



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Curriculum Vitae

Family Name: Cisneros

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Education:

- PhD in Animal and Food Science, Università di Padova (2019-)
- M.Sc. Master's in Nutrition (2017-2019)
- B.Sc. Bachelor's in Food Engineering (2010-2015)

Research areas:

- Food by-products
- Functional food
- Natural antioxidants

PhD project:

Lipid oxidation is not an exclusive concern for the food industry but also occurs in feeds and feedstuffs, resulting in rancidity of fats, degradation of proteins, vitamins, and pigments, and crosslinking of lipids and other macromolecules into non-nutritive polymers with a serious decrease in the nutritional value. The growing interest in the replacement of synthetic food antioxidants by natural ones has led to multiple investigations in the field of new antioxidants. In this context, the by-products from the food industry can be valuable resources for those new business models that are already competing in the emerging market of eco-products and/or healthy foods. Besides, enzyme browning in plant products is associated with many of the qualitative and economic losses in the agro-food industry. The main agent responsible is polyphenol oxidase or tyrosinase (PPO; EC 1.10.3.1), a copper-containing oxidoreductase that catalyzes two different reactions involving the oxidation of phenolic substances and subsequent production of quinones that polymerize to brown pigments known as melanins. Synthetic additives can be mixed or combined with thermal treatments to synergistically inhibit PPO activity. However, they have some drawbacks including low stability towards oxygen and water, reduction of the content in bioactive compounds, alterations of organoleptic, nutritional and healthy properties of final products, and potential hazards for human health. Currently, the research of novel anti-polyphenol oxidase systems is focused on mild alternatives to conventional treatments which could impair not only the sensory and nutritional properties of agro-food products but also consumer health. Therefore, the aim of this Ph.D. project is the valorization of products and by-products from agroindustry that nowadays are not being taken into consideration as natural sources of bioactive compounds, especially as promising antioxidants and inhibitors of enzymes presented in foodstuff. They could be proposed as a safer and cheaper eco-friendly alternative than the conventional technology currently used.

Supervisor:

Anna Lante

Publications:

<https://scholar.google.com/citations?user=oea228wAAAAJ&hl=es>