CurEzima™

Ezetimibe and Curcumin for use in cancer treatment

"Nature Meets Precision in Cancer Care."

Technology

This invention relates to a pharmaceutical composition comprising ezetimibe, alone or in combination with curcumin, for the treatment of cancers characterised by the overexpression of the oncogene Mdm2. The technology is based on the novel discovery that ezetimibe - an FDA-approved cholesterol absorption inhibitor which can bind to the p53-binding domain of Mdm2, thereby promoting p53 tumour-suppressing activity and inducing apoptosis of cancer cells. The co-administration with curcumin further enhances therapeutic efficacy, particularly in colon cancer, by inhibiting ezetimibe's glucuronidation and prolonging its bioavailability in the target tissues.

Market need

There is a significant market need for safer, more affordable, and effective cancer therapies that target the Mdm2–p53 pathway, which plays a critical role in tumour development and resistance to treatment Many cancers, including colon, breast, lung, and pancreatic cancers, are characterised by Mdm2 overexpression, yet current inhibitors are limited by poor bioavailability, toxicity, and high cost. The proposed Ezetimibe–Curcumin combination addresses this gap by repurposing ezetimibe, an FDA-approved cholesterol-lowering drug, as a novel anticancer agent capable of disrupting the Mdm2–p53 interaction and inducing apoptosis, while curcumin enhances efficacy by preventing metabolic deactivation and contributing anti-inflammatory and antioxidant effects. With cancer incidence exceeding 20 million new cases annually and increasing global demand for orally administered, low-toxicity, and cost-effective treatments, this technology aligns with key market drivers in targeted oncology therapeutics, drug repurposing, and natural compound-based combination therapies, offering a strong commercial opportunity for both developed and emerging healthcare markets.

Features

- Repurposing of a clinically approved drug (ezetimibe) for oncology use.
- Enhanced anti-tumour efficacy through combination with curcumin.
- Broad-spectrum activity across multiple cancer types, with efficacy in colon and solid tumours.
- Potential for oral administration, improving patient compliance and reducing treatment costs.
- Lower toxicity profile compared to conventional chemotherapeutics and experimental nutlins.

Benefits

- Accelerated clinical translation due to ezetimibe's established safety record.
- Potential cost-effective therapy for cancers with limited treatment options.
- Synergistic therapeutic effect from combining a synthetic drug with a natural compound.
- Targeted action on the Mdm2-p53 pathway, addressing drug resistance in p53-deficient cancers.
- Flexibility in formulation and administration routes to suit various clinical needs.

Industry
Drug Discovery

Potential applications
- Treatment of cancers characterised by Mdm2 overexpression, including colon, breast, lung, and pancreatic cancers.
- Development of targeted anticancer therapies that enhance p53 tumour-suppressing activity.
- Use in combination therapy to improve treatment efficacy and reduce toxicity compared to conventional chemotherapy.
- Potential integration into oral, low-toxicity cancer treatment regimens suitable for both developed and resource-limited healthcare systems.

Creators
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Stage of development
Phase I Clinical Trials completed

Intellectual property
Patent Protection

Desired relationship
Co-development, Investors