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Universiteit Leiden



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Title: Development of ATX and DUSP inhibitors : inhibiting phosphate ester hydrolysis in biology

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Stellingen

Behorende bij het proefschrift

'Development of ATX and DUSP inhibitors: Inhibiting phosphate ester hydrolysis in biology'

1. Autotaxin (ATX) can be inhibited efficiently by boronic acid-based inhibitors. (This thesis)
2. The binding of the boronic acid in inhibitor HA155 to the threonine oxygen nucleophile in the ATX active site is reversible. (This thesis)
3. Maintenance of steady-state lysophosphatidic acid (LPA) levels in plasma involves a highly dynamic balance between ATX-mediated LPA synthesis and LPA degradation. (This thesis)
4. Given the multitude of different LPA receptors, it seems more effective to target ATX than individual LPA receptors to study the effect of LPA. (van Meeteren & Moolenaar, *Progress in Lipid Research* 2007; 46, p. 145)
5. Controlling the LPA signaling system through ATX inhibitors is a stimulating task for the academic community and a lucrative opportunity for the pharmaceutical industry. (Tigyi, *British Journal of Pharmacology* 2010; 161, p. 241)
6. Compounds that can block the hydrophobic channel of ATX represent yet another avenue that could be explored for inhibiting ATX activity. (Tabchy *et al.*, *Nature Structural & Molecular Biology* 2011; 18, p. 117)
7. Targeting non-conserved active site residues in dual specificity phosphatases (DUSPs) could be a valid strategy for the development of selective DUSP inhibitors. (This thesis)
8. Identification of truly selective inhibitors of protein tyrosine phosphatases (PTPs) is a challenging task. (Bialy & Waldmann, *Angewandte Chemie International Edition* 2005; 44, p. 3814)
9. Vodka is an excellent solvent for Suzuki reactions. (Fisher *et al.*, 242nd American Chemical Society National Meeting & Exposition, Denver, CO, United States 2011 / *C₂W* 2011; 16, p. 11)
10. Keep your colleagues close, but your competitors closer.
11. The power of communication is often underestimated in exact sciences.