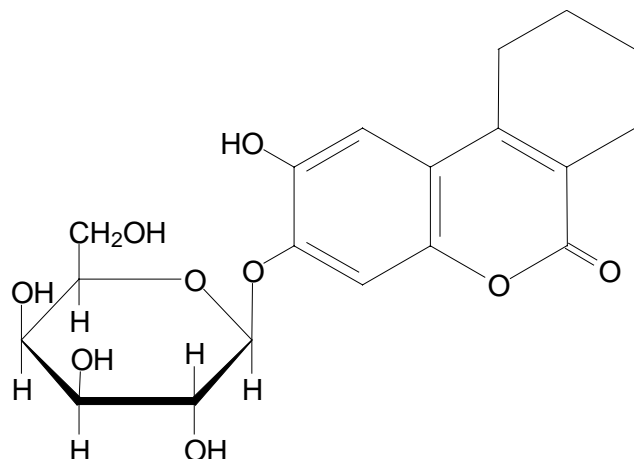


S-Gal™

Product Code **S 9811**

Store at Room Temperature


Product Description

S-Gal™ (3,4-cyclohexenoescluletin β-D-galactopyranoside) is a patented, autoclavable, chromogenic substrate for β-galactosidase that, in the presence of the iron(III) (ferric or Fe³⁺) ion, outperforms commonly used X-gal.¹ For color selection in molecular genetics applications, S 9811 greatly enhances contrast between lac⁺ and lac⁻ colonies or plaques, in comparison with X-gal. The hydrolyzed aglycone (non-sugar portion) reacts with the added Fe³⁺ (ferric ammonium citrate) to produce an intense black stain. In cloning applications, black colonies or plaques indicate the absence of a cloned DNA fragment, while the unstained colony or plaque denotes the presence of a cloned insert.^{2,3}

Appearance	Off-white/gray/tan powder
HNMR (DMSO-d ₆)	Consistent with structure
Purity (HPLC)	≥ 95%
Diglycosylated form (HPLC)	≤ 5%
Loss on Drying	≤ 2%

Intended Use

For R&D use only. Not for drug, household or other use.

Product Information

Precautions and Disclaimer

Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

When dry-blended with isopropyl β-D-thiogalactoside in agar medium, S-Gal is autoclavable. There's no waiting time for media to cool before adding the substrate. Additionally, since it can be blended with growth medium prior to autoclaving, making up stock solutions in dimethylformamide (DMF) or dimethyl sulfoxide (DMSO) is not necessary. Should you desire to work from a concentrated solution, S-Gal is soluble in DMSO at 50 mg/ml.

S-Gal is added to the medium prior to autoclaving at a recommended concentration of 300 mg/L of medium, along with 500 mg/L of ferric ammonium citrate.

Note: The iron(III) (ferric or Fe³⁺) ion is required for color development and must be added to any S-Gal formulation. Pre-formulated products such as C 4478, S-Gal™/LB Agar Blend contain ferric ammonium citrate (F 5879). A medium prepared with S-Gal is moderately dark due to the presence of ferric ammonium citrate. This darker background often provides enhanced contrast for automated colony counting or isolation.

Storage/Stability

The product as supplied is stored at room temperature. In prepared medium, it is stable for two weeks when stored at 4 °C.

References

1. U.S. Patent #6,008,008.
2. Heuermann, K. and Cosgrove, J., S-Gal™: A superior dye to X-gal for clonal selection. *LifeScience Quarterly*, **2(2)**, 2-4 (2001). [LifeScience Quarterly is a newsletter distributed by Sigma-Aldrich Corporation]
3. Heuermann, K. and Cosgrove, J., S-Gal™: An autoclavable dye for color selection of cloned DNA inserts. *BioTechniques*, **30(5)**, 1142-1147 (2001).

GWS/MAM 11/01

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