# BST2

Tetherin, also known as bone marrow stromal antigen 2, is a lipid raft associated protein that in humans is encoded by the BST2 gene. In addition, tetherin has been designated as CD317 (cluster of differentiation 317).

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BST2 was predicted to be associated with the infiltration of Tumor-associated macrophages (TAMs). However, its potential function by which colorectal cancer cells and TAMs interact with each other still needs further investigation. Methods: The target genes in CRC were selected by bioinformatics screening. The level of bone marrow stromal cell antigen 2 (BST2) in CRC cells and tissues was determined by qRT–PCR, Western blotting, and immunohistochemistry staining. In vitro and in vivo assays were applied to clarify the function of BST2. Results: In this study, according to bioinformatics analysis, a nomogram based on the risk score (constructed by BST2 and CAV1 (caveolin-1)) and clinical features was built and displayed satisfactory prognostic value. Upregulated BST2 was significantly related to Braf mutation, dMMR/MSI-H, CMS1 subtype, and immune response and was a potential biomarker for predicting immune checkpoint blockade therapy. Silencing BST2 in CRC obviously restrained CRC progression and M2 TAM polarization. The infiltration of TAMs was positively correlated with the high expression of BST2, and depletion of TAMs alleviated the protumoural effect of BST2 in CRC in vivo. In vitro experiments revealed that a reduction in BST2 in CRC inhibited CRC proliferation and migration and also M2 polarization. Conclusion: These findings indicated that BST2 played a vital role in CRC progression and might be a predictable marker for immunotherapy [1)].

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He X, Chen H, Zhong X, Wang Y, Hu Z, Huang H, Zhao S, Wei P, Shi D, Li D. BST2 induced macrophage M2 polarization to promote the progression of colorectal cancer. Int J Biol Sci. 2023 Jan 1;19(1):331-345. doi: 10.7150/ijbs.72538. PMID: 36594082; PMCID: PMC9760448.