



Biotraceur chromatinien pour l'étude de la génotoxicité dans des cellules hépatiques métaboliquement compétentes.

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► To cite this version:

Gladys Mirey. Biotraceur chromatinien pour l'étude de la génotoxicité dans des cellules hépatiques métaboliquement compétentes.. 32. Journée Chimie-Biologie-Santé, Apr 2018, Toulouse, France. hal-02787706

HAL Id: hal-02787706

<https://hal.inrae.fr/hal-02787706>

Submitted on 5 Jun 2020

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09h00	Ouverture de la XXXI ^{ème} Journée Chimie-Biologie-Santé de Toulouse
09h10	Dr. Maria Laura BOLOGNESI (Department of Pharmacy and Biotechnology, Bologna University, Italy) <i>"Multi-target drug discovery for Alzheimer's disease: building on the past, looking to the future"</i>
10h00	Aritz PEREZ (SPCMIB, Toulouse) <i>"Complexes tri-antennes hydrosolubles d'ions lanthanides basés sur la plateforme pyridinophane"</i>
10h20	Pause café
10h45	Maxime DEMAZEAU (IMRCP, Toulouse) <i>"Utilisation de modèles membranaires simples pour décrypter le relargage de phéophorbide-a encapsulé dans des nano-vecteurs de copolymères."</i>
11h05	Julien PEDRON (LCC, Toulouse) <i>"Bioactivation by nitroreductases to target kinetoplastids"</i>
11h25	Dr. Sophie BOZONNET (LISBP, Toulouse) <i>"Enzyme discovery and engineering for added-value products"</i>
12h00	Session Posters / Repas
14h00	Dr. Jean-Yves ORTHOLAND (Edelris, Lyon) <i>"3D molecules: beyond the hype, delivering valuable actives"</i>
14h50	Dr. Gladys MIREY (Toxalim, Toulouse) <i>"Biotraceur chromatinien pour l'étude de la génotoxicité dans des cellules hépatiques métaboliquement compétentes"</i>
15h25	Marie-Noelle PALUDETTO (LCC-IUCT oncopôle, Toulouse) <i>"Oxydation biomimétique du sunitinib et du pazopnib, deux inhibiteurs de tyrosine kinase : mise en évidence de métabolites réactifs"</i>
15h45	Remise du prix poster offert par la société Cisbio et clôture de la journée

Avec la participation du **Master 2 Indifférencié Chimie-Santé de l'Université Paul Sabatier**

Comité d'organisation : Dr. Florence Bedos-Belval (SPCMIB), Pr. Vania Bernardes-Génisson (LCC),
Dr. Yves Génisson (SPCMIB) et Dr. Jacques Prandi (IPBS)



Multi-target drug discovery for Alzheimer's disease: building on the past, looking to the future

Dr. Maria-Laura Bolognesi

Department of Pharmacy and Biotechnology, Alma Mater Studiorum – University of Bologna

Alzheimer's disease (AD) represents an enormous global burden both in terms of social and financial costs. To tackle the current lack of effective drugs and the continuous clinical failures might require a shift from the prevailing 'target-centric' drug discovery approaches by facilitating the exploration of favorable poly-pharmacology effects on multiple disease pathways. By accounting for the true etiological complexity of AD, multi-target drug discovery provides a concrete means to identify innovative drugs with maximum impact on the protein network underlying AD neurodegeneration, while possessing intrinsic therapeutic advantages. Despite a solid foundation and promising early studies, it is now evident that the development of multi-target drugs for AD is not an easy task. It has to deal with peculiar issues of selecting the proper target combinations in a system biology perspective and achieving a balanced activity towards them, while maintaining drug-like properties and avoiding unwanted side-effects. On top of this, big pharmaceutical companies are abandoning AD research. Thus, as academic scientists we cannot give up and use all the knowledge acquired so far to solve this needle-in-haystack problem.

Motivated by these considerations, in this lecture I will provide an overview of the principles of multi-target drug discovery and I will illustrate recent medicinal chemistry strategies that have enabled discovery of new small molecules with a potentially disease-modifying profile against AD.



3D molecules: beyond the hype, delivering valuable actives.

Dr. Jean-Yves Ortholand (Société Edelris, Lyon, France)

Many Natural Products (NP) have fairly rigid 3D shapes due to the presence of chiral centers and saturated rings in their scaffolds. In addition, they usually have enhanced HBD/HBA capacities resulting from their above-average number of oxygen atoms, thus permitting strong interactions with biological targets of interest.

Introducing some of the NP features into de-novo compounds provides increased biorelevance (E.g.: enhanced solubility and target selectivity), while keeping a good tractability and strong IP position. Such strategies have efficiently been applied to the design and synthesis of 3D molecules, useful for Hit-finding activities.

Success stories around Cyclophilin-D and Caspase-1 will be presented.