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Indeno[1,2-b]indoles: A good scaffold for designing bioactive molecules

Indeno [1, 2-b] indoles represent an important class of synthetic compounds for exploring drug targets. The great interest of these structures in Drug Design is due to the use of various building blocks to get the elemental four ring structure. Depending on the synthetic route chosen, the medicinal chemists can also achieve a large number of pharmaco-modulations. Therefore, this presentation aims (i) to present an overview on how to access this family of heterocyclic compounds and (ii) to discuss their various biological applications in oncology (e.g. protein kinases and phosphatases) and in chemoresistance (e.g. ABC transporters). New biological investigations will be also presented. The presentation will cover several scientific disciplines to highlight our drug discovery program dedicated to indeno[1,2-b]indoles. For example, organic syntheses (classical chemical process, "greener" methods), structural optimizations, CE-assay, Autodisplay technology, crystallography, docking, SAR and 3D-QSAR studies, rational design, complexation studies of cyclodextrins, cytotoxicity studies and so on will be presented and discussed. The audience could notice how a research project started, made progress and allowed to build a ChemBio partners' network to share knowledges and results. Furthermore the success will depend on how chemists interfere with biologists. Both must investigate in all areas at the interface of chemistry and biology.

Biography

Marc Le Borgne has completed his PhD from Nantes Atlantic University after Pharmacy studies (6 years). He is the Director of EA 4446 B2MC, a research group dedicated to Drug Design, Synthesis and Structural Optimization. He has published more than 60 papers in reputed journals and is serving as an Editorial Board Member of Pharmaceuticals (since 2016). He gave some invited lectures abroad He is developing bioactive small molecules targeting kinases, efflux pumps and CYPs. His research interests include design, synthesis and structural optimization of functionalized small molecules as anticancer agents (CK2, Dyrks), efflux pump inhibitors (Pg-p, BCRP) and anti-infective agents (CYP51, vaccines).

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