HEALTH & BIOMEDICAL

Inhibitory compounds neurodegeneration and tumors

NEW DRUGS & THERAPIES

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The inhibition of the monoacylglycerol lipase enzyme (MAGL), naturally present in many brain cells and involved in physio-pathological processes, has a high therapeutic potential: neurodegenerative inflammation pathologies and tumors could be treated with new reversible inhibitory compounds, which would reduce the side effects of the irreversible inhibitors tested so far.

Technical Features

Monoacylglycerol lipase (MAGL) is a human enzyme of the endocannabinoid system involved in numerous physio-pathological processes (regulation of inflammation, anxiety, immune modulation, motor coordination ...), yet its overexpression/upregulation can cause neuroinflammatory diseases and tumors. The inhibition of MAGL for therapeutic purposes has been studied so far with irreversible inhibitors, which however nullify the enzyme activity, leading to a progressive loss of the therapeutic effect and to addiction phenomena. On the contrary, the new-patented compounds based on a strong non-covalent reversible mechanism of action avoid the side effects mentioned. Effective in laboratory on various tumor cell lines (e.g. colorectal, breast and ovarian cancer), they could also treat other MAGL-mediated pathologies (neuroinflammation/degeneration, pain, amyotrophic multiple/lateral sclerosis, Alzheimer's disease, Parkinson's disease).

Possible Applications

- Innovative and less harmful pharmaceutical compositions for the treatment of serious neurodegenerative pathological conditions;
- Innovative and less harmful pharmaceutical compositions for cancer treatment.

Advantages

- Temporary nature and reversibility;
- Drastic reduction of side effects;
- High efficacy tested on tumor cell lines;
- Exploitable to treat numerous neurodegenerative diseases;
- One of the few non-covalent reversible MAGL inhibitors with high efficacy.

PATENT OWNERS
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