Alcian Blue Staining Kit, pH 2.5

Catalog No.: RA20099

Basic Information

Product name	Alcian Blue Staining Kit, pH 2.5
Sizes	50 mL
Storage	2-8 °C, keep away from light
Shipping	Shipped with ice pack
Validity	12 months

Product Introduction

Alcian Blue, also known as Alcian Blue 8GX or Alcian Blue GX, 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 isothiouronium groups via thioether bonds. The isothiouronium 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. At pH 1.0, sulfate groups are ionized and carry a negative charge, allowing staining of sulfated mucosubstances.

EnkiLife Alcian Blue Staining Solution (pH 2.5), also known as standard Alcian Blue solution, uses different pH values to distinguish types of mucosubstances: At pH 1.0: carboxyl (COOH) groups are not stained, sulfate (OSO_3H) groups are stained. At pH 2.5: carboxyl groups are well stained, sulfated mucins are poorly stained. 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 fixative, distilled water, graded ethanol series
2. 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. Immerse in Alcian Acidification Solution for 3 min.
3. Stain in Alcian Staining Solution for 15–30 min, rinse with running water for 5 min.
4. Counterstain with Nuclear Fast Red Staining Solution for 10 min, rinse with running water for 1 min.
5. Dehydrate through graded ethanol, clear with xylene or substitute, mount with neutral balsam.

Staining Results

Component	Color
Acid mucins (sulfated and sialylated)	Blue
Proteoglycans and hyaluronic acid	Blue
Nuclei	Red

Notes

1. Use 10% neutral formalin as fixative.
2. To selectively identify sulfated mucins and proteoglycans, use Alcian Blue at pH 1.0. The staining procedure is the same as for pH 2.5, but staining time should be extended.
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!