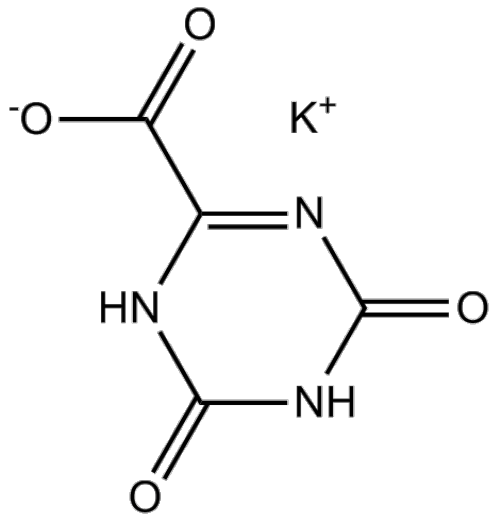
Product Data Sheet

Product Name: Oxonic acid potassium salt
Cat. No.: GC17025

Chemical Properties

Cas. No.	2207-75-2		
Chemical Name	potassium;4,6-dioxo-1H-1,3,5-triazine-2-carboxylate		
SMILES	C1(=NC(=O)NC(=O)N1)C(=O)[O-].[K+]		
Formula	$C_4H_2KN_3O_4$	M.Wt	195.17
Solubility	≥ 19.5mg/mL in Water with gentle warming	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Protocol

Animal experiment [1]:

Product Data Sheet

Animal models	Kunming (KM) mice
Preparation Method	Mice were intraperitoneally administered Oxonic acid potassium salt (350mg/kg/day) combined with oral hypoxanthine (450mg/kg/day) for 8 weeks. Cardiac function and histopathology were assessed post-treatment.
Dosage form	350mg/kg/day; i.p; Daily administration for 8 weeks.
Applications	Oxonic acid potassium salt and hypoxanthine co-administration induced chronic hyperuricemia, leading to left ventricular remodeling characterized by anterior wall thickening, myocardial disorganization, inflammatory infiltration, and collagen fibrosis.

References:

[1] Lin C, Zheng Q, Li Y, et al. Assessment of the influence on left ventricle by potassium oxonate and hypoxanthine-induced chronic hyperuricemia. Exp Biol Med (Maywood). 2023 Jan;248(2):165-174.

Background

Oxonic acid potassium salt selectively and competitively inhibits the activity of uricase, effectively elevating uric acid levels in vivo. Oxonic acid potassium salt inhibits the phosphorylation of 5-fluorouracil (5-FU) to 5-fluorouridine-5'-monophosphate[1-2]. Oxonic acid potassium salt can be used to establish animal models of hyperuricemia and serves as an auxiliary tool in cancer research[3-4].

In vivo, treatment of Kunming mice with Oxonic acid potassium salt (350mg/kg/day) combined with Hypoxanthine (450mg/kg/day) via intraperitoneal injection and oral gavage for 8 consecutive weeks induced a chronic hyperuricemia model, Oxonic acid potassium salt significantly led to left ventricular anterior wall thickening, myocardial structural disorganization, increased cardiac mass, and was

accompanied by complications such as renal enlargement and renal tubule dilation[5]. Treatment of Kunming mice with Oxonic acid potassium salt (350mg/kg/day) combined with Hypoxanthine (450mg/kg/day) via intraperitoneal injection and oral gavage for 1 consecutive week induced a hyperuricemia model, Oxonic acid potassium salt significantly decrease in polyamine levels in cardiomyocytes and upregulation of the protein expression of the key polyamine synthesis enzyme ODC1 and the metabolic enzyme SAT1, leading to cardiomyocyte injury[6].

References:
[1] Zhang N, Zhang B, Chen X, et al. Effects and mechanisms of Polygonati Rhizoma polysaccharide on potassium oxonate and hypoxanthine-induced hyperuricemia in mice. Int J Biol Macromol. 2024 Sep 13;280(Pt 1):135550.
[2] Yamashita T, Ueda Y, Fuji N, et al. Potassium oxonate, an enzyme inhibitor compounded in S-1, reduces the suppression of antitumor immunity induced by 5-fluorouracil. Cancer Chemother Pharmacol. 2006 Aug;58(2):183-8.
[3] Tian J, Wang B, Xie B, et al. Pyroptosis inhibition alleviates potassium oxonate- and monosodium urate-induced gouty arthritis in mice. Mod Rheumatol. 2022 Jan 5;32(1):221-230.
[4] Yoshisue K, Hironaga K, Yamaguchi S, et al. Reduction of 5-fluorouracil (5-FU) gastrointestinal (GI) toxicity resulting from the protection of thymidylate synthase (TS) in GI tissue by repeated simultaneous administration of potassium oxonate (Oxo) in rats. Cancer Chemother Pharmacol. 2000;46(1):51-6.
[5] Lin C, Zheng Q, Li Y, et al. Assessment of the influence on left ventricle by potassium oxonate and hypoxanthine-induced chronic hyperuricemia. Exp Biol Med (Maywood). 2023 Jan;248(2):165-174.
[6] Lin C, Zheng Q, Yu H, et al. Uric acid-induced cardiomyocytic polyamines' insufficience: a potential mechanism mediates cardiomyocytic injury. Front Endocrinol (Lausanne). 2025 Apr 7;16:1504614.