organochlorine Pesticides in Soils and Rye Plant Tissues in a Field Study”, *Journal of Agriculture and Food Chemistry*, Vol., 52, 7045-7050.

Stefan M. Waliszewski, **Octavio Carvajal**, Rosa M. Infanzon, Sandra Gomez-Arrollo, Rafael Villalobos-Petrini, Patricia Trujillo, Angel Aguirre and Mary Maxwell, (2004). ” Organochlorine Pesticides Levels in Blood Serum Samples Taken at Autopsy from Auto Accident Victims in Veracruz ”, *Archives of Environmental Health, an International Journal*, Vol., 59 (9) 441-448.

Stefan M. Waliszewski, Sandra Gomez-Arrollo, **Octavio Carvajal**, Rafael Villalobos-Petrini, Rosa M. Infanzon, (2004). Use of sulfuric acid for determination of organochlorine pesticides “Uso del Acido Sulfurico en las Determinaciones de Plaguicidas Organoclorados”, *Revista Internacional de Contaminación Ambiental*, Vol. 30 (4), 185-192-

Waliszewski S.M., Bermúdez M.T., Infanzón R.M., Silva C.S., Saldaña V.A., Esquivel S., Castro R., Ocampo H., Melo G., Trujillo P., **Carvajal O.**, Aguirre A.A. (2005). Niveles de plaguicidas organoclorados persistentes en tejido adiposo de mujeres con tumores de mama maligno y benigno. *Memorias del X Congreso Nacional y IV Internacional de Ciencias Ambientales. Revista Internacional de Contaminación Ambiental*, Vol. 21 Suplemento 1, 748-752.

Waliszewski S.M., Infanzón R.M., Gomez-Arroyo Villalobos-Pietrini R., **Carvajal O.**, Trujillo P., Hayward-Jones P.M.(2005). Persistent organochlorine pesticides levels in blood serum lipids in women bearing babies with undescended

testis. Bull. Environ. Contam. Toxicol. 75(5), 952-959.

Waliszewski S.M., Bermúdez M.T., Silva C.S., Infanzón R.M., **Carvajal O.**, Gómez-Arroyo S., Villalobos-Pietrini R., Trujillo P., Saldaña V.A., Melo G., Esquivel S., Castro F., Ocampo H., Torres J., Hayward-Jones P.M. (2005). DDT`S, HCH and HCB Levels in Breast Adipose Tissue in Women with Breast Tumors. Revista Internacional de Contaminacion Ambiental 21(3), 133-142

Waliszewski S.M., Bermúdez M.T., Silva C.S., Infanzón R.M., **Carvajal O.**, Gómez-Arroyo S., Villalobos-Pietrini R., Trujillo P., Saldaña V.A., Melo G., Esquivel S., Castro F., Ocampo H., Torres J., Hayward-Jones P.M. (2005). Persistent organochlorine pesticide levels in breast adipose tissue in women with malignant and benign breast tumors. Bull. Environ. Contam. Toxicol. 75(4), 752-759.

Carvajal-Zarrabal , O., Walisewski, S.M., Barradas-Dermitz, D.Ma., Orta-Flores, S., Hayward-Jones, P.M., Nolasco-Hipolito, C., Angulo-Guerrero, O., Trujillo-Mariel, P.R.L., Sanchez-Ricaño, R., (2005). "The consumption of Hibiscus sabdariffa dried cáliz ethanolic extract reduced lipid profile in rats". Food Plant for Human Nutrition, Vol. 7, 425-31

Waliszewski, S.M., **Carvajal, O.**, Gómez-Arroyo S., Amador-muños, O., Villalobos-Petrini, R., Hayward-Jones, P.M., Valencia-Quintana, R. (2008). DDT and HCH Isomer Levels in Soils, Carrot and Carrot Leaf Samples. Bulletin of Environmental Contamination and Toxicology, Vol. 81 (4), 343-347.

