bio-techne
TOCRIS

Print Date: Apr 9th 2025

# Certificate of Analysis

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**Product Name:** **ESI 1** **Catalog No.: 8811** **Batch No.: 1**

IUPAC Name: *N*-(2-Aminophenyl)-5-[(phenylmethyl)amino]-2-pyrazinecarboxamide dihydrochloride

## 1. PHYSICAL AND CHEMICAL PROPERTIES

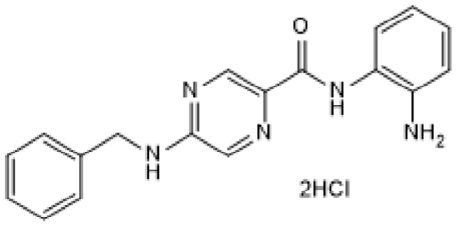
**Batch Molecular Weight:** 401.29

**Physical Appearance:** Pale yellow solid

**Solubility:** DMSO to 100 mM

**Storage:** Store at -20°C

**Batch Molecular Structure:**




## 2. ANALYTICAL DATA

**HPLC:** Shows 99.9% purity

**$^1$H NMR:** Consistent with structure

**Mass Spectrum:** Consistent with structure

**Microanalysis:**

| | Carbon | Hydrogen | Nitrogen | Chlorine |
|---|---|---|---|---|
| Theoretical | 53.88 | 5.02 | 17.45 | 17.67 |
| Found | 53.16 | 5.09 | 17.15 | 15.99 |



**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

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IUPAC Name: *N*-(2-Aminophenyl)-5-[(phenylmethyl)amino]-2-pyrazinecarboxamide dihydrochloride

**Description:**

ESI 1 (epigenetic silencing inhibitor 1; also called PT3) is an HDAC3 inhibitor ($IC_{50}$ = 250 nM). ESI 1 exhibits high selectivity for HDAC3 over HDAC1, HDAC6, and HDAC8. Also, ESI 1 promotes remyelination in demyelinated animal models and enables de novo myelinogenesis on regenerated CNS axons. In vivo, ESI 1 enhances long-term memory in mouse model of novel object recognition. ESI 1 triggers nuclear condensate formation of lipid-metabolic regulators SREBP1/2, concentrating transcriptional co-activators to drive lipid/cholesterol biosynthesis. ESI 1 is orally bioavailable and blood-brain-barrier penetrant.

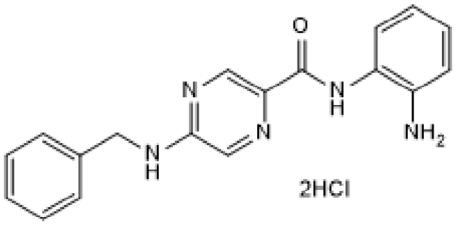
**Physical and Chemical Properties:**

Batch Molecular Weight: 401.29

Physical Appearance: Pale yellow solid

**Minimum Purity:** ≥98%

**Batch Molecular Structure:**




**Storage:** Store at -20°C

**Solubility & Usage Info:**

DMSO to 100 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. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

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:**

**Liu** *et al* (2024) Small-molecule-induced epigenetic rejuvenation promotes SREBP condensation and overcomes barriers to CNS myelin regeneration. Cell ***187*** 2465. PMID: 38701782.

**Pulya** *et al* (2021) PT3: A novel benzamide class histone deacetylase 3 inhibitor improves learning and memory in novel object recognition mouse model. ACS Chem.Neurosci. ***12*** 883. PMID: 33577290.