28 THE NORMAL EPITHELIAL CELL-SPECIFIC GENE 1 (NES1) RESIDES ON CHROMOSOME 19q13 AND ITS EXPRESSION IS REGULATED BY STEROID HORMONES

Luo, L. Y., Grass, L., and Diamandis, E. P.
Department of Pathology and Laboratory Medicine, Mount Sinai Hospital, Department of Laboratory Medicine and Pathobiology, University of Tornoto, Toronto, Ontario, M5G 1X5, Canada

The normal epithelial cell-specific 1 (NES1) gene is a recently identified novel serine protease-like gene, the expression of which is down -regulated during breast cancer progression. The cDNA of this gene was cloned and predicted to be a serine protease by protein homology comparison. In this study, we investigated the chromosomal localization of the NES1 gene by somatic cell hybrid and radiation hybrid mapping. NES1 gene was mapped to chromosome 19q13.3-4, in the same region where the human kallikrein gene family resides. These results suggest that NES1 may be a novel member of the human kallikrein gene family. We have also isolated a 150Kb PAC clone containing the gene of interest. After subcloning, we sequenced 5Kb of genomic DNA and established the genomic structure of NES1. The gene has one untranslated exon and 5 coding exons. Intron/exon boundaries were established. In order to further investigate whether NES1 is regulated by steroid hormones, like the other members of the kallikrein gene family, we studied its steroid hormone regulation using the BT-474 breast cancer cell line. The reverse transcriptase-polymerase chain reac-