

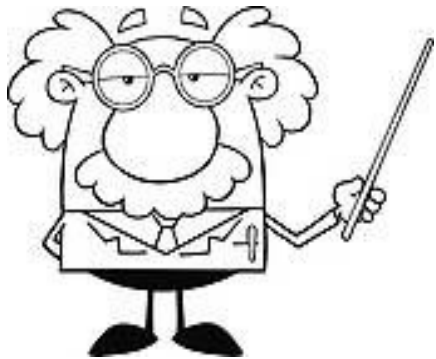
Practical Histology

Renal block

وَمَنْ يَتَوَكَّلْ عَلَى اللَّهِ فَهُوَ حَسْبُهُ

Things you need to know before the exam :

- The pictures in the exam will be the same as the ones included in the slides.
- Don't try to take short cuts during the exam so avoid using abbreviations so you don't lose marks.
- Please keep in mind that this work is done by students , so if there are any mistakes please inform us .
- This work is not by any means a reference.
- Please study hard and don't worry the exam will be easy!!



Cortex of the Kidney

Structures:

1. Glomerulus of renal corpuscle.
2. Urinary space (or capsular space).
3. Parietal layer of Bowman's capsule.
4. Proximal convoluted tubules with brush border.
5. Distal convoluted tubules.
6. **Juxta-glomerular apparatus.**

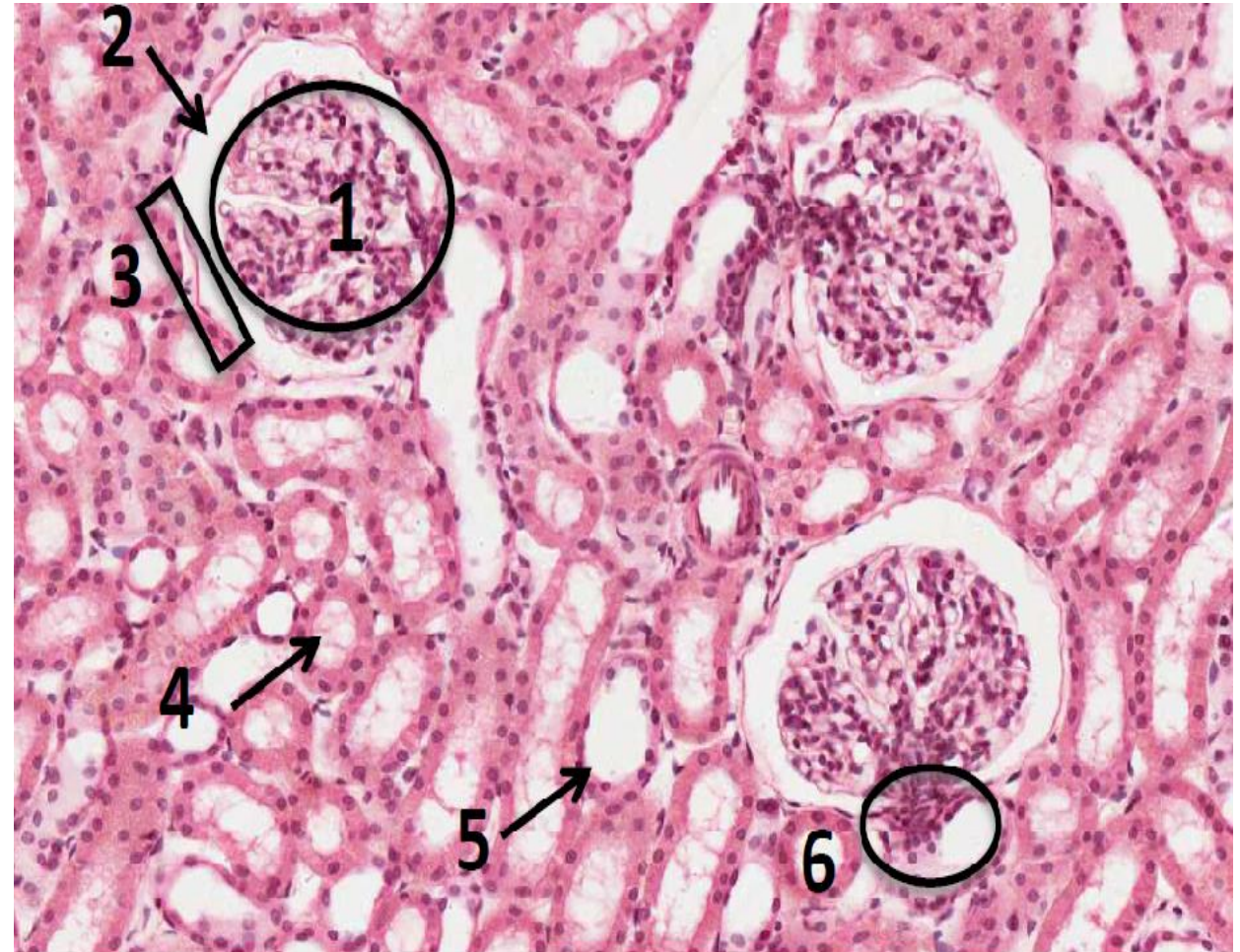
How to differentiate between the proximal and distal convoluted tubules ?

