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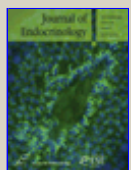
JOURNAL ARTICLE

Morphologic changes in efferent ductules and epididymis in estrogen receptor-alpha knockout mice

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Estrogen has been shown to have an important role in fluid reabsorption in efferent ductules of the testis. Our previous study of the estrogen receptor-alpha knockout mouse (ERKO) showed that the efferent ductules and rete testis were primary targets of estrogen receptor function. In the present study, a more comprehensive evaluation of the ERKO male reproductive tract was performed to determine the severity of effects in efferent ductules as well as the epididymis. The following observations were found in ERKO males: 1) blind-ending efferent ductules were more prevalent in ERKO than in wild type (WT) tissues; 2) glycogen-containing cells were observed at the rete testis-efferent ductule junction; 3) the tubular diameters of the efferent ductules and initial segment epididymides were dilated; 4) efferent ductules were dilated between 130 to 300% over wild type ductules; 5) efferent ductule epithelial height was reduced nearly 50%; 6) microvilli of nonciliated cells of efferent ductules were 64% shorter in length; 7) cilia were reduced in number; 8) initial segment epithelium was displaced into regions adjacent to the rete testis and in short segments of the common region of efferent ductule; 9) apical, narrow, and clear cells of the epididymis also were abnormal in some regions; 10) in the corpus and cauda regions, sperm granulomas were noted in one third of the ERKO males. In conclusion, the entire reproductive tract is affected in ERKO males. The cells showing the greatest effects were estrogen receptor-positive cells. It appears that in the ERKO mouse there are developmental anomalies that must be considered separately from adult dysfunctional changes in the male reproductive tract.

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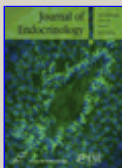
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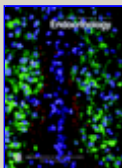
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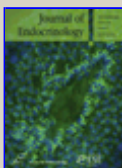
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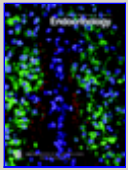
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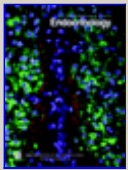
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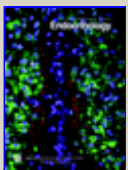
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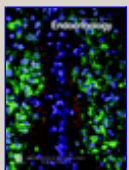


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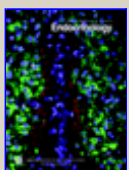


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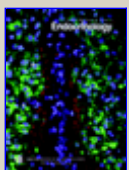


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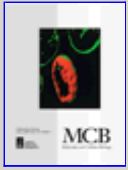


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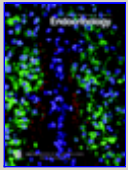


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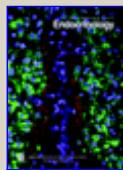
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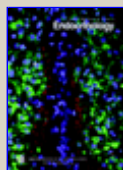
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