WHITEPAPER

Meet the Marker: LMO2

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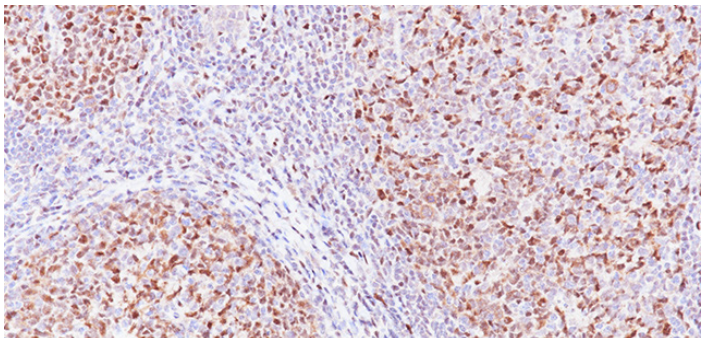
Most people familiar with Immunohistochemistry (IHC) are aware of its diagnostic properties. However, the prognostic capability of IHC is equally as important. LIM Domain Only 2 (LMO2) may be a marker capable of both.

LMO2 is a protein involved in the scaffolding of transcription factors for the formation of new blood cells and new blood vessels.[1] As a result, it is implicated in a variety of cancers, including follicular lymphoma, diffuse large b-cell lymphoma (DLBCL), and prostate cancer.[1,2] LMO2 is a nuclear marker highly specifically expressed in the germinal center of normal B-cells, the antibody-producing white blood cells responsible for humoral immunity in the adaptive immune system.[2] It is also expressed in blood cell precursors in bone marrow and endothelial cells, the single cell layer that lines all blood vessels.[2]

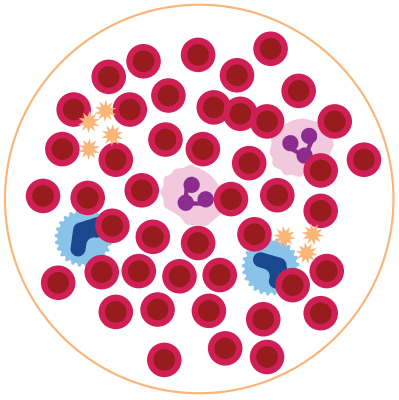
In cases of cancer, studies have shown that LMO2 is expressed in neoplastic lymphoblasts of T-cell acute lymphoblastic leukemia (T-ALL), an aggressive cancer of the bone marrow that primarily affects young children and adolescents.[1] In contrast, it is not present in the T-cell precursor thymocytes in the thymus.[1] Macroscopically, it is often difficult to distinguish whether an abnormal thymic growth is thymic epithelial neoplastic in origin (in the case of thymomas), or a neoplasm of T lymphoblasts, as there is no specific physical difference between the two.[1] Therefore, the properties of LMO2 can be useful in differentiating such abnormal cell growths in the thymus.

LMO2 expression in DLBCL cells may act as an indicator of longer survival following chemotherapy treatment.[3] In gene expression studies, LMO2 may aid as a predictor of improved outcome in DLBCL patients.[3]

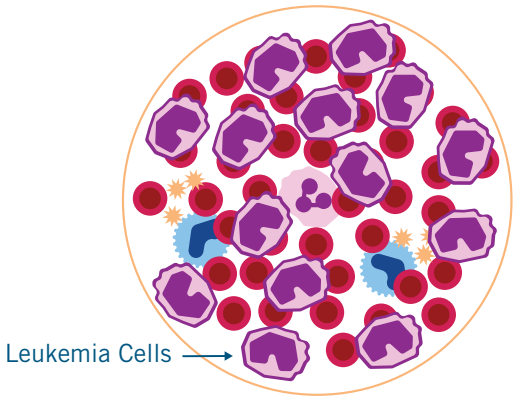


Tonsil stained with LMO2 [SP51] antibody

Normal Blood vs Leukemia



Normal Blood



Leukemia

LMO2 may aid to be both a diagnostic and prognostic marker makes it a valuable multipurpose edition to a laboratory menu. If you are interested in learning more about LMO2 for your lab, please visit us at biocare.net or call 1-800-799-9499.

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