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Segment	Functions	Water Permeability	Primary Transporters and Drug Targets at Apical Membrane	Diuretic with Major Action
Glomerulus	Formation of glomerular filtrate	Extremely high	None	None
Proximal convoluted tubule (PCT)	Reabsorption of 65% of filtered Na^+ , K^+ , CA^{2+} , and Mg^{2+} ; 85% of NaHCO_3 , and nearly 100% of glucose and amino acids. Isosmotic reabsorption of water.	Very high	Na/H^1 (NHE3), carbonic anhydrase	Carbonic anhydrase inhibitors, Osmotic diuretics (Minor Action)
Proximal tubule, straight segments	Secretion and reabsorption of organic acids and bases, including uric acid and most diuretics	Very high	Acid (eg, uric acid) and base transporters	None
Thin descending limb of Henle's loop	Passive reabsorption of water	High	Aquaporins	Osmotic diuretics (Minor Action)
Thick ascending limb of Henle's loop (TAL)	Active reabsorption of 15–25% of filtered Na^+ , K^+ , Cl^- ; secondary reabsorption of Ca^{2+} and Mg^{2+}	Very low	$\text{Na}/\text{K}/2\text{Cl}$ (NKCC2)	Loop diuretics
Distal convoluted tubule (DCT)	Active reabsorption of 4–8% of filtered Na^+ and Cl^- ; Ca^{2+} reabsorption under parathyroid hormone control	Very low	Na/Cl (NCC)	Thiazides
Cortical collecting tubule (CCT)	Na^+ reabsorption (2–5%) coupled to K^+ and H^+ secretion	Variable	Na channels (ENaC), K channels, ¹ H transporter, ¹ aquaporins	K^+-sparing diuretics