Waliszewski, S.M., Mojica, García, X., Infanzon, R.M., Barradas Dermitz D.M., **Carvajal Zarrabal, O.**, (2008). Use of sulfuric acid for organochlorine pesticides determination. I. Calidad Químico-Analítica de la Precipitación de Grasas por el Ácido Sulfúrico Concentrado en Muestras con alto Contenido de Lípidos. Revista Internacional de Contaminación Ambiental Vol. 24, (1), 33-38.

Cirilo Nolasco Hipolito, Edward Crabbe, Carmen Monterrubio Badillo, **Octavio Carvajal**, Miguel A. Morales Mora, Gabriel Pineda Flores, Manuel de A. Hernandez Cortazar, Ayaaki Ishizaki., (2008). Bioconversion of industrial wastewater from palm oil processing to butanol by Clostridium saccharoperbutylacetonicum N1-4 (ATCC 13564), Journal of Cleaner Production Vol. 16, 632-638.

Waliszewski, S.M., Melo Santiesteban, G., Villalobos-Petrini, R., Gómez-Arroyo S., Amador-muños, O., Herrero-Mercado, M., **Carvajal, O.**, (2009). Breast Milk Excretion Kinetic of β -HCH, pp`DDE and pp`DDT. Bulletin of Environmental Contamination and Toxicology, Vol. 83, 869-873.

Octavio Carvajal-Zarrabal, Cirilo Nolasco-Hipolito, Kopli Bujang, B. Bujang, Ayaki Ishizaki. (2009). Production of nizin Z using *Lactococcus lactis* IO-1 from hydrolysed sago starch., *Journal of Industrial Microbiology and Biotechnology*, Vol., 36 (3), 409-415.

O. Carvajal-Zarrabal, P.M. Hayward-Jones, Z. Orta-Flores, C. Nolasco-Hipólito, D.M. Barradas-Dermitz, M.G. Aguilar-Uscanga, M.F. Pedroza-Hernández. (2009). Effect of hibiscus *sabdariffa* L. dried calyx ethanol extract on fat absorption-excretion, and body weight implication in rats. *Journal of Biomedicine and Biotechnology*, Volume 2009, article ID 394592, 5 pages. [Doi:10.1155/2009/394592](https://doi.org/10.1155/2009/394592).

Benigno Ortiz-Muñiz, **Octavio Carvajal-Zarrabal**, Beatriz Torrestiana-Sánchez, and Guadalupe Aguilar-Uscanga. (2010). "Kinetic study on ethanol production using *Saccharomyces cerevisiae* ITV-01 yeast isolated from sugar cane molasses". *Journal of Chemical Technology & Biotechnology*., Published online in Wiley Interscience: (www.interscience.wiley.com) DOI 10.1002/jctb.2441.

B. Ortiz-Muñiz, **O. Carvajal-Zarrabal**, B. Aguilar, and M.G. Aguilar-Uscanga. (2011). Improvement in ethanol production using respiratory deficient phenotype of a wild type yeast *Saccharomyces cerevisiae* ITV-01. *Renewable Energy* 37 (2011) 197-201), [doi:10.1016/j.renene.2011.06.019](https://doi.org/10.1016/j.renene.2011.06.019).

Carvajal-Zarrabal Octavio, Nolasco-Hipólito Cirilo, Barradas-Dermitz Dulce Ma., Hayward-Jones Patricia M., Aguilar-Uscanga Ma. Guadalupe and Kopli Bujang. (2012). Treatment of Vinasse from Tequila Production Using Polyglutamic Acid. *Journal of Environmental Management* (2011), Vol.95, pag. S66-S70. [doi:10.1016/j.jenvman.2011.05.001](https://doi.org/10.1016/j.jenvman.2011.05.001).

Octavio Carvajal-Zarrabal, Dulce María Barradas-Dermitz, Zaida Orta Flores, Patricia Margaret Hayward-Jones, Cirilo Nolasco-Hipólito, Ma. Guadalupe Aguilar-Uscanga, Anilú Miranda-Medina. (2012) *Hibiscus sabdariffa* L., roselle calyx, from ethnobotany to pharmacology. *Journal of Experimental Pharmacology*. 2012: 4 1-15.