- ✓ PCV: Has an ill defined lumen because it is filled with brush border (microvilli)

من جوا لونها زهري.

- ✓ DCV: Has a well demarcated and clear lumen.

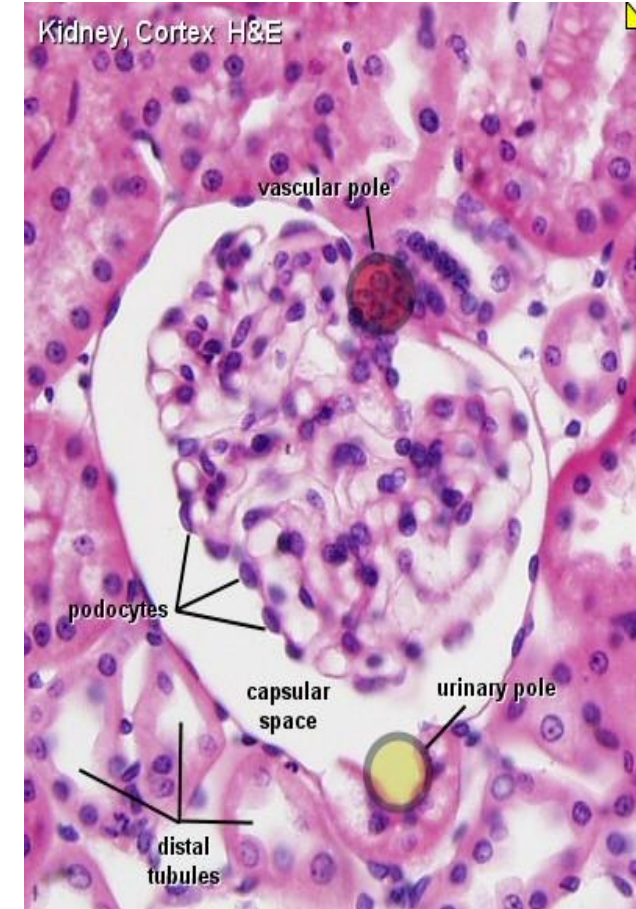
من جوا لونها أبيض.



Juxtaglomerular apparatus

Formed of:

- ✓ The macula densa of distal tubule (tall columnar cells)
تكون جهة ال Distal tubule
- ✓ Juxtaglomerular cells of afferent glomerular arteriole (they secrete renin)
تكون جهة ال afferent arteriole
- ✓ The extraglomerular mesangial cells



