

Repurposing propranolol to improve cancer therapy in clinic: where are we?

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Abstract

Repurposing non-oncology drugs to improve cancer therapy has been increasingly attracting drug developers due to potentially lower costs and shorter timelines. Propranolol, a non-cardiac selective, lipophilic β -adrenergic receptor blocker used to treat hypertension, arrhythmia, and anxiety, has successfully been repurposed as first-line therapy for infantile hemangioma. Thereafter, accumulating preclinical and clinical studies have demonstrated the safe and promising antitumor activity of propranolol to treat different types of human cancers. In this review, we have focused on summarizing the therapeutic potential of propranolol in both solid and hematologic malignancies. We have also discussed the current bottleneck of repurposing propranolol in cancer therapy. Taken together, these inspiring findings help to shed light on propranolol repurposing and future drug discovery.

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