Cirilo Nolasco-Hipólito, **Octavio Ccarvajal-Zarrabal**, Rubena Malfia Kmalidin, Ling Teck-Yee, Samuel Lihan, Kopli Bin Bujang, Youji Nitta. Lactic Acid production by *Enterococcus faecium* in liquefied sago starch. *Applied and Industrial Microbiology (AMB Express)*. 2012, 2:53.

Mara E. Salazar Calderón, **Octavio Carvajal Zarrabal**, Guadalupe Melo Santiesteban. Identificación de cadáveres mediante técnicas de biología molecular. *Memorias en extenso*.

Congreso Internacional de Investigación de Academia Journal.com CHIAPAS. Vol. 4, No. 2, **2012**. ISSN 1946-5351. Online.

José O. Rojas-Reyes, Victor Robles-Olvera, **Octavio Carvajal-Zarrabal**, Claudia Castro Martínez, Krzysztof Waliszewski and Guadalupe Aguilar-Uscanga. Purification and characterization of peroxidase from avocado (*Persea americana* Mill, cv, Hass). Journal of the Science of Food and Agriculture. **2013**. DOI [10.1002/jsfa.6503](https://doi.org/10.1002/jsfa.6503).

Octavio Carvajal-Zarrabal, Cirilo Nolasco-Hipolito, M. Guadalupe Aguilar-Uscanga, Guadalupe Melo-Santiesteban, M. Patricia Hayward-Jones, Dulce M. Barradas-Dermitz. Avocado Oil Supplementation Modifies Cardiovascular Risk Profile Markers in a Rat Model of Sucrose-Induced Metabolic Changes. Disease Markers. Volume **2014**. Article ID 386425, 8 pages. <http://dx.doi.org/10.115572014/386425>.

Octavio Carvajal-Zarrabal, Cirilo Nolasco-Hipolito, Ma. Guadalupe Aguilar-Uscanga, Guadalupe Melo-Santiesteban, Patricia M. Hayward-Jones, Dulce Ma. Barradas-Dermitz. Effect of Dietary Intake of Avocado and Olive Oil on Biochemical Markers of Liver Function in Sucrose-Fed Rats. Biomed Research International. Volume **2014**. Article ID 595479, 8 pages. <http://dx.doi.org/10.1155/2014/595479>.

German Partida-Sedas, N. Montes-García, **Octavio Carvajal-Zarrabal**, L. López-Zamora, Javier Gómez-Rodríguez, M. Guadalupe Aguilar-Uscanga. Optimization of Hydrolysis Process to Obtain Fermentable Sugars from Sweet Sorghum Bagasse Using a Box–Behnken Design. Sugar Tech **2017**, 19(3):317-325. DOI [10.1007/s12355-016-0461-y](https://doi.org/10.1007/s12355-016-0461-y).

Octavio Carvajal-Zarrabal, Patricia Hayward-Jones, Cirilo Nolasco-Hipolito, Dulce Ma. Barradas-Dermitz, Ana Laura Calderón Garcidueñas, Noé López-Amador. Use of Cardiac Injury Markers in the Postmortem Diagnosis of Sudden Cardiac Death. J Forensic Sci, **2017**. doi: [10.1111/1556-4029.13397](https://doi.org/10.1111/1556-4029.13397).

Noé López-Amador, Cirilo Nolasco-Hipólito, Macario de J. Rojas-Jimeno, **Octavio Carvajal-Zarrabal**. Liver enzymes in patients diagnosed with non-alcoholic fatty liver disease (NAFLD) in Veracruz: a comparative analysis with the literature. *Clin. Invest. (Lond.)* **2017**, 7(1): 025-032. [10.4172/Clinical-Investigation.1000107](https://doi.org/10.4172/Clinical-Investigation.1000107)

Octavio Carvajal-Zarrabal, Dulce María Barradas-Dermitz, Patricia Hayward-Jones, María Guadalupe Aguilar-Uscanga,

