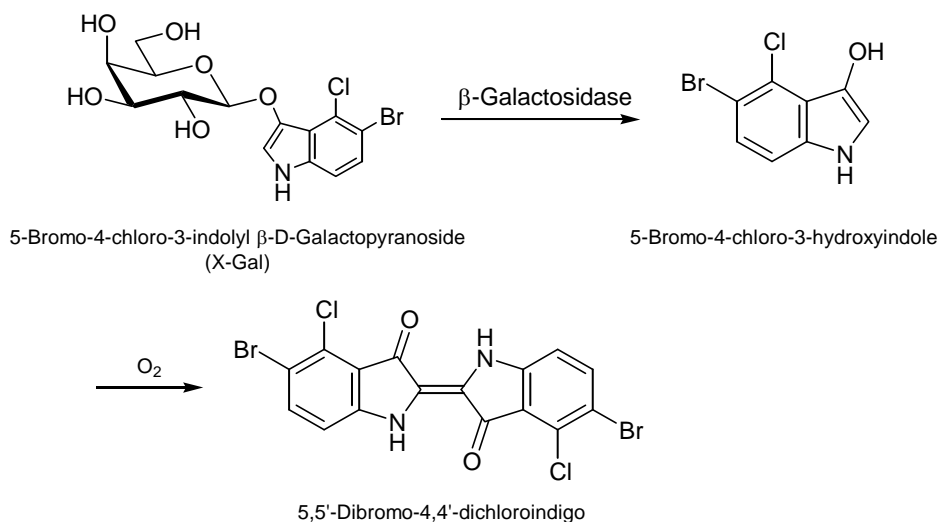


Chromogenic β -Galactosidase Substrates

5-Bromo-4-chloro-3-indolyl β -D-galactopyranoside (X-Gal) is used to detect the β -galactosidase. β -Galactosidase hydrolyzes X-Gal to generate galactose and 5-bromo-4-chloro-3-hydroxyindole. The resultant 5-bromo-4-chloro-3-hydroxyindole is subsequently oxidized to produce an insoluble blue precipitate (5,5'-Dibromo-4,4'-dichloroindigo).

Including the color-selection assay of recombinant (blue-white selection) with *lacZ* gene / *lacZ*⁻ host cells, X-Gal is widely applied for assays in molecular biology, biochemistry and histochemistry.

Bluo-Gal (5-bromo-3-indolyl β -D-galactopyranoside), producing an insoluble blue dye, Magenta-Gal (5-bromo-6-chloro-3-indolyl β -D-galactopyranoside) and Salmon-Gal (6-chloro-3-indolyl β -D-galactopyranoside), producing an insoluble red dye respectively, are known as similar substrates to X-Gal. Also 2-nitrophenyl β -D-galactopyranoside (ONPG) and 4-nitrophenyl β -D-galactopyranoside (PNPG), hydrolyzed to released a soluble nitrophenol, are generally used for substrates.



Producing an insoluble dye

B3201	5-Bromo-4-chloro-3-indolyl β -D-Galactopyranoside (X-Gal)	200mg	1g
B3469	5-Bromo-6-chloro-3-indolyl β -D-Galactopyranoside (Magenta-Gal) (contains ca. 10% Ethyl Acetate)	20mg	100mg
B3470	5-Bromo-3-indolyl β -D-Galactopyranoside (Bluo-Gal)	20mg	100mg
C2371	6-Chloro-3-indolyl β -D-Galactopyranoside (Salmon-Gal)	20mg	100mg

Producing a soluble dye

N0418	2-Nitrophenyl β -D-Galactopyranoside (ONPG)	1g	25g
N0616	4-Nitrophenyl β -D-Galactopyranoside (PNPG)	1g	5g

Reference

J. Sambrook, D. W. Russell, in *Molecular Cloning, A Laboratory Manual (3rd edition)*, Cold Spring Harbor Laboratory Press, New York, **2001**.

Keywords : chromogenic substrate, β -galactosidase

2010. Mar., L-3017E

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