

## Human C-Cbl and Cbl-b Proteins Are More Highly Expressed in the Thymus Compared to the Testis

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**Abstract :** Background and objectives: c-Cbl and Cbl-b are two members of the Cbl family proteins, with a crucial role of downregulation of tyrosine kinase receptors. They act as E3 ubiquitin ligases and are multivalent adaptor proteins, making them important in maintaining homeostasis in the body. This study investigated the expression level in thymus and testis in normal conditions. Methods: The expression level was assessed by immunochemistry of tissue microarrays of normal thymus and testis biopsies. Results: Cbl-b and c-Cbl proteins were found to be highly expressed in normal testis and thymus, indicated as yellowish brown granules in the cytomembrane and cytoplasm compared to controls. The c-Cbl appears to be more highly expressed than the Cbl-b in the thymus, while c-Cbl appears slightly stronger than Cbl-b in the testis. The thymus was found with a higher grade compared to the testis. Conclusion: In this work we concluded, that in normal condition, thymus tissue expresses more Cbl family proteins(c-Cbl and Cbl-b) than the testis tissue in humans.

**Keywords :** Human C-Cbl proteins, Human Cbl-b protein, Testis, Thymus

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