Polydatin (PD), a resveratrol glycoside, has been shown to protect renal function in diabetic nephropathy (DN), but the underlying molecular mechanism remains unclear.

A study demonstrates that PD stabilize the mitochondrial morphology and attenuate mitochondrial malfunction in both KKAy mice and in hyperglycemia (HG)-induced MPC5 cells. We use Western blot analysis to demonstrate that PD reversed podocyte apoptosis induced by HG via suppressing dynamin-related protein 1 (Drp1). This effect may depend on the ability of PD to inhibit the generation of cellular reactive oxygen species (ROS).

PD may be therapeutically useful in DN, and that, podocyte apoptosis induced by HG can be reversed by PD through suppressing Drp1 expression [1)].

1)
Ni Z, Tao L, Xiaohui X, Zelin Z, Jiangang L, Zhao S, Weikang H, Hongchao X, Qiujing W, Xin L. Polydatin impairs mitochondria fitness and ameliorates podocyte injury by suppressing Drp1 expression. J Cell Physiol. 2017 Oct;232(10):2776-2787. doi: 10.1002/jcp.25943. Epub 2017 Apr 27. PubMed PMID: 28383775.