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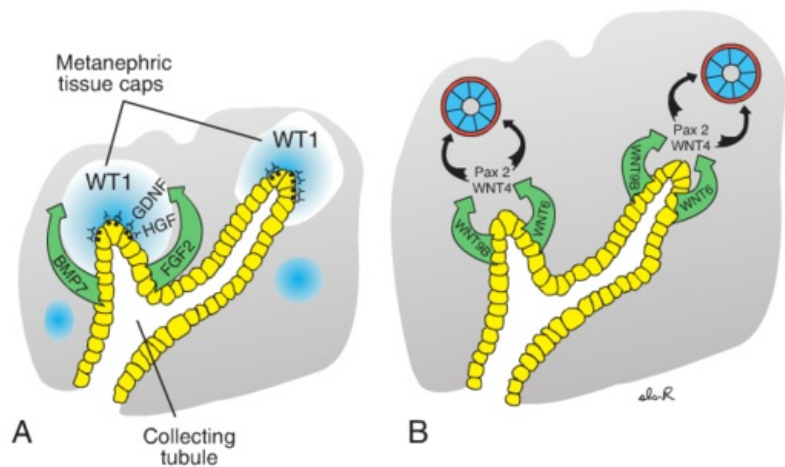


Figure 15.7 Genes involved in differentiation of the kidney. **A.** *WT1*, expressed by the mesenchyme, enables this tissue to respond to induction by the ureteric bud. GDNF and HGF, also produced by the mesenchyme, interact through their receptors, RET and MET, respectively, in the ureteric bud epithelium, to stimulate growth of the bud and maintain the interactions. The growth factors FGF2 and BMP7 stimulate proliferation of the mesenchyme and maintain *WT1* expression. **B.** WNT9B and WNT6 secreted by branches of the ureteric bud epithelium cause upregulation of *PAX2* and *WNT4* in the surrounding mesenchyme. In turn, these genes cause the mesenchyme to epithelialize (*PAX2*) and to then form tubules (*WNT4*). Changes in the extracellular matrix also occur, such that laminin and type IV collagen form a basement membrane for the epithelial cells.

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Source
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