Novel Autotaxin Inhibitors

Challenge

- Autotaxin (ATX) is an essential human enzyme, primarily known for the formation of lysophosphatidic acid (LPA). The ATX-LPA axis is linked to numerous physiological and pathological processes such as vascular and neuronal development, multiple sclerosis, atherosclerosis and cancer, making ATX a promising therapeutic target.
- Despite huge needs and efforts, no ATX inhibitor has reached the market yet.

Comprehensive characterization

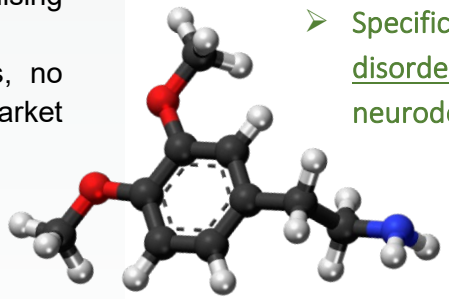
- Chemical (e.g. synthesis examples)
- NMR/Mass spectrometry analysis
- Biochemical (dose response and mode of inhibition assay, FS3 Autotaxin activity assay)
- Structural (co-crystal structure of the compound and hATX)
- Cellular assay (hLPAR1 internalization assay, cytotoxicity assay)

Technology

- Novel set of ATX inhibitors
- One compound developed further and characterized comprehensively:

Better chemical properties and different mechanism of action make conceivable:

- Huge range of application scenarios (e.g. prophylactic, therapeutic and diagnostic)
- Different administration routes (e.g. oral, rectal)
- Specific adaptation to a large spectrum of disorders (e.g. inflammatory diseases, neurodegenerative diseases, cancer).



- Two druggable scaffolds
- Increased non-competitive inhibitory activity towards ATX.
- Diminished side effects expected
- No toxicity towards human cells

Intellectual Property

A priority patent application has been filed.

Commercial Opportunity

The technology is comprehensively evaluated in vitro and available for out-licensing or co-development. We also offer a technology evaluation program.

Further Reading

Eymery et al. 2023, Life Science Alliance: Medicinal cannabis & autotaxin–lysophosphatidic acid signaling

Internal Reference

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