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Assignment[#] of 5-hydroxytryptamine receptor (HTR4) to human chromosome 5 bands q31-->q33 by in situ hybridization.

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

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Rationale and significance

5-Hydroxytryptamine 4 receptors (5-HT4R) were first characterized in 1988 (Dumuis *et al.,* 1988) in mouse colliculi neurons. Since then, it has been shown that 5-HT4R mediates widespread effects in central and peripheral systems (Eglen *et al.*, 1995). These observations have stimulated the search and discovery of a very large series of selective and potent agonists and antagonists as well as the cloning of the receptor in rat and mouse brain (Eglen *et al.*, 1996; Gerald *et al.,* 1995; Claeysen *et al.*, 1996). In human atria the concentration of 5-HT4R and □□- and □$_2$-adrenoceptors vary, depending on whether the patients have been treated with □-adrenergic-blocking agents or not (Kaumann *et al.*, 1994; Ouadid *et al.*, 1992).These observations suggest that a "cross-talk" may exist between the regulation of 5-HT4R and □-adrenoceptors in human myocardium. To answer these questions, we cloned human 5-HT4R (gene symbol: HTR4; Claeysen *et al.*, 1997*)* from heart and mapped the chromosomal location by FISH.

Materials and methods

Human metaphase cells were prepared from phytohemagglutinin-stimulated lymphocytes. Probe was labeled with biotinyl-16-dUTP and FISH was performed as previously described (Taviaux and Demaille, 1993).

Probe name(s): h5-HT$_{4S}$
Probe type: cDNA
Insert size: 1.2kb
Proof of authenticity: sequencing
Gene reference: GDB:6381308; Claeysen *et al.* (1997)

Results

Mapping data
Location: 5q31→q33
Number of cells examined: 52
Number of cells with specific signal: 1 (19), 2 (8), 3 (6), 4 (1) chromatids per cell
Most precise assignment: 5q32
Location of background signals (sites with >2 signals): none

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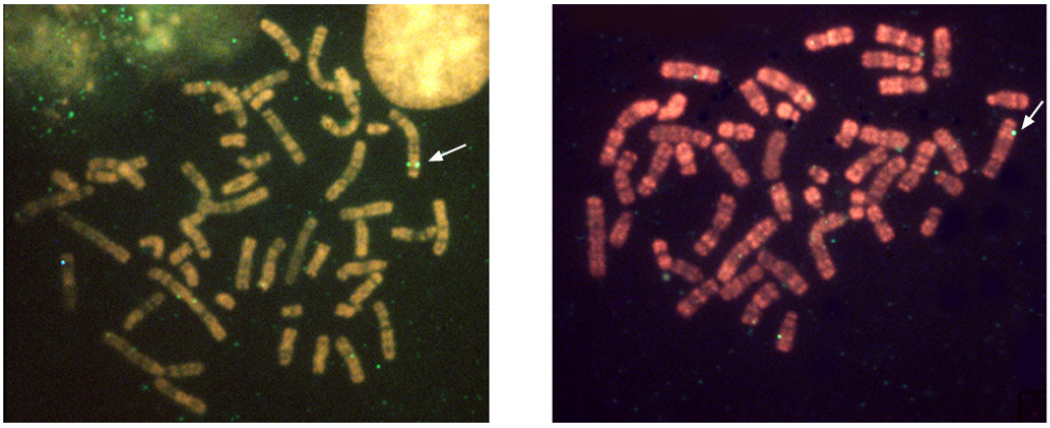
Figure legend

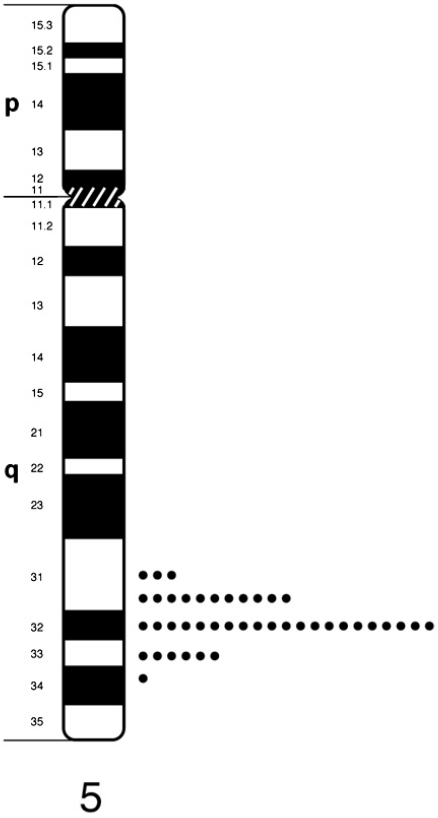
Figure 1

A) Hybridization of a human cDNA 5-HT_4 receptor probe to R-band human metaphases. Fluorescent spots are visualized at 5q31→q33. **B)** Ideogram of chromosome 5 homologue showing the fluorescent spot distribution to the 5q31→q33 band for 30 metaphases.

A



B


15.3
15.2
15.1
p
14
13
12
11
11.1
11.2
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21
q
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31
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Figure 1