Alpha receptors, classified into subtypes ?1, ?2, and ?3, are integral components of the adrenergic signaling pathways that modulate various physiological functions.The implications for therapeutic strategies in conditions such as hypertension and prostate diseases are substantial, as non-selective ?1 antagonists have exhibited adverse cardiac effects in clinical settings, further underscoring the necessity for a nuanced approach in targeting adrenergic signaling pathways in clinical practice ().Upon stimulation by norepinephrine and epinephrine, the activation of these receptors leads to the phosphorylation of extracellular signal-regulated kinase (ERK) and endothelial nitric oxide synthase (eNOS), which are essential signals in promoting cellular processes such as DNA synthesis and vascular tone regulation.