International Blood Group Reference Laboratory
500 North Bristol Park
Northway
Filton
Bristol
BS34 7QH

Protein Development and Production Unit
Tel: +44 (0)117 921 7500
Fax: +44 (0)117 912 5796
Website: http://ibgrl.blood.co.uk
Email: enquiries.IBGRL@nhsbt.nhs.uk

Antigen	Protein 4.2
Clone	BRIC 273
Product Code	9474
Immunoglobulin Class	Mouse IgG1, kappa

Antigen Description and Distribution

The peripheral membrane protein, protein 4.2, is one of the most abundant protein components of the erythrocyte membrane. Protein 4.2 has an important role in red cell membrane structure, its absence due to natural mutations in humans or gene knockout in mice has a detrimental effect on membrane stability and results in hereditary spherocytosis. It is known to be a point of connection between the band 3 complex and the Rhesus protein complex, through its associations with band 3 and CD47 and also via interactions with the cytoskeletal protein ankyrin. Based on protein 4.2's close homology with transglutaminase family proteins, it has been proposed that protein 4.2 has an "open" homology structure that may represent the active, membrane associated protein 4.2 molecule in red blood cells and also explain the dependence of protein 4.2 on band 3 binding for stability[1].

Clone

BRIC 273 was made in response to a partial purified erythrocye membrane preparation. It has been used to elucidate protein distribution during human erythroblast enucleation[2].

References

1. Satchwell TJ, Shoemark DK, Sessions RB, Toye AM. (2009) Protein 4.2: a complex linker. Blood Cells Mol. Dis 42(3):201-10.
2. 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.