Cirilo Nolasco-Hipolito, Sayra Quero-Herrera, Gladys Guadalupe Espinosa-Martínez. Study of Anthurium schlechtendalii Kunth Effects on Nephroprotective or Renal Damage Remission Capacity. Research Journal of Medicinal Plants. **2017**, 11(3):107-114. DOI: [10.3923/rjmp.2017.107.114](https://doi.org/10.3923/rjmp.2017.107.114)

Noé López-Amador, Jorge Alberto Alfonso-Bravo, Karina Ortíz-Valdez, **Octavio Carvajal-Zarrabal**. Postmortem Blood Culture Profile in Sudden Cardiac Death: An Exploratory Study. Journal of Forensic Science & Criminal Investigation. **2017**, 5(2):555665. DOI: [10.19080/JFSCI.2017.05.555665](https://doi.org/10.19080/JFSCI.2017.05.555665).

Anilú Miranda-Medina, Patricia M. Hayward-Jones, **Octavio Carvajal-Zarrabal**, Luz del Alba Ladrón de Guevara-Vela, Yerikc David Ramírez-Villagómez¹, Dulce M. Barradas-Dermitz, Georgina Luna-Carrillo, María G. Aguilar-Uscanga. Optimization of Hibiscus sabdariffa L. (Roselle) Anthocyanin Aqueous-Ethanol Extraction Parameters using Response Surface Methodology. Chemistry & Chemical Engineering, Biotechnology, Food Industry. **2018**, 19 (1) pp. 053-062.

Wai Xian Lau, **Octavio Carvajal-Zarrabal**, Cirilo Nolasco-Hipólito, Mizuno Kohei, Zayn Al-Abideen Gregory, Mohammad Omar Abdullah, Seng Chiew Toh, Samuel Lihan Production of pigments by Rhodotorula mucilaginosa. Malaysian Journal of Microbiology. **2018**, 14 (4) pp. 344-350. DOI: [10.21161/mjm.144188](https://doi.org/10.21161/mjm.144188)

Samantha Siong Ling-Chee, **Octavio Carvajal-Zarrabal**, Cirilo Nolasco-Hipólito, Mohammad Omar Abdullah, Esaki Shoji, María Guadalupe Aguilar-Uscanga, Zayn Al-Abideen Gregory & Shafri Samawi. Separation of sago starch from model suspensions by tangential flow filtration. Chemical Engineering Communications. **2019**, 206 8, 1058-1071. DOI: [10.80/00986445.2018.1544897](https://doi.org/10.80/00986445.2018.1544897).

Cirilo Nolasco-Hipolito, **Octavio Carvajal Zarrabal**, Eivo Kelvin, Yie Hua Tang, Mizuno Kohei, Stanley Anthony Nyoel, Esaki Shoji, Hamady Dieng and Kopli Bujang. Scaln up of lactic acid fermentation using Enterococcus faecalis. IOP Conf. Series: Materials Science and Engineering. **2019**, 455 012049. DOI: [10.1088/1757-899X/495/1/012049](https://doi.org/10.1088/1757-899X/495/1/012049)

Cirilo Nolasco-Hipolito¹, **Octavio Carvajal-Zarrabal**, Hamady Dieng, Edmund Sim Ui-Hang and Kopli Bujang. A medium formulation for lactic acid bacteria. Int. Biotechnol. Color J. **2019**, 5 (1): 2-13.

Noé López-Amador, Ana L. Calderón-Garcidueñas, Rubén Ruiz-Ramos & **Octavio Carvajal-Zarrabal**. Violent death in Mexican children: Could fatalities be prevented?. Cogent Social Sciences. **2019**: 5:1, 1662588, DOI: [10.1080/23311886.2019.1662588](https://doi.org/10.1080/23311886.2019.1662588)

Carmen Martínez Valenzuela, Edmundo Erbey Castelán-Maldonado, **Octavio Carvajal-Zarrabal**, Ana Laura Calderón-Garcidueñas. First report of a Mexican family with mutation in the CDH1 gene. *Mol Genet Genomic Med.* **2020**; 8 (11):e1208. doi: [10.1002/mgg3.1208](https://doi.org/10.1002/mgg3.1208).

