

## New England Biolabs Product Specification

<i>Product Name:</i>	<i>BsrF<math>\alpha</math>I</i>
<i>Catalog #:</i>	<i>R0682S/L</i>
<i>Concentration:</i>	<i>10,000 units/ml</i>
<i>Unit Definition:</i>	<i>One unit is defined as the amount of enzyme required to digest 1 <math>\mu</math>g of pBR322 DNA in 1 hour at 37°C in a total reaction volume of 50 <math>\mu</math>l.</i>
<i>Shelf Life:</i>	<i>12 months</i>
<i>Storage Temp:</i>	<i>-20°C</i>
<i>Storage Conditions:</i>	<i>250 mM NaCl, 10 mM Tris-HCl, 1 mM DTT, 0.1 mM EDTA, 50 % Glycerol, 0.15 % TritonX-100, 200 <math>\mu</math>g/ml BSA, (pH 7.4 @ 25°C)</i>
<i>Specification Version:</i>	<i>PS-R0682S/L v1.0</i>
<i>Effective Date:</i>	<i>18 Jan 2018</i>

### Assay Name/Specification (minimum release criteria)

**Exonuclease Activity (Radioactivity Release)** - A 50  $\mu$ l reaction in CutSmart<sup>®</sup> Buffer containing 1  $\mu$ g of a mixture of single and double-stranded [<sup>3</sup>H] *E. coli* DNA and a minimum of 30 units of BsrF $\alpha$ I incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.

**Functional Testing (15 minute Digest)** - A 50  $\mu$ l reaction in CutSmart<sup>®</sup> Buffer containing 1  $\mu$ g of pBR322 DNA and 1  $\mu$ l of BsrF $\alpha$ I incubated for 15 minutes at 37°C results in complete digestion as determined by agarose gel electrophoresis.

**Ligation and Recutting (Terminal Integrity)** - After a 10-fold over-digestion of pBR322 DNA with BsrF $\alpha$ I, >95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, >95% can be recut with BsrF $\alpha$ I.

**Non-Specific DNase Activity (16 Hour)** - A 50  $\mu$ l reaction in CutSmart<sup>®</sup> Buffer containing 1  $\mu$ g of pBR322 DNA and a minimum of 10 units of BsrF $\alpha$ I incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

**Protein Purity Assay (SDS-PAGE)** - BsrF $\alpha$ I is  $\geq$  95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.



Date 18 Jan 2018

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