

**International Blood Group
Reference Laboratory**500 North Bristol Park
Northway
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Antigen	Alpha spectrin
Clone	BRIC 172
Product Code	9477
Immunoglobulin Class	Mouse IgG1, kappa

**Protein Development
and Production Unit****Tel:** +44 (0)117 921 7500
Fax: +44 (0)117 912 5796**Website:** <http://ibgri.blood.co.uk>**Email:** enquiries.IBGRL@nhsbt.nhs.uk**Antigen Description and Distribution**

Spectrin alpha chain, erythrocyte is a protein that in humans is encoded by the *SPTA1* gene¹. 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

BRIC 172 was made in response to a partial purified erythrocyte membrane preparation. It has been used to elucidate protein distribution during human erythroblast enucleation¹. BRIC 172 has been used to investigate the key membrane protein changes during *in vitro* erythropoiesis of Protein 4.2 cells².

References

1. 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.
2. Van den Akker E *et al* (2010). Investigating the key membrane protein changes during *in vitro* erythropoiesis of protein 4.2 (-) cells (mutations Chartres 1 and 2). *Haematologica* Aug;95(8):1278-86.