Renal Corpuscle

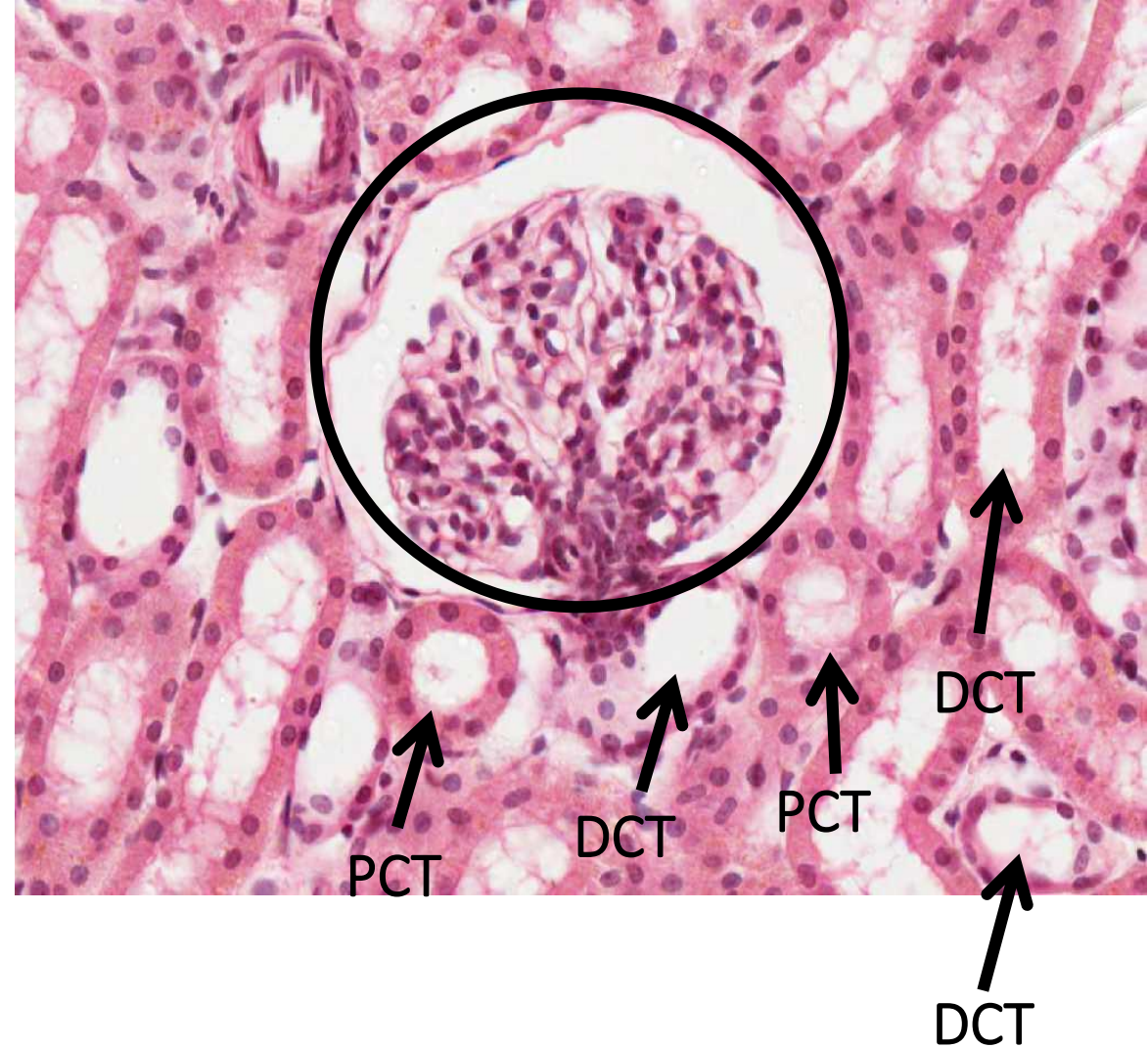
Structures:

- ✓ **Glomerulus** which contains fenestrated capillaries "without diaphragm"
- ✓ **Bowman's capsule:** Parietal layer, urinary space, and **podocytes** (visceral layer)
- ✓ **Mesangial cells:** Intra-glomerular cells

Cells:

- ✓ **Mesangial cells**
- ✓ **Glomerular endothelial cells**
- ✓ **Podocytes** (epithelial cells)

Podocytes have processes, and these processes have filtration slits with diaphragms.

