

Use of Androgen Receptor-Mediated Mechanisms in the Treatment of Acute Myeloid Leukemia

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TECHNOLOGY READINESS LEVEL

3

Seeking

Investment | Licensing | Research

Keywords

- Acute myeloid leukemia
- Leukemia-initiating stem cells
- Androgen receptor
- DHT
- Antagonists

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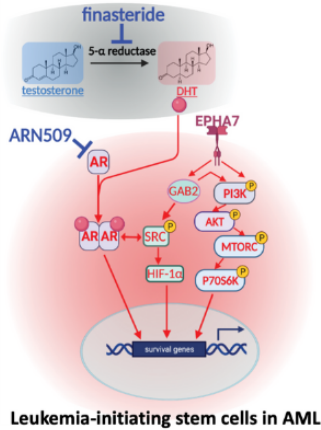
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Technology Summary

Androgen receptor (AR) signaling is increased in acute myeloid leukemia (AML) either through increased expression of AR or increased production of its ligand dihydrotestosterone (DHT). Inhibition of AR signaling with 5- α -reductase inhibitors or with AR antagonists significantly increases survival and reduces leukemia burden in a murine model of AML. The invention proposes to repurpose FDA-approved therapeutics to inhibit the production of DHT, antagonize AR, or a combination of both, to treat AML. Inhibiting AR signaling could be used in combination with standard chemotherapy regimens or as a standalone therapy. This treatment exploits newly discovered targets to treat AML.

Application & Market Utility

AML is a difficult disease to treat. Although, most patients who respond to initial chemotherapy relapse because leukemia-initiating cells (LICs) are resistant to chemotherapy drugs. There is a need for new therapies to target LICs to prevent relapse. The use of AR-targeted therapies represents a new approach to treat AML and preventing relapse and advancing clinical options.

Next Steps

Advancing the use of AR-targeted therapies for AML in the clinic through pre-clinical studies by treating immunocompromised mice transplanted with AML-patient samples. Phase I/II clinical trials using FDA-approved drugs targeting AR-signaling in combination with standard chemotherapy regimens.