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Role of Wnt signaling and mechanism of treatment in leukemia

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Objective: Increased activity of Wnt pathway has been observed in a huge number of malignancies. This pathway can function as a prosurvival factor in leukemia stem cells and early committed leukemic precursors and its inhibition is regarded as a therapeutic approach. Accordingly, the aim of this review is to evaluate the Wnt inhibitors used in leukemia models.

Discussion: Inhibition of the Wnt pathway has been reported to have beneficial therapeutic effects in leukemia, both in vitro in leukemia cell lines and in vivo in animal models. Overall, the use Wnt inhibitor in CML, AML, APL, CLL, B-ALL and T-ALL has a better therapeutic effect than conventional treatments.

Conclusions: Clearly, precise modulation of the Wnt pathway will be necessary to balance anti-tumor efficacy with adverse eventsand will be a challenge for ongoing and future leukemia patients. Despite these concerns, new regulators of the Wnt signaling cascade offer the opportunity for us to increase our comprehension of this exceedingly complex pathway and potentially for the treatment of leukemia.

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