

Understanding liver Research Project Proposal
Academic year 2017-2018

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| Project Nº 11 |
| Title: Study of the mechanisms underlying liver regeneration using proteomics |
| Department/ Laboratory Proteomics laboratory. Centro Nacional de Biotecnología, (CSIC). |
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| <p>Summary The liver is the only visceral organ with the remarkable capacity to regenerate after surgery or a chemical damage. Despite several central players have been identified, yet there is no systematic study describing the underlying mechanisms of this unique process, from liver resection to full parenchymal recovery. Our goal is to perform a comprehensive analysis of liver proteome at different time points during liver regeneration using a combination of protein separation techniques, mass spectrometry and bioinformatics. Using proteomics it is our hope to identify differentially expressed as well as phosphorylated proteins throughout the process to gain an in depth dissection of the mechanisms involved. This project will provide the opportunity to learn a wide variety of technologies and research strategies with high value both, in the academic and industrial environments. Our group has a large experience in liver proteomics and our research is aligned with international initiatives, including the Human Proteome Project, which provides the opportunity to work in an international network of colleagues from all around the world.</p> <p>References Progress and pitfalls in finding the 'missing proteins' from the human proteome map. Segura V, Garin-Muga A, Guruceaga E, Corrales FJ. Expert Rev Proteomics. 2017 Jan;14(1):9-14. doi: 10.1080/14789450.2017.1265450. Epub 2016 Dec 2. Methylthioadenosine (MTA) Regulates Liver Cells Proteome and Methylproteome: Implications in Liver Biology and Disease. Bigaud E, Corrales FJ. Mol Cell Proteomics. 2016 May;15(5):1498-510. doi: 10.1074/mcp.M115.055772. Epub 2016 Jan 27. Surfing transcriptomic landscapes. A step beyond the annotation of chromosome 16 proteome. Segura V, Medina-Aunon JA, Mora MI, Martínez-Bartolomé S, Abian J, Aloria K, Antúnez O, Arizmendi JM, Azkargorta M, Barceló-Batlloori S, Beaskoetxea J, Bech-Serra JJ, Blanco F, Monteiro MB, Cáceres D, Canals F, Carrascal M, Casal JI, Clemente F, Colomé N, Dasilva N, Díaz P, Elortza F, Fernández-Puente P, Fuentes M, Gallardo O, Gharbi SI, Gil C, González-Tejedo C,</p> |



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