IBGRL RESEARCH PRODUCTS

NHS Blood and Transplant

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Antigen	Beta Spectrin
Clone	BRAC 65
Product Code	9479
Immunoglobulin Class	Rat IgG2a, kappa

Antigen Description and Distribution

Spectrin beta chain, erythrocyte is a protein that in humans is encoded by the *SPTB* gene[1,2]. Spectrin is an actin crosslinking and molecular scaffold protein that links the plasma membrane to the actin cytoskeleton, and functions in the determination of cell shape, arrangement of transmembrane proteins, and organization of organelles. It is a tetramer made up of alpha-beta dimers linked in a head-to-head arrangement. This gene is one member of a family of alpha-spectrin genes. The encoded protein is primarily composed of 22 spectrin repeats which are involved in dimer formation. It forms weaker tetramer interactions than non-erythrocytic alpha spectrin, which may increase the plasma membrane elasticity and deformability of red blood cells. Mutations in this gene result in a variety of hereditary red blood cell disorders, including elliptocytosis type 2, pyropoikilocytosis, and spherocytic hemolytic anemia.

Clone

BRAC 65 was made in response to a partial purified erythrocye membrane preparation. BRAC 65 has been used to elucidate protein distribution during human erythroblast enucleation[3].

References

1. Bennett V, Baines AJ (2001). "Spectrin and ankyrin-based pathways: metazoan inventions for integrating cells into tissues.". *Physiol. Rev.* **81** (3): 1353–92. PMID 11427698.
2. Kanzaki A, Rabodonirina M, Yawata Y et al. (1992). "A deletional frameshift mutation of the beta-spectrin gene associated with elliptocytosis in spectrin Tokyo (beta 220/216)". *Blood* **80** (8): 2115–21. PMID 1391962.
3. Bell AJ, Satchwell TJ, Heesom KJ, Hawley BR, Kupzig S, Hazell M, Mushens R, Herman A and Toye AM (2013). Protein Distribution during Human Erythroblast Enucleation *In Vitro*. PLoS ONE Volume **8** (Issue 4): e60300, pages 1-12. doi:10.1371/journal.pone.0060300.