3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

# ProductInformation

## RESTRICTION ENDONUCLEASE Msp I

Product No. **R 4506**

Store at 0 °C to –20 °C

### Product Summary
Recognition Sequence: 5'C/CGG'3
Activity: 10,000 units/ml
Cutting: 100%
Ligation: >95%
Recutting: >95%
No degradation detected with >50 units for 16 hrs.
Fold over digestion: 800 (50 units x 16 hrs.)
Package Size: 2,000 units

### Unit Definition
One unit is the enzyme activity that completely cleaves 1 µg λDNA in 1 hr. at 37 °C in a total volume of 25 µl of Buffer SL for restriction endonucleases. 1µg pBR322 DNA is digested completely by 0.5 unit of Msp I.

### Specificity
Msp I recognizes the sequence C/CGG and generates fragments with 5′cohesive ends.[1] Msp I is an isoschizomer to Hpa II.[2]

### Comments
Digestion Buffer SL is supplied as a 10x concentrate. Information for heat inactivation Msp I is not available.

### Msp I Storage and Dilution Buffer Composition
10 mM Tris-HCl
50 mM KCl
1.0 mM EDTA
10 mM 2-mercaptoethanol
0.2% (v/v) Triton X-100
50% (v/v) glycerol
pH 7.5

### 1x Digestion Buffer SL (B 3782) Composition for Msp I: 100% Digestion at 37 °C.
10 mM Tris-HCl
10 mM $MgCl_2$
1 mM dithioerythritol(DTE)
pH 7.5

### Quality Control Testing
**Absence of unspecific endonuclease activities:**
1 µg λDNA is incubated for 16 hrs. in 50 µl buffer SL with excess of Msp I.

### Ligation and Recutting Assay
Msp I fragments, obtained by complete digestion of 1 µg λDNA, are adjusted to pH 7.5 at 20 °C. The Msp I fragments are then ligated with 0.1 unit T4-DNA ligase at 4 °C at pH 7.5. A 10 µl reaction mixture, incubated for 16 hrs. at 4 °C, contained: 0.1 unit T4-DNA ligase, 66 mM Tris-HCl, 5 mM $MgCl_2$, 1 mM dithioerythritol and 1 mM ATP.

The degree of ligation and subsequent recutting with Msp I to yield the typical pattern of λ x Msp I fragments is determined.

### References
1. Waalwijk, C., and Flavell, R.A., Nucleic Acids Res., **5**, 3231 (1978).
2. Roberts, R.J., Nucleic Acids Res., **11**, r135 (1983).

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