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- **Research interests**

The development of colloidal based delivery systems such as nanoemulsions or biopolymer nanoparticles for protection and control release of bioactive compounds and flavors. Obesity is a major public health problem, so one of his line of research will be focused on the development of biopolymer-based systems to replace high calorie food ingredients Develop food systems to replace artificial components to satisfy the consumer demand of “all natural” ingredients.

- **Graduate students' projects**

Lutein enriched nanoemulsions: Effect of Maillard conjugates and polyphenols on the physical and chemical stability. In progress.

In vitro Bioaccessibility of Resveratrol Bound to Sodium Caseinate or Encapsulated in Zein Biopolymer Nanoparticles Stabilized by Maillard Conjugation. Presented June 2015.

Effect of fermentation and roasting on the polyphenolic concentration and antioxidant activity of cocoa from Nicaragua. Presented May 2012.

Study of the addition of polyphenolic extracts from grape seeds to bakery products Presented September 2010.

- **Undergraduate students' projects**

Lutein enriched nanoemulsions: Effect of Maillard conjugates and polyphenols on the physical and chemical stability. In progress.

Controlled release of flavors in biopolymer soluble complexes and multilayered nanoemulsions. In progress.

Polyphenolic balance in mice with induced colon cancer fed with a high fat diet supplemented with apple extracts. Presented November 2013.

- **Publications**

1. Cansu Ekin Gumus, **Gabriel Davidov-Pardo***, David Julian McClements. (2016) Lutein-enriched emulsion-based delivery systems: Impact of Maillard conjugation on physicochemical stability and gastrointestinal fate. *Food Hydrocolloids*. 60. 38-49.
2. **Gabriel Davidov-Pardo**, Cansu Ekin Gumus, David Julian McClements*. (2016) Lutein-enriched emulsion-based delivery systems: Influence of pH and temperature on physical and chemical stability. *Food Chemistry*. 196. 821-827.
3. **Gabriel Davidov-Pardo**, Iris Julie Joye*, Mauricio Espinal-Ruiz, David Julian McClements. (2015) Effect of Maillard conjugates on the physical stability of zein nanoparticles prepared by liquid antisolvent co-precipitation. *Journal of agriculture and Food Chemistry* 63, 8510–8518.
4. **Gabriel Davidov-Pardo**, Sonia Pérez-Ciordia, María R. Marín-Arroyo and David Julian McClements* (2015) Improving Resveratrol Bioaccessibility using Biopolymer Nanoparticles and Complexes: Impact of Protein-Carbohydrate Maillard Conjugation. *Journal of Agriculture and Food Chemistry* 63, 3915–3923.
5. Iris Julie Joye, **Gabriel Davidov-Pardo***, David Julian McClements. (2015) Fluorescence quenching study of resveratrol binding to zein and gliadin: Towards a more rational approach to resveratrol encapsulation using water-insoluble proteins. *Food Chemistry* 185, 261-267.
6. Iris Julie Joye, **Gabriel Davidov-Pardo***, David Julian McClements. (2015) Encapsulation of resveratrol in biopolymer particles produced using liquid antisolvent precipitation. Part 2: stability and functionality. *Food Hydrocolloids*. 49, 127-134.
7. **Gabriel Davidov-Pardo**, Iris Julie Joye*, David Julian McClements. (2015) Encapsulation of resveratrol in biopolymer particles produced using liquid antisolvent precipitation. Part 1: preparation and characterization *Food Hydrocolloids*. 45, 309-316.
8. **Gabriel Davidov-Pardo***, David Julian McClements. (2015) Nutraceutical delivery systems: Resveratrol encapsulation in grape seed oil nanoemulsions formed by spontaneous emulsification. *Food Chemistry*. 167(15), 205-212.
9. Iris Julie Joye, **Gabriel Davidov-Pardo***, David Julian McClements (2014). Nanotechnology for increased micronutrient bioavailability *Trends in Food Science and Technology*. 40(2), 168-182.
10. **Gabriel Davidov-Pardo***, David Julian McClements. (2014) Resveratrol encapsulation: designing delivery systems to overcome solubility, stability and bioavailability issues. *Trends in Food Science and Technology*. 38 (2), 88-103.
11. G. Bobo, **G. Davidov-Pardo***, C. Arroqui, P. Vírveda, M.R. Marín-Arroyo, M. Navarro. (2015) Intralaboratory validation of microplate methods for total phenolic content and antioxidant activity on polyphenolic extracts, and comparison with conventional spectrophotometric method. *Journal of the Science of Food and Agriculture*. 95(1) 204-209.
12. Suazo, Yader; **Davidov-Pardo, Gabriel***; Arozarena, Iñigo. (2014) Effect of Fermentation and Roasting on the Phenolic Concentration and Antioxidant Activity of Cocoa from Nicaragua. *Journal of Food Quality*. 37(1) 50-56.
13. **Gabriel Davidov-Pardo**, Iñigo Arozarena, María R. Marín-Arroyo*. (2013) Grape seed extract:

