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# Epalrestat

National Cancer Institute

## Source

National Cancer Institute. *Epalrestat*. NCI Thesaurus. Code C72762.

An orally available, a non-competitive, reversible inhibitor of aldose reductase (AR), with potential antineoplastic, antioxidant, and anti-inflammatory activities. Upon oral administration, epalrestat non-competitively binds to AR, a polyol pathway enzyme that catalyzes reactive oxygen species (ROS)-initiated lipid peroxidation-generated lipid aldehydes and their glutathione conjugates, which have been implicated in the activation of transcription factors such as nuclear factor kappa-light-chain-enhancer of activated B cells (NF-kappa B) and activator protein-1 (AP-1), which control the transcription of many inflammatory cytokines. Increased inflammatory cytokines and growth factors promote cell proliferation, a primary feature in the tumorigenesis process. AR is overexpressed in several oxidative stress- and inflammation-related conditions, including cancer.