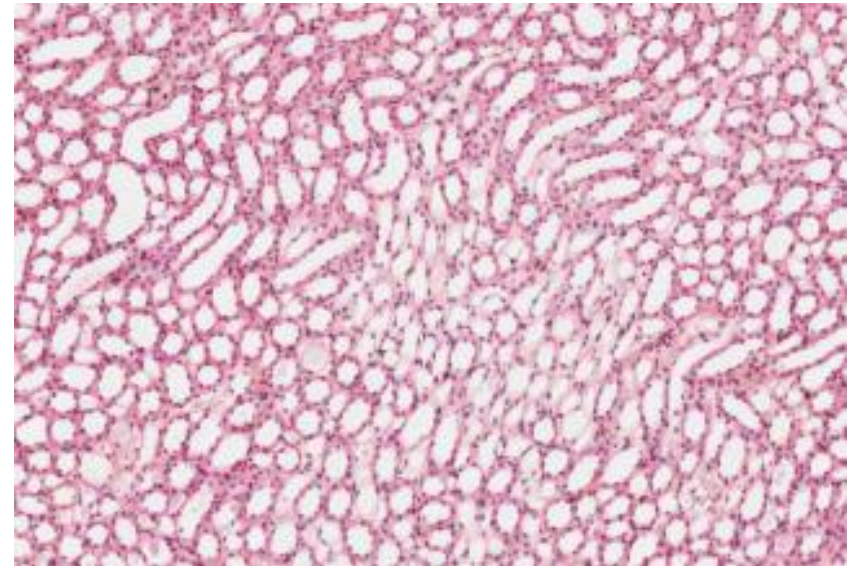
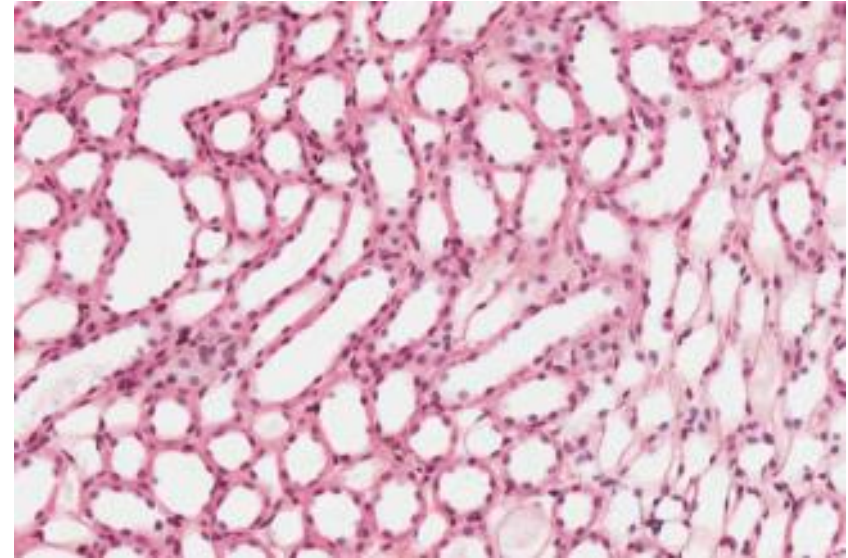


Kidney (Medulla)

Features :

Contains tubular structures:

- ✓ **loop of Henle:** simple squamous epithelium
- ✓ **collecting tubules and ducts:** simple cuboidal epithelium
- ✓ **Papillary ducts (ducts of Bellini):** Simple Columnar epithelium

