

## Química Física

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**Áreas de conocimiento:** Química Física

**Director:** : Irene Luque Fernández

**Secretario:** Beatriz Ibarra Molero

**Página web:** <http://quimicafisica.ugr.es>

**Profesorado:** CU: 6, PTU:11 ,PTEU: 0, PDI Contratado y Otros.: 10

### Tesis leídas

- Estudio de evolución de proteínas.

Doctorando: Fadia Manssour Triedo

Director: José Manuel Sánchez Ruiz, Beatriz Ibarra Molero

Fecha de lectura: 26/01/2018

- The role of protein dynamics in loss-of-function disease mechanisms: A NQ01 cancer-associated polymorphism as model

Doctorando: Encarnación Medina Carmona

Director: Ángel Luis Pey Rodríguez

Fecha de lectura: 29/06/2018

### Grupos de Investigación.

FQM171 BIOFÍSICA Y BIOTECNOLOGIA MOLECULAR

- Responsable: PEDRO LUIS MATEO ALARCON

BIO223 BIOMOLECULAS

- Responsable: JOSE MANUEL SANCHEZ RUIZ

BIO189 FISICOQUIMICA FARMACEUTICA

- Responsable: BARTOLOME QUINTERO OSSO

FQM361 QUÍMICA FÍSICA BIOMOLECULAR

- Responsable: ANTONIO PARODY MORREALE

### Dirección y participación en Proyectos I+D

- 2017 DISEÑO Y DESARROLLO DE NUEVOS INHIBIDORES DEL VIH BASADOS EN PROTEINAS MIMETICAS DE GP41, , 01/01/2017-31/12/2019

Investigador/a BERTRAND MOREL

Investigador/a ANA ISABEL AZUAGA FORTES

Investigador/a ABDULIO LÓPEZ MAYORGA

- 2017 Generating and understanding de novo enzyme functionalities using ancestral proteins as scaffolds, , 01/10/2017-30/09/2020

Coordinador JOSE MANUEL SANCHEZ RUIZ

- 2017 Generating and understanding de novo enzyme functionalities using ancestral proteins as scaffolds, , 01/10/2017-30/09/2020

Investigador/a BEATRIZ IBARRA MOLERO

### Publicaciones en revistas

- 2018 Artículo: Approaching the thermodynamic view of protein folding through the reproduction of Anfinsen's experiment by undergraduate physical biochemistry students, Biochemistry and Molecular Biology

Education, 46, 3, 262-269

EVA SANCHEZ COBOS

IRENE LUQUE FERNÁNDEZ

JAVIER RUIZ SANZ

JOSE CRISTOBAL MARTINEZ HERRERIAS

- 2017 Artículo: Two-Step Amyloid Aggregation: Sequential Lag Phase Intermediates, Scientific Reports, 7, 40065, 1-11

SALVADOR CASARES ATIENZA

- 2017 Artículo: Purification and characterization of Pseudomonas aeruginosa LasR expressed in acyl-homoserine lactone free Escherichia coli cultures, Protein Expression and Purification, 130, , 107-114

BERTRAND MOREL

- 2017 Artículo: Versatile synthesis and enlargement of functionalized distorted heptagon-containing nanographenes, Chemical Science, 8, , 1068-1074

LUIS CROVETTO MONTOYA

- 2017 Artículo: Magnetite nanoparticles biomineralization in the presence of the magnetosome membrane protein MamC: Effect of protein aggregation and protein structure on magnetite formation, Crystal

