

Functions

Main Function! = Production of urine

Others include:

- Filtration of blood

- Reabsorption of filtered substances (Adjusting salt & water excretion to maintain a constant fluid volume & osmolality)

- Excretion of metabolic waste & xenobiotics such as urea (from protein metabolism), nitrogen, CO_2

- Water & acid-base balance

- Endocrine functions

↳ Kidney is an endocrine organ

Endocrine functions of the kidney

Calcitriol: stimulates Ca^{2+} binding protein, sends it to the basal lamina, activates ATP transporter, reabsorbs Ca^{2+} to send to blood
↳ vitamin D hormone

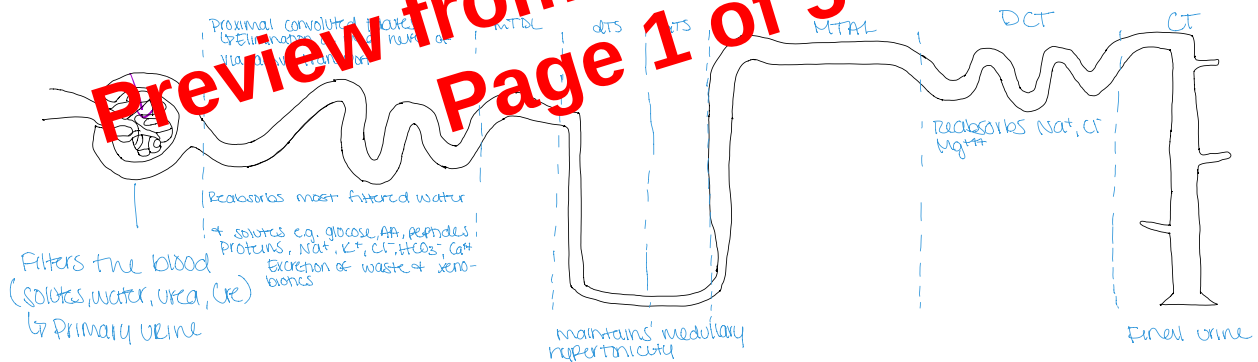
Erythropoietin: hormone (glycoprotein, growth factor), essential for erythropoiesis

↳ steroid hormone receptor intracellular

Renin: hormone activator, renal regulation of blood pressure

↳ Activates angiotensin

Functional segments of the nephron



Trace the flow of blood through the kidney

