

CURRICULUM VITAE

June 2020

Personal Information

Ernesto Alfaro-Moreno

Born

October 2, 1967



Professional skills

Over 25 years of experience in the toxicological evaluation of inhaled particulate matter, ranging from Urban Particles (PM₁₀, PM_{2.5}, Diesel, etc.), Indoor Pollutants to Nanoparticles. I have a large experience working with *in vitro* models, but also with animal models and human samples. My main focus has been related to the inflammatory effects of air pollutants, mainly related to the role of cytokines-chemokines and inflammatory cells. Since 2006 I have been involved in the development of *in vitro* models using multiple cell cultures to mimic the structure of airways and alveoli and the communication these structures have with blood vessels. My work in this field was among the first successful models of its type and was used as the base to develop a model that now is under patent at the Luxemburg Institute of Science and Technology (Patent WO2018/122219 A1).

From 2008 until 2015 I was the head of the Environmental Toxicology Laboratory at the National Institute of Cancer in Mexico. When I started, the laboratory staff was me and a technician, and at the end it developed to 7 staff members (2 associate researchers, one postdoc, one technician, one laboratory assistant and 2 Ph.D. students) and several undergraduate students.

In 2015 I moved to Sweden to take over a project on inhalation toxicology at Swetox where I was a Senior Researcher until December 2018. From January 2019 until May 2020 I was a Guest Researcher at the Örebro University.

I have a good network of co-workers and collaborations, within Sweden (Stockholm, Örebro, and

Higher Education Qualification

1993 BSc Pharmaceutical Chemistry, School of Chemistry, National Autonomus University of Mexico (UNAM)

1999 MSc Biology, Biomedicine, School of Medicine, UNAM.

Degree of Doctor

2004 Ph.D. in Biomedical Sciences. Biologic effects induced by airborne particles (PM₁₀) from three different zones of Mexico City. School of Medicine, UNAM.

Postdoctoral position

January 2006 to July 2008: Lung Toxicology Unit, Pneumology Section, Katholieke Universitet Leuven, Leuven, Belgium. Under the Supervision of **Professor Benoit Nemery** and **Professor Peter Hoet**.

Postdoctoral position sponsored by the **European Respiratory Society** (January 2006-January 2007), K.U. Leuven (February-July 2007) and Belgian Science Policy (August 2007-July 2008).

Present position

Leader of the Nanosafety Research Group, International Iberian Nanotechnology Laboratory.

Previous positions

2019-2020 Guest Researcher, Örebro Universitet

2015-2020 Senior Researcher, Karolinska Institutet.

2015-2018 Senior Researcher, Swedish Toxicology Sciences Research Center (SWETOX). Leading the *in vitro* inhalation toxicology project.

2008-2015 Head of the Environmental Health Laboratory, National Cancer Institute, Mexico.

2006-2008 Postdoctoral Fellow, K.U. Leuven.

2001-2005 Researcher at the Basic Research Department, National Cancer Institute, Mexico.

1996-2001 Associate Researcher at the Basic Research Department, National Cancer Institute, Mexico.

Supervision

Main Supervisor

Ph.D. Thesis: Blanca Eunice González-Gómez. Ph.D. in Biological Sciences, School of Biological Sciences, National Polytechnical Institute, Mexico, 2013

Ph.D. Thesis: Raúl Omar Quintana-Belmares. Ph.D. in Earth Sciences, National University of Mexico, 2019.

Several bachelor degree and master degree students from 1999 to the present.

Publications and Science Communication

40 articles, 3 book chapters, 3 books of popular science for children, over 1300 citations, h-Index 19 (Web of Science, Google Scholar, Scopus).

