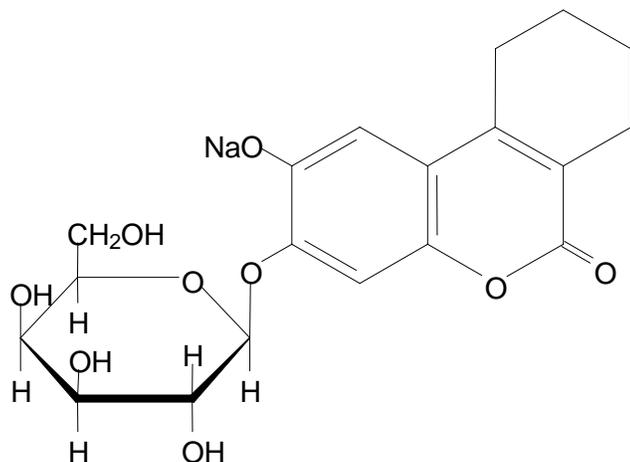


Product Information

S-Gal™, Sodium Salt

Product Code: **S 7313**

Store at Room Temperature



Product Description

S-Gal™, sodium salt (3,4-cyclohexenoesculetin 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 7313 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 (D ₂ O)	Consistent with structure
Purity (HPLC)	≥ 95%
Diglycosylated form (HPLC)	≤ 5%
Water content (KF)	≤ 5%
Solvents (GC)	≤ 5% total solvents
Sodium (ICP)	4.2 to 6.8% (anhydrous basis)

Intended Use

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

Precautions and Disclaimer

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

Preparation Instructions

S-Gal, sodium salt is water-soluble (50 mg/ml). Dimethylformamide (DMF) or dimethyl sulfoxide (DMSO) is not needed when preparing stock solutions. Additionally, S-Gal, sodium salt is not light sensitive as is the case for X-gal.^{2,3}

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 a 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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