

PROF. ANNA ARNOLDI: CURRICULUM VITAE

Anna Arnoldi (F) is professor of **Food chemistry** and **Dietary products**, Department of Pharmaceutical Sciences, Faculty of Pharmacy, University of Milan, Italy (UMIL). She is responsible of the molecular biology section of the FOOD&PLANT Lab of the department.

She is also President of the Undergraduate Course in Herbal Sciences and Technologies. She has a long experience in the collaboration with nutritionists, pharmacologists, and physicians.



Studies and Academics.

Studies. Prof. Anna Arnoldi was born on 04/28/1952 in Bergamo (Italy). She got her gymnasium diploma in July 1971, her master degree in Chemistry on 11/3/1976 with the score 110/110 cum laude, in UMIL, and PhD in Chemistry in March 1980, in the same university.

Academics. From 12/01/1976 to 06/30/1977 she worked as Assistant in the Institute of Chemistry of the Polytechnic of Milan, under the supervision of prof. Francesco Minisci. From 09/01/1977 to 10/31/1981 she worked as Research fellow in the Department of Agri-Food Molecular Sciences (DISMA) of the Faculty of Agriculture of UMIL, under the supervision of prof. Lucio Merlini. From 11/01/1981 to 10/31/1992 she worked as Researcher in Organic Chemistry in the Faculty of Agriculture of UMIL, under the supervision of prof. Lucio Merlini. Since 11/01/1992, she is Associate Professor in Food Chemistry in the Faculty of Pharmacy of UMIL.

Major research interests in recent years:

- 1) Development of innovative functional foods and dietary supplements from legumes for the prevention of chronic diseases and other pathologies.
- 2) Food protein analysis: structure elucidation, identification of food allergens, and development of analytical methods by mass spectrometry, shot-gun proteomics, 2D-electrophoresis.
- 3) Identification and development of innovative analytical methods for the quantification of low molecular weight bioactive components of foods.
- 4) Investigation of the health-promoting properties of plant proteins: soybean, lupin etc..
- 5) Investigation of the mechanism of action and absorption of nutraceuticals by in vitro studies in cell cultures.

She is considered one major world expert on legume proteins and she is regularly enrolled as invited speaker at international congresses on lupin or grain legumes.

Publications, conferences, posters, and patents

She is author of: 137 papers in international journals listed by Web of Science or Scopus, 5 chapters in International Books (invited reviews), 56 proceedings of international or national congresses, 97 oral or poster presentations at international congresses/conferences, 93 presentations at national congresses/conferences, 7 patents. In addition, she has been the editor of an international book.

International grants. She has great experience in the coordination of EU project. List:

Coordinator of the European project PROCESSED-FOODS, "Optimization of the Maillard reaction. A way to improve quality and safety of thermally processed food"; contract PF4-FAIR-CT96-1080, total grant 2,109,000 euros; period 08/01/1996 - 07/31/1999.

Coordinator of the European project HEALTHY-PROFOODS, "Optimized processes for preparing healthy and added value food ingredients from lupin kernels, the European protein-rich grain legume"; contract PF5-QLK1-2002-2235, total grant 1,958,305 euros; period 01/01/2003 - 12/31/2005.

Scientific coordinator of the European project BIOPROFIBRE, “Development of cholesterol lowering foods through bioactive proteins and fibers”, contract PF6-SME-CT-2006-032075, total grant 1,215,350 euros; period 07/01/2006 - 05/31/2009.

Coordinator of the European project LUPICARP, “Innovative functional foods from sweet lupin for cardiovascular prevention”; contract PF7-SME-2011-GA-285819, total grant 1,023,000 euros, period 10/01/2011 - 31/03/2014.

National projects (last decade)

Coordinator of the Italian project FIRB RBAU01JS5C “New ingredients from legume seeds for the preparation of functional foods for hypercholesterolemic subjects”; total grant 600,000 euros, period 11/05/2002 - 11/04/2005.

