

BILIRUBIN TEST KIT

Modified Jendrassik & Grof's Method



Product Code: 10010	Reaction Type: End Point (With Std. / Factor)
Pack Size: 3 x 100 ml	Matrix Target: Human Serum & Plasma
Storage Temp: RT (Reagents) / 2-8°C (Standard)	Wavelength: 540 nm (Green Filter)

INTENDED USE & CLINICAL SIGNIFICANCE

Intended Use: This diagnostic system is configured for the discrete quantitative determination of Total and Direct Bilirubin fractions in human serum or plasma specimens.

Clinical Significance: Bilirubin is a breakdown product of hemoglobin metabolism. Serum elevations serve as critical diagnostic milestones: elevated unconjugated fractions occur in Hemolytic Jaundice; elevated conjugated (direct, water-soluble) fractions characterize Obstructive Jaundice; and elevations of both tracks signify Hepatic Jaundice pathologies.

METHOD PRINCIPLE

Bilirubin reacts with diazotized sulfanilic acid in an acidic environment to synthesize azobilirubin, yielding a pink complex. Direct Bilirubin reacts rapidly in the absence of an accelerator. Total Bilirubin (free and conjugated fractions) requires the addition of an organic caffeine/benzoate activator (R3-Activator) to decouple and process the albumin-bound molecule.

STEP 1: REAGENT CONFIGURATION & PIPETTING BASELINE (COLORIMETER MATRIX)

Label 4 clean dry test tubes: **T1 & T2** (Total Bilirubin track) and **D1 & D2** (Direct Bilirubin track):

Reagent / Element Line	T1 (Total)	T2 (Total Blank)	D1 (Direct)	D2 (Direct Blank)
R1 - Diazo A Reagent	1000 µl	1000 µl	1000 µl	1000 µl
R2 - Diazo B Reagent	100 µl	—	100 µl	—
R3 - Activator	1000 µl	1000 µl	—	—
Distilled Water	2500 µl	2600 µl	3500 µl	3600 µl
Serum / Plasma Specimen	200 µl	200 µl	200 µl	200 µl

Operational Directives: Strictly adhere to the pipetting sequence. Mix well. Incubate Direct tracks (D1/D2) for exactly 1 minute at RT and read absorbance. Incubate Total tracks (T1/T2) in the **dark** at RT for 5 minutes and read absorbance against water within 30 minutes at 540 nm.

STEP 2: CALCULATIONS & DATA TRACKING

$$\text{Total Bilirubin (mg\%)} = \frac{[(\text{Abs. T1} - \text{Abs. T2}) / \text{Abs. of Std.}] \times 10$$

$$\text{Direct Bilirubin (mg\%)} = \frac{[(\text{Abs. D1} - \text{Abs. D2}) / \text{Abs. of Std.}] \times 10$$

Standard Factor for Automated Analyzers: 27.77

TECHNICAL PARAMETERS & CLINICAL SUPPORT MATRIX

Universal Safeguards	Professional use only. CRITICAL: Protect samples and standard from direct light exposure during processing to avoid photolytic decay. Do not reuse the artificial standard.
Expected Range	Total Bilirubin: 0.2 – 1.0 mg% Direct Bilirubin: 0.0 – 0.2 mg%
Analytical Linearity	Linear up to 20 mg%. Dilute high samples with saline and apply the dilution factor.

Manufactured by: M/s. SAWIN BIOMEDICALS PVT. LTD.

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