



# METH (4E2): sc-58375

## BACKGROUND

Methamphetamine (METH) is a central nervous system stimulant with further peripheral sympathomimetic effects. Closely related chemically to amphetamine, METH has been used clinically for the treatment of narcolepsy, depression, obesity, minimal brain dysfunction, and to counter fatigue. METH, a molecule with a molecular weight of 149.2 g/mol, is also an indirect agonist selectively binding to a specific receptor and activating a response in the cell. The mechanism by which METH functions is through the release of newly synthesized norepinephrine and dopamine. METH also blocks the re-uptake of these neurotransmitters, leading to an increase in the concentration of catecholamines in the synaptic cleft. Neurotoxicity caused by METH in all monoaminergic cell types may remain primarily in the dopaminergic system within the striatum. METH is sometimes used as a stimulant recreational drug, and it is associated with widespread abuse.

## REFERENCES

1. Beckett, A.H. and Rowland, M. 1965. Urinary excretion of methylamphetamine in man. *Nature* 206: 1260-1261.
2. Narita, M., Akai, H., Nagumo, Y., Sunagawa, N., Hasebe, K., Nagase, H., Kita, T., Hara, C. and Suzuki, T. 2004. Implications of protein kinase C in the nucleus accumbens in the development of sensitization to methamphetamine in rats. *Neuroscience* 127: 941-948.
3. Tirumala, V.R., Ilavsky, J. and Ilavsky, M. 2006. Effect of chemical structure on the volume-phase transition in neutral and weakly charged poly(N-alkyl(meth)acrylamide) hydrogels studied by ultrasmall-angle x-ray scattering. *J. Chem. Phys.* 124: 234911.
4. Kuehn, B.M. 2006. Nicotine, donepezil may dampen METH craving. *JAMA* 296: 31.
5. Hendrickson, R.G., Horowitz, B.Z., Norton, R.L. and Notenboom, H. 2006. "Parachuting" METH: a novel delivery method for methamphetamine and delayed-onset toxicity from "body stuffing". *Clin. Toxicol.* 44: 379-382.
6. Curtis, E.K. 2006. METH mouth: a review of methamphetamine abuse and its oral manifestations. *Gen. Dent.* 54: 125-129.
7. Xie, D., Park, J.G., Faddah, M. and Zhao, J. 2006. Preparation, formulation and evaluation of novel photo-cured glass ionomers based on co-polymers of (meth)acrylated amino acids. *J. Biomater. Sci. Polym. Ed.* 17: 303-322.
8. Lewis, D. 2006. We were wrong about "crack babies": are we repeating our mistake with "meth babies"? *MedGenMed* 7: 30.
9. Fujimoto, Y., Kitaichi, K., Nakayama, H., Ito, Y., Takagi, K., Takagi, K. and Hasegawa, T. 2007. The pharmacokinetic properties of methamphetamine in rats with previous repeated exposure to methamphetamine: the differences between Long-Evans and Wistar rats. *Exp. Anim.* 56: 119-129.

## SOURCE

METH (4E2) is a mouse monoclonal antibody raised against methamphetamine.

## RESEARCH USE

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

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

METH (4E2) is recommended for detection of METH by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

## 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) for detailed protocols and support products.