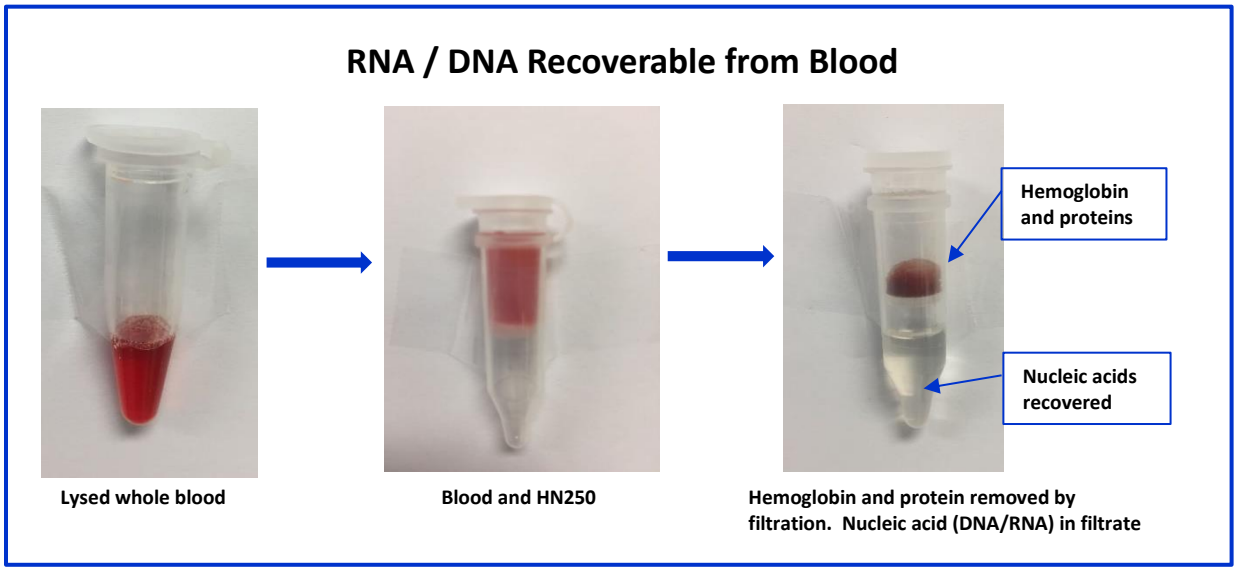
HemogloBind™ Nucleic Acid

Suspension Reagent to remove Hemoglobin interference for PCR

- Suitable for infectious disease research or rigorous analysis for whole blood or heavily hemolyzed samples
- Scaleable suspension reagent
- Robust and simple, no phenol/chloroform or ammonium sulfate precipitation
- High Yield – free and soluble DNA or RNA is highly recoverable
- > 95% Hemoglobin and Protein removal from whole blood lysates & dried blood cards
- Eliminates inhibitory effects of heme for PCR applications
- Compatible with silica-type final isolation preps

Some infectious viruses are known or suspected to be associated with red cells, such as Zika and West Nile viruses. So to detect their presence, it is becoming increasingly apparent to use whole blood, rather than plasma alone, as a starting sample type. However, the presence of hemoglobin from whole blood lysates is challenging for PCR because of the large amount of hemoglobin present. **HemogloBind™ Nucleic Acid** is designed to efficiently remove hemoglobin while maintaining very high recovery of nucleic acids, both RNA and DNA.



Gentaur Europe BVBA Voortstraat 49, 1910 Kampenhout BELGIUM
Tel 0032 16 58 90 45 info@gentaur.com

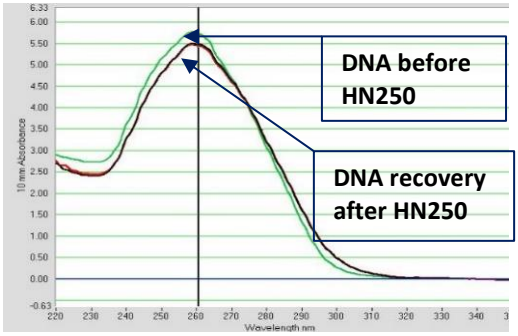
The protocol is easily scaled up or down to accommodate different starting blood volumes and works with common lysis buffers. Simply adjust the reagent volumes 5:1 proportionally to the starting blood volume.