82 presentations in congresses, 22 talks as an invited speaker

Selected Talks as Invited Speaker

- 1) *In vitro* systems to mimic systemic effects induced by inhaled particles. Biotechnology Institute, Ankara University, February 15, 2017, Ankara Turkey.
- 2) Local and systemic effects induced by inhaled particles: What do we know so far? Faculty of Pharmacy, Gazi University, February 16, 2017, Ankara Turkey.
- 3) Inhalation toxicity of nanoparticles. Guest Speaker at the Annual Meeting of the Svensk Förening för Toxikologi. Nobel Forum, Stockholm, Sweden. April 15, 2016
- 4) Local and systemic adverse outcomes induced by Inhaled particles and nanoparticles. Where are we standing? Smulochowski Institute of Physics, Jagiellonian University, Cracow. October 26, 2015
- 5) Development of *in vitro* models to assess local and systemic effects induced by inhaled particles. Smulochowski Institute of Physics Jagiellonian University, Cracow. October 27, 2015
- 6) Pulmonary and systemic inflammation: an *in vitro* model. Environmental Health Department, Norwegian Institute of Public Health. February 29, 2008
- 7) Biologic Effects Induced by Urban Airborne Particles: Pulmonary and Systemic Effects. c/o U.O. Medicina del Lavoro, H. Sacco. Università degli studi di Milano, Milan, Italy, March 27, 2007
- 8) Cytokine secretion profile of multiple cellular co-cultures: How inhaled particles can lead to systemic effects. R&D meeting with Encysive. July 27, 2007, K.U. Leuven, Leuven, Belgium.
- 9) Pro-inflammatory response to urban pollution particles: Co-culture of multiple cell types reveals importance of pulmonary cell sociology. Plenary Session, Pneumology Department, U.Z. Leuven, Leuven, Bélgica, November 14, 2007

List of Publications:

Peer-Reviewed Publications

1. Huerta-García E, Ramos-Godínez MDP, Lopez-Saavedra A, **Alfaro-Moreno E**, Gomez-Crisostomo NP, Colin-Val Z, López-Marure R. Internalization of titanium dioxide nanoparticles is mediated by actin- dependent reorganization and clathrin- and dynamin-mediated endocytosis in H9c2 rat cardiomyoblasts. *Chem Res Toxicol* **2019**; 32(4): 578-588
DOI:10.1021/acs.chemrestox.8b00284 **(1 Citation)**
2. Åkerlund E, Islam MS, McCarrick S, **Alfaro-Moreno E**, Karlsson HL. Inflammation and (secondary) genotoxicity of Ni and NiO nanoparticles. *Nanotoxicology* **2019**; TNAN-2018-OR-0360.R2
3. Quintana-Belmares RO, Kraiss AM, Esfahani BK, Rosas-Pérez I, Mucs D, López-Marure R, Bergman Å, **Alfaro-Moreno E**. Phthalate esters on urban airborne particles: Levels in PM₁₀ and PM_{2.5} from Mexico City and theoretical assessment of lung exposure. *Environmental Research* **2018**; 161:439-445 <https://doi.org/10.1016/j.envres.2017.11.039> **(14 citations)**
4. Quintana-Belmares RO, Hernández-Pérez G, Montiel-Dávalos A, Gustafsson A, Miranda J, Rosas-Pérez I, López-Marure R, **Alfaro-Moreno E**. Urban particulate matter induces the expression of receptors for early and late adhesion molecules on human monocytes. *Environmental Research* **2018**; 167:283-291
