

Natural products as probes in pharmaceutical research: Nannocystin A, an inhibitor of the elongation factor 1a

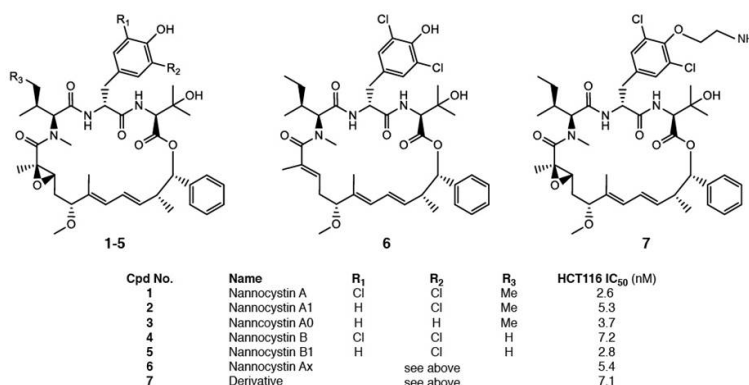
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From the start of the pharmaceutical research natural products played a key role in drug discovery and development. Over time many discoveries of fundamental new biology were triggered by the unique biological activity of natural products. Unprecedented chemical structures, novel chemotypes, often pave the way to investigate new biology and to explore new pathways and targets [1].

The cyclic lactone Nannocystin A, obtained from the cultivation of myxobacteria from the Nannocystis genus, displayed in biological assays antifungal and cytotoxic activities. Combined genetic and proteomic approaches identified the eukaryotic translation elongation factor 1a (EF-1a) as the target of this compound class [2].

The talk will focus on the discovery of this compound class and will guide through the target identification of this compound class.



[1] E. Schmitt, D. Hoepfner, P. Krastel (2016), Natural products as probes in pharmaceutical research. *Journal of Industrial Microbiology & Biotechnology* 43, 1691-1699.

[2] P. Krastel, S. Roggo, M. Schierle, N. Ross, F. Perruccio, P. Aspesi, T. Aust, K. Buntin, D. Estoppey, B. Liechty, F. Mapa, K. Memmert, H. Miller, X. Pan, R. Riedl, C. Thibaut, J. Thomas, T. Wagner, E. Weber, X. Xie, E. Schmitt, D. Hoepfner (2015), Nannocystin A: an elongation factor 1 inhibitor from myxobacteria with differential anticancer properties. *Angewandte Chemie International Edition* 54, 10149-10154.