Indeno[1,2-*b*]indoles: Synthesis, molecular modeling, CK2 inhibition, co-crystallization, converting CK2 activity, drug delivery, multi-target approach.

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Abstract:

There is considerable international attention related to new inhibitors of casein kinase 2 (CK2), a highly conserved serine/threonine protein kinase that is playing a key role in cell growth, proliferation and regulation of apoptosis.[1] Inhibition of CK2 kinase activity is become an attractive way to stop growth of cancer cells (e.g. glioblastoma, renal cell carcinoma, acute myeloid leukemia).

In parallel, our academic Group mainly develops synthetic methods that provide access to biologically active compounds. Then we progressively optimized the relationships between structures and activities for a selection of targets.[2] Optimizing performance in this way requires using modern MedChem tools.[3]

The lecture will present our strategy for the development of indeno[1,2-*b*]indoles as CK2 inhibitors (and other targets will be discussed). Sharing research allows efficient work and can lower your costs…

References:

[1] Jose J, Le Borgne M, Pinna LA, Montenarh M. An Updated View on an Emerging Target: Selected Papers from the 8th International Conference on Protein Kinase CK2. Pharmaceuticals (Basel). 2017 Mar 23;10(2). pii: E33. doi: 10.3390/ph10020033.

[2] Jabor Gozzi G, Bouaziz Z, Winter E, et al. Converting potent indeno[1,2-b]indole inhibitors of protein kinase CK2 into selective inhibitors of the breast cancer resistance protein ABCG2. J Med Chem. 2015 Jan 8;58(1):265-77.

[3] Gratz A, Bollacke A, Stephan S, et al. Functional display of heterotetrameric human protein kinase CK2 on Escherichia coli: a novel tool for drug discovery. Microb Cell Fact. 2015 Jun 3;14:74.