



CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date	16/01/2023
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First name	María Teresa		
Family name	Sanz Taberner		
Gender (*)	Woman	Birth date (dd/mm/yyyy)	01/03/1974
Social Security, Passport, ID number	52735396F		
e-mail	tesanz@iata.csic.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-0555-6836		

(*) Mandatory

A.1. Current position

Position	Scientific		
Initial date	19/07/2008		
Institution	Consejo Superior de Investigaciones Científicas		
Department/Center	Food Quality	Institute for Agrochemistry and Food Technology (IATA-CSIC)	
Country	Spain	Teleph. number	0034963900022
Key words	Rheology, Texture, Sensory properties, Calorimetry, Hydrocolloids, Cellulose ethers, Xanthan gum, Starch, Modified starches, Emulsions, In vitro digestion, Bioaccessibility, Food reformulation, Fat substitutes, Fat functionality		

A.2. Previous positions (research activity interruptions, indicated total months)

Period	Position/Institution/Country/Interruption cause
16/03/2006-18/07/2008	I3P Postdoctoral IATA-CSIC
01/01/2004-31/12/2005	Postdoctoral Researcher. Agrotechnology and Food Innovations (A&F), Wageningen, The Netherlands
21/06/2004-02/07/2004 22/06/2005-06/07/2005	STSM in Cost Action 921. Institute of Food Science and Nutrition (ETH), Zurich, Switzerland
01/10/2003-31/10/2003	Postdoctoral Researcher. Chemical Engineer Department. University of Seville
01/01/200-31/12/2003	PhD Researcher FPI grant. IATA-CSIC
06/05/2002/15/07/2002	Predocoral stay. Chemical Engineer Department. University of Seville

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Graduated in Pharmacy	University of Valencia/Spain	1997
PhD-Pharmacy	University of Valencia/Spain	2003

Part B. CV SUMMARY (max. 5000 characters, including spaces)



Ph-D in Pharmacy (2003). Doctoral thesis carried out in IATA-CSIC with a predoctoral grant from Valencia government. Two years (2004, 2005) postdoctoral grant in A&F in Wageningen, The Netherlands. Short scientific stays in ETH, Zurich, Switzerland and in The Chemical Engineering Department of Seville University. Titular Scientific in IATA-CSIC, since 19/07/2008.

My research activity has been always focused in solving the existing social and industrial requirements, through innovation in food formulations and process development. The main topics of my research included hydrocolloids functionality (including starches) in food, with emphasis in the rheological study of hydrocolloid/ingredients interactions, and their contribution to food texture and structure, including technological processing, physicochemical stability, oral processing, sensory properties and in vitro bioaccessibility of active compounds.

Outstanding experience in the functionality of the cellulose ethers, methylcellulose (MC) and hydroxypropyl methylcellulose (HPMC) as thickeners, gelling agents and emulsifiers. In my doctoral thesis, the focus was on the application of MC as gelling agent to eliminate the industrial pre-frying step. The process became an International patent (WO 03/101.228) acquired by the company Alimentaria ADIN.

During my postdoctoral stay in A&F (Wageningen, The Netherlands) my research topic was the functionality of hydrocolloids to control bioaccessibility of functional ingredients in milk based emulsions after in vitro mouth, stomach and small intestine simulations, and the relationship with food structure and rheology. A relationship was established among the structural changes in the matrix food structure during in vitro digestion and the bioaccessibility of the functional ingredients.

The development of new healthy fat alternatives to reduce saturated fat has been the main topic of my research in the last 10 years. In this topic outstands my participation as main researcher in the Patent "Fabricación y aplicación de emulsion sustituta de grasa", PCT/ES2012/070735, licenced to the company Vedeqsa, and as main researcher in the I+D contract with the company Vedeqsa entitled "Study of the viability at room temperature of a fat substitute emulsion protected by the patent n°P201131749".

