(R)-Cetirizine (hydrochloride)

**Item No. 23992**

**CAS Registry No.:** 130018-87-0  
**Formal Name:** 2-[[4-[[R-[(4-chlorophenyl) phenylmethyl]-1-piperazinyl]ethoxy]-acetic acid, dihydrochloride  
**Synonym:** Levocetirizine

**MF:** C<sub>21</sub>H<sub>25</sub>ClN<sub>2</sub>O<sub>3</sub> • 2HCl  
**FW:** 461.8  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 228 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

**Laboratory Procedures**

(R)-Cetirizine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the (R)-cetirizine (hydrochloride) in the solvent of choice. (R)-Cetirizine (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of (R)-cetirizine (hydrochloride) in these solvents is approximately 12 and 3 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of (R)-cetirizine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (R)-cetirizine(hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

**Description**

(R)-Cetirizine is the (R)-enantiomer of the histamine H<sub>1</sub> receptor antagonist and second generation antihistamine cetirizine (Item No. 19686).<sup>1</sup> (R)-Cetirizine binds to the H<sub>1</sub> receptor with higher affinity than cetirizine (K<sub>i</sub>s = 3 and 6 nM, respectively) and is 25,000-100,000-fold selective for H<sub>1</sub> receptors over muscarinic M<sub>1</sub>-M<sub>5</sub> receptors.<sup>2</sup> It decreases production of RANTES and eotaxin following antigen stimulation in mouse eosinophils in vitro in a concentration-dependent manner with a minimum effective concentration (MEC) of 0.05 µM.<sup>3</sup> Intranasal administration of (R)-cetirizine (0.01-1%) dose-dependently decreases histamine-induced nasal rubbing and sneezing in mice.<sup>4</sup> Formulations containing (R)-cetirizine have been used in the treatment of allergic rhinitis and chronic idiopathic urticaria.

**References**