

**Monoclonal Anti-Endonuclease VIII**

Clone E8-122

Purified Mouse Immunoglobulin

Product Number **E 2279****Product Description**

Monoclonal Anti- Endonuclease VIII (mouse IgM isotype) is derived from the E8-122 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from mice immunized with recombinant full length endonuclease VIII from *E. coli*. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-Endonuclease VIII recognizes endonuclease VIII from *E. coli* (approx. 30 kDa). The product is useful in ELISA and immunoblotting.

Endonuclease VIII (Endo VIII) from *E. coli*, a product of the *nei* gene, is a DNA repair protein that recognizes and removes modified pyrimidines, such as thymine glycol (Tg) and 5,6, dihydrothymine (DHT), from DNA.<sup>1</sup> Endo VIII possesses both DNA glycosylase and apurinic/apyrimidinic (AP) lyase activities. Its modified-base substrate specificity overlaps the endonuclease III (endo III, *nth*) substrate specificity. This cross reactivity is manifested in *E. coli* mutants. *E. coli nth* and *nei* mutants are either not sensitive or are slightly more sensitive to ionizing radiation and hydrogen peroxides than the wild type. The *nei-nth* double mutant is hypersensitive to oxidative stress.<sup>2,3</sup> The mechanism used by Endo VIII to cleave the DNA backbone (lyase activity) is  $\beta$ - $\gamma$  elimination, resembling the action of fpg protein and not endo III, which cleaves the DNA backbone by  $\beta$  elimination.<sup>3,4</sup>

**Reagent**

Monoclonal Anti-Endonuclease VIII is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: approx. 1.5 mg/ml.

## Product Information

**Precautions and Disclaimer**

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

**Storage/Stability**

For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at -20 °C. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

**Product Profile**

A minimum working concentration of 10-20 µg/ml is determined by immunoblotting using recombinant endonuclease VIII (Product No. E 0651). An upper weak band may also appear.

Note: In order to obtain the best results using different techniques and preparations, we recommend determining the optimal working dilutions by titration.

**References**

1. Laval, J., et al., *Mutation Res.*, **402**, 93-102 (1998).
2. Jiang, D., et al., *J. Bacteriol.*, **179**, 3773-3782 (1997).
3. Jiang, D., et al., *J. Biol. Chem.*, **272**, 32230-32239 (1997).
4. D'Ham, C., et al., *Biochemistry*, **38**, 3335-3344 (1999).

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