# TOTAL BILIRUBIN SYSTEM PACK

(DMSO METHOD)

B Auto 400, Unicorn 480, Bonavera Chem 400, Beaconic B400 & Beaconic Chem 400 (Fully Auto Biochemistry Analyzer)

Code	Product Name	Pack Size
UNI35	Total Bilirubin System Pack	4 x 40 + 4 x 5 ml

INTENDED USE :

Diagnostic reagent for quantitative in vitro determination of Bilirubin in human serum

## CLINICAL SIGNIFICANCE

Bilirubin is a breakdown product of haemoglobin. Bilirubin formed in the reticulo endothelial system is transported bound by albumin to the liver. This bilirubin is water insoluble and is known as indirect or unconjugated bilirubin. In the liver, bilirubin is conjugated to glucuronic acid to form direct bilirubin. Conjugated bilirubin is excreted via the biliary system into the intestine. Here it is metabolised by bacteria to urobilinogen & stercobilinogen.

TOTAL BILIRUBIN = INDIRECT BILIRUBIN + DIRECT BILIRUBIN

Bilirubin Total is elevated in obstructive conditions of the bile duct, hepatitis, cirrhosis in haemolytic disorders and several inherited enzyme deficiencies.

#### PRINCIPLE

In the determination of Bilirubin Total, Bilirubin is coupled with diazotized sulfanilic acid in the presence of ethylene glycol and dimethylsulfoxide as solvents to produce an intensely colored diazo dye. The intensity of colour of this solution is proportional to the concentration of the bilirubin total in the sample.

#### REACTION:

Total Bilirubin	DMSO	
Bilirubin+Sulphanilic acid+Sodium N	Nitrite →	Azobilirubin

#### **Direct Bilirubin**

Bilirubin + Sulphanilic acid + Sodium Nitrite ------ Azobilirubin

## CONTENTS:

#### Reagent 1 : Total Bilirubin Reagent

Buffer : < 15 mmol/l Sulphanilic Acid : < 20mmol/l

## Reagent 2 : Total Nitrite Reagent

Sodium Nitrite : > 30 mmol/l

#### SAMPLES:

at +2- +8°C protected from light, as it is photosensitive.

#### REAGENT PREPARATION

Reagents are liquid, ready to use.

#### STABILITY AND STORAGE

The unopened reagents are stable till the expiry date stated on the bottle and label when stored at room temperature.

On board stability: Min 30 days (+8 -+25°C) if not contaminated.

#### SPECIMEN COLLECTION AND HANDLING

Use unheamolytic serum It is recommended to follow NCCLS procedures (or similar standardized

:	1 day	at +15-+25°C
	7 days	at +2-+8°C
	3 months	at-20°C

3 months at -20

Discard contaminated specimens.

## CALIBRATION

Stability

Calibration with the Beacon Multicalibrator is recommended.

## QUALITY CONTROL

Its recommended to run normal and abnormal control sera to validate reagents performance.

UNIT CONVERSION mg/dl x 16.95 = µmol/l

NORMAL VALUE : Serum : Total Bilirubin : upto 1.0 mg/dl Each Laboratory should establish it's own normal range

representing its patient population.



## TOTAL BILIRUBIN

## PERFORMANCE DATA

Data contained within this section is representative of performance on Beacon systems. Data obtained in your laboratory may differ from these values.

Limit of quantification	: 0.0052 mg
Linearity:	20 mg/dl
Measuring range:	0.0052 - 20 mg/dl

Intra-assay precision Within run (n=20)	Mean (mg/dl)	SD (mg/dl)	CV (%)
Sample 1	1.06	0.03	3.16
Sample 2	4.47	0.04	0.92
Inter-assay precision Run to run (n=20)	Mean (mg/dl)	SD (mg/dl)	CV (%)
Sample 1	4.06	0.01	0.35

## COMPARISON

A comparision between Total Bilirubin System Pack (y) and commercially available test (x) using 20 samples gave following results:

y = 0.990 x - 0.042 mg/dl

#### LINEARITY :

r = 0.999

This procedure is linear upto 20 mg/dl. If the values exceed this limit, dilute

the sample with normal saline (NaCl 0.9%) and repeat the assay.

Multiply result by dilution factor.

## INTERFERENCES

Following substances do not interfere: haemoglobin up to 7.5 g/l, triglycerides up to 1500 mg/dl.

#### WARNING AND PRECAUTIONS

For *in vitro* diagnostic use. To be handled by entitled and professionally educated person.

## LINEARITY :

This procedure is linear upto 20 mg/dl. If the values exceed this limit, dilute the sample with normal saline (NaCl 0.9%) and repeat the assay.Multiply result by dilution factor.

#### INTERFERENCES

Following substances do not interfere: haemoglobin up to 7.5 g/l, triglycerides up to 1500 mg/dl.

## WARNING AND PRECAUTIONS

For in vitro diagnostic use. To be handled by entitled and professionally educated person.

Parameter For B Auto 400, Unicorn 480, Bonavera Chem 400, Beaconic B400 & Beaconic Chem 400 (Fully Auto Biochemistry Analyzer)

## FOR TOTAL BILIRUBIN

TEST NAME	Bilirubin	
FULL NAME	Bilirubin	
PRI WAVE	546 nm	
SEC WAVE	700 nm	
ASSAY/POINT	2 Point End	
START	7	
END	33	
DECIMAL	2	
UNIT	mg/dl	
LINEARITY RANGE LOW	0.0052	
LINEARITY RANGE HIGH	20	
SAMPLE VOLUME	15 µ l	
REAGENT 1 (R1) VOLUME	200 µl	
REAGENT 1 (R2) VOLUME	10 µl	
SUBSATRATE DEPLETED	-	
LINEARITY	20 mg/dl	
OUT OF LINEARITY RANGE	-	
CALIBRATION TYPE	2 Point linear	
POINTS	2	
BLANK TYPE	Reagent	
CONCENTRATION BLANK	0.00	
CONCENTARTION STD	Refer calibrator value sheet.	

#### REFERENCES

- Cornall, A. G., Bardawill, C. J., David, M. M.: J. Biol. Chem. 177, 751, 1949. 1.
- 2. Doumas, B. T., Bayse, D. D. a kol.: Clin. Chem. 27, 1642, 1981.
- 3. Chromý, V., Fischer, J.: Clin. Chem. 23, 754, 1977.
- Chromý, V., Fischer, J., Vozníèek, J.: Z. Med. Labor.-Diagn. 21, 333, 1980. Tietz Textbook of Clinical Chemistry and Molecular diagnostics. Burtis, C.A., Ashwood, E.R., Bruns, D.E.; 5th edition, WB Saunders 4.

Content

In Vitro Diagnostics

- 5.
- 6.



#### SYMBOLS USED ON LABELS









Ω



IVD

Storage Temperature

## BEA/24/BIT/UN/IFU Ver-01

Expiry Date

## 23/04/2025