Barradas-Dermitz, Dulce María¹; Nolasco-Hipolito Cirilo; Hayward-Jones, Patricia Margaret; Ramírez-Hernández Aurelio; Calderon-Garcidueñas, Ana Laura³; Olaide Olawunmi Ajibola; **Carvajal-Zarrabal Octavio**. Contribution to the phytomedicinal study of the solid and aqueous extract of *Anthurium schlechtendalii* kunth root against liver damage in a rat model, **2021**. *Pharmacologyonline*; Vol. 3, pp. 1283-1291.

Olaide Olawunmi Ajibola, Samuel Lihan, Ahmad Hussaini, Cirilo Nolasco Hipolito, **Octavio Carvajal Zarrabal**, Shahrul Eazid Sarbini and Sharifah Aminah Syed Mohamad. Cell viability, physicochemical and sensory characteristics of probiotic coconut juice during cold storage. *Journal of sustainability science and management.* **2021**;Vol.16 No. 8, pp.1-13

López Amador Noé, Ruiz Ramos Rubén, Calderón Garcidueñas Ana Laura, **Carvajal Zarrabal Octavio** y Alexander Aguilera Alfonso. "Proteínas de choque térmico durante la isquemia cerebral transitoria: ¿Un posible blanco terapéutico?." **Aceptado para publicación (2022)**.

Carvajal-Zarrabal, O.; Siong, S.L.C 3Mohammad, O. A.; Tan Y-H.; Shoji, E.; Morales-Mora, M.A.; Carrillo-Ahumada, J.; Nolasco-Hipolito, C. (2022). Recovery of Membrane Permeability after Filtration of Sago Starch Suspension by Tangential Flow Filtration. *Journal of Applied, Research and Technology.* **Accepted for publication.**

Salleh, S.F.; Olaide, O. A.; Nolasco-Hipolito, C.; Husaini, A.; **Carvajal-Zarrabal, O.**; Lihan, S.; Gbadebo, C. A.; Rosli, R. R.; Idris, A. A.; Mohamed, Z. Z.; and Saat, R. (2022). Fatty acid profile and antioxidant capacity of Dabai (*Canarium odontophyllum* L.): Effect of origin and fruit component. *Molecules.* **Accepted for publication**

PUBLICATION IN MEXICAN JOURNALS:

Octavio Carvajal, Patricia Trujillo, Research Seminars as a Tool for achieving the Terminal Efficiency in the Postgrade", en XVII National Congress of Postgrade, Ed. Universidad Nacional Autónoma de México, pag., 91-94, México, **2004**.

Stefan M. Waliszewski, **Octavio Carvajal**, Rosa M. Infanzón, Patricia Trujillo, "Environmental Xenoestrogens and Health", *Ideas*, Vol. 23, pag 72-78, México **2004**.

Stefan M. Waliszewski, **Octavio Carvajal**, Rosa M. Infanzón, Patricia Trujillo, "Insecticides Acetyl Cholinesterase blockers", Ideas, Vol., 23, pag. 44-59. México **2004**.

Octavio Carvajal, Stefan Waliszewski y Rosa Ma. Infanzón. "Uses and Wonder of Jamaica". Ciencia y el Hombre, Vol. 19, pag., 37 a la 39, México, **2006**.

Octavio Carvajal, Victor Robles Olvera, Stefan Waliszewski Patricia Trujillo, Guadalupe Melo Santiesteban. "**Avocado: Useful in Cardiovascular disease**". Ciencia y el Hombre, Vol. 23, pag., 29 a la 31, México, **2010**.

Octavio Carvajal Zarrabal, Víctor Robles Olvera, Guadalupe Melo Santiesteban, Patricia Beatriz Denis Rodríguez, Ángel A. Aguirre Gutiérrez, Jaime Rivera, and Noe López Amador. (**2010**). "**For hypertension, Jamaica.**" Ciencia y el Hombre. Vol 23, No.3, pp. 11-14. Mexico.