Coordinator of the project funded by the Cariplo Foundation “Innovative methodologies for the quality assurance of the production of lupin and lupin based foods”; total grant 300,000 euros, period 05/01/2006 - 04/30/2008.

Scientific responsible of a research unity in the project PRIN 2006 “Innovative methodologies for the quantification of the main allergens in complex foods”; single grant 35,750 euros, period 02/09/2007 - 02/08/2008.

RELEVANT PUBLICATIONS IN THE LAST 5 YEARS

1. Sirtori E., Resta D., Brambilla F., Zacherl C., **Arnoldi A.** The effects of various processing conditions on a protein isolate from *Lupinus angustifolius* investigated by different approaches. *Food Chemistry* **2010**, 120, 496-504 (IF 3.458, rank 5/125, cit. 9)
2. Boschini G., **Arnoldi A.** Legumes are valuable sources of tocopherols. *Food Chemistry* **2011**, 127, 1199-1203. (IF 3.655, rank 6/128, cit 7)
3. Coisson J.D., Arlorio M., Locatelli M., Garino C., Resta D., Sirtori E., **Arnoldi A.**, Boschini G. The artificial intelligence-based chemometrical characterization of genotype/chemotype of *Lupinus albus* and *Lupinus angustifolius* permits their identification and potentially their traceability. *Food Chemistry* **2011**, 129, 1806-1812. (IF 3.655, rank 6/128).
4. Sirtori E., Resta D., **Arnoldi A.**, Savelkoul H.F.J., Wichers H.J. Cross-reactivity between peanut and lupin proteins *Food Chemistry* **2011**, 126, 902-910 (IF 3.655, rank 6/128, cit. 7).
5. Resta D., Brambilla F., **Arnoldi A.** HPLC-Chip-Multiple reaction monitoring (MRM) method for the label-free absolute quantification of gamma-conglutin in lupin: proteotypic peptides and standard addition method. *Food Chemistry* **2012**, 131, 126-133 (IF 3.334, rank 10/124, cit 2).
6. Sirtori, E.; Isak, I.; Resta, D.; Boschini, G.; **Arnoldi, A.** Mechanical and thermal processing effects on protein integrity and peptide fingerprint of pea protein isolate. *Food Chemistry* **2012**, 134, 113-121. (IF 3.334, rank 10/124, cit 3).
7. Sirtori C.R., Triolo M., Bosisio R., Bondioli A., Calabresi L., De Vergori V., Gomaschi M., Mombelli G., Pazzucconi F., Zacherl C., **Arnoldi A.** Hypocholesterolemic effects of lupin protein and pea protein/fibre combinations in moderately hypercholesterolemic individuals. *British Journal of Nutrition* **2012**, 107, 1176-83 (IF 3.302, rank 18/76, cit 2).
8. Sirtori C.R., Triolo M., Bosisio R., Bondioli A., Calabresi L., De Vergori V., Gomaschi M., Mombelli G., Pazzucconi F., Zacherl C., **Arnoldi A.** Hypocholesterolemic effects of lupin protein and pea protein/fibre combinations in moderately hypercholesterolemic individuals. *British Journal of Nutrition* **2012**, 107, 1176-83 (IF 3.302, rank 18/76, cit 4)

