

# Curriculum Vitae

## Antonio Chaves Sanjuán, PhD

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### Personal Information

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Date of Birth: 18<sup>th</sup> October 1986  
Nationality: Spanish  
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### Education

- 2009-2014 Doctor of Philosophy (Ph.D.) in Crystallography and Crystallization  
Universidad Internacional Menéndez Pelayo.
- 2009-2010 Master's Degree in Crystallography and Crystallization  
Universidad Internacional Menéndez Pelayo.
- 2004-2009 Bachelor's degree in Chemistry  
Universidad de Sevilla.
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### Professional Experience

- 2021-present Fixed-term researcher type A (RTD-A)  
Department of Biosciences, Università degli Studi di Milano,  
Milan (Italy)
- 2015-2021 Postdoctoral Research Assistant  
Department of Biosciences, Università degli Studi di Milano,  
Milan (Italy)
- 2014-2015 Postdoctoral Research Assistant
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Instituto de Química-Física 'Rocasolano', (CSIC), Madrid (Spain).

2009-2014 PhD Student  
Instituto de Química-Física 'Rocasolano', (CSIC), Madrid (Spain).

2008 Research Assistant  
Instituto de Investigaciones Químicas (IIQ, CSIC), Sevilla (Spain).

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## Awards

3 - "Crystallization of Biomolecules" Best Oral Presentation Award -Young Researcher (Conference Award, Structural Biology, Under-32, Molecular Dimensions). 2017.

2 - José Tormo Award (National Research Award, Structural Biology, Under-33, Bruker). 2017.

1 - Xavier Solans Award (National Research Award, Structural Biology, Under-36, Bruker). 2015.

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## Publications

17. Chaves-Sanjuan A, Gnesutta N, Gobbini A, Martignago D, Bernardini A, Fornara F, Mantovani R, Nardini M. Structural determinants for NF-Y subunit organization and NF-Y/DNA association in plants. *Plant J.* 2021 Jan;105(1):49-61. doi: 10.1111/tpj.15038. Epub 2020 Nov 27. PMID: 33098724.

16. Lavatelli F, Mazzini G, Ricagno S, Iavarone F, Rognoni P, Milani P, Nuvolone M, Swuec P, Caminito S, Tasaki M, Chaves-Sanjuan A, Urbani A, Merlini G, Palladini G. Mass spectrometry characterization of light chain fragmentation sites in cardiac AL amyloidosis: insights into the timing of proteolysis. *J Biol Chem.* 2020 Dec 4;295(49):16572-16584. doi: 10.1074/jbc.RA120.013461. Epub 2020 Sep 20. PMID: 32952127.

15. Nardone V, Chaves-Sanjuan A\*, Lapi M, Airoidi C, Saponaro A, Pasqualato S, Dolfini D, Camilloni C, Bernardini A, Gnesutta N, Mantovani R, Nardini M. Structural Basis of Inhibition of the Pioneer Transcription Factor NF-Y by Suramin. *Cells.* 2020 Oct 29;9(11):2370. doi: 10.3390/cells9112370. PMID: 33138093; PMCID: PMC7692634. \*Co-first author

14. Pederzoli R, Tarantino D, Gourlay LJ, Chaves-Sanjuan A, Bolognesi M. Detecting the nature and solving the crystal structure of a contaminant protein from an opportunistic pathogen. *Acta Crystallogr F Struct Biol Commun.* 2020 Sep 1;76(Pt 9):392-397. doi: 10.1107/S2053230X20010626.

13. Sánchez-Barrena MJ, Chaves-Sanjuan A, Raddatz N, Mendoza I, Cortés Á, Gago F, González-Rubio JM, Benavente JL, Quintero FJ, Pardo JM, Albert A. Recognition and Activation of the Plant AKT1 Potassium Channel by the Kinase CIPK23. *Plant Physiol.* 2020 Apr;182(4):2143-2153. doi: 10.1104/pp.19.01084. Epub 2020 Feb 3. PMID: 32015077; PMCID: PMC7140914.

12. Molla G, Chaves-Sanjuan A\*, Savinelli A, Nardini M, Pollegioni L. Structure and kinetic properties of human d-aspartate oxidase, the enzyme-controlling d-aspartate levels in brain. *FASEB J.* 2020 Jan;34(1):1182-1197. doi: 10.1096/fj.201901703R. Epub 2019 Nov 29. PMID: 31914658. \*Co-first author

11. Fuchsbaauer O, Swuec P, Zimberger C, Amigues B, Levesque S, Agudelo D, Durringer A, Chaves-Sanjuan A, Spinelli S, Rousseau GM, Velimirovic M, Bolognesi M, Roussel A, Cambillau C, Moineau S, Doyon Y, Goulet A. Cas9 Allosteric Inhibition by the Anti-CRISPR Protein AcrIIA6. *Mol Cell.* 2019 Dec 19;76(6):922-937.e7. doi: 10.1016/j.molcel.2019.09.012. Epub 2019 Oct 8. PMID: 31604602.

