Buffer TTGB 10X

Reference: TP10004

For research use only

	Expiration date
2-8°C	Store at temperature range 2°C to 8°C
LOT	Lot number
REF	Reference number

technologies ApoH

Increasing sensitivity, improving diagnostics

www.apohtech.com

S.A. of 729 885 € capital
94, Allée des Fauvettes, 34280 La Grande Motte, FRANCE
Email: info@apohtech.com – Phone: +33 (0)4 11 75 94 85
Mobile: +33 (0)6 50 60 33 17 – Fax: +33 (0)4 11 75 95 46
R.C.S. Montpellier/SIRET: 429 750 839/00038 – APE: 7219Z
VAT: FR18429750839

1 – INTRODUCTION

The Buffer TTGB 10X is a binding buffer that enhances the Apolipoprotein H (ApoH) protein attachment to **bacteria**. The ApoH protein, also known as Beta-2 glycoprotein 1, is able to bind various micro-organisms, including **viruses** (1-2), **fungi** (3) and **bacteria** (4-6). The ApoH protein is also known as Apolipoprotein H or Beta-2 glycoprotein 1. Its poly-specific nature allows **multiplexing** of various micro-organisms. This affinity capture method proves to be **simple, soft and fast** enough so that the micro-organisms retain their viability and infectivity. The captured micro-organisms are concentrated and **separated from potential inhibitors** and so become easier to identify/detect by the usual specific techniques, leading to a gain of sensitivity (7-10).

The Buffer TTGB 10X is also recommended for the use of the synthetic Peps6 molecule derived from the ApoH protein.

2 – REAGENTS

REF TP10004 – Buffer TTGB 10X

The Buffer TTGB is a light yellow aqueous binding buffer filtered at 0.2 µm and concentrated 10X. Dilute according to the instructions below.

3 – STORAGE

- Buffer TTGB may travel at ambient temperature without altering its function; store at 2-8°C upon reception.
- Buffer TTGB 10X concentrated or diluted to 1X remains stable at 2-8°C until the expiration date when free of contaminations.
- After use, rapidly store at 2-8°C.

4 – SAFETY AND PRECAUTIONS

- For better stability, Buffer TTGB must be handled with care to **avoid any contaminations**.
- The need for a **sterile work area** will be determined by the use of captured micro-organisms (mandatory for culture).

- Reