Assignment of the gene for gp130^{RB13} (*Pdnpno*) to rat chromosome band 1p12 by in situ hybridization

B.U.		Koelsch
S.		Stadge
H.		Deissler
M.F.		Rajewsky

Institute of Cell Biology (Cancer Research), University of Essen Medical School, Essen (Germany)

Request reprints from M.F. Rajewsky, Institute of Cell Biology (Cancer Research), University of Essen Medical School, Hufelandstrasse 55, D-45122 Essen (Germany); telephone: 201-723-2802; fax: 201-723-5905; e-mail: Rajewsky@uni-essen.de

Rationale and significance

Expression of the RB13-6 antigen (gp130^{RB13}-6) characterizes a subpopulation of immature neural precursor cells in rat brain that are highly susceptible to malignant conversion by exposure to N-ethyl-N-nitrosourea (Kindler-Röhrborn et al., 1994). After purification and sequencing of the cell surface glycoprotein gp130^{RB13}-6, the cDNA was isolated from a λ gt11 fetal rat brain library (Deissler et al., 1995), and genomic clones were isolated from a lambda EMBL3 library. The gene was given the symbol *Pdnpno* for phosphodiesterase/5'-nucleotidase associated with neuro-oncogenesis. The phosphodiesterase/5'-nucleotidase gp130^{RB13}-6 is a member of a new protein family including the plasma cell membrane glycoprotein PC-1 (van Driel and Goding, 1987) and the tumor cell motility factor autotaxin (Murata et al., 1994).

Fig. 1. (a) In situ hybridization of a biotin-labeled 13.6-A probe to rat metaphase cells resulted in specific labeling at 1p13 $\rightarrow$ p12. Images of propidium iodide stained chromosomes and of the signal were obtained using a CCD camera and merged with Aldus Photostyler 2.0. (b) Chromosome 1 magnified, (c) Ideogram of rat chromosome 1 (Levan, 1974).

Materials and methods

Metaphase cells were prepared from rat embryo fibroblasts. FISH was performed as described previously (Pinkel et al., 1986). Hybridization to a biotin-labeled probe was detected with fluorescein-conjugated avidin, and chromosomes were counterstained with propidium iodide.

Probe name: 13.6-A

Probe type: genomic DNA

Insert size: 16 kb

Vector: lambda EMBL3

Proof of authenticity: DNA sequencing

Gene reference: Deissler et al., 1995

To our knowledge this is the first time this gene has been mapped.

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Results

Mapping data

Location: 1p13→p12

No. of cells examined: 23

Number of cells with specific signal: 1 (0), 2 (1), 3 (7), 4(15)

chromatids per cell Most precise assignment: 1p12 Location of background signals (sites with > 2 signals): none

observed

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E-mail karger@karger.ch © 1996 S. Karger AG, Basel