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Method for treating P300/CBP-dependent tumors using combined P300/CBP inhibition/ degradation, and senolytic therapy

A method for treating P300/CBP-dependent tumors, such as Ewing sarcoma, by selectively eliminating senescence-induced cancer cells through P300/CBP inactivation.

Technology ID
2025-069

Category
All Technologies
Life Sciences/Biochemicals & Small Molecules
Life Sciences/Human Health
Life Sciences/Pharmaceuticals
Life Sciences/Therapeutics

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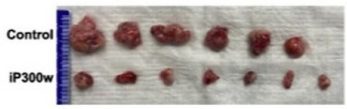

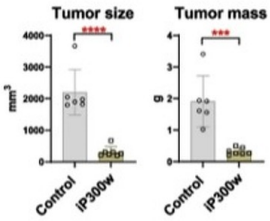

IP Status: Provisional Patent Application Filed

Applications

- Treatment for P300/CBP-dependent cancers
- CIC-rearranged sarcomas
- Ewing sarcomas

Key Benefits & Differentiators

- **Novel Combination Therapy:** This method combines already approved P300/CBP inhibitors and senolytics
- **Unique pharmacological targeting:** Targeting inhibition of P300/CBP yields comparable results to knocking out key oncogenes that are difficult to target

Technology Overview

Ewing sarcoma (ES), the second most common form of pediatric bone cancer, primarily affects individuals at a median age of 15 years and occurs with an incidence of approximately three cases per million annually. Over the last fifty years, improvements in diagnosis, surgery, chemotherapy, and radiation have increased survival rates to nearly 70% for localized ES, yet the prognosis for patients with metastatic or recurrent forms remains challenging, with a five-year survival rate still below 25%. ES is defined by chromosomal translocations that form fusion genes encoding aberrant transcription factors (EWS::FLI1) crucial for pathogenesis. The structural complexity of EWS::FLI1 and the absence of a defined active site make direct targeting a challenge.

Researchers at the University of Minnesota have developed a method to treat Ewing sarcoma by targeting the regulatory network of EWS::FLI1 to reduce oncogenic activity. More specifically, by inhibiting two critical histone acetyltransferases, P300 (E1A Binding Protein P300) and CBP (CREB Binding Protein), early senescence in ES cells is triggered. By combining an already approved P300/CBP inhibitor (iP300w, University of Minnesota case 2021-151) with senolytics, ES cells are more efficiently cleared. By combining both of these treatments, cancer cells are eliminated more efficiently and rapidly, as demonstrated in mouse models.

Phase of Development

TRL: 3
Proof-of-principle in mice

Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

Please contact our office to share your business' needs and learn more.

Researchers

- **Darko Bosnakovski, DVM, PhD** Professor, Department of Pediatrics, Division of Pediatric Blood and Marrow Transplantation & Cellular Therapy

References

1. Erdong Wei, Ana Mitanoska, Quinn O'Brien, Kendall Porter, MacKenzie Molina, Haseeb Ahsan, Usuk Jung, Lauren Mills, Michael Kyba & Darko Bosnakovski(2024) , https://molecular-cancer.biomedcentral.com/articles/10.1186/s12943-024-02115-7, Molecular Cancer, 23, 222