Patricia Denis, Guadalupe Melo, Edmundo Denis, Andrés Hermida, **Octavio Carvajal**. Risk of suicide in patients treated with isotretinoin: A meta-analysis. Psicología y Salud. **2016**, 26(2):225-231.

Octavio Carvajal Zarrabal, Dulce María Barradas Dermitz, Ruben Ruiz Ramos. "**Medicina Tradicional: Alternativas en la ERC**". La Ciencia y el Hombre. **2018**, Vol. 31, No. 2 pp. 44-47.

María de la Luz Velez Cepeda, **Octavio Carvajal Zarrabal**, Ana Laura Calderon Garcidueñas. "Consumo de Narcóticos en Veracruz". La Ciencia y el Hombre. **2020**, Vol. 33, No. 1 pp. 40-43.

INTERNATIONAL CONFERENCES AND SEMINARS:

International Symposium on *Science and Food Technology*. June, **1993**. Graduate Center. Institute Technological of Veracruz.

XIII Annual Meeting of Masters and Doctorate in Health Sciences. March 2-3rd, **1995**. México D.F. *Effect of polyunsaturated fat n-3 on lipid profile in normolipidemic and hyperlipidemic subjects*.

IFT International Meeting (International Food Technology). June 22-26th, **1996**. New Orleans, Louisiana, USA. *N-3 Polyunsaturate*

Fatty Acid Effects on the Serum Lipid Profile in Normolipidemic & Hyperlipidemic Mexican population.

International Symposium on Science and Food Technology. April 16-18th, **1998 Okinawa Japan. *Lymphatic transport of dietary fats in rats with permanent cannulation of the thoracic duct.***

8th Asian Congress of Nutrition, August 29, Sep 2nd, **1999**. Seoul, Korea. ***Effect of differently synthetic fats on intestinal absorption of dietary fatty acids in rats.***

IX III National Congress and International Congress of Environmental Sciences. Keynote presentation. Mayo 12-14th, **2004**, México. ***Removal of t-fluvalinate residues in Honey.***

X National Congress and IV International Congress of Environmental Sciences, Keynote presentation. May 8-10th, **2005**, Mexico. ***The consumption of Hibiscus sabdariffa Flower Extract reduces the Lipid Profile in Rats.***

The Second Internatinal Meeting on Environmental Biotechnology and Engineering (2IMBEBE). Oral Presentation. September 26-29th, **2006**. Cd. México CIVESTAV. ***Rapid Lactic Acid Fermentation to Produce Starting Block Material for Biodegradable Polymers.***

IV International Congress and XV National Congress of Biochemical Engineering. Keynote presentation. April, 4-7th, **2006**. Morelia Michoacán, México. ***Effect of Avocado Oil (Persea Americana) on cardiovascular risk profiles and liver function with Metabolic Syndrome.***

XI International Congress and V National Congress of Environmental Sciences. Keynote presentation. June 7-9th, **2006**, Oaxtepec, Morelos, Mexico. ***Evaluation of the flower extract of Hibiscus sabdariffa on Fat Absorption and Excretion of Rats.***

VI International Congress and XII National Congress of Environmental Sciences. June, 6-8th, **2007**. Chihuahua, Chih., México. ***Physical-Chemical Treatment for Waste Purification of Alcohol Distillery.***

VII International Congress and XIII National Congress and III Regional Congress of Environmental Sciences. June 4-6th, **2008** Obregón, Sonora, México. ***Dissemination of organochlorine pesticides from carrot to Soil.***

VII International Congress and XIII National Congress and III Regional Congress of Environmental Sciences. June 4-6th, **2008** Obregón, Sonora, México. ***Prenatal exposure to organochlorine pesticides.***

IV International Symposium on Science and Technology. Sep. 24-26th, **2008**. Villahermosa Tabasco, México. ***Stability and Acceptability of mayonnaise made with avocado oil.***