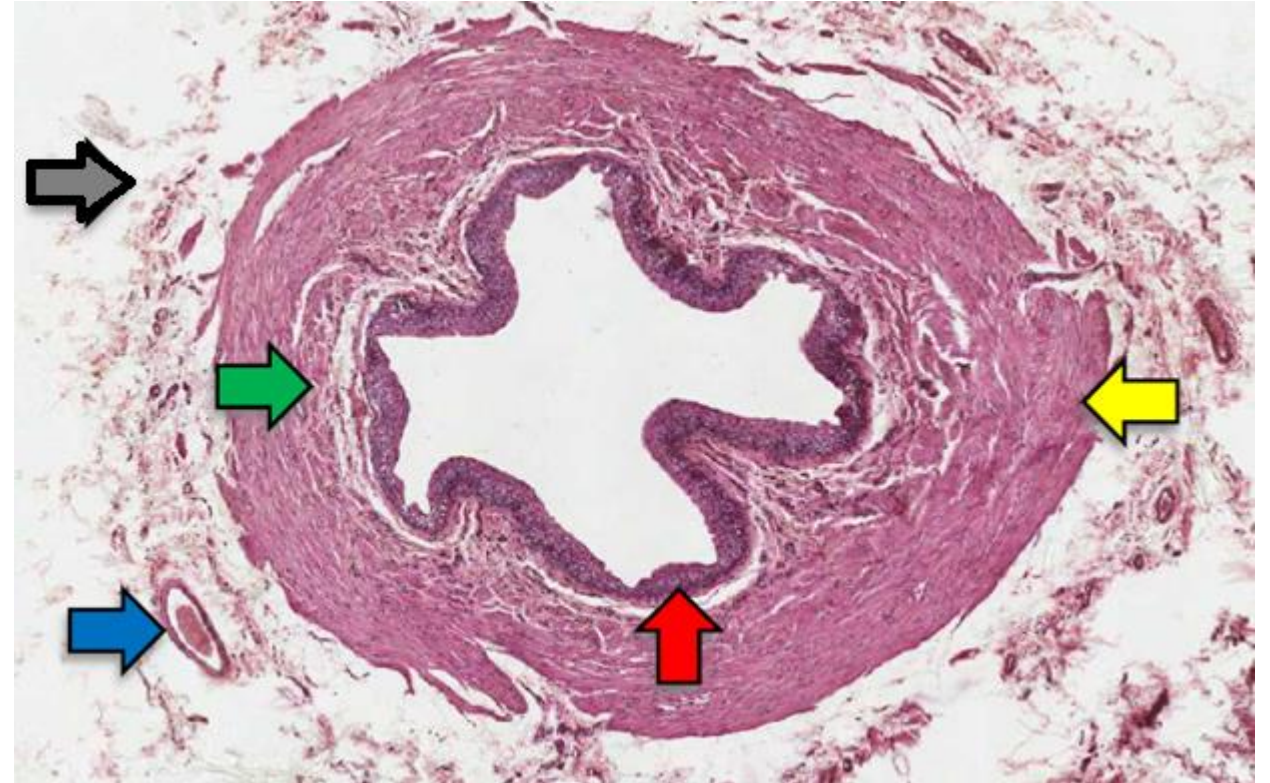


Ureter

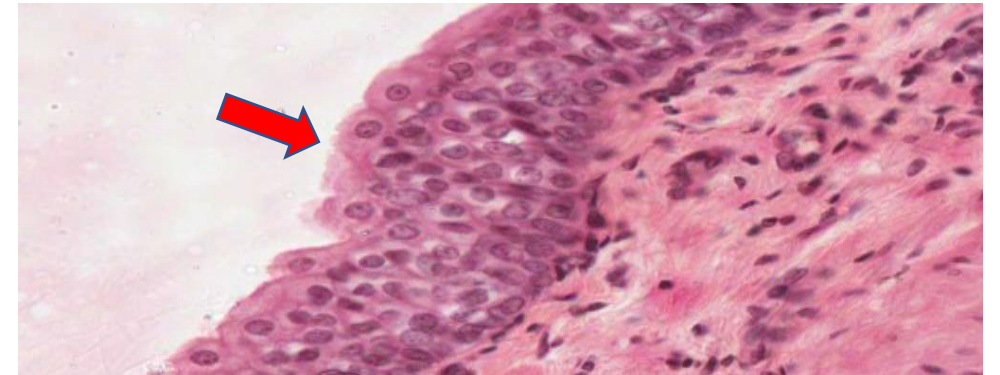
Features:

- ✓ Transitional epithelium
- ✓ Inner longitudinal layer
- ✓ Outer circular
- ✓ Blood vessels
- ✓ Adventitia

Layers:



Mucosa	Muscularis	Adventitia
<ul style="list-style-type: none"> ✓ Transitional Epithelium ✓ Lamina Propria 	<p>Muscularis "Muscle coat"</p> <ul style="list-style-type: none"> ✓ Upper 2/3: <ul style="list-style-type: none"> - Inner Longitudinal - Outer Circular ✓ Lower 1/3: <ul style="list-style-type: none"> - Inner Longitudinal - Middle Circular - Outer Longitudinal 	<ul style="list-style-type: none"> ✓ NO Serosa