9. Messina, M., Delzenne, N., Joubrel, G., Arnoldi, A., Lecerf, J.-M., Rowland, I., Widhalm, K. Soy foods and breast cancer | Aliments à base de soja et cancer du sein. *Pratiques en Nutrition* **2013**, 9, 10-14. doi: 10.1016/j.pranut.2013.03.003 (Scopus)
10. Lecerf, J.-M., Arnoldi, A., Delzenne, N., Rowland, I., Joubrel, G., Messina, M., Widhalm, K. Soy foods and cardiovascular health | Aliments à base de soja et santé cardiovasculaire *Pratiques en Nutrition* **2013**, 9, 15 – 18. doi: 10.1016/j.pranut.2013.03.004 (Scopus)
11. Joubrel, G., Rowland, I., Lecerf, J.-M., Messina, M., Delzenne, N., Widhalm, K., Arnoldi, A. Calcium in soy foods | Le calcium dans les aliments au soja. *Pratiques en Nutrition* **2013**, 9, 30 - 32 . doi: 10.1016/j.pranut.2013.03.007 (Scopus)
12. Messina, M., Rowland, I., Widhalm, K., Joubrel, G., Arnoldi, A., Delzenne, N., Lecerf, J.-M. Soy foods and the endocrine system | Aliments à base de soja et système endocrinien. *Pratiques en Nutrition* **2013**, 9, 19 – 23. doi: 10.1016/j.pranut.2013.03.005 (Scopus)
13. Widhalm, K., Arnoldi, A., Delzenne, N., Joubrel, G., Rowland, I., Lecerf, J.-M., Messina, M. Soy protein allergy | Allergie aux protéines de soja. *Pratiques en Nutrition* **2013**, 9, 24 – 29. doi: 10.1016/j.pranut.2013.03.006 (Scopus)
14. Ruscica M., Gomasrashi M., Mombelli G., Macchi C., Bosisio R., Pazzucconi F., Pavanello C., Calabresi L., **Arnoldi A.**, Sirtori C. R., Magni P. Nutraceutical approach to moderate cardiometabolic risk: results of a randomized, double-blind and crossover study with Armolipid plus. *Journal of Clinical Lipidology* **2014**, 8, 61-68. (IF2013 3.587, rank 53/254, cit 1)
15. Boschini G., Scigliuolo G.M., Resta D., **Arnoldi A.** ACE-inhibitory activity of enzymatic protein hydrolysates from lupin and other legumes. *Food Chemistry* **2014**, 145, 34-40. (IF2013 3.259, rank 10/123, cit 2).
16. Boschini G., Scigliuolo G. M., Resta D., **Arnoldi A.** Optimization of the Enzymatic Hydrolysis of Lupin (*Lupinus*) Proteins for Producing ACE-Inhibitory Peptides. *Journal of Agriculture and Food Chemistry*, **2014**, 62, 1846-51. (IF2013 3.107, rank 13/123).
17. Annicchiarico P., **Arnoldi A.**, Manunza P., Boschini G. Quality of *Lupinus albus* L. (white lupin) seed: extent of genotypic and environmental effects. *Journal of Agriculture and Food Chemistry*, 2014, 62(28), 6539–6545 (IF2013 3.107, rank 13/123)
18. Lammi C., Zanoni C., Scigliuolo G. M., D'Amato A., Arnoldi A. Lupin peptides lower low-density-lipoprotein (LDL) cholesterol through the up-regulation of the LDL receptor / SREBP2 pathway at HepG2 cell line. *Journal of Agriculture and Food Chemistry*, **2014**, 62(29), 7151–7159 (IF2013 3.107, rank 13/123)
19. Lammi C., Zanoni C., **Arnoldi A.** A simple and high-throughput in-cell western assay at HepG2 cell line for investigating the potential hypocholesterolemic effects of food components and nutraceuticals. *Food Chemistry*, **2015**, 169, 59-64. (IF2013 3.259, rank 10/123)
20. **Arnoldi A.**, Zanoni C., Lammi C., Boschini G. The role of grain legumes in the prevention of hypercholesterolemia and hypertension. *Critical Reviews in Plant Sciences*. **2015**, 34, 144-168. DOI:10.1080/07352689.2014.897908 (IF2013 5.292, rank 14/196)
21. Lammi C., Zanoni C., **Arnoldi A.** Molecular characterization of the hypocholesterolemic mechanism of action of IAVPGEVA, IAVPTGVA, and LPYP, three peptides from soy glycinin, in HepG2 cells. *Journal of Functional Foods*. **2015**, 14, 469-478. (IF2013 4.480, rank 5/123)