10. Swuec P, Chaves-Sanjuan A, Camilloni C, Vanoni MA, Bolognesi M. Cryo-EM Structures of *Azospirillum brasilense* Glutamate Synthase in Its Oligomeric Assemblies. *J Mol Biol.* 2019 Nov 8;431(22):4523-4526. doi: 10.1016/j.jmb.2019.08.011. Epub 2019 Aug 29. PMID: 31473159.

9. Roca C, Martínez-González L, Daniel-Mozo M, Sastre J, Infantes L, Mansilla A, Chaves-Sanjuan A, González-Rubio JM, Gil C, Cañada FJ, Martínez A, Sánchez-Barrena MJ, Campillo NE. Deciphering the Inhibition of the Neuronal Calcium Sensor 1 and the Guanine Exchange Factor Ric8a with a Small Phenothiazine Molecule for the Rational Generation of Therapeutic Synapse Function Regulators. *J Med Chem.* 2018 Jul 26;61(14):5910-5921. doi: 10.1021/acs.jmedchem.8b00088. Epub 2018 Jul 17. PMID: 29966094.

8. Saponaro A, Porro A, Chaves-Sanjuan A, Nardini M, Rauh O, Thiel G, Moroni A. Fusicoccin Activates KAT1 Channels by Stabilizing Their Interaction with 14-3-3 Proteins. *Plant Cell.* 2017 Oct;29(10):2570-2580. doi: 10.1105/tpc.17.00375. Epub 2017 Sep 29. PMID: 28970335; PMCID: PMC5774578.

7. Gnesutta N, Saad D, Chaves-Sanjuan A, Mantovani R, Nardini M. Crystal Structure of the *Arabidopsis thaliana* L1L/NF-YC3 Histone-fold Dimer Reveals Specificities of the LEC1 Family of NF-Y Subunits in Plants. *Mol Plant.* 2017 Apr 3;10(4):645-648. doi: 10.1016/j.molp.2016.11.006. Epub 2016 Nov 18. PMID: 27871811.

6. Mansilla A, Chaves-Sanjuan A\*, Campillo NE, Semelidou O, Martínez-González L, Infantes L, González-Rubio JM, Gil C, Conde S, Skoulakis EM, Ferrús A, Martínez A, Sánchez-Barrena MJ. Interference of the complex between NCS-1 and Ric8a with phenothiazines regulates synaptic function and is an approach for fragile X syndrome. *Proc Natl Acad Sci U S A.* 2017 Feb 7;114(6):E999-E1008. doi: 10.1073/pnas.1611089114. Epub 2017 Jan 24. PMID: 28119500; PMCID: PMC5307446. \*Co-first author

5. Nardone V, Chaves-Sanjuan A\*, Nardini M. Structural determinants for NF-Y/DNA interaction at the CCAAT box. *Biochim Biophys Acta Gene Regul Mech.* 2017

May;1860(5):571-580. doi: 10.1016/j.bbagr.2016.09.006. Epub 2016 Sep 25. PMID: 27677949. \*Co-first author

4. Chaves-Sanjuan A, Sanchez-Barrena MJ, Gonzalez-Rubio JM, Moreno M, Ragel P, Jimenez M, Pardo JM, Martinez-Ripoll M, Quintero FJ, Albert A. Structural basis of the regulatory mechanism of the plant CIPK family of protein kinases controlling ion homeostasis and abiotic stress. *Proc Natl Acad Sci U S A*. 2014 Oct 21;111(42):E4532-41. doi: 10.1073/pnas.1407610111. Epub 2014 Oct 6. PMID: 25288725; PMCID: PMC4210280.

3. Romero-Pozuelo J, Dason JS, Mansilla A, Baños-Mateos S, Sardina JL, Chaves-Sanjuán A, Jurado-Gómez J, Santana E, Atwood HL, Hernández-Hernández Á, Sánchez-Barrena MJ, Ferrús A. The guanine-exchange factor Ric8a binds to the Ca<sup>2+</sup> sensor NCS-1 to regulate synapse number and neurotransmitter release. *J Cell Sci*. 2014 Oct 1;127(Pt 19):4246-59. doi: 10.1242/jcs.152603. Epub 2014 Jul 29. PMID: 25074811.