- additive and functional ingredient. *Agro Food Industry Hi-Tech*. 24(3) 41-43.
14. **Davidov-Pardo G.**, Arozarena I., Marín-Arroyo M. R*. (2013) Optimization of a Wall Material Formulation to Microencapsulate a Grape Seed Extract Using a Mixture Design of Experiments. *Food and Bioprocess Technology*. 6(4), 941-951
 15. **Davidov-Pardo G.**, Moreno M., Arozarena I., Marín-Arroyo M. R.*, Bleibaum R., Bruhn C. (2012) Sensory and Consumer Perception of the Addition of Grape Seed Extracts in Cookies. *Journal of Food Science*. 77(12) S430-S438.
 16. **Davidov-Pardo G.***, Arozarena I., Marín-Arroyo M. R. (2011) Kinetics of Thermal Modifications in a Grape Seed Extract. *Journal of Agricultural and Food Chemistry*. 59(13) 7211-7217.
 17. **Davidov-Pardo, G.***, Arozarena, I., & Marín-Arroyo, M. (2011). Stability of polyphenolic extracts from grape seeds after thermal treatments. *European Food Research and Technology*, 232(2) 211-220.
 18. **G. Davidov-Pardo**, P. Rocchia, D. Salgado, A.E. León* y R. Pedroza-Islas. (2008) Utilization of Different Wall Materials to Microencapsulate Fish Oil. Evaluation of its Behavior in Bread Products. *American Journal of Food Technology* 3(6) 384-393.
 19. **Gabriel Davidov-Pardo**, Iris J. Joye and David Julian McClements. Food-grade protein-based nanoparticles and microparticles for bioactive delivery: fabrication, characterization, and utilization in *Protein and Peptide Nanoparticles for Drug Delivery, APCS Volume 98*. Editor: Rossen Donev. El Sevier Filadelfia, PA. EEUU. Pp: 301-333.
 20. Iris J. Joye, **Gabriel Davidov-Pardo**, and David Julian McClements. (2016) 481. Nanotechnology in Food Processing in *Encyclopedia of Food and Health*. Editores: Benjamin Caballero, Paul Finglas, and Fidel Toldrá. El Sevier Pp: 49-55.
 21. **Davidov-Pardo Gabriel**, Arozarena Íñigo, Navarro Montserrat, Marín-Arroyo María R. (2015) Microencapsulation of grape seed extracts in *Microencapsulation and Microspheres for Food Applications*. Editor: Leonard Sagis. El Sevier. San Diego, CA. EEUU Pp: 351-368.
 22. **Davidov-Pardo Gabriel**, Navarro Montserrat, Arozarena Íñigo, Marín-Arroyo María R. (2014). Chapter 9: Obtaining polyphenolic extracts from wine by-products in *Grapes: Production, phenolic composition and potential biomedical effects*. Editor: José S. Câmara. Novapublisher, Hauppauge N.Y., EEUU. Pp: 225-244
 23. **Davidov-Pardo Gabriel**, Casares Isabel, Fontanot Adriana, Pedroza-Islas Ruth. (2009) Evaluation of fish-oil microcapsules with two different antioxidants. *Industria Alimentaria Editorial Alfa Editores Técnicos*. 31(5) 26-31. ISSN: 0187-7658
 24. **Davidov-Pardo Gabriel**, Barrera Lourdes, Casares Isabel, Fontanot Adriana. (2008) Utilization of a mix experiment design to create a flavor for water. *Bebidas Mexicanas Editorial Alfa Editores Técnicos*. 17(3) 24-31. ISSN: 0188-8080

- Current research group

