

Display Settings: Abstract

[Neurochem Int.](#) 2011 Jul 7. [Epub ahead of print]

COX-2 regulates the proliferation of glioma stem like cells.

Sharma V, Dixit D, Ghosh S, Sen E.

National Brain Research Centre, Manesar, Haryana 122 050, India.

Abstract

Cancer stem-like cells (CSCs) possessing features of neural precursor cells (NPC) influence initiation, recurrence and chemoresistance of glioblastoma multiforme (GBM). As inflammation is crucial for glioblastoma progression we investigated the effect of chronic IL-1 β treatment on CSCs derived from glioblastoma cell line U87MG. Exposure to IL-1 β for 10days increased (i) accumulation of 8-OHdG - a key biomarker of oxidative DNA damage; (ii) DNA damage response (DDR) indicators γ H2AX, ATM and DNA-PK; (iii) nuclear and cytoplasmic p53 and COX-2 levels and (iv) interaction between COX-2 and p53. Despite upregulating p53 expression IL-1 β had no effect on cell cycle progression, apoptosis or self renewal capacity of CSCs. COX-2 inhibitor Celecoxib reduced self renewal capacity and increased apoptosis of both control and IL-1 β treated CSCs. Therefore the ability of COX-2 to regulate proliferation of CSCs irrespective of exposure to IL-1 β , warrants further investigation of COX-2 as a potential anti-glioma target.

Copyright © 2011 Elsevier B.V. All rights reserved.

PMID: 21763744 [PubMed - as supplied by publisher]

LinkOut - more resources