IV International Symposium on Science and Technology. Sep.24-26th, **2008**. Villahermosa Tabasco, México. ***Oxidative Stability Avocado Oil During Frying of Potato Slices.***

The Third International Meeting on Environmental Biotechnology and Engineering (3 IMEBE). Sep. 21-25th, **2008**. Universidad de las Islas Baleares., Palma de Mallorca, Spain. ***Use of Polyglutamic Acid PGA α 21 in the Treatment of Vinasse from an Alcohol Distillery.***

International Symposium on Lactic Acid Bacteria, 25-27th July, **2010**. University of Putra Malaysia. Oral presentation. ***Glucose from Hydrolyzed Sago Starch to Produce Lactic Acid using Lactococcus lactis IO-1***

International Symposium on Lactic Acid Bacteria, 25-27th July, **2010**. University of Putra Malaysia. Oral presentation. ***Reuse of Lactic Acid Bacteria in Repeated Batch Fermentation Mode Using Hydrolyzed Sago Starch to Produce Lactic Acid.***

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2nd ASEAN Sago Symposium **2012**. From 29-31 October 2012. Faculty of Resource Science and Technology, Universiti Malaysia Sarawak. ***Removal of Starch from Starch Solutions by Tangential Flow Filtration.***

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National Congress of Biotechnology and Bioengineering. Cancún México. **2013**. June 23-28. ***Long Term Repeated Batch Fermentation of Hydrolyzed Sago Starch for Ethanol Production.***

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3rd ASEAN Sago Symposium “Enhancing sago potential for application in research and industry”. From 25-26 October **2016**. Universiti Malaysia Sarawak UNIMAS. ***Production of Bacteriocin from sago starch in continuous mode.***

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INTEX16. Innovation Technology Expo. Detar Putra 23-24 Mayo, **2016**. University Malaysia. ***Production of bacteriocina from Sago Starch in Continuous Mode.***

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INTEX16. Innovation Technology Expo. Detar Putra 23-24 Mayo, **2016**. University Malaysia. *Effectiveness of Lactococcus lactis IO-1 and Enterococcus faecalis ATTC2a to produce lactic acid at high concentration.*

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EXHIBITION OF TECHNOLOGICAL INNOVATION:

Researchers: Cirilo Nolasco-Hipolito, **Octavio Carvajal-Zarrabal**, Esaki Shoji, Samanta Siong Ling-Chee, Pressly Anak Matthew and Kopli B. Bujang. *Automatized Control of Membrane Clogging During Cross Filtration of Sago Effluent*. The 8th Research & Development Exposition **2015**. “Strengthening Research and Innovation for Communities’ Sustainability”. 14-15 April **2015**. DeTAR PUTRA, UNIMAS, Kota Samarahan. Sarawak Malaysia.

Researchers: Nurfaezah Amat Jafar, **Octavio Carvajal-Zarrabal**, Maryana Dahari, Cirilo Nolasco-Hipolito, Nur’Ain Izaty Abdul Hamid, Nur Fashareena Adila Abdul Rahim, Kopli Bujang. *Modelling the Ethanol Fermentation of Ethanogenic Microorganism in Hydrolyzed Sago Starch Based Media*. InTEX 16 Inovation Technology Expo. Research & Development Exposition. 23-24 May **2016**. DeTAR PUTRA UNIMAS, Kota Samarahan. Sarawak Malaysia.

Researchers: Nur Fashareena Adila Abdul Rahim, **Octavio Carvajal-Zarrabal**, Nur’Ain Izaty Abdul Hamid, Cirilo Nolasco-Hipolito, Chiew Kelvin Toh, Nurfaezah Amat Jafar, Kopli Bujang, Maryana Dahari, Samuel Lihan. *Effectiveness of Lactococcus lactis IO-1 and Enterococcus faecalis ATTC2a to Produce Lactic Acid at High Concentration*. InTEX 16 Inovation Technology Expo. Research & Development Exposition. 23-24 May **2016**. DeTAR PUTRA UNIMAS, Kota Samarahan. Sarawak Malaysia.

