

## **Research title**

**Emerging contaminants in food of animal origin: mapping of their presence through different food chains aimed to food safety evaluation**

**Indagine sulla presenza dei contaminanti emergenti nelle diverse filiere alimentari per la valutazione della sicurezza degli alimenti di origine animale**

**Tutor** Prof. Luca Chiesa

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## **State of the art and aims of the project**

Recently, brominated flame retardants and certain perfluorinated chemicals have recently emerged as new contaminants of concern. Governments worldwide are currently evaluating all commercial chemicals, with the goal to identify substances that can biomagnify in food chains and achieve harmful concentrations in high-trophic level organisms including human beings. Dietary accumulation or biomagnification can cause additional bioaccumulation, resulting in an increase in chemical concentration with increasing trophic level in food webs. The purpose of this project will lead to evaluate the presence of POPs in food of animal origin with particular attention toward the emerging pollutants from different food chains (e.g. meat, milk, honey and fish) in order to evaluate the accumulation of these toxic compounds. Particular attention will be also paid to the evaluation of the influence of rearing on the presence of POPs in food (organic food and conventional food).

## **Recent publications of the tutor in the field**

1. L.M.Chiesa, M.Nobilea, F.Ceriania, R.Malandra, F.Arioli, S.Panseria. Risk characterisation from the presence of environmental contaminants and antibiotic residues in wild and farmed salmon from different FAO zones
2. Food Additives and Contaminants: Part A- 36, 1, 2 (2019), Pages 152-162.
3. L.M.Chiesa, M.Nobile, S.Panseri, F.Arioli. Detection of glyphosate and its metabolites in food of animal origin based on ion chromatography-high resolution mass spectrometry (IC-HRMS). FOOD ADDITIVES & CONTAMINANTS: PART A-2019, Pages 1-9.
4. L.M. Chiesa, Shih-Kuo Lin, F.Ceriani, S.Panseri, F.Arioli. Levels and distribution of emerging POPs PBDEs and PFASs in pork from different European Countries. Food Additives and contaminant (2018) - Part A- 35, 12, 2,(2018), 2414-2423
5. L.M.Chiesa, S.Panseri, M.Nobile, F.Ceriani, F.Arioli. Distribution of POPs, pesticides and antibiotic residues in organic honeys from different production areas. Food Additives & Contaminants: Part A- 35, 7, 3 (2018), 1340-1355
6. L.M.Chiesa, M.Nobile, R.Malandra, D.Pessina, S.Panseri, G.F.Labella, F.Arioli,. Food safety traits of mussels and clams: distribution of PCBs, PBDEs, OCPs, PAHs and PFASs in sample from different areas using HRMS-Orbitrap® and modified QuEChERS extraction followed by GC-MS/MS. Food Additives & Contaminants: Part A- 35, 5, 4(2018), 959-971