Inhibitors of cancers caused by genetic mutations in p53

Technology #cu12116

Breast cancer, the second most common cancer among women, is often caused by mutations in the gene p53 as are several other cancers. Because p53 is such a common target for mutation in various cancers, related molecular pathways could provide an extremely effective therapeutic route. This technology uses fatostatin and its analogues to target the mevalonate pathway, which is involved in mutated p53. This technology enables a targeted treatment for p53-specific cancers through a straightforward and rapid inhibition of SCAP and SREBP proteins.

Targeted molecular inhibition for effective treatment of p53-related cancers

Fatostatin specifically targets SCAP and SREBP transcription factor proteins within the mevalonate pathway. By utilizing a 3D culturing system in conjunction with molecular inhibitors, this technology can detect whether a patient sample would benefit from the treatment even before beginning therapy. Such a method for treating p53 tumors takes into consideration the genetic makeup of the patient and allows for a more personalized approach. This type of treatment yields significant advantages over typical therapeutic options that are more generic in approach. In addition, it would allow treatment for a large patient population, given the frequency of p53 mutations observed in human tumors. Such a technology allows for specific and effective treatment of cancers that arise from a commonly mutated gene.

The technology has been validated in 3D cultures of human patient samples.

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Applications:

• Genetic screening and early detection
• Breast and other p53-related cancers
• Combination therapy for rapidly mutating and treatment-resistant cancers
• Diagnostics and preventative care
• Cancer research and p53 genetic mapping
• 3D cell culturing method for development of additional therapeutics

**Advantages:**

• Improved diagnostics and thus prognosis of patients
• Enables personalized therapeutic approach
• Allows for treatment of multiple downstream targets of p53
• Can treat multiple cancers caused by the same underlying mutation
• Effective targeting results in faster treatment
• Improves research and development on the mechanisms between p53 and cancer

**Patent Information:**

Patent Pending (WO/2013/110007)

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**Related Publications:**


**Inventors**

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