5. Huerta-García E, Zepeda-Quiroz I, Sánchez-Barrera H, Colín-Val Z, **Alfaro-Moreno E**, Ramos-Godínez MP, López-Marure R. Internalization of Titanium Dioxide Nanoparticles Is Cytotoxic for H9c2 Rat Cardiomyoblasts. *Molecules* **2018**; 23(8):1955 **(6 Citations)**
6. Montiel-Dávalos A, Silva Sánchez GJ, Huerta-García E, Rueda-Romero C, Soca Chafre G, Mitre-Aguilar IB, **Alfaro-Moreno E**, Pedraza-Chaverri J, López-Marure R. Curcumin inhibits activation induced by urban particulate material or titanium dioxide nanoparticles in primary human endothelial cells. *Plos One* **2017** **(2 Citations)**
7. Rueda-Romero C, Hernández-Pérez G, Ramos-Godínez P, Vázquez-López I, Quintana-Belmares RO, Huerta-García E, Stepien E, López-Marure R, Montiel-Dávalos A, **Alfaro-Moreno E**. Titanium dioxide nanoparticles induce the expression of early and late receptors for adhesion molecules on monocytes. *Particle and Fibre Toxicology* **2016**; 13(36). DOI 10.1186/s12989-016-0147-3 **(6 citations)**
8. Huerta-García E, Marquez-Ramirez SG, Ramos-Godínez MP, Lopez-Saavedra A, Herrera-Montalvo LA, Parra A, **Alfaro-Moreno E**, Gomez EO, López-Marure R. Internalization of titanium dioxide nanoparticles by glial cells is given at short times and is mainly mediated by actin reorganization-dependent endocytosis. *NeuroToxicology* **2015**; 51:27-37
DOI:10.1016/j.neuro.2015.08.013 **(14 Citations)**
9. Quintana R, **Alfaro-Moreno E**, García-Cuellar CM, et al. Evaluation of the oxidative potential of urban PM and its relation to in vitro induced DNA damage: a spatial and temporal comparison. *Revista Internacional de Contaminacion Ambiental* **2015**; 31(2): 145-154 **(5 Citations)**
10. Ramos-Godínez P, González-Gómez BE, Montiel-Dávalos A, López-Marure R, **Alfaro-Moreno E**. TiO₂ nanoparticles induce endothelial cell activation in a pneumocyte-endothelial co-culture model. *Toxicology in Vitro* **2013**; 27: 774-781 DOI:10.1016/j.tiv.2012.12.010 **(14 Citations)**
11. Huerta-García E, Montiel-Dávalos A, **Alfaro-Moreno E**, Gutierrez-Iglesias G, Lopez-Marure R. Dehydroepiandrosterone protects endothelial cells against inflammatory events induced by urban particulate matter and titanium dioxide nanoparticles. *Biomed Res Int* **2013**; ID 382058, DOI: 10.1155/2013/382058 **(9 Citations)**
12. Nemmar A, Holme J, Rosas I, Schwarze P, **Alfaro-Moreno E**. Recent advances in Particulate Matter and Nanoparticle toxicology: A review of the in vivo and in vitro studies. *Biomed Res Int* **2013**; ID 279371 **(125 Citations)**
13. Montiel-Dávalos A, Ventura-Gallegos JL, **Alfaro-Moreno E**, Soria-Castro E, Garcia-Latorre E, Cabañas-Moreno JG, Ramos-Godínez P, Lopez-Marure R. TiO₂ nanoparticles induce dysfunction and activation of human endothelial cells. *Chem Res Toxicol* **2012**; 25(4): 920-930 DOI: 10.1021/tx200551u **(42 Citations)**
14. Wynants M, Quarck R, **Alfaro-Moreno E**, et al. Effects of C-reactive protein on human

