



Erd2 (yC-19): sc-19881

BACKGROUND

Retention of resident proteins in the lumen of the endoplasmic reticulum is achieved in both yeast and animal cells by their continual retrieval from the *cis*-Golgi, or a pre-Golgi compartment. In yeast, resident proteins of the ER lumen carry a specific tetrapeptide signal HDEL (His-Asp-Glu-Leu) that prevents their secretion. Erd2 is a yeast mutant that fails to retain such resident proteins within the cell. ERD2, a gene required for retention, encodes a 26 kDa integral membrane protein whose abundance determines the efficiency and capacity of the retention system. ERD2 encodes the HDEL receptor and is also required, perhaps indirectly, for normal protein transport through the Golgi, and hence for growth. Cells that lack Erd2 completely have a defective Golgi apparatus and cannot grow. The receptor has a second function, possibly related to its ability to recycle from Golgi to ER and mutations that block its recycling also prevent growth.

REFERENCES

1. Lewis, M.J. and Pelham, H.R. 1990. A human homologue of the yeast HDEL receptor. *Nature* 348: 162-163.
2. Semenza, J.C., Hardwick, K.G., Dean, N. and Pelham, H.R. 1990. ERD2, a yeast gene required for the receptor-mediated retrieval of luminal ER proteins from the secretory pathway. *Cell* 61: 1349-1357.
3. Lewis, M.J., Sweet, D.J. and Pelham, H.R. 1990. The ERD2 gene determines the specificity of the luminal ER protein retention system. *Cell* 61: 1359-1363.
4. Hardwick, K.G., Boothroyd, J.C., Rudner, A.D. and Pelham, H.R. 1992. Genes that allow yeast cells to grow in the absence of the HDEL receptor. *EMBO J.* 11: 4187-4195.
5. Townsley, F.M., Frigerio, G. and Pelham, H.R. 1994. Retrieval of HDEL proteins is required for growth of yeast cells. *J. Cell Biol.* 127: 21-28.

SOURCE

Erd2 (yC-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Erd2 of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-19881 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 or our catalog for detailed protocols and support products.

APPLICATIONS

Erd2 (yC-19) is recommended for detection of Erd2 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

RESEARCH USE

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