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## JOURNAL ARTICLE

# Expression and Localization of the Na<sup>+</sup>/H<sup>+</sup> exchanger isoform NHE3 in the rat efferent ducts

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The efferent ducts reabsorb most of the fluid released with spermatozoa from the testis. This absorptive capacity results in a severalfold increase in sperm concentration in the proximal epididymis and is partly responsible for maintenance of the optimal microenvironment for the sperm maturation. The fluid absorption is coupled to active Na<sup>+</sup> transport and is inhibitable by amiloride, both of which suggest a role for a Na<sup>+</sup>/H<sup>+</sup> exchanger (NHE). NHE3 is an apical membrane NHE responsible for sodium absorption in renal proximal tubule and intestinal epithelium. In the present study, we examined the expression of NHE3 messenger RNA (mRNA) and protein in the rat efferent ducts by reverse transcription-polymerase chain reaction (RT-PCR) and Western blotting and the localization of NHE3 by indirect immunofluorescence. RT-PCR indicated the expression of NHE3 mRNA, and Western blotting showed an NHE3 protein in the efferent duct membrane homogenate. By immunofluorescence, NHE3 was localized to the apical membrane of the nonciliated cells in the efferent duct epithelium, which also expressed aquaporin-1 water channel protein. These results suggest that NHE3 potentially plays an important role in the fluid reabsorption in the efferent ducts.

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