

RhD/CE (3H2011): sc-71962

BACKGROUND

The Rhesus (Rh) blood group system represents one of the most complex and important systems in humans. Two highly homologous genes, RhD and RhCE (collectively referred to as Rh30 or RhCED), encode the antigens of the Rh blood group system. These tightly linked genes map to human chromosomal position 1p36.11. The RhD gene, which is commonly deleted from a large segment of the population, encodes the most potent blood group immunogen, the D antigen. Rh incompatibility between maternal and fetal blood types results in hemolytic disease of the newborn (HDN), which often results in fetal death. The RhCE gene exists in four allelic forms, and each allele determines the expression of two antigens in Ce, ce, cE, or CE combinations. The RhCED antigens exist as integral membrane proteins which contain 12-transmembrane helices and maintain erythrocyte membrane integrity. The presentation of the Rh antigenic activity requires the formation of a complex between the RhCED antigens and RhAG (Rh50).

REFERENCES

1. Mouro, I., Colin, Y., Cherif-Zahar, B., Cartron, J.P. and Le Van Kim, C. 1993. Molecular genetic basis of the human Rhesus blood group system. *Nat. Genet.* 5: 62-65.
2. Cherif-Zahar, B., Le Van Kim, C., Rouillac, C., Raynal, V., Cartron, J.P. and Colin, Y. 1994. Organization of the gene (RHCE) encoding the human blood group RhCcEe antigens and characterization of the promoter region. *Genomics* 19: 68-74.
3. Wagner, F.F. and Flegel, W.A. 2000. RHD gene deletion occurred in the Rhesus box. *Blood* 95: 3662-3668.
4. Narang, A. and Jain, N. 2001. Haemolytic disease of newborn. *Indian J. Pediatr.* 68: 167-172.
5. Zhang, J., Hou, Y. and Tang, J. 2002. Molecular genetics and clinical application of Rh blood group system. *Zhonghua Yi Xue Yi Chuan Xue Za Zhi* 19: 246-249.
6. Albert Einstein College of Medicine at Yeshiva University. Department of Biochemistry. <http://www.bioc.aecom.yu.edu/bgmur/rh.htm>.

CHROMOSOMAL LOCATION

Genetic locus: RHD/RHCE (human) mapping to 1p36.11.

SOURCE

RhD/CE (3H2011) is a mouse monoclonal antibody raised against erythrocytes of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RhD/CE (3H2011) is available conjugated to either phycoerythrin (sc-71962 PE) or fluorescein (sc-71962 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

RhD/CE (3H2011) is recommended for detection of RhD/CE of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10⁶ cells).

Molecular Weight of RhD: 45 kDa.

Molecular Weight of RhCE: 46 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, HEL 92.1.7 cell lysate: sc-2270 or AML-193 whole cell lysate: sc-364182.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.