PERFORMANCE EFFICIENCY	HemogloBind™ Nucleic Acid Suspension Reagent: Sample Volume Ratio	Nucleic Acid Recovery
RNA from Yeast, Total OD A_{260} = 15	5 : 1	>95%

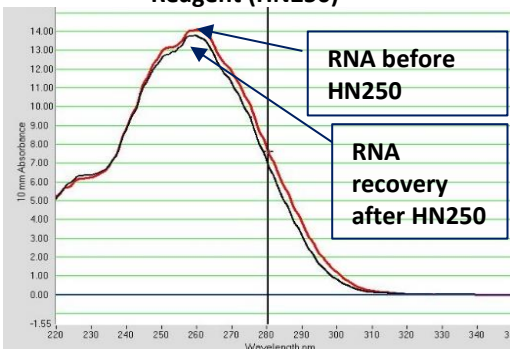
PERFORMANCE EFFICIENCY	HemogloBind™ Nucleic Acid Suspension Reagent	Hemoglobin Removal	Protein Removal
50 µl whole blood (Lysed using 3 M GuSCN. Final volume 150 µl.)	250 µl	>95%	>95%

Effect of HemogloBind™ Nucleic Acid on RNA / DNA

Absorbance at 260nm showing DNA (250 µg/ml) in sample before and after treatment with HemogloBind™ Nucleic Acid Suspension Reagent (HN250)



Absorbance at 260nm showing RNA (500 µg /ml) in sample before and after treatment with HemogloBind™ Nucleic Acid Suspension Reagent (HN250)



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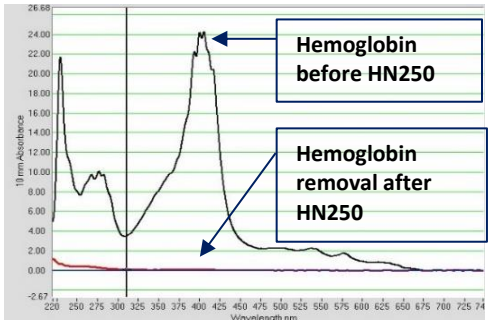
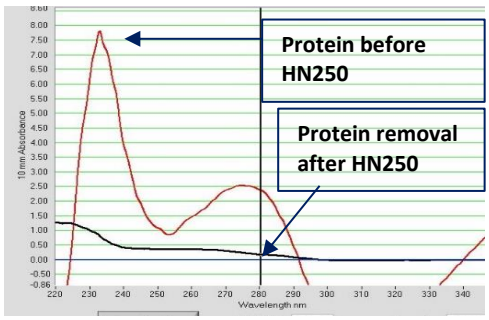
Effect of HemogloBind™ Nucleic Acid on Lysed Blood

Absorbance at 410nm showing hemoglobin in blood before and after treatment with HemogloBind™ Nucleic Acid Suspension Reagent (HN250)



Absorbance at 280nm showing protein in blood before and after treatment with HemogloBind™ Nucleic Acid Suspension Reagent (HN250)



Product	Item No.
HemogloBind™ Nucleic Acid 5ml (includes Spin filters)	HN250-20
HemogloBind™ Nucleic Acid 50ml (reagent only)	HN250-200

MATERIALS

Materials required	HN250-20	HN250-200
HemogloBind™ Nucleic Acid supplied as Suspension Reagent in <5 % Isopropanol	5 ml	50 ml
No. Preps Based on 50 µl of lysed whole blood sample	20 preps	200 preps
Microfuge Spin-X type Filters	20 supplied	Recommended (Not supplied)
3M Guanidine ThioCyanate (or equivalent lysis)	Not supplied	Not supplied
Wide bore pipette tips	Suggested (Not Supplied)	

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PROTOCOL - Based on 50 µl of whole blood sample

The suspension is supplied in <5% Isopropanol.

1. This step removes the alcohol before use. Shake **HemogloBind™ Nucleic Acid** reagent well to completely resuspend. Using a wide bore pipette tip, add 250 µl of **HemogloBind™ Nucleic Acid** reagent to a spin-X tube. Centrifuge the suspension for 10 minutes at 10,000 + G's. Discard the supernatant. Add 250 µl RNase/DNase free water (to original volume) and vortex for 5 mins to re-suspend the reagent.

2. Add the lysed (3 M GuSCN or equivalent) whole blood sample to the reagent that has been resuspended. Vortex for 20 seconds. Mix by inversion for 10 minutes. IMPORTANT NOTE: Failure to mix thoroughly will result improper separations and performance.

3. Centrifuge for 10 minutes at 10,000 x G's.
4. The filtrate contains the nucleic acid (DNA / RNA).
5. The hemoglobin and proteins are retained in the spin filter.

Proportions of **HemogloBind™ Nucleic Acid** reagent, can be adjusted v:v, at a ratio of 5 volumes suspension to 1 volume (before lysis) of whole blood sample.

It is recommended that this protocol be performed in a microfuge 0.2 to 0.45 µm Spin-X type filter to reduce the potential for carry-over of the solids into the nucleic acid solution.

CONTACT US

We welcome your questions and comments regarding our products.

Tel: 0032 16 58 90 45
Email: info@gentaur.com