

学位論文の要旨

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主論文の題名 Neurotrophic receptor tyrosine kinase B induces c-fos-associated cell survival			
主論文の要旨 <p>The neurotrophic receptor tyrosine kinase B (TrkB) is a cell surface receptor for brain-derived neurotrophic factor (BDNF) with kinase activity. This protein is expressed in various tumors and thought to participate in various cellular processes. The objective of this study is to clarify the biological roles of TrkB and its downstream target molecules using 293T cells stably expressing TrkB (293T-TrkB).</p> <p>Expression levels of TrkB mRNA and protein were analyzed by real-time PCR and by Western blot analysis, respectively. RT-PCR was performed to analyze c-fos mRNA expression.</p> <p>293T-TrkB cells expressed TrkB mRNA by 10^4-fold higher than 293T-Mock cells did. An increased survival rate by BDNF up to about 1.7-fold was observed in 293T-TrkB cells, but not in 293T-Mock cells. Moreover, this increment was completely reversed by K252a, an inhibitor of tyrosine kinase. The expression level of c-fos mRNA was increased up to 4.7-fold in the presence of BDNF comparing to that without BDNF in 293T-TrkB cells. Furthermore, combination of inhibitors of MEK and PI3K partially reduced c-fos mRNA expression level.</p> <p>In conclusion, TrkB could play a certain role in c-fos associated cell survival through both MEK and PI3K pathway. It is conceivable that activation of TrkB has a significant impact on tumorigenesis and metastasis.</p>			

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