

Alcian Blue Staining Kit, pH 1.0

Catalog No.: RA20100

Basic Information

Product name	Alcian Blue Staining Kit, pH 1.0
Sizes	50 mL
Storage	2-8 °C, keep away from light
Shipping	Shipped with ice pack
Validity	6 months

Product Introduction

Alcian Blue, also known as Alcian Blue 8GX, is a copper-containing phthalocyanine dye originally used for textile fiber staining. This cationic dye binds to acidic groups, forming insoluble complexes with anionic groups such as carboxyl and sulfate groups in tissues. The structure of Alcian Blue consists of a central copper-containing phthalocyanine ring linked to four isothiuronium groups via thioether bonds. The isothiuronium groups are moderately basic, giving the dye a positive charge. At pH 2.5, carboxyl groups in tissues are ionized and carry a negative charge, forming electrostatic bonds with the positively charged dye, thus staining acidic mucosubstances such as sialomucins and sulfomucins. EnkiLife Alcian Blue Staining Solution (pH 1.0) utilizes different pH values to distinguish types of mucosubstances: At pH 2.5: carboxyl groups are well stained, sulfated mucins are poorly stained. At pH 1.0: sulfate groups are ionized and carry a negative charge, allowing selective staining of sulfated mucosubstances. Neutral mucins (e.g., in gastric mucosa and Brunner's glands) do not react with Alcian Blue.

Product Components

Components	3x 50mL
Reagent (A): Alcian Acidification Solution	50 mL
Reagent (B): Alcian Staining Solution	50 mL
Reagent (C): Nuclear Fast Red Staining Solution	50 mL

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Materials Required (Not Supplied)

1. 10% neutral formalin, distilled water, graded ethanol series, xylene or eco-friendly dewaxing and clearing solution, neutral balsam.

Experimental procedure

1. Deparaffinize sections with xylene or substitute, rehydrate through graded ethanol to distilled water.
2. Prepare Alcian acidification working solution at a ratio of Alcian Acidification Solution : Distilled Water = 1:2, immerse sections for 5 min.
3. Stain in Alcian Staining Solution for 25–40 min, rinse with running water for 5 min.
4. Rinse briefly with Alcian acidification working solution, do not rinse with water, gently blot excess liquid with filter paper.
5. Counterstain with Nuclear Fast Red Staining Solution for 10 min, rinse with running water.
6. Dehydrate through graded ethanol, clear with xylene or substitute, mount with neutral balsam.

Staining Results

Component	Color
Sulfated mucins	Blue
Non-sulfated acidic mucosubstances	Unstained
Nuclei	Light red

Notes

1. Use 10% neutral formalin as fixative.
2. This method can distinguish sulfated mucins and proteoglycans at pH = 1.0.
3. After opening, use the reagent within 6 months. Always tighten the cap after use to prevent evaporation or degradation.
4. For your safety and health, wear a lab coat and disposable gloves.
5. Use the reagent promptly after opening to ensure optimal performance.

This product is for research use only!