



PRODUCT INFORMATION & MANUAL

Direct Bilirubin/DBIL Assay Kit (Colorimetric) *NBP3-25787*

For research use only.
Not for diagnostic or therapeutic
procedures.

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Novus kits are guaranteed for 6 months from date of receipt

Direct Bilirubin/DBIL Assay Kit (Colorimetric)

Catalog No: NBP3-25787

Method: Colorimetric method

Specification: 96T (Can detect 94 samples without duplication)

Measuring instrument: Microplate reader

Detection range: 1.0-410 $\mu\text{mol/L}$

This manual must be read attentively and completely before using this product.

If you have any problems, please contact our Technical Service Center for help.

Please kindly provide us the lot number (on the outside of the box) of the kit for more efficient service.

Application

This kit can be used to measure Direct Bilirubin/DBIL content in serum or plasma samples.

Detection significance

High total bilirubin in serum (plasma) is common in hepatitis, extrahepatic biliary obstruction, hemolytic disease, neonatal jaundice, etc.

Detection principle

Direct bilirubin is oxidized under vanadonic acid to form biliverdin. The decrease of absorbance at 450 nm is proportional to the content of direct bilirubin.

Kit components

Reagent 1: Citric Acid Buffer, 20 mL ×1 vial, store at 2-8°C for 12 months.

Reagent 2: Sodium Metavanadate Phosphate Buffer, 5 mL ×1 vial, store at 2-8°C for 12 months.

Experimental material

Microplate (96 wells), High-precision transferpettor, Multichannel pipette, Microplate Reader (450 nm)

Sample preparation

Separate the serum or plasma as soon as possible after blood collection to avoid hemolysis and shading light.

Operation steps

	Blank well	Sample well
Double distilled water (μL)	7	
Sample (μL)		7
Reagent 1 (μL)	200	200
Mix fully, react for 5 min at 37°C and measure the OD value (A1) at 450 nm.		
Reagent 2 (μL)	50	50
Mix fully, react for 5 min at 37°C and measure the OD value (A2) at 450 nm. Calculate the $\Delta A = A1 - A2$.		

Calculation of results

D-BIL content (μmol/L) = $13803 \times (\Delta A_{\text{sample}} - \Delta A_{\text{blank}})^2 + 115.96 \times (\Delta A_{\text{sample}} - \Delta A_{\text{blank}}) + 0.7564$

The reference range

Healthy human serum: 0-6.84 μmol/L (0-0.04 mg/dL) (This is for reference only.)

Limitations

1. Interferential substance: Hemoglobin \leq 0.2 g/L, Vitamin C \leq 30 mg/dL, Glycerin trilaurate \leq 2000 mg/dL, have no interference to the result.
2. Direct bilirubin is just one of the indicators of the experiment. It is also necessary to make a comprehensive judgment according to the physical signs of the sample and other experimental indexes.

Product performance index

1. The OD value of blank is less than 0.05.
2. **Linear range** : 1.0 - 410 μ mol/L (a: $R^2 \geq 0.995$. b: 1.0-150 μ mol/L, deviation from linearity is less than 20.0 μ mol/L. c: 150-410 μ mol/L, deviation from linearity is less than 10%).
3. **Precision**: the CV% is less than 10%.
4. **Recovery**: $100 \pm 20\%$.
5. **Sensitivity**: When the concentration of sample is 50 μ mol/L, the difference of absorbance (ΔA) is more than 0.04.

Notes

1. This kit is for research use only.
2. Instructions should be followed strictly, changes of operation may result in unreliable results.
3. The validity of kit is 12 months.
4. Do not use components from different batches of kit.
5. The working solution is corrosive, it should be avoided to contact with skin and clothing. Wash immediately with plenty of water if contact it carelessly.
6. All the samples and waste material should be treated as infective material according to the relevant rules of biosafety.
7. Bilirubin can be easily decomposed by light and it should be avoid light when measurement.