Growth and Design, 17, , 1620-1629

ANA ISABEL AZUAGA FORTES

SALVADOR CASARES ATIENZA

- 2017 Artículo: Sublingual Priming with a HIV gp41-Based Subunit Vaccine Elicits Mucosal Antibodies and Persistent B Memory Responses in Non-Human Primates., *Frontiers in Immunology*, 8, 63, -  
FRANCISCO CONEJERO LARA  
IRENE LUQUE FERNÁNDEZ  
PEDRO LUIS MATEO ALARCON  
SARA CRESPILO TORREÑO
- 2017 Artículo: Site-to-site interdomain communication may mediate different loss-of-function mechanisms in a cancer-associated NQO1 polymorphism., *Scientific Reports*, 7, , 44532-  
ANGEL LUIS PEY RODRÍGUEZ  
ENCARNACIÓN MEDINA CARMONA
- 2017 Artículo: Structural Basis of the Oncogenic Interaction of Phosphatase PRL-1 with the Magnesium Transporter CNNM2., *Journal of Biological Chemistry*, 292, 3, 786-801  
ANGEL LUIS PEY RODRÍGUEZ
- 2017 Artículo: The influence of N-terminal acetylation on micelle-induced conformational changes and aggregation of  $\alpha$ -Synuclein, *PLoS One*, 12, 5, e0178576-  
BERTRAND MOREL  
DAVID RUZAFÁ RUIZ  
FRANCISCO CONEJERO LARA
- 2017 Artículo: Understanding the contribution of disulfide bridges to the folding and misfolding of an anti-Abeta scFv, *Protein Science*, 26, , 1138-1149  
JOSE CRISTOBAL MARTINEZ HERRERIAS
- 2017 Artículo: Using Resurrected Ancestral Proviral Proteins to Engineer Virus Resistance, *Cell Reports*, 19, 6, 1247-1256  
ASUNCIÓN DELGADO DELGADO  
BEATRIZ IBARRA MOLERO  
JOSE MANUEL SANCHEZ RUIZ
- 2017 Artículo: Fast folding and slow unfolding of a resurrected Precambrian protein, *Proceedings of the National Academy of Sciences of the United States of America*, 114, 21, E4122-E4123  
BEATRIZ IBARRA MOLERO  
JOSE MANUEL SANCHEZ RUIZ  
MARÍA GLORIA GÁMIZ ARCO  
MARIA LUISA ROMERO ROMERO
- 2017 Artículo: De Novo Active Sites for Resurrected Precambrian Enzymes, *Nature Communications*, 0, 0, 0-0  
JOSE MANUEL SANCHEZ RUIZ  
VALERIA ALEJANDRA RISSO DIRAZAR
- 2017 Artículo: Modification of the peroxygenative:peroxidative activity ratio in the unspecific peroxygenase from *Agroclybe aegerita* by structure-guided evolution., *Protein Engineering, Design & Selection*, 30, 3, 191-198  
MIGUEL ARCÁNGEL PALOMINO LÓPEZ
- 2017 Artículo: Towards the improvement in stability of an anti-Abeta single-chain variable fragment, scFv-h3D6, as a way to enhance its therapeutic potential, *Amyloid: the Journal of Protein Folding Disorders*, 24, 3, 167-175  
JAVIER MURCIANO CALLES  
JOSE CRISTOBAL MARTINEZ HERRERIAS
- 2017 Artículo: Enhanced vulnerability of human proteins towards disease-associated inactivation through divergent evolution, *Human Molecular Genetics*, 26, 18, 3531-3544  
ANGEL LUIS PEY RODRÍGUEZ  
ENCARNACIÓN MEDINA CARMONA  
NOEL MESA TORRES
- 2017 Artículo: Intrinsically disordered chromatin protein NUPR1 binds to the C-terminal region of Polycomb RING1B, *Proceedings of the National Academy of Sciences of the United States of America*, 114, 31, E6332-E6341  
ANGEL LUIS PEY RODRÍGUEZ
- 2017 Artículo: A mechanism for cancer-associated inactivation of NQO1 due to P187S and its reactivation by the consensus mutation H80R, *FEBS Letters*, 591, 18, 2826-2835  
ANGEL LUIS PEY RODRÍGUEZ  
BERTRAND MOREL  
ENCARNACIÓN MEDINA CARMONA
- 2017 Artículo: Unlocking Reactivity of TrpB: A General Biocatalytic Platform for Synthesis of Tryptophan Analogues, *Journal of the American Chemical Society*, 139, , 10769-10776  
JAVIER MURCIANO CALLES

#### Capítulos de libros (con ISBN)

- 2018 Titulo Capítulo: Biocalorimetry: differential scanning calorimetry of protein solutions, Titulo Libro: Enthalpy and internal energy: liquids, solutions and vapours: The Royal Society of Chemistry (RSC), Londres, UK, 2018, 978-1-78262-711-1  
EVA SANCHEZ COBOS  
ANA ISABEL AZUAGA FORTES  
JAVIER RUIZ SANZ  
IRENE LUQUE FERNÁNDEZ  
FRANCISCO CONEJERO LARA  
PEDRO LUIS MATEO ALARCON  
JOSE CRISTOBAL MARTINEZ HERRERIAS

#### Contribuciones en congresos

- 2017 Comunicación en congreso: Two different mechanisms, based on direct and indirect signal recognition, mediate *Pseudomonas aeruginosa* chemotaxis to the major virulence signal inorganic phosphate, Bacterial Locomotion and Signal Transduction (BLAST) XIV, 15/01/2017, New Orleans (Estados Unidos), Congreso  
BERTRAND MOREL
- 2017 Comunicación en congreso: Asociación de los niveles de Zinc plasmático y la expresión de transportadores de Zinc, con la edad y el Síndrome de Respuesta Inflamatoria Sistémica., 32 Congreso Nacional SENPE, 18/05/2017, Valladolid, España, Congreso  
BARTOLOME QUINTERO OSSO
- 2017 Ponencia en Congreso: Biotechnological applications of resurrected ancestral proteins, XL Congreso de la Sociedad Española de Bioquímica y Biología Molecular, 23/10/2017, . Barcelona, Congreso  
JOSE MANUEL SANCHEZ RUIZ
- 2017 Ponencia en Congreso: Biotechnological applications of resurrected ancestral proteins, Workshop on evolution inspired protein engineering, 17/09/2017, GOSAU, AUSTRIA, Congreso  
JOSE MANUEL SANCHEZ RUIZ
- 2017 Ponencia en Congreso: Biotechnological applications of resurrected ancestral proteins, 254 American Chemical Society National Meeting, 20/08/2017, WASHINGTON (EEUU), Congreso  
JOSE MANUEL SANCHEZ RUIZ