- pulmonary vascular cells in CTPEH. *European Respiratory Journal* **2012**; 40(4):886-894 (**43 Citations**)
15. Vázquez-Ulloa E, Lizano M, Avilés-Salas A, **Alfaro-Moreno E**, Contreras-Paredes A. Abnormal distribution of hDlg and PTEN in premalignant lesions and invasive cervical cancer. *Gynecol Oncol*, **2011**; 122(3): 663-668 doi:10.1016/j.ygyno.2011.05.017 (**15 Citations**)
 16. Montiel-Dávalos A, Ibarra-Sánchez MJ, Ventura-Gallegos JL, **Alfaro-Moreno E**, López-Marure R. Oxidative stress and apoptosis are induced in human endothelial cells exposed to urban particulate matter. *Toxicology In Vitro* **2010**; 24(1): 135-141 (**48 citations**)
 17. Johan Robbens, Caroline Van Parys, Ingrid Nobels, Karen Van Hoecke, Colin Janssen, Karel De Schamphelaere, Kathleen Roland, Gersande Blanchard, Frédéric Silvestre Patrick Kestemont, Roel Anthonissen, Olivier Toussaint, Sébastien Vankoningsloo, **Ernesto Alfaro-Moreno**, Peter Hoet, Laetitia Gonzalez, Peter Dubruel, Paul Troisfontaines. Eco-, geno- and human toxicology of bio-active nanoparticles for biomedical applications. *Toxicology* **2010**; 269: 170-181 (**38 citations**)
 18. J. Emmerechts, **E. Alfaro-Moreno**, BM. Vanaudenaerde, B Nemery, MF Hoylaerts. Shortterm Exposure to Particulate Matter induces only mild Coagulation Activation in healthy Mice. *Journal of Thrombosis and Haemostasis*. **2010**; 8(12): 2651-2661; DOI:10.1111/j.1538-7836.2010.04081.x. (**23 citations**)
 19. **Alfaro-Moreno E**, Torres V, Miranda J, Martínez L, García-Cuellar C, Nawrot TS, Vanaudenaerde B, Hoet P, Ramírez-López P, Rosas I, Nemery B, Osornio-Vargas AR. Induction of IL-6 and inhibition of IL-8 secretion in the human airway cell line Calu-3 by urban particulate matter collected with a modified method of PM sampling. *Environmental Research* **2009**; 109: 528-535 (**46 citations**)
 20. **Alfaro-Moreno E**. Las partículas atmosféricas contaminantes y sus efectos en la población expuesta. *Memorias del Sexto Minisimposium Internacional sobre Remoción de Contaminantes de Agua, Atmósfera y Suelos (ISBN 978-607-7807-04-9) pp 100-107*. María del Carmen Durán-de-Bazúa (Ed.) Publicación electrónica.
 21. Nawrot TS, **Alfaro-Moreno E**, Nemery B. Update in occupational and environmental respiratory disease – 2007. *Am J Respir Crit Care Med* **2008**; 177(7): 696-700 (**15 citations**)
 22. **Alfaro-Moreno E**, Nawrot TS, Vanaudenaerde B, Hoylaerts M, Vanoirbeek J, Nemery B, Hoet PHM. Co-cultures of multiple cell types mimic pulmonary cell communication in response to urban PM₁₀. *European Respiratory Journal*, **2008**; 32(5): 1184-1194 (**102 citations**)
 23. **Alfaro-Moreno E**, López-Marure R, Montiel-Dávalos A, Symonds P, Osornio-Vargas AR, Rosas I, Murray JC. E-selectin expression in human endothelial cells exposed to PM₁₀: The role of endotoxin and insoluble fraction. *Environ Res* **2007**; 103 (2): 221-228 (**25 citations**)
 24. **Alfaro-Moreno E**, Nawrot TS, Nemmar A, Nemery B. Particulate matter in the environment: pulmonary and cardiovascular effects. *Curr Opin Pulm Med* **2007**; 13: 98-106. (**70 citations**)
 25. Rosas-Pérez I, Serrano J, **Alfaro-Moreno E**, Baumgardner D, García-Cuellar C, Mirand J, Raga G, Castillejos M, Drucker-Colín R, Osornio-Vargas AR. Relations between PM₁₀ composition and cell toxicity: a multivariate and graphical approach. *Chemosphere* **2007**; 67(6): 1218-1228 (**66 citations**)
 26. **Alfaro-Moreno E**, Ponce-de-León-Rosales S, Osornio-Vargas AR, García-Cuellar C, Martínez L, Rosas I. Potential toxic effects associated to metals and endotoxin present in PM₁₀. An ancillary study using multivariate analysis. *Inhal Toxicol* **2007**; 19 (Suppl 1): 49-53 (**12 citations**)
 27. Montiel-Dávalos A, **Alfaro-Moreno E**, López-Marure R. PM_{2.5} and PM₁₀ induce the expression of adhesion molecules and the adhesion of monocytic cells to human umbilical vein endothelial cells. *Inhal Toxicol* **2007**; 19 (Suppl 1): 91-98 (**36 citations**)
 28. de Vizcaya-Ruiz A, Gutiérrez-Castillo ME, Uribe-Ramírez M, Cebrián ME, Mugica-Alvarez V, Sepúlveda J, Rosas I, Salinas E, García-Cuellar C, Martínez F, **Alfaro-Moreno E**, Torres-Flores V, Osornio-Vargas A, Sioutas C, Fine PM, Singh M, Geller MD, Kuhn T, Eiguren-Fernandez A, Miguel A, Schiestl R, Reliene R, Froines J. Characterization and In Vitro Biological Effects of Concentrated Particulate Matter from Mexico City. *Atmospheric Environ* **2006**; 40: S583-S592 (**60 citations**)
 29. Vázquez-López MI, García-Cuellar CM, **Alfaro-Moreno E**, Sánchez-Pérez Y, Segura Y, Osornio-Vargas AR. Daño a ADN desnudo por partículas contaminantes del aire. *Memorias del*

