

TRIAL TO CLONE A PH - SENSING RECEPTOR

Cloning of a receptor expressed only in differentiated renal tubular cells.

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SUMMARY

Alteration of pH induced a mRNA in some cells but it is quite selective to the polarity of the cells and differentiation of the cells. Therefore, we assumed the presence of pH (HCO_3) sensing receptor in these cell and tried to isolate the cDNA. Degenerative primer sets were constructed to G-protein coupled receptor, tyrosine kinase type receptor and tyrosine phosphatase type receptor. Amplified fragments were sought in the latter two type receptors, however, the tyrosine kinase type receptor was expressed in both differentiated and growth phase of the cells. Northern blot analysis showed the presence of a fragment of tyrosine PHOSPHATASE type receptor in the differentiated cells but not in growing cells. Thus we cloned a tyrosine phosphatase type of receptor. A cDNA encoding a new alignment of amino acids was isolated but the isoform was reported just before our publication. The cDNA encodes characteristics of the tyrosine phosphatase with one transmembrane segment. Further analysis was required more 5' stretched extracellular region, which may sense extracellular HCO_3 .