Periostin (PN)

Periostin (PN) is a secreted 90 kDa ECM protein, originally identified as an osteoblast-specific factor related to the midline fasciclin-1 (mfas-1) gene in Drosophila.

It has four repeated fasciclin domains, an alternatively spliced carboxyl tail, an amino terminus cysteine rich region, and a putative signal sequence, suggesting it is a secreted protein.

PN is expressed in several normal adult tissues with the highest levels of expression being detected in connective tissues such as bone, skin, and heart valves, but the peripheral vasculature exhibits low or absent expression of PN.

The expression levels of Periostin were relative to glioma grade progression and inversely correlated with overall survival in high grade glioma patients. Gene ontology (GO) analysis performed using DAVID showed that the gene sets related to cell migration and proliferation were significantly enriched in the cases with POSTN overexpression. Functional analyses in LN229 and U87 cells revealed that PN was involved in cell invasion and proliferation. MMP-9 was an effector of PN signaling in glioma cells. The expression of stromal protein PN is relative to glioma grade progression and confers a poor prognosis via promoting cellular invasion and proliferation in high-grade glioma patients [1].

A potential target for glioblastoma multiforme treatment [2].

Periostin was expressed in tumor stroma of meningiomas. Both periostin and Ki67 may behave as a maker in predicting the grade and prognosis in meningiomas. Drugs that targets periostin aims at reducing invasion of meningioma patients should be further researched [3].

[1]

Wang H, Wang Y, Jiang C. Stromal protein periostin identified as a progression associated and prognostic biomarker in glioma via inducing an invasive and proliferative phenotype. Int J Oncol. 2013 May;42(5):1716-24. doi: 10.3892/ijo.2013.1847. Epub 2013 Mar 5. PubMed PMID: 23467707.

[2]

Cavaleri JM, Monaco EA 3rd. Periostin: a potential target for glioblastoma multiforme treatment. Neurosurgery. 2015 Jun;76(6):N17-9. doi: 10.1227/01.neu.0000465856.13744.2d. PubMed PMID: 25985005.

[3]

Liu Y, Shi J, Chen M, Cao YF, Liu YW, Pan J, Qi ST. Periostin: a novel prognostic predictor for meningiomas. J Neurooncol. 2014 Dec 18. [Epub ahead of print] PubMed PMID: 25519301.

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