Allopurinol is a purine analog that mimics hypoxanthine, inhibiting xanthine oxidase; it is clinically used to treat diseases of hyperuricemia, such as gout. Allopurinol exhibits anti-inflammatory, nephroprotective, antinociceptive, antioxidative, anti-fibrotic, and cardioprotective activities. In animal models of renal ischemia, allopurinol decreases production of inflammatory cytokines. In other animal models, allopurinol decreases oxidative stress, suppresses atrial fibrosis, and prevents atrial fibrillation. Additionally, this compound also decreases nociception in animal models of thermal and chemical pain, likely due to increasing levels of hypoxanthine and xanthine, which are metabolized downstream to form adenosine.

References