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Assignment[1] of protooncogene MERTK (a.k.a. c-mer) to human chromosome 2q14.1 by in situ hybridization

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

Rationale and significance

The human protooncogene MERTK (c-mer, GenBank database U08023) is a receptor-like tyrosine kinase (tk) with features characteristic of the axl family of tk genes (O'Bryan et al., 1991; Graham et al., 1994). While MERTK expression in heart, skeletal muscle or brain is below the detection limit, high levels of expression were found in epithelium and cells of reproductive origin (Graham et al., 1994). From a genomic P1 library, we isolated a clone for MERTK by in vitro DNA amplification screening (Weier et al., 1995) and assigned the gene to human chromosome 2q14.1 by non-isotopical fluorescence in situ hybridization (FISH).

Materials and methods

We screened a human genomic P1 library by PCR using primers HMER-4F: 5′-GTTGGGAACCTACTTGGGAAACTC-3′ and HMER-3R: 5′-ATTCCTTCCCATCTTTCCTCCAAG-3′. Library screening, metaphase spread preparation, FISH and image acquisition were performed as described previously (Weier et al., 1995).

Probe name: RMC02P031
Probe type: genomic DNA
Insert size: ~ 80 kb
Vector: P1
Proof of authenticity: restriction digest of 414-bp PCR product
Gene reference: Graham et al. (1994)

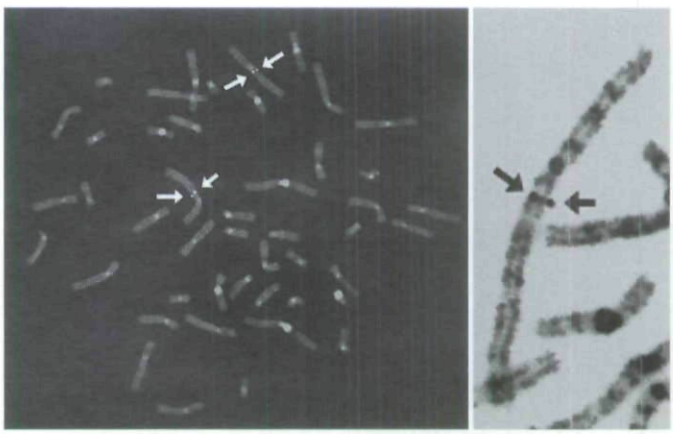

Fig. 1. In situ hybridization of a digoxigenin-labeled RMC02P031 probe to human metaphase cells resulted in specific labeling at 2q14 (arrows). Images of DAPI stained chromosomes and the signal were obtained with a CCD camera, and merged using Adobe Photoshop 2.5. (**A**) Metaphase spread showing 4 specific signals. (**B**) One copy of chromosome 2 shown at high resolution. The fluorescence images were inverted and displayed as grayscale images.

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