Puromycin is an aminonucleoside antibiotic compound originally produced by *Streptomyces albogriseolus*. Puromycin displays antibacterial activity through inhibition of ribosomal protein translation; it resembles the 3' end of tRNA and is incorporated into growing protein chains through the ribosomal A site, inducing premature chain termination. Puromycin also induces DNA damage mediated by ROS and oxidative stress in animal models. In vitro, puromycin inhibits insulin-stimulated glycolysis by inhibiting insulin activation of phosphofructokinase 2. Puromycin also inhibits dipeptidyl peptidase II (DPP2; serine peptidase) and metallopeptidase. Additionally, this compound induces ERK activation-dependent apoptosis and mTOR-dependent autophagy in podocytes, leading to proteinuria and glomerular damage.

References