2. Baños-Mateos S, Chaves-Sanjuán A, Mansilla A, Ferrús A, Sánchez-Barrena MJ. Frq2 from *Drosophila melanogaster*: cloning, expression, purification, crystallization and preliminary X-ray analysis. *Acta Crystallogr F Struct Biol Commun*. 2014 Apr;70(Pt 4):530-4. doi: 10.1107/S2053230X14005408. Epub 2014 Mar 25. PMID: 24699756; PMCID: PMC3976080.

1. Chaves-Sanjuán A, Sánchez-Barrena MJ, González-Rubio JM, Albert A. Preliminary crystallographic analysis of the ankyrin-repeat domain of *Arabidopsis thaliana* AKT1: identification of the domain boundaries for protein crystallization. *Acta Crystallogr F Struct Biol Commun*. 2014 Apr;70(Pt 4):509-12. doi: 10.1107/S2053230X14005093. Epub 2014 Mar 25. PMID: 24699751; PMCID: PMC3976075.

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## Congresses

### Lectures

9. A Chaves-Sanjuan, M Lapi, I Cornaciu, J Márquez, M Nardini. Structural based inhibition of the NF-Y transcription factor [1st Italian Crystallographic Association Biological MacroMolecules Group Meeting]. 20-21th February 2020, Fiesole (Italy).

8. A Chaves-Sanjuan, N Gnesutta, R Mantovani, M Nardini. Structural insights of NF-Y in plants [XXV Workshop. Advances in Molecular Biology by young researchers aboard]. 20th December 2017, Madrid (Spain).

7. A Chaves-Sanjuan, V Nardone, M Nardini. Optimizing protein/DNA complex crystallization: the case of NF-Y transcription factor. [Italian Crystal Growth 2017]. 20-21th November 2017, Milan (Italy).

6. A Chaves-Sanjuan, MA Mansilla, NE Campillo, O Semelidou, L Martínez-González, L Infantes, JM González-Rubio, C Gil, EMC Skoulakis, A Ferrús, A Martínez, MJ Sánchez-Barrena. Phenothiazines

regulate synaptic function by interfering the NCS-1/Ric8a complex: An approach for Fragile X Syndrome. [FEBS3+ Barcelona 2017]. 23-26th October 2017, Barcelona (Spain).

1. 5. A. Chaves Sanjuán, M.J. Sanchez-Barrena, J.M. Gonzalez-Rubio, M. Moreno, M. Jimenez, M. Martinez-Ripoll and A. Albert. The structure of the CBL-CIPK pathway: the regulation of Arabidopsis thaliana ion homeostasis Structural basis of the regulatory mechanism of the plant CIPK family of protein kinases controlling ion homeostasis and abiotic stress, [XXXV Biental RSEQ Meeting]. 19-23th July 2015, A Coruña (Spain).
  4. Antonio Chaves-Sanjuán, Baños-Mateos S, Martinez A, Gil C, Campillo NE, Mansilla A, Ferrús A, Sánchez-Barrena MJ. Frequentin/NCS-1 as a pharmacological target for synapse regulation in X-linked mental retardation and autism, [II Simposio de Jóvenes Investigadores de IQFR]. 26th February 2015, Madrid (Spain).
  3. Antonio Chaves Sanjuán, María Moreno Alvero, Araceli Flores, Martín Martínez-Ripoll, María José Sánchez-Barrena, Armando Albert. The structure of the CBL-CIPK pathway: the regulation of Arabidopsis thaliana ion homeostasis, [Meeting of the Italian, Spanish and Swiss Crystallographic Associations. MISSCA 2013]. 9-12th September 2013, Villa Olmo, Como (Italy).
  2. A. Chaves, M.J. Sánchez, M. Martínez, A. Albert. Regulation of an Arabidopsis thaliana potassium channel, [XXII Simposio del grupo especializado de cristalografía y crecimiento cristalino]. 26-29th June 2012, Sevilla (Spain).
  1. Antonio Chaves Sanjuán. Facile splitting of hydrogen and ammonia by nucleophilic activation at a single carbon center, [IV Congreso de Estudiantes de Química]. 19th May 2009, Universidad de Sevilla, Sevilla (Spain).

### **Courses**

3. Macromolecular Crystallography School (MCS 2010). 26-30th April 2010. IQFR (CSIC), Madrid (Spain).

2. VI Reunión de la Red Temática nacional "Estructura y Función de Proteínas". 21-23th April 2010, IQFR (CSIC), Madrid (Spain).

1. Advanced Catalysis and Organometallic Chemistry (Intensive Programmes Erasmus). 16-28th August 2009, Università di Camerino, Camerino (Italy).

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