CRISPR/Cas9 and targeted cancer therapy

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Propositions

Belonging to the thesis

CRISPR/Cas9 and targeted cancer therapy

by Bin Liu

1. CRISPR/Cas9 is a powerful tool not only for cancer research but also for cancer treatment.

2. EGFR targeting mediated by CRISPR/Cas9 is a promising strategy for treatment of non-small cell lung cancer.

3. CXCR7 contributes to survival and resistance of KRAS-mutant non-small cell lung cancer upon EGFR targeting.

4. Cyclin D1 inhibition resensitizes erlotinib-resistant (ER) cells to erlotinib. Cyclin D1 may be a potential therapeutic target for patients with EGFR inhibitors resistant NSCLC.

5. Regulation of chromatin compaction by inhibiting HAT and/or HDAC activity can modulate CRISPR/Cas9-based gene editing

6. EGFR knockout is not equivalent to EGFR inhibition. Tumor cells can develop resistance to inhibitors as well as to CRISPR/Cas9-mediated EGFR knockout, but resistance mechanisms do not have to be the same. Understanding those mechanisms would be helpful for cancer therapy.

7. Things are the hardest right before they get better; this is the truth for life, for science, and particularly for life sciences