



# Theophylline (1.BB.956): sc-73156

## BACKGROUND

Theophylline is a colorless crystalline alkaloid that is derived from tea leaves or made synthetically. It is a methylxanthine drug that is similar to caffeine in its structure and pharmacology. Theophylline is used as a bronchial dilator for respiratory diseases such as chronic obstructive pulmonary disease (COPD) or asthma. Theophylline inhibits the TGF $\beta$  regulated conversion of pulmonary fibroblasts into myofibroblasts via cyclic adenosine monophosphate (cAMP)-PKA pathway, and it suppresses COL1 mRNA which codes for the protein collagen. Theophylline also directly activates histone deacetylase (HDAC), an enzyme that mediates inflammatory responses, and it decreases the levels of interleukin-4 (IL-4) and cyclic guanosine monophosphate (cGMP).

## REFERENCES

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7. Lee, D.W., Shirley, S.A., Lockey, R.F. and Mohapatra, S.S. 2006. Thiolated chitosan nanoparticles enhance anti-inflammatory effects of intranasally delivered Theophylline. *Respir. Res.* 7: 112.
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## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## SOURCE

Theophylline (1.BB.956) is a mouse monoclonal antibody raised against Theophylline.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Theophylline (1.BB.956) is recommended for detection of Theophylline by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with caffeine.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.