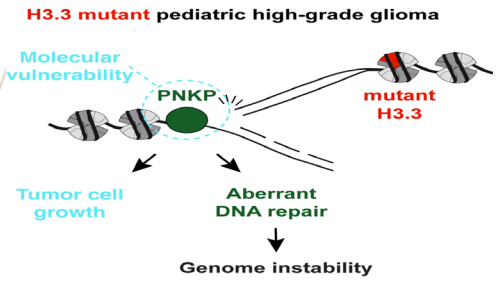
TARGETING OF A DNA REPAIR ENZYME IN TUMORS CARRYING HISTONE 3.3 MUTATIONS

Identification of the DNA repair PNKP enzyme as a potential therapeutic target in histone 3.3 mutated pediatric gliomas.

ERGANEO
L'AVENIR EST FAIT D'AUDACE

PRESENTATION

Pediatric high-grade gliomas are particularly aggressive brain tumors with a very poor prognosis. In these tumors, which are often mutated for the H3.3 variant of histone H3, a defect in a PNKP-dependent DNA repair mechanism has been identified. The resulting genomic instability may promote the transformation of cancer cells. The inventors have shown that inhibition of PNKP gene expression specifically prevents the proliferation of glioma tumor cells carrying the H3 oncohistone mutations. These promising results pave the way for targeting PNKP as a novel therapeutic strategy.



Pediatric high-grade gliomas PNKP - Histone - Synthetic lethality - H3.3 oncohistone mutations - DNA repair

APPLICATIONS

- Treatment of pediatric high-grade gliomas

COMPETITIVE ADVANTAGES

- Novel therapeutic target
- Synthetic lethality-based approach

DEVELOPMENT PHASE

- TRL 3

INTELLECTUAL PROPERTY

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PUBLICATIONS

- Giacomini et al., 2024, Nucleic Acids Res., 52, 2372-2388
- Dabin et al., 2024, DNA Repair (Amst.), 140 :103702

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