- V Congreso Internacional y XI Congreso Nacional de Ciencias Ambientales. Sánchez-Salinas E y Ortiz-Hernández MA (Coordinadores). Primera Edición, junio del 2006. ISBN 968-878-265-3.
30. Miranda J, Barrera BA, Espinosa AA, Galindo OS, Meinger J, **Alfaro-Moreno E**, García-Cuellar C, Osornio-Vargas AR. PIXE analysis of atmospheric aerosols related to their cytotoxic and genotoxic effects. Proceedings of the 10th International Conference of Particle Induced X-ray Emission and its analytical applications. Portoro, Slovenia 2004.
<http://pixe2004.ijs.si/FinalPapersCheckup/502.pdf> **(1 citation)**
 31. Osornio-Vargas AR, Bonner JC, **Alfaro-Moreno E**, Martínez L, García-Cuellar C, Ponce-de-León Rosales S, Miranda J, Rosas I. Proinflammatory and cytotoxic effects of Mexico City air pollution particulate matter in vitro are dependent on particle size and composition. *Environ Health Perspect* **2003**; 111: 1289-1293 **(189 citations)**
 32. **Alfaro-Moreno E**, Martínez L, García-Cuellar C, Murray JC, Bonner JC, Ponce de Leon S, Rosas I, Osornio-Vargas A. Biologic effects induced in vitro by PM₁₀ from three different zones of Mexico City. *Environ Health Perspect* **2002**; 110: 715-720. **(151 citations)**
 33. García-Cuellar C, **Alfaro-Moreno E**, Martínez-Romero F, Ponce de Leon Rosales S, Rosas I, Pérez-Cardenas E, Osornio-Vargas AR. DNA damage induced by PM₁₀ from different zones of Mexico City. *Annals of Occupational Hygiene*, 2002; 46 (Suppl. 1): 425-428 **(11 citations)**
 34. Rosas I, Calderón C, Salinas E, Martínez L, **Alfaro-Moreno E**, Osornio-Vargas AR, Milton D. Animal and worker exposure to dust and biological particles in animal care houses. *Int J Aerobiol.* **2001**; 17: 49-59. **(14 citations)**
 35. **Alfaro-Moreno E**, García-Cuellar C, Dueñas A. Métodos de detección de la apoptosis, aplicaciones y limitaciones. *Revista del Instituto Nacional de Cancerología.* **2000**; 46(4): 275-280. **(14 citations)**
 36. Borm PJA, van Hartingsveldt B, **Alfaro-Moreno E**, Cruz Rico G, Rosas I, Osornio-Vargas AR. Priming of cytokine release and increased levels of bactericidal permeability increasing protein (BPI) in the blood of animal facility workers. *Int. Arch. Occup. Env. Health.* **1999**; 72(5): 323-329. **(11 citations)**
 37. Bonner JC, Rice AB, Lindroos PM, O'Brien PO, Dreher KL, **Alfaro-Moreno E**, Rosas I, Osornio-Vargas AR. Induction of the lung myofibroblast PDGF receptor system by urban ambient particles from Mexico City. *Am. J. Respir. Cell. Mol. Biol.* **1998**; 19(4):672-680. **(97 citations)**
 38. **Alfaro-Moreno E**, Flores-Rojas G, Hartasánchez-Frenk F, Orozco de la Huerta A, Raúl Quintana Belmares, Osornio-Vargas AR. In vitro Induction of Abnormal Anaphases by Contaminating Atmospheric Dust From the City of Mexicali, Baja California. *Arch Med Res.* **1997**; 28(4):549-553. **(9 citations)**
 39. Reyes-Domínguez C, Mireles Boeneker R, Chimal JA, Carranza Estrada I, Aguirre A, **Alfaro-Moreno E**, Osornio-Vargas AR. Evaluación de la capacidad hemolítica in vitro de muestras de polvo casero de la delegación Benito Juárez (D.F.) *Rev Inst Nal Enf Resp* **1995**; 8(2):38-42. **(2 citations)**
 40. **Alfaro-Moreno E**, Arenas-Huertero F, Taja-Chayeb L, Cervantes-Peredo A, Osornio-Vargas AR. Alteraciones cromosómicas inducidas por un polvo casero de la Ciudad de Mexicali, Baja California. *Rev Inst Nal Cancerol Mex.* **1995**; 41(4):196-204.