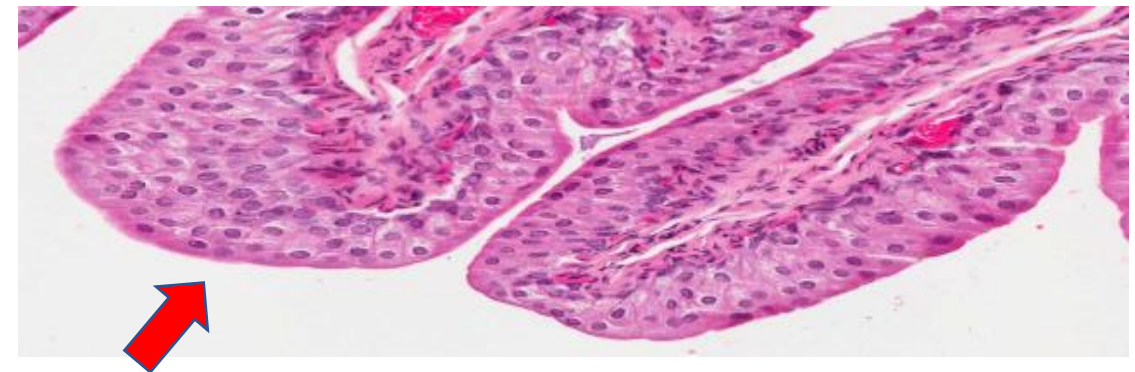
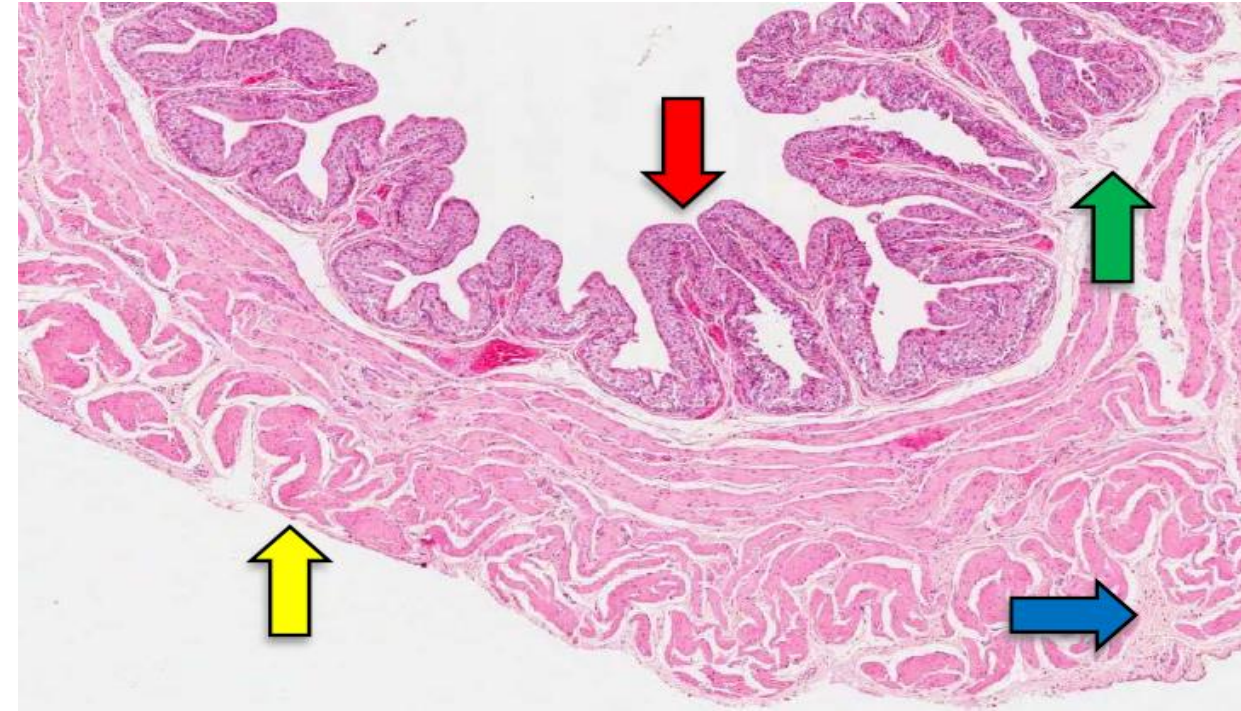
Urinary Bladder

Features:

- ✓ Transitional epithelium
- ✓ Lamina propria
- ✓ Connective tissue
- ✓ Mesothelium

Layers:

Mucosa	Muscularis	Adventitia
<ul style="list-style-type: none"> ✓ Transitional Epithelium ✓ Lamina Propria 	<p>3 layers of smooth muscle coat"</p> <ul style="list-style-type: none"> ✓ Inner Longitudinal ✓ Middle Circular ✓ Outer Longitudinal 	<ul style="list-style-type: none"> ✓ Serosa



It is a continuation of the lower third of the ureter, has the same structure except that it has serosa.

Thank you & good luck

- Histology team

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