SANTA CRUZ BIOTECHNOLOGY, INC.

S-Mecoprop (HYB337-01): sc-58015



BACKGROUND

Herbicides are specialized pesticides that kill plants and are widely used in agriculture and in landscape turf management. 2-(2-methyl-4-chlorophenoxy)propionic acid (Mecoprop or MCPP) is a member of the phenoxy family of herbicides. Mecoprop is an acidic, selective, hormone-type chlorophenoxy molecule that exists as two different enantiomers: S-Mecoprop and R-Mecoprop. Mecoprop is widely applied to corn fields in order to control broad-leaved weeds such as clovers, chickweed, lambsquarters, ivy and plantain. Chlorphenoxy herbicides are thought to be potentially carcinogenic and if it is detected in groundwater, Mecoprop can be a persistent contaminant. Mecoprop is absorbed by plant leaves and translocated to the roots where it functions to change enzyme activity and plant growth. This herbicide acts relatively slowly, taking three to four weeks for full plant control.

REFERENCES

- 1. Marsh, J.A. and Davies, H.A. 1981. Effects of dichlorprop and Mecoprop on respiration and transformation of nitrogen in two soils. Bull. Environ. Contam. Toxicol. 26: 108-115.
- 2. Kolmodin-Hedman, B., Höglund, S. and Akerblom, M. 1983. Studies on phenoxy acid herbicides. I. Field study. Occupational exposure to phenoxy acid herbicides (MCPA, dichlorprop, Mecoprop and 2,4-D) in agriculture. Arch. Toxicol. 54: 257-265.
- 3. Nickel, K., Suter, M.J. and Kohler, H.P. 1997. Involvement of two α -ketoglutarate-dependent dioxygenases in enantioselective degradation of (R)and (S)-Mecoprop by Sphingomonas herbicidovorans MH. J. Bacteriol. 179: 6674-6679.
- 4. Zipper, C., Bolliger, C., Fleischmann, T., Suter, M.J., Angst, W., Müller, M.D. and Kohler, H.P. 2000. Fate of the herbicides Mecoprop, dichlorprop, and 2.4-D in aerobic and anaerobic sewage sludge as determined by laboratory batch studies and enantiomer-specific analysis. Biodegradation 10: 271-278.
- 5. Clausen, L. and Fabricius, I. 2001. Atrazine, isoproturon, Mecoprop, 2,4-D, and bentazone adsorption onto iron oxides. J. Environ. Qual. 30: 858-869.
- 6. Johannesen, H. and Aamand, J. 2003. Mineralization of aged atrazine, terbuthylazine, 2,4-D, and Mecoprop in soil and aquifer sediment. Environ. Toxicol. Chem. 22: 722-729.
- 7. Williams, G.M., Harrison, I., Carlick, C.A. and Crowley, O. 2003. Changes in enantiomeric fraction as evidence of natural attenuation of Mecoprop in a limestone aquifer. J. Contam. Hydrol. 64: 253-267.
- 8. Lim, J.S., Jung, M.K., Kim, M.S., Ahn, J.H. and Ka, J.O. 2004. Genetic and phenotypic diversity of (R/S)-Mecoprop [2-(2-methyl-4-chlorophenoxy)propionic acid]-degrading bacteria isolated from soils. J. Microbiol. 42: 87-93.

SOURCE

S-Mecoprop (HYB337-01) is a mouse monoclonal antibody raised against carrier protein coupled S-Mecoprop.

RESEARCH USE

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

PRODUCT

Each vial contains 100 μg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

S-Mecoprop (HYB337-01) is recommended for detection of S-Mecoprop by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with other phenoxy herbicides such as R-MCPP, S-DCPP and R-DCPP.

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 for detailed protocols and support products.