My research in the area of food emulsions as healthy fat substitutes continued with my participation as main researcher in the AGL2015-68923-C2-1-R project entitled "Hydrocolloids functionality in the reduction of in vitro fat digestion in food emulsions: rheology, structure and sensory perception". Important knowledge about the functionality of hydrocolloids in the development of non-digestible emulsions, and the relationship between emulsion structure and oil bioaccessibility was acquired. Emulsions with the higher structural resistant during in vitro digestion were associated to a decrease in fat digestibility. Result of the project was the Doctoral Thesis of Dr María Espert Tortajada, awarded with "The best thesis" recognition by University of Valencia. Research collaboration was established with Professor Lars Wiking from Aarhus University (scientific stay and publication in SCI journal).

Also related to the topic of low saturated fat substitutes is my participation as main researcher in the RTI2018-099738-B-C21 project entitled "Structuring oils through the use of hydrocolloids as a strategy to replace high plasticity saturated fats. Rheological, structural and sensorial research", which investigates the functionality of hydrocolloids as oil structurants to develop new saturated fat substitutes with high consistency and plastic properties. New methodologies to confer hydrocolloids with the expanded necessary molecular structure to interact with the oil were investigated and developed. The highest strength and plasticity of the oleogels obtained made them suitable as fat replacers in puff pastry. The scientific development of the



new oleogels based on hydrocolloids and their application as fat substitutes in puff pastry is the topic of the doctoral thesis of the PhD student Qi Yang (in progress).

I have been always involved in student formation. In the last 10 years, I have been Director of: 6 Doctoral PhD thesis (5 already defense and 1 in progress), 7 Master Thesis of Valencia University and 1 of University of Seville, 2 Final Degree Projects of University of Valencia and 28 Curricular practicum of students of University of Valencia.

Participation in divulgation activities: author of divulgation articles, participation in radio programs, annual participation in ExpoCiencia, guide in the students visits to IATA. Professor in the Master of University of Valencia, Editor of the SCI journal Food Science and Technology International, and regular reviewer of SCI journals. Participation as evaluator of industrial ID and IT projects. Scientific Organizer of the Ibereo 2017 Conference.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

1. M. Espert, M.J. Hernández, **T. Sanz**, A. Salvador, 2021, *Reduction of saturated fat in chocolate by using sunflower oil-hydroxypropyl methylcellulose based oleogels*. Food Hydrocolloids 120, 106917.
2. Fontes-Candia, C., López-Sánchez, P., Ström, A., Martínez, J.C., Salvador, A., **Sanz, T.**, Dobsicek Trefna, H., López-Rubio, A., Martínez-Sanz, M., 2021, *Maximizing the oil content in polysaccharide-based emulsion gels for the development of tissue mimicking phantoms*. Carbohydrate polymers 256, 117496.
3. M. Espert, **T. Sanz**, A. Salvador, 2021, *Development of structured sunflower oil systems for decreasing trans and saturated fatty acid content in bakery creams*. Foods, 10(3), 505.
4. M. Espert, M., A. Salvador, A., **T.Sanz**, 2020, Cellulose ether oleogels obtained by emulsion-templated approach without additional thickeners. Food Hydrocolloids 109, 106085.
5. L. Ould Saadi, F. Zaidi, **T. Sanz**, C.M. Haros, 2020, Effect of faba bean and chickpea mucilage incorporation in the structure and functionality of kefir. Food Science and Technology International, 26(6), 503-511.
6. M. Espert, **T. Sanz**, A. Salvador, 2020, Use of milk fat/cellulose ether emulsions in spreadable creams and the effect of in vitro digestion on texture and fat digestibility. Foods 9(6), 796.
7. M. Espert, L. Wiking, A. Salvador, **T. Sanz**, 2020. Reduced-fat spreads based on anhydrous milk fat and cellulose ethers. Food Hydrocolloids, 99, 105330.
8. M. Espert, A. Salvador, **T. Sanz**. M.J. Hernández, 2020. Cellulose ether emulsions as fat source in cocoa creams: Thermorheological properties (flow and viscoelasticity). LWT, 117, 108640.
9. M. Espert, A. Salvador, **T. Sanz**, 2019. Rheological and microstructural behaviour of xanthan gum and xanthan gum-Tween 80 emulsions during in vitro digestion. Food Hydrocolloids, 95, 454-461.
10. M. Espert, L. Constantinescu, **T. Sanz**, A. Salvador, 2019, Effect of xanthan gum on palm oil in vitro digestion. Application in starch-based filling creams. Food Hydrocolloids 86: 87-94.



