



LKT Laboratories, Inc.

## Glycylglutamine

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### Product Information

Product ID G6400

CAS No. 13115-71-4

**Chemical Name**

Synonym GQ

Formula  $C_7H_{13}N_3O_4$

Formula Wt. 203.2

**Melting Point**

Purity  $\geq 95\%$

Solubility Soluble in water, acid.

Store Temp  $-20^{\circ}C$

Ship Temp Ambient

**Description**

Glycylglutamine (GQ) is an endogenous  $\beta$ -endorphin-derived dipeptide that exhibits antioxidative, cardioprotective, anti-inflammatory, and neuromodulatory activities. In animal models of burn injury, GQ decreases serum creatine kinase, lactate dehydrogenase, and lactic acid and increases serum ATP and glutathione, decreasing myocardial damage and improving cardiac contractility. In animal models of liver transplant, GQ increases levels of secretory IgA (sIgA) and decreases levels of TNF- $\alpha$ , improving microvilli structure and intestinal barrier function. Additionally, GQ inhibits IL-1 $\beta$ -induced thermogenesis and prostaglandin E2 (PGE2) production, suppressing the development of fever in vivo. In animal models of opioid use, GQ inhibits opioid-induced dopamine signaling, preventing reward and suppressing development of tolerance and withdrawal. GQ also inhibits nicotine-induced reward signaling in conditioned place preference (CPP) paradigms as well as development of nicotine withdrawal.

**References**

Zhang Y, Yan H, Lv SG, et al. Effects of glycyl-glutamine dipeptide supplementation on myocardial damage and cardiac function in rats after severe burn injury. *Int J Clin Exp Pathol*. 2013 Apr 15;6(5):821-30. PMID: 23638213.

Jiang JW, Ren ZG, Chen LY, et al. Enteral supplementation with glycyl-glutamine improves intestinal barrier function after liver transplantation in rats. *Hepatobiliary Pancreat Dis Int*. 2011 Aug;10(4):380-5. PMID: 21813386.

Basaran NF, Buyukuysal RL, Millington WR, et al. Glycyl-glutamine (beta-endorphin(30-31)) inhibits morphine-induced dopamine efflux in the nucleus accumbens. *Naunyn Schmiedebergs Arch Pharmacol*. 2010 May;381(5):467-75. PMID: 20349045.

Göktalay G, Cavun S, Levendusky MC, et al. Glycyl-glutamine inhibits nicotine conditioned place preference and withdrawal. *Eur J Pharmacol*. 2006 Jan 13;530(1-2):95-102. PMID: 16364288.

Resch GE, Millington WR. Inhibition of interleukin-1beta and prostaglandin E(2) thermogenesis by glycyl-glutamine, a pro-opiomelanocortin-derived peptide. *Brain Res*. 2001 Mar 16;894(2):316-20. PMID: 11251208.

H-Gly-Gln-OH

**Bulk quantities available upon request**

Product ID	Size
G6400	5 mg
G6400	10 mg
G6400	25 mg

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.