

HOAIR

HOAIR (for HOX transcript antisense RNA) is a human gene located on [chromosome 12](#). It is the first example of an RNA expressed on one chromosome that has been found to influence transcription on another chromosome.

It has been considered as a negative prognostic factor in liver, colon, and laryngeal squamous cancer patients, and identified as a critical [glioma biomarker](#) for tumor grade, molecular subtype, diagnosis, and prognosis. ¹⁾ ²⁾ ³⁾.

HOAIR was reported to promote [glioblastoma](#) (GBM) [cell cycle](#) by regulating a predominant PRC2 complex component [EZH2](#) ⁴⁾.

Knockdown of HOTAIR was found to exert a glioma-suppressive function by regulating the [miR 326/FGF1](#)-signaling pathway in vitro and in vivo, indicating the HOTAIRmiR-326-FGF1 axis as a potential therapeutic strategy for glioma treatment ⁵⁾.

Knockdown of HOTAIR can also increase permeability of the blood-tumor barrier (BTB) by reducing tight junction-related proteins in glioma microvascular endothelial cells via the miR148b-3p/USF1 pathway, facilitating the delivery of antineoplastic drugs ⁶⁾.

In addition, HOTAIR is a direct target of [bromodomain](#) and extraterminal (BET) domain proteins in GBM ⁷⁾. BET proteins are functional requisites for GBM cell growth and malignancy; ⁸⁾ thus, targeting HOTAIR may block BET protein-induced malignancy of GBM and overcome resistance of GBM to BET bromodomain inhibitors (BBIs), which show broad anticancer effects.

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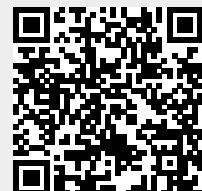
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