

# PRODUCT INFORMATION



**O412**

Item No. 19135

**CAS Registry No.:** 165682-93-9  
**Formal Name:** 2-[(4-chlorophenyl)amino]-4-thiazolecarboxylic acid, ethyl ester

**MF:** C<sub>12</sub>H<sub>11</sub>ClN<sub>2</sub>O<sub>2</sub>S

**FW:** 282.7

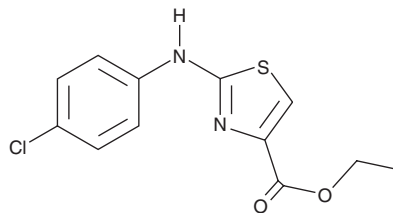
**Purity:** ≥98%

**UV/Vis.:** λ<sub>max</sub>: 276 nm

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:** As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly



## Laboratory Procedures

O412 is supplied as a crystalline solid. A stock solution may be made by dissolving the O412 in the solvent of choice. O412 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of O412 in ethanol is approximately 20 mg/ml and approximately 30 mg/ml in DMSO and DMF.

O412 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, O412 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. O412 has a solubility of approximately 0.12 mg/ml in a 1:7 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

## Description

Octamer-binding transcription factor 3/4 (Oct3/4) is a transcription factor that has key roles in early embryogenesis and embryonic stem cell pluripotency.<sup>1,2</sup> O412 is a potent inducer of Oct3/4 expression and translation in human cell lines, including embryonic kidney HEK293, embryonic placental NCCIT, and Oct-deficient HeLa cells.<sup>3</sup> It also induces Oct3/4 expression and translation in terminally differentiated human fibroblasts. Through this action, O412 promotes the expression of pluripotency-associated genes in human neonatal foreskin fibroblasts.<sup>3</sup>

## References

1. Niwa, H., Miyazaki, J., and Smith, A.G. Quantitative expression of Oct-3/4 defines differentiation, dedifferentiation or self-renewal of ES cells. *Nat. Genet.* **24**(4), 372-376 (2000).
2. Takahashi, K., Tanabe, K., Ohnuki, M., *et al.* Induction of pluripotent stem cells from adult human fibroblasts by defined factors. *Cell* **131**, 861-872 (2007).
3. Cheng, X., Yoshida, H., Raoofi, D., *et al.* Ethyl 2-((4-Chlorophenyl)amino)thiazole-4-carboxylate and derivatives are potent inducers of Oct3/4. *J. Med. Chem.* **58**(15), 5742-5750 (2015).

### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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## CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897

[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM