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# A Putative 12-Transmembrane Domain Cotransporter Associated With Apical Membranes of the Epididymal Duct

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The epithelial cells lining the epididymal duct play an important role in establishing and maintaining the luminal fluid microenvironment. A cDNA, canine epididymal cDNA 11 (CE11), was cloned from the dog epididymis predicting a transport protein involved in this process. The full-length sequence encoded a 12-transmembrane domain protein of 481 amino acids; a splice variant predicted a shorter isoform. Northern blot analysis and in situ transcript hybridization revealed that the CE11 mRNA is highly expressed by the epididymal duct epithelium. By reverse transcription-polymerase chain reaction, however, lower levels of both splice variants were detected in other tissues as well. Database searches suggested that CE11 is homologous to the previously described so-called thymic stromal cotransporter (TSCOT) with weak similarity to sugar (and other) cotransporters. We show here that the mouse and human TSCOT mRNAs, although enriched in immune tissues, have a broader distribution than previously assumed. Employing Western blot analysis, we identified the endogenous CE11 protein in membrane preparations of the canine epididymis. In accordance with the occurrence of 2 splice variants, 2 immunopositive bands were detected, most probably representing the predicted CE11 isoforms. Immunoperoxidase staining and indirect immunofluorescence localized the antigen in the apical membrane compartment of the adult organ, suggesting that CE11 functions as an apical transport protein involved in the establishment and/or maintenance of the specific luminal microenvironment of the epididymal duct.

Key words: Canine epididymis, transporter, TSCOT homologue, apical membrane compartment

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