C.2. Congress

1. Invented conference. “Non digestible cellulose ether emulsions. Rheology and microstructure during in vitro digestion”. 2nd Edition of Nutrition & Food Science. Webinar on Food Science & Obesity, 22-23 Marzo 2021.
2. Oral presentation entitled *Thermal Stability of Oil/Water Cellulose Emulsions* in the Ibero 2015. Challenges in rheology and product development. September 2015, Coimbra, Portugal.
3. Oral presentation entitled *Reducing fat digestion through cellulose ether emulsions* in the 19th Gums and Stabilisers for the Food Industry Conference. June 2017, Berlin, Germany.
4. Oral presentation entitled *Rheological behavior of low fat cocoa creams based on cellulose ether emulsions* in the 20th Gums and Stabilisers for the Food Industry Conference. June 2019, San Sebastián, Spain.

C.3. Research projects

1. **PDC2022-133549-C21**: Desarrollo a escala piloto de oleogel saludables para sustituir grasas saturadas en la industria de Alimentos. Funding Organization: Ministry of Economy and Competitiveness (2022). Time scale: 2 years (01/01/2023 to 31/12/2024). Funding obtained: 58.500€. Main researchers: Ana Salvador Alcaraz and Teresa Sanz Taberner.
2. **RTI2018-099738-B-C21**, titled: “Structuring oils through the use of hydrocolloids as a strategy to replace high plasticity saturated fats. Rheological, structural and sensorial research”. Funding Organization: Ministry of Economy and Competitiveness. Time scale: 3 years, from 01/01/2019 to 31/12/2021. Funding: 140.000€. Main researchers: Ana Salvador Alcaraz y **Teresa Sanz Taberner**
3. **AGL2015-68923-C2-1-R**, titled: "Hydrocolloids functionality in the reduction of *in vitro* fat digestion in food emulsions: rheology, structure and sensory perception. Funding Organization: Ministry of Economy and Competitiveness. Funding: 133.100€ Time scale: 3 years, from 01/01/2016 to 31/12/2018. Main researchers: Ana Salvador Alcaraz y **Teresa Sanz Taberner**
4. PRIMA Project, titled: “Flat bread of Mediterranean area; Innovation and Emerging process and technology-FLAT BREAD MINE. IATA: Partner 1. Main Researcher IATA: Cristina Molina Rosell. Other researchers IATA: **Teresa Sanz Taberner** and Ana Salvador Alcaraz.. Funding: 2.072041,75€. From 2021 to 2024

C.4. Contracts, technological or transfer merits

1. **I+D Contract**, titled: “Study of the viability at room temperature of a fat substitute emulsion protected by the patent n°P201131749”. Company: VEDEQSA-LAMIRSA
Main IATA Research: **Teresa Sanz Taberner**. Other IATA participants: Ana Salvador y Susana Fiszman . Funding obtained: 35000€. From 01/06/2013 to 31/12/2013.
2. **Contract of Option of Patent P201131749** to the Company Vedeqsa-Lamirsa, S.A.
T. Sanz, A. Salvador, S.M. Fiszman, L. Laguna. Date: 19/06/2013.
3. **Patent**. Inventors: **T. Sanz**, A. Salvador, S.M. Fiszman, y L. Laguna. Titled: “Fabricación y aplicación de emulsión sustituta de grasa”. Patent applicant n°: ES201131749 20111031. Applicant: CSIC. Priority country: Spain. Priority date: 31 October 2011. International Publication N°: PCT/ES2012/070735. Application date: 23 October 2012. Contract of Licence to the company: Vedeqsa (06/10/2014).
4. **I+D Contract**, titled “Increase of sensory life of infant fruit foods”
Company: ALIMENTACIÓN Y NUTRICIÓN FAMILIAR S.L.U. IATA main researcher: A. Salvador. Other IATA participants: S.M. Fiszman y **T.Sanz** Funding: 9680€. Year 2014.