Researchers: Nur’Ain Izaty binti Abdul Hamid, **Octavio Carvajal-Zarrabal**, Cirilo Nolasco-Hipolito, Nur Fashareena Adila Abdul Rahim, Nurfaezah Amat Jafar, Maryana Dahari, Kopli Bujang. *Production of Ethanol by Using Very High Gravity Fermentation and the Supplementation of Soy Flour*. InTEX 16 Inovation Technology Expo. Research & Development Exposition. 23-24 May **2016**. DeTAR PUTRA UNIMAS, Kota Samarahan. Sarawak Malaysia.

Inventor: Cirilo Nolasco-Hipolito, **Octavio Carvajal-Zarrabal**, Kopli Bujang, Mayra Dahari.

Invention: Production of Bacteriocin from Sago Starch in Continuous Mode.

Description: The invention is related to the continuous production of bacteriocin an antibiotic like substance and used in the food industry as natural preservative. Using fermentative route, we claim high productivity of product, not risk of contamination of the process and long-term fermentation process.

28th International Invention, Innovation & Technology Exhibition. ITEX’17. 11-13 May **2017**. Kuala Lumpur, Malaysia.

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PATENTS:

Automatized control of membrane clogging during cross filtration of sago effluent. PI 2015701799. Purification method for wastewater discharged from spirit production facility. The invention is related to a fractionation process of an effluent and the equipment. The invention separates the solid phase from the liquid phase using tangential filtration. The products are used in animal feed and water is reused in the process. Patent under registration. Approved as a novel process. **Published 03-12-2016.**

Production of bacteriocina from sago starch in continuous mode. PI 2017702183. The invention is related to a continuous process to produce bacteriocin an antibiotic like substance used mainly in the food industry as natural preservative. The invention used *Lactococcus lactis* but it is not limited to as other microorganism as any bacteriocin producing microorganism can be used. A cost effective substrate such as sago starch is used as the main carbon source and yeast extract as a nitrogen source. Continuous mode assess steady state working at high dilution rate (0.1-0.5 h⁻¹). The

fermentation can be performed during long term without contamination of opportunistic microorganisms. **14-06-2017.**

A method continuous liquefaction of sago starch. PI 2017702677. The invention is related to a process where the sago starch not limited to and then referred as “the starch”, can be liquefied continuously. The product as maltodextrins, could be used for different routes such as the production of malto-syrups, glucose for food, pharmaceutical or industrial use. **21-07-2017.**

ON GOING RESEARCH PROJECTS:

Kinetics and Mathematical Modeling of the Extraction of Anthocyanins from *Hibiscus sabdariffa* calyx *L.* Application No. 0103797 National Council for Science and Technology (CONACyT) Octavio Carvajal Zarrabal PhD.

Kinetic Engineering Studies in *Hibiscus sabdariffa* *L.*, Jamaica. Include four works in association with the Instituto Tecnológico de Veracruz. Application No. CI-01/2009 (DGEST). Octavio Carvajal Zarrabal. PhD.

Technologies for sustainable development in the production of ethanol (Biofuel) from agro resources. Application No. 0128052 (CONACyT) Octavio Carvajal Zarrabal. PhD., In co-responsibility with the Technological Institute of Veracruz.

Selected publications - Proceedings

Nolasco Hipolito Cirilo, et al. Rapid lactic acid fermentation to produce starting block material for biodegradable polymers. Environmental Biotechnology and Engineering. Proceedings of the Second International Meeting on Environ. Biotechnol. Eng. (2IMEBE). Edited by: Héctor Mario Poggi-Varaldo. 26-29 September, **2006.** México City, México. Paper 2IMEBE059.

Octavio Carvajal Zarrabal et al. Use of polyglutamic acid PGA α 21 in treatment of vinasse from an alcohol distillery. Proceedings of the Third International Meeting on Environmental biotechnology and engineering. (3IMEBE), Edited by: Maria Isabel Sastre Conde, 25-27 September, **2008.** Palma de Mallorca, España. Paper 3IMEBE2249.

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