Certificate of Analysis

Product Name: **Zoledronic Acid** **Catalog No.: 6111** **Batch No.: 1**

CAS Number: 118072-93-8

IUPAC Name: [1-Hydroxy-2-(1*H*-imidazol-1-yl)ethylidene]bisphosphonic acid

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_5H_{10}N_2O_7P_2.2H_2O$

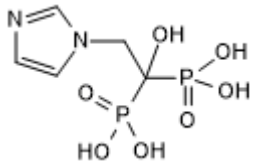
Batch Molecular Weight: 308.12

Physical Appearance: Off White solid

Solubility: 1.1eq. NaOH to 50 mM
water to 3 mM

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.4% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	19.49	4.58	9.09
Found	19.5	4.2	8.89

Product Information

Product Name: **Zoledronic Acid** **Catalog No.: 6111** **Batch No.: 1**

CAS Number: 118072-93-8

IUPAC Name: [1-Hydroxy-2-(1*H*-imidazol-1-yl)ethylidene]bisphosphonic acid

Description:

Potent bisphophonate farnesyl diphosphate (FPP) synthase inhibitor (IC_{50} = 20 nM). Inhibits osteoclast-mediated bone resorption. Also inhibits Ras signaling and tumor growth, and induces apoptosis in pancreatic cancer cells. Reverses epithelial-mesenchymal transition and inhibits breast cancer cell renewal via inactivation of NF-κB.

Physical and Chemical Properties:

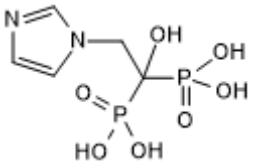
Batch Molecular Formula: $C_5H_{10}N_2O_7P_2.2H_2O$

Batch Molecular Weight: 308.12

Physical Appearance: Off White solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Store at +4°C

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

Solubility & Usage Info:

1.1eq. NaOH to 50 mM
water to 3 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Schech *et al* (2013) Zoledronic acid reverses the epithelial-mesenchymal transition and inhibits self-renewal of breast cancer cells through inactivation of NF-κB. Mol.Cancer Ther. ***12*** 1356. PMID: 23619300.

Tassone *et al* (2003) Zoledronic acid induces antiproliferative and apoptotic effects in human pancreatic cancer cells *in vitro*. Br.J.Cancer ***88*** 1971. PMID: 12799645.

Dunford *et al* (2001) Structure-activity relationships for inhibition of farnesyl diphosphate synthase *in vitro* and inhibition of bone resorption *in vivo* by nitrogen-containing bisphosphonates. J.Pharmacol.Exp.Ther. ***296*** 235. PMID: 11160603.

bio-techne.com
info@bio-techne.com
techsupport@bio-techne.com

North America
Tel: (800) 343 7475

China
info.cn@bio-techne.com
Tel: +86 (21) 52380373

Europe Middle East Africa
Tel: +44 (0)1235 529449

Rest of World
www.tocris.com/distributors
Tel:+1 612 379 2956