G-Biosciences ♦ 1-800-628-7730 ♦ 1-314-991-6034 ♦ technical@GBiosciences.com

A Geno Technology, Inc. (USA) brand name

Sodium metaperiodate

(Cat. # BKC-12, BKC-15)

INTRODUCTION

Sodium metaperiodate, or sodium m-periodate, is a mild oxidant that is routinely used for the conversion of *cis*-glycol groups in carbohydrates to reactive aldehdye groups. The reactive aldehyde groups are used in chemical conjugation procedures or detection of carbohydrates. For proteomic research, sodium m-periodate is used for the oxidation of the carbohydrate moiety of glycoproteins and offers the advantage of modifying the sugar side chains as opposed to critical amino acids.

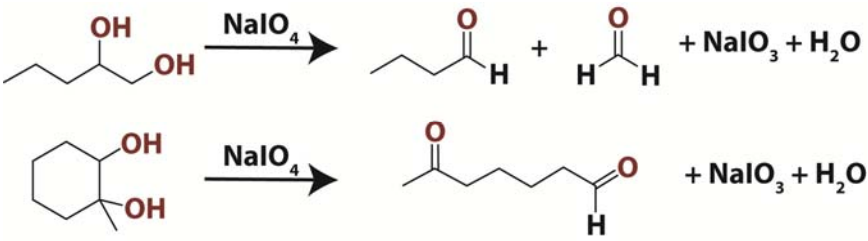


Figure 1: Oxidation of *cis*-glycols to aldehydes and ketones.

The resulting aldehydes can interact with primary amines to from Schiff's bases, which in turn can be stabilized by reduction with sodium cyanoborohydride (Cat. # 786-061, 786-062) to form covalent amide bonds. Alternatively, the aldehydes can spontaneously react with hydrazide activated molecules to form relatively stable hydrazone bonds, which again can be stabilized with sodium cyanoborohydride.

ITEM(S) SUPPLIED

Cat. #	Description	Size
BKC-12	Sodium metaperiodate	25g
BKC-15	Sodium metaperiodate	5g

STORAGE CONDITIONS

Shipped at ambient temperature. Upon receipt, store at room temperature.

PROPERTIES

- Synonyms: Sodium m-periodate, sodium periodate
- Linear formula:$NaIO_4$
- CAS #. 7790-28-5
- Molecular weight: 213.89
- Form: White crystalline powder

STRUCTURE

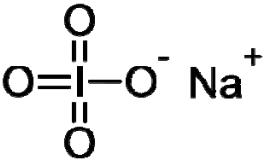


Figure 2: Sodium metaperiodate structure.

PROTOCOL FOR OXIDATION OF GLYCOPROTEINS

Additional Reagent(s) Required

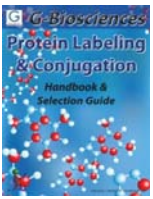
- Oxidation Buffer: We recommend our Optimizer Buffer™ V (Cat. # BKC-08) or 0.1M sodium acetate, pH 5.5. Neutral pH buffers, such as PBS, can be used but are less efficient than then slightly acidic conditions. Avoid buffers with primary amines, such as Tris or glycine, or sugars as these will compete in the reaction.

Glycoprotein Oxidization

1. Dissolve 0.5-10mg glycoprotein in 1ml Oxidation Buffer.
2. Add 2mg sodium metaperiodate to an amber vial. Using 2mg for each 1ml protein solution results in ~10mM sodium metaperiodate. Add the protein solution to the amber vial and swirl to dissolve the sodium metaperiodate.
3. Alternatively, dissolve 4.3mg sodium metaperiodate in 1ml oxidation buffer and then add 1ml to every 1ml glycoprotein solution.
   NOTE: *The steps involving sodium metaperiodate are light sensitive and must be performed in an amber vial.*
   NOTE: *To only oxidize the sialic groups, use 1mM final concentration of sodium periodate by adding 50µl 20mM sodium metaperiodate to every 1ml glycoprotein solution.*
4. Incubate at room temperature for 30 minutes.
5. Remove the sodium metaperiodate from the sample by dialysis or desalting. We recommend our Tube-O-DIALYZER™ (Cat. # 786-610 to 786-624) for dialysis or our SpinOUT™ columns (Cat. # 786-170 to 786-173) for desalting.

RELATED PRODUCTS

Download our Protein Labeling & Conjugation Handbook.



http://info.gbiosciences.com/complete-protein-labeling-conjugation-handbook/

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