

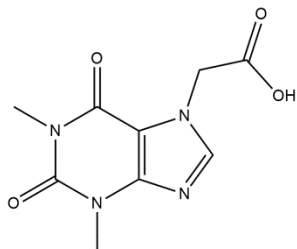
# Acefylline

03/21

**ALTERNATE NAMES:** Theophylline-7-acetic acid; 2-(1,3-dimethyl-2,6-dioxopurin-7-yl)acetic acid; 7-(Carboxymethyl)theophylline; (1,3-Dimethyl-2,6-dioxo-1,2,3,6-tetrahydro-7H-purin-7-yl)acetic acid; 2-(1,3-Dimethyl-2,6-dioxo-2,3-dihydro-1H-purin-7(6H)-yl)acetic acid; 1,3-Dimethylxanthine-7-acetic acid; 2-(1,3-dimethyl-2,6-dioxo-1,3,7-trihydropurin-7-yl)acetic acid

**CATALOG #:** B3119-10G 10 g  
B3119-25G 25 g

**STRUCTURE:**



**MOLECULAR FORMULA:** C<sub>9</sub>H<sub>10</sub>N<sub>4</sub>O<sub>4</sub>

**MOLECULAR WEIGHT:** 238.2

**CAS NUMBER:** 652-37-9

**APPEARANCE:** White to off-white powder

**PURITY:** ≥ 98%

**SOLUBILITY:** ~33 mg/ml in DMSO (may need ultrasonication)

**DESCRIPTION:** Acefylline is a xanthine derivative which acts as potential Peptidylarginine deiminase (PAD) activator. It increases the *in vitro* deimination of filaggrin by PAD1 and PAD3 at a concentration of 200 μM. It enhances deimination in the stratum corneum which is essential for epidermal photoprotection and moisturizing of the stratum corneum. Acefylline is also a bronchodilator, which inhibits rat lung cAMP phosphodiesterase isoenzymes.

**STORAGE TEMPERATURE:** -20 °C

**HANDLING:** Do not take internally. Wear gloves and mask when handling the product! Avoid contact by all modes of exposure.

**REFERENCES:**

1. Méchin, M-C., Cau, L., Galliano, M-F. et al. Acefylline activates filaggrin deimination by peptidylarginine deiminases in the upper epidermis. *J Dermatol Sci.* 81(2):101-6 (2016).
2. Ferretti, C., Coppi, G., Blengio, M. et. al. Inhibitory effect of theophylline, theophylline-7-acetic acid, ambroxol and ambroxol-theophylline-7-acetate on rat lung cAMP phosphodiesterase isoenzymes. *Comparative Study Int J Tissue React.* 14(1):31-6 (1992).

**RELATED PRODUCTS:**

Cl-Amidine (hydrochloride) (Cat. No. B2802)  
 BB-Cl-Amidine (Cat. No. B2847)  
 F-Amidine (trifluoroacetate salt) (Cat. No. B2803)  
 GSK-121 trifluoroacetate (Cat. No. B1034)  
 GSK-484 hydrochloride (Cat. No. B1035)

**DISCLAIMER:** **FOR RESEARCH USE ONLY! Not to be used on humans.**