EDITORIAL

- 1) **Alfaro-Moreno E**, Nawrot T, Nemmar A, Rosas I, Schwarze P. Particulate matter and nanoparticles toxicology. *Biomed Research International* 2013; ID 642974 **(2 Citations)**

Technical Reports

- 1) Ian Cotgreave, Ali Alavian Ghavanini, **Ernesto Alfaro-Moreno**, et al. Pyriproxifen and

microcephaly: an investigation of potential ties to the ongoing" Zika epidemic". REPORT FROM A WORKING GROUP. SWETOX, MARCH 2016 (4 Citations).

Book Chapters

- 1) Osornio-Vargas AR, **Alfaro-Moreno E**, García-Cuellar C, Rosas I. ¿Tienen las PM₁₀ de diferentes zonas de la Ciudad de México el mismo potencial tóxico? Proyectos Conserva 1999-2000. Editado por el Gobierno del Distrito Federal y la Universidad Autónoma Metropolitana. México 2001. pp 453-479. (1 Citation)
- 2) Rosas I, **Alfaro-Moreno E**, García-Cuellar C, Martínez-Romero L, Torres-Flores V, Pérez-Cárdenas E, Gutiérrez-Avedoy V, Osornio-Vargas A. Potencial tóxico y proinflamatorio de las partículas contaminantes. Un estudio experimental comparativo entre las PM₁₀ y las PM_{2.5} de dos zonas de la ciudad de México. Proyectos Conserva 1999-2000. Ed. Gobierno del Distrito Federal, Universidad Autónoma Metropolitana. México 2001.
- 3) **Alfaro-Moreno E**, García-Cuellar CM, De Vizcaya Ruiz A, Rojas-Bracho L, Osornio-Vargas A. The Cellular Mechanisms behind Particulate Matter Air Pollution Related Health Effects. En "Air Pollution: Health & Environmental Impacts" B.R. Gurjar, L.T. Molina, C.S.P. Ojha (Eds.); Taylor & Francis, 2010 (6 citations)
- 4) Huerta-García E, Montiel-Davalos A, Ramos-Godínez MP, **Alfaro-Moreno E**, López-Marure R. Effects Of Titanium Dioxide Nanoparticles On The Inflammatory Process. En "Titanium Dioxide: Chemical Properties, Applications and Environmental Effects" Jerry Brown, Editor. Nova Science Publishers, 2014; 227-250

Popular Science Articles

- 1) Ponciano-Rodríguez G, Rosas-Pérez I, **Alfaro-Moreno E**. Contaminación atmosférica por partículas y salud en la ciudad de México. Ciencia y Desarrollo. 2000; 26(152): 19-25.
- 2) Ponciano-Rodríguez G, **Alfaro-Moreno E**, Rosas-Pérez I. La exposición a partículas atmosféricas. La evaluación de sus efectos. Ciencia y Desarrollo. 2001; 27(159): 4-13
- 3) Multidisciplinary Group UNAM, UAM & **INCan**. Evaluation of Toxicity Induced by PM₁₀ and PM_{2.5} from Three Different Zones of México City in Relation with Their Composition. Integrated Program on Urban, Regional, and Global Air Pollution, Mass. Institute of Technology Newsletter, Volume 3, Spring 2003.
http://mce2.org/newsletter/nwsltr_3/english/toxicity.html (April 13, 2006)

Published Abstracts

- 1) Osornio-Vargas AR, **Alfaro-Moreno E**, Rosas I, Lindroos PM, A Badget, Dreher KL, Bonner JC. "The in vitro toxicity of ambient PM₁₀ particles from the southern, central and northern regions of Mexico City to lung fibroblasts is related to transition metal content". Am J Resp Crit Care Med. 1996; 153(4): A15 (10 citations)
- 2) **Alfaro-Moreno E**, Flores-Rojas G, Orozco de la Huerta A, Hartasánchez-Frenk F, Quintana-Belmares R, Osornio-Vargas AR. "Abnormal anaphase induction by an environmental dust from Mexicali City, Baja California". Biocell. 1996; 20 (2): C130.
- 3) **Alfaro-Moreno E**, Osornio-Vargas A, Rosas-Pérez I, Murray JC. E-selectin activation in human endothelial cells exposed to PM₁₀ from Mexico City. Am J Resp Crit Care Med. 2000; 161(3): A240
- 4) García-Cuellar C, Sánchez-Pérez Y, **Alfaro-Moreno E**, Rosas I, Osornio-Vargas A. Evaluación de HSP72 en la línea celular A549 (células epiteliales de pulmón humano) expuestas a partículas contaminantes atmosféricas de la ciudad de México. Rev. Salud Publica y Nutrición. 2000; 2

- 5) **Alfaro-Moreno E**, García-Cuellar C, Sánchez-Pérez Y, Torres-Flores V, Martínez L, Rosas I, Bonner JC, Osornio-Vargas AR. Stress response induced *in vitro* by particulate matter (PM) from three zones of Mexico City (MC). *Am J Resp Crit Care Med.* 2001; 163(5): A360
- 6) Martínez L, García-Cuellar C, **Alfaro-Moreno E**, Rosas I, Bonner JC, Osornio-Vargas AR. Differential pro-inflammatory effects induced *in vitro* by PM₁₀ from three zones of Mexico City (MC). *Am J Resp Crit Care Med.* 2001; 163(5): A884
- 7) Osornio-Vargas AR, Martínez L, García-Cuellar C, **Alfaro-Moreno E**, Rosas I, Torres V, Pérez-Cárdenas E. Cellular effects induced by PM_{2.5} and PM₁₀ from two zones of Mexico City (MC). *Am J Resp Crit Care Med.* 2002; 165(8): A213
- 8) García-Cuellar C, **Alfaro-Moreno E**, Torres V, Martínez-Romero FM, Rosas I, Sánchez-Pérez Y, Osornio-Vargas AR. Differential expression of p53 and PARP in mouse fibroblast (L929) exposed to urban air particles (PM₁₀) from different zones of Mexico City. *Toxicol Lett.* 2002; 135 (suppl 1): S140
- 9) **Alfaro-Moreno E**, García-Cuellar C, Ponce de Leon S, Rosas I, Osornio-Vargas AR. Cell death induced by PM₁₀ from different zones of Mexico City preferentially leads to necrosis or apoptosis in relation to differences in composition. *Toxicol Lett.* 2002; 135 (suppl 1): S140
- 10) **Alfaro-Moreno E**, Heng YE, Osornio-Vargas AR, Rosas I, Murray JC. PM₁₀ effects on pro-inflammatory gene expression in lung epithelial cells. *Toxicol Letts* 2003; 144(suppl 1): s106
- 11) García-Cuellar C, Martínez-Romero F, Sánchez-Pérez Y, Calva-Treviño V, **Alfaro-Moreno E**, Rosas I, Osornio-Vargas A. Differential DNA damage produced by metals from urban air particles (PM₁₀) from different zones of Mexico City. *Toxicol Letts* 2003; 144(suppl 1): s182
- 12) **Alfaro-Moreno E**, Heng YE, Edgson J, Symonds P, Osornio-Vargas AR, Rosas I, Murray JC. PM₁₀ effect on EMAP-II expression in lung epithelial cells. *Toxicol Letts* 2003; 144(suppl 1): s183
- 13) Garcia-Cuellar C, Martinez F, Flores G, Sanchez Y, Torres V, **Alfaro-Moreno E**, Quintana R, Calva V, Rosas I, Shi T, Borm P, Osornio-Vargas A. Lipid and DNA Oxidative Damage Induced In Vitro by PM₁₀ Samples with Different Hydroxyl Radical Generation Potential. *Am J Resp Crit Care Med.* 2004; 169(8): A508 (1 citation)
- 14) Garcia-Cuellar C, **Alfaro-Moreno E**, Quintana R, Martinez F, Torres V, Sánchez Y, Flores G, Rosas I, Osornio-Vargas A. Pro-Oxidative Potential and DNA Damage Induced by PM from Mexico City (MC): A Spatial and Temporal Comparison. *Am J Resp Crit Care Med.* 2005; 171(8): A170
- 15) Flores-Rojas G, Trujillo S, Castro S, Vazquez I, Segura Y, **Alfaro-Moreno E**, Osornio-Vargas AR. In Vitro Toxicity Patterns Induced by Soil and Urban PM₁₀. *Am J Resp Crit Care Med.* 2006; 173: A386
- 16) **Alfaro-Moreno E**, Hoet P, Hoylaerts M, Nemery B. Cytokine secretion profile of human epithelial-macrophage-mast cell-endothelial cell-co-cultures exposed to urban particulate matter. *Am J Respir Crit Care Med.* 2007; 175: A165
- 17) Osornio-Vargas AR, Rosas I, Serrano J, **Alfaro-Moreno E**, et al. Relations between PM₁₀ composition and cell toxicity: A multivariate and graphical approach. *Am J Respir Crit Care Med.* 2007; 175: A165
- 18) **Alfaro-Moreno E**, Hoet P, Nemmar A, et al. Human mast cell activation by urban particulate matter. *Am J Respir Crit Care Med.* 2007; 175: A456
- 19) Celis M, Hoet PH, Nemery B, Fierens F, Janssen S, Verleden G, Vanaudenaerde B, Vanoirbeek JA, **Alfaro-Moreno E**, Nawrot TS. Fine particles in alveolar macrophages and their association with outdoor particulate pollution. *Eur Respir J.* 2007; 30(suppl 51): 234s.
- 20) **Alfaro-Moreno E**, Hoet P, Nawrot T, et al. Urban particulate matter induces changes in cytokine release in co-cultures of human epithelial-macrophage-mast cell lines. *Eur Respir J.* 2007; 30(suppl 51): 473s.
- 21) Quarck R, Wynants M, **Alfaro-Moreno E**, Delcroix M. Role of endothelial and smooth muscle cells in vascular wall remodeling of large pulmonary arteries in patients with CTeph. *Eur Respir J.* 2007; 30(suppl 51): 603s.
- 22) **Alfaro-Moreno E**, Hoet P, Nemery B. Cytokine secretion profile of human Epithelial-Macrophage-Mast cell-Endothelial cell co-cultures exposed to urban particulate matter. *Eur Respir J.* 2007; 30(suppl 51): 789s

