Dr. Soto is the Huffington Distinguished University Chair, Professor of Neurology and Director of the Mitchell Center for Alzheimer's Disease and Related Brain Disorders at The University of Texas Health Science Center at Houston, McGovern Medical School. Dr. Soto has been working in the field of neurodegenerative diseases, in particular in Alzheimer's, Parkinson's and prion diseases for the past 30 years and has made several important discoveries both to the basic science understanding of these diseases and to the translation of this knowledge into novel strategies for treatment and early diagnosis. He invented and developed the Protein Misfolding Cyclic Amplification (PMCA), (also known as SAA and RT-QuIC) technology for ultra-sensitive detection of misfolded proteins and beta-sheet breaker approach to produce therapeutic compounds for various protein misfolding disorders. He also contributed to understand that protein misfolding diseases have the intrinsic ability to be transmissible and that misfolded protein aggregates can adopt alternative conformations, usually referred as conformational strains and lead to different diseases. Also, he has been studying the use of induced pluripotent stem cells for regenerative therapy as well as developing novel cellular (including 3D cerebral organoids) and animal models of these diseases. His group has recently initiated studies of gene expression changes (RNAseq and spatial transcriptomics) and studies of the atomic resolution structure of protein aggregates by cryo electron microscopy. Dr. Soto has published more than 230 peer review publications, which have been cited more than 33,000 times (H index 91). According to Google scholar, 87 articles have >100 citations, 48 have >200, 11 have >500 and 5 have >1000. Dr. Soto has received >60 million dollars funding from NIH over the past 20 years.

LIST OF RELEVANT PUBLICATIONS (selected from >230)

1. Simuni, T., Chahine, …Soto, C… and Marek, K. (2024) A Biological Definition and Integrated Staging System of Neuronal alpha-Synuclein Disease. ***Lancet Neurol***. 23(2):178-190.
2. Siderow, A., Concha-Marambio, L., … and Soto, C. (2023) High diagnostic accuracy of the α-synuclein seed amplification assay informs Parkinson's disease heterogeneity and disease onset in the PPMI cohort. ***Lancet Neurol***. 22(5):407-417.
3. Concha-Marambio, L., Pritzkow, S., Shahnawaz, M. and Soto, C. (2023) Seed Amplification Assay (SAA) for detection of pathologic α-Synuclein aggregates in cerebrospinal fluid. ***Nature Protocols.*** 18(4):1179-1196.
4. Urayama, A., Moreno-Gonzalez, I., Morales-Scheihing, D., Kharat, V., Pritzkow, S. and Soto, C. (2022) Preventive and therapeutic reduction of amyloid deposition and behavioral impairments in a mice model of Alzheimer's disease by whole blood exchange. ***Molecular Psychiatry*** 27(10):4285-4296.
5. Concha-Marambio, L., Farris, C.M., … and Soto, C. (2021) Seed Amplification Assay to diagnose early Parkinson's and predict SWEDD's abnormal brain scans. ***Movements Disorders*** 36:2444-2446.
6. Shahnawaz, M., Mukherjee, A., … and Soto, C. (2020) Discrimination between α-synuclein conformational strains associated with Parkinson's disease and multiple system atrophy. ***Nature*** 578: 273-277.
7. Kang, U.J., Boehme, A.K., Fairfoul, G., Shahnawaz, M., Ma, T.C., Hutten, S.J., Green, A. and Soto, C. (2019) Detection of alpha-synuclein oligomers in CSF by seeding aggregation assays predicts clinical diagnosis of Parkinson's disease. ***Movement Disorders*** 34(4):536-544.
8. Soto, C. and Pritzkow, S. (2018) Protein Misfolding, Aggregation and Conformational Strains in Neurodegenerative Diseases. ***Nature Neuroscience*** 21: 1332-1340
9. Gonzalez, C., Armijo, E., Bravo-Alegria, J., Mays, C. and Soto, C. (2018) Modeling Alzheimer's disease in human cerebral organoids. ***Molecular Psychiatry*** 23(12):2363-2374.
10. Shahnawaz, M., Tokuda, T., Waragai, M., Mendez, N., Ishii, R., Trenkwalder, C., Mollenhauer, B., and Soto, C. (2017) Biochemical diagnosis of Parkinson's disease by detection of α-synuclein misfolded aggregates in cerebrospinal fluid. ***JAMA Neurol*** 74(2):163-172.
11. Concha-Marambio, L., Pritzkow, S., Moda, F., Ironside, J., Schulz, P. and Soto, C. (2016) Detection of prions in blood of variant Creutzfeldt-Jakob disease. ***Science Translational Medicine*** 8: 370ra183.
12. Pritzkow, S., Morales, R., Moda, F., Telling, G.C., Hoover, E. and Soto, C. (2015) Prion contaminated plants transmit prion disease. ***Cell Reports*** 11: 1168-1175.
13. Moda, F., Gambetti, P., … and Soto, C. (2014) Prion Detection in Urine of Variant Creutzfeldt-Jakob Disease Patients. ***New Engl. J. Med.*** 371: 530-539.
14. Salvadores, N., Shahnawaz, M., Scarpini, E., Tagliavini, F. and Soto, C. (2014) Detection of Misfolded Aβ Oligomers for Sensitive Biochemical Diagnosis of Alzheimer's disease. ***Cell Reports*** 7:261-268.
15. Soto, C. (2012) Transmissible Proteins: Expanding the Prion Heresy. ***Cell*** 149: 968-977.
16. Morales, R., Duran-Aniotz, C., Diaz-Espinoza, R., Camacho, M. and Soto, C. (2012) Protein Misfolding Cyclic Amplification (PMCA) of Infectious Prions. ***Nature Protocols*** 7: 1397-1409.

