CBX7

Polycomb repressor complex 1-chromobox7 (CBX7) has emerged as a key regulator in several cellular processes including stem cell self-renewal and cancer cell proliferation. The hypoxic environment triggering NPC self-renewal after CBX7 activation remains unknown.

In a study, Chiu et al. found that the upregulation of CBX7 during hypoxia and ischaemia appeared to be from hypoxia-inducible factor-1α (HIF-1α) activation. During hypoxia, the HIF-1α-CBX7 cascade modulated NPC proliferation in vitro. NPC numbers significantly decreased in CBX7 knockout mice generated using CRISPR/Cas9 genome editing.

Chiu et al. provided the novel insight that CBX7 expression is regulated through HIF-1α activation, which plays an intrinsically modulating role in NPC proliferation [1)].

1)
Chiu HY, Lee HT, Lee KH, Zhao Y, Hsu CY, Shyu WC. Mechanisms of ischaemic neural progenitor proliferation: a regulatory role of the HIF-1α-CBX7 pathway. Neuropathol Appl Neurobiol. 2019 Oct 19. doi: 10.1111/nan.12585. [Epub ahead of print] PubMed PMID: 31630421.