- 23) Wynants M, Quarck R, **Alfaro-Moreno E**, Meyns B, Delcroix M. C-reactive protein (CRP)-Driven vascular wall remodeling in patients with chronic thromboembolic pulmonary hypertension (CTEPH). *Am J Respir Crit Care Med*. 2008; 177: A22
- 24) **Alfaro-Moreno E**, Quarck R, Delcroix M, Nemery B, Hoet P. Endothelin-1 secretion is enhanced by PM_{2.5} but not by PM₁₀ in an endothelial cell-pneumocyte-macrophage-mast cell co-culture system. *Am J Respir Crit Care Med*. 2008; 177: A424
- 25) Montiel-Davalos A, Ibarra-Sanchez M, **Alfaro-Moreno E**, Lopez-Marure R. PM_{2.5} AND PM₁₀ induce oxidative stress and apoptotic death in human endothelial cells: their possible relation with cardiovascular diseases. *Atherosclerosis Supplements* 2009; 10(2): e111
- 26) **Alfaro-Moreno E**, Nemery B, Hoet P. Cytokine secretion pattern in multiple cellular co-cultures exposed to carbon nanotubes. *Journal of Physics: Conference Series* 151 (2009) 011002 doi:10.1088/1742-6596/151/1/011002
- 27) Wynants M, Quarck R, **Alfaro-Moreno E**, et al. C-reactive Protein Contributes To Pulmonary Vascular Cell Dysfunction In Chronic Thromboembolic Pulmonary Hypertension. *Am. J. Respir. Crit. Care Med*. 2010; 181: A1957
- 28) Y. I. Chirino, D. J. Sánchez-González, C. Martínez-Martínez, **E. Alfaro-Moreno**. Sub-chronic exposure to urban particulate matter induce pro-fibrotic events in mice. *Eur Respir J*. 2010; 36(suppl 54): E439
- 29) **E. Alfaro-Moreno**, M. D. P. Ramos-Godinez, A. Montiel-Davalos, R. Lopez-Marure. The interaction of particulate matter with alveolar epithelial cells triggers endothelial cell dysfunction. *Eur Respir J*. 2010; 36(suppl 54): E445
- 30) M. Wynants, R. Quarck, **E. Alfaro-Moreno**, M. R. Sepulveda, F. Wuytack, A. Ronisz, D. Van Raemdonck, B. Meyns, M. Delcroix. Vascular remodeling in chronic thromboembolic pulmonary hypertension: Involvement of dedifferentiated smooth muscle cells and C-reactive protein. *Eur Respir J*. 2010; 36(suppl 54): E3884
- 31) **Alfaro-Moreno E**, Gonzalez-Gomez BE, Ramos-Godinez P, Montiel-Davalos A, Reyes-Maldonado E, Lopez-Marure R. Urban PMs induce the adhesion of cancer cells to endothelial cells. *Toxicology Letters* 211S (2012) S108–S109 (**1 citation**)
- 32) **Alfaro-Moreno E**, Montiel-Davalos A, Hernandez G, Lopez-Marure R, Quintana-Belmares R, Munic Kos V, Cederbrant K. Receptors for adhesion molecules are induced on monocytes exposed to PM₁₀. *European Respiratory Journal* 2015; 46 (suppl 59) DOI: 10.1183/13993003.congress-2015.PA4106
- 33) Alfaro-Moreno E, Quintana-Belmares R, Montiel-Davalos A, Gustafsson Å, Miranda J, Lopez-Marure R, Rosas-Perez I. Expression of receptors for adhesion molecules in monocytes exposed to urban particulate matter is independent of size and composition of the particles. *Toxicology Letters* 2019; 314S1: S232-S233.

Letters

- 1) Geys J, Nemery B, **Alfaro-Moreno E**, Hoet P. Cytotoxicity of SiO₂ in A549 cells. *Toxicol Applied Pharmacol*. 2007; 20(2):225 (**2 citations**)

Popular Science Books for Children

- 1) **Ernesto Alfaro Moreno**. Mi planeta y el ambiente. Editorial Santillana, 2004 ISBN: 970-29-0835-3 (**Libro de Biblioteca de Aula seleccionado por la SEP**).
- 2) **Ernesto Alfaro Moreno**. El aire. Editorial Santillana, 2004 ISBN: 970-29-0925-2
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