Docket #: S15-441

CRISPR/Cas9-mediated Genome Editing to Treat EGFR-mutant Lung Cancer

Researchers at Stanford have developed methods of using CRISPR/Cas9-mediated genome editing to treat patients with EGFR-mutant non-small-cell lung cancer (NSCLC). Approximately 85% of lung cancers are NSCLC. Within this population, some patients have a mutant EGFR tyrosine kinase which results in continuous activation of intracellular pathways that support cancer growth. Drugs have been developed to inhibit the mutant EGRF activity, but most patients develop resistance to the drugs within 2 years. As such, new therapeutic approaches are needed. To help meet this need the inventors have developed methods of using CRISPR/Cas9-mediated gene editing to correct or destroy the mutant EGFR. This new approach combined with conventional lung cancer therapies could significantly improve the survival of patients with EGFR-mutant NSCLC.

Stage of research
Development of the method is ongoing.

Applications

- Treatment of EGFR-mutant lung cancer

Advantages

- New approach to treating lung cancer
- Potential to improve survival of lung cancer patients
- Can personalize the approach for patient-specific mutations
- Can be used with conventional treatments

Publications

- Tang H, Shrager JB. CRISPR/Cas-mediated genome editing to treat EGFR-mutant lung cancer: a personalized molecular surgical therapy. EMBO Mol Med. 2016 Feb 1;8(2):83-5.

Patents

- Published Application: 20170145405
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