17. Chen, B., Morales, R., Barria, M.A. and Soto, C. (2010) Estimating prion concentration in fluids and tissues by quantitative PMCA. ***Nature Methods*** 7: 519-521.
18. Castilla, J., Gonzalez, D., Saa, P., Morales, R., De Castro, J. and Soto, C. (2008) Crossing the species barrier by PrPSc replication in vitro generates new infectious prions. ***Cell*** 134: 757-768.
19. Saa, P., Castilla, J. and Soto, C. (2006) Pre-symptomatic detection of prions in blood. ***Science*** 313: 92-94.
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21. Soto, C. and Castilla, J. (2004) The controversial protein-only hypothesis of prion propagation. ***Nature Medicine*** 10: S63-S67.
22. Soto, C. (2003) Unfolding the role of Protein Misfolding in Neurodegenerative Diseases. ***Nature Rev. Neurosci.*** 4: 49-60.
23. Castilla, J., Saa, P. and Soto, C. (2005) Biochemical detection of prions in blood. ***Nature Medicine*** 11: 982-985.
24. Saborio, G.P., Permanne, B. and Soto, C. (2001). Cyclic amplification of protein misfolding: A novel approach for sensitive detection of pathological prion protein. ***Nature*** 411: 810-813.
25. Soto, C., Kascsak, R.J., Saborio, G., Aucouturier, P., Wisniewski, T., Prelli, F., R. Kascsak, Mendez, E., Harris, D.A., Ironside, J., Tagliavini, F., Carp, R.I. & Frangione, B. (2000) Reversion of prion protein conformational changes by synthetic ß-sheet breaker peptides. ***The Lancet*** 355: 192-197.
26. Soto, C., Sigursson, E., Morelli, L., Kumar, R.A., Castaño, E.M. and Frangione, B. (1998) ß-sheet breaker peptides inhibit fibrillogenesis in a rat brain model of amyloidosis: Implications for Alzheimer's therapy. ***Nature Medicine*** 4: 822-826.
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