



Leiden University Research & Innovation Services

New compound offers attractive therapeutic candidate for autoimmune inflammatory diseases

Market sector(s): anti-inflammatory pharmaceuticals

Commercial opportunity: Collaboration or licensing opportunity

Leiden University has identified a new adenosine receptor agonist. The innovative technology that led to its design, synthesis and pre-clinical evaluations, is now available for licensing purposes and/or for collaborative therapeutic development in the area of autoimmune inflammatory diseases.

Description

Adenosine receptors (ARs) of which four subtypes exist (A_1 , A_{2A} , A_{2B} , A_3) are present in the brain, the heart, the kidneys and the lungs and mediate diverse physiological functions including vasodilatation and fluid retention in the periphery, and cognitive and sleep/wake activity in the brain. Adenosine receptor ligands have numerous promising applications and several drug candidates have been clinically evaluated. However the ubiquity of adenosine receptors and the potential side effects impeded the development of adenosine receptor modulators in the past, despite their great therapeutic potential.

Chemists from Leiden University, the Netherlands, have synthesized a novel compound proved to be a dual agonist towards both A_{2A} AR and A_3 AR. This compound has high affinity and selectivity for both human adenosine A_{2A} and A_3 receptors and showed to exert strong anti-inflammatory effects in various pre-clinical animal models of autoimmune disease.

This new agonist opens opportunities for new treatment strategies in conditions of chronic inflammation (arthritis, colitis, multiple sclerosis) either as stand-alone application of the compound or in combination with other drugs.

Key benefits

- High affinity and selectivity for A_{2A} and A_3 adenosine receptors
- Potent anti-inflammatory agent

Applications

- Treatments for autoimmune inflammatory diseases such as multiple sclerosis, Crohn's disease, arthritis.

Patent status

For this invention a PCT application has been filed, US, CN, KR, JP patents have been granted and EP application is still pending.

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