

**Datasheet for XGAL-0100****X-Gal (Beta-Galactosidase Substrate)****Overview**

<b>Description:</b>	X-Gal (Beta-Galactosidase Substrate) - XGAL-0100
<b>Item No.:</b>	XGAL-0100
<b>Size:</b>	100 mg
<b>Applications:</b>	Gene Editing, IHC

**Product Details**

<b>Background:</b>	X-Gal (5-Bromo-4-chloro-3-indolyl $\beta$ -D-galactopyranoside) is a chromogenic substrate for the $\beta$ -galactosidase enzyme, commonly used in molecular biology for blue-white screening of recombinant bacterial colonies and other reporter assays. When hydrolyzed by $\beta$ -galactosidase, X-Gal produces an insoluble blue precipitate.
<b>Synonyms:</b>	5-bromo-4-chloro-3-indolyl- $\beta$ -D-galactopyranoside

**Target Details**

<b>Purity/Specificity:</b>	Purity: >99.0% (enzymatic), Melting Range: 232° to 234° C, Solubility: 2% in DMF, Molecular Weight: 408.64, Grade: Ultrapure
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**Application Details**

<b>Tested Applications:</b>	Gene Editing
<b>Suggested Applications:</b>	IHC (Based on references)
<b>ELISA:</b>	1X
<b>IHC:</b>	1X
<b>WB:</b>	1X
<b>Other:</b>	Use by 30APR2023

**Formulation**

**Physical State:** Solid

**Concentration:** Neat

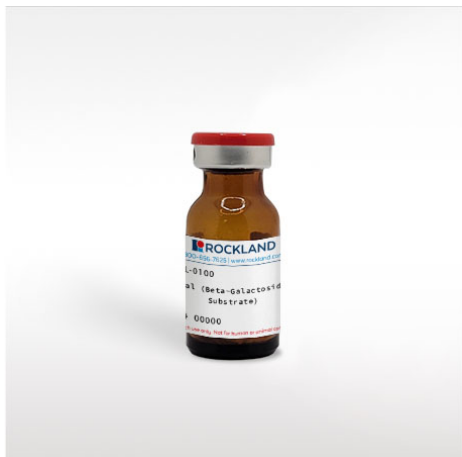
## Shipping & Handling

**Shipping Condition:** Dry Ice

**Storage Condition:** Store container at -20° C prior to opening. Protect from moisture and light. No special shipping conditions or precautions are required.

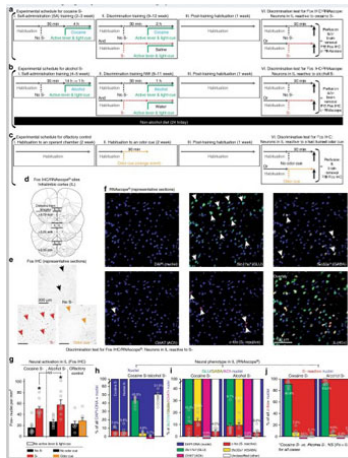
**Expiration:** Expiration date is one (1) year from date of receipt.

## Images



**Bottle**  
X-Gal (Beta-Galactosidase Substrate)





### Immunohistochemistry

Omission cue-induced suppression (OCIS) procedures for localization and phenotypic characterization of omission cue-reactive neurons in IL. All data are mean and SEM. Gray open circles on bar charts depict individual data-points. a, b, c Timeline and schedule. d Target sites. e, f Representative sections. g Effects of cocaine S-, alcohol S-, and well-habituated odor on neural activation in IL as indicated by Fos immunohistochemistry.  $n = 10, 9, 8, 9, 6, 6$ . Two-way between-subjects ANOVA: Training ( $F(2, 42) = 4.81, P < 0.05$ ) and Cue-Test ( $F(1, 42) = 28.67, P < 0.001$ ) main effects, and Training x Cue-Test interaction ( $F(2, 42) = 3.77, P < 0.05$ ). \* $P < 0.001$  vs. No S-. Tukey HSD test. h, i, j Neural phenotypes in IL reactive to cocaine or alcohol S- as indicated by in situ hybridization via 4-plex RNAscope® targeting *c-fos*, *Slc17a7*, *Slc32a1*, and *CHAT*, as markers for “S- reactive”, “glutamatergic (GLU)”, “GABAergic (GABA)”, and “cholinergic (ACh)” nuclei. Each nucleus was identified by DAPI. For statistical analyses, total numbers of nuclei per mm<sup>2</sup> that satisfied each phenotypic criterion were used. For graphic representations, percentages of each phenotype within a specific “parent” phenotype were used. h Percentages of different phenotypes within all DAPI-positive nuclei.  $n = 7, 8, 15$ . Individual data-points are not overlaid on the right panel for clarity because  $n = 15$ . For this panel, data from rats tested for cocaine S- and alcohol S- were pooled to represent the overall percentages of different phenotypes independent of neural activity. Two-way mixed ANOVA: Phenotype ( $F(4, 52) = 532.79, P < 0.001$ ), but not Group ( $F(1, 13) = 4.05, NS$ ) or Group x Phenotype interaction ( $F(4, 52) = 0.34, NS$ ).  $n = 7, 8$ . i Percentages of S-reactive nuclei within different phenotypes. Two-way mixed ANOVA: Phenotype ( $F(3, 39) = 38.62, P < 0.001$ ), but not Group ( $F(1, 13) = 2.5, NS$ ) or Group x Phenotype interaction ( $F(3, 39) = 1.74, NS$ ).  $n = 7, 8$ . j Percentages of different neural phenotypes within S- reactive nuclei. Two-way mixed ANOVA: Phenotype ( $F(3, 39) = 27.77, P < 0.001$ ), but not Group ( $F(1, 13) = 2.20, NS$ ) or Group x Phenotype interaction ( $F(3, 39) = 2.04, NS$ ).  $n = 7, 8$ . X-gal (5-bromo-4-chloro-3-indolyl  $\beta$ -d-galactopyranoside) (p/n XGAL-0100). Fig 3. PMID: 31477694.

### References

- Laque A et al. Anti-relapse neurons in the infralimbic cortex of rats drive relapse-suppression by drug omission cues. *Nat Commun.* (2019)
- Suto, N et al. Distinct memory engrams in the infralimbic cortex of rats control opposing environmental actions on a learned behavior. *ELife* (2016)

## Disclaimer

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.