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BLyS: A new therapeutic targets of multiple myeloma

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Multiple myeloma (MM) is a plasma cell disorder (plasma cell dyscrasia) caused by bone lesions and production of a paraprotein. Our findings show high expression levels of B-lymphocyte stimulator (BLyS) and its receptor on B cells both of the peripheral blood and the bone marrow in MM patients when compared to monoclonal gammopathy of unknown significance (MGUS) and healthy control donors, and may involve the immunopathogenesis of MM. Serum BLyS in MM patients were significantly higher than that in MGUS and healthy controls and coincided with the evaluation of increased BLyS expression in bone marrow specimens from patients with MM by immunofluorescence. Furthermore, BLyS significantly promoted multiple myeloma cell proliferation and its receptor BAFFR, together with IL-2 and IL-6 when compared with the control group. Bortezomib is an approved clinical treatment for relapsed MM as a therapeutic proteasome inhibitor. In this study, Bortezomib induced apoptosis to repress the proliferation of RPMI8226 and U266 cells expressed high level of BLyS through the inhibition of NFκB p65 and IκBα. So, our findings confirm that BLyS and its receptors are expressed by B lymphocytes in peripheral blood and in the bone marrow of patients with MM. In addition, the ability of BLyS binding to B cells and the finding of elevated serum soluble BLyS levels suggest that it may be seen as hallmark of MM. The same as that Bortezomib induced apoptosis in MM cells and suggest it might be involved in the mechanism of the regulation of BLyS. We hypothesize that abnormal BLyS signaling and NFκB activity form a positive feedback loop which may be crucial in elucidating further mechanisms in MM pathogenesis and could provide future therapeutic targets for MM.

Recent Publication

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2. Dongqing Zhang, Ping Wang, Liu Qian, Xiangliang Yuan, Chaoying Hu, Liansheng Huang, PingMiao, Qiwen YU, Yanhui Ma, Jiying Zhang, Xuehua Chen, Bingya Liu and Lisong Shen (2013) Blys: A potential hallmark of multiple myeloma. Frontiers in Bioscience 18(1):324-331.
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Biography

Dongqing Zhang is a Principle Investigator, Research Professor at Shanghai Institute of Immunology, Shanghai Jiaotong University Medical School. His research interests are: Tumor immunology and autoimmune disease are induced by many factors which seriously affect human health like genetic, environmental, endocrine, cell apoptosis and virus infection. His team is committed to study the pathogenesis of gastric cancer and autoimmune diseases-like RA, including T/B cells and their associated signaling molecules expression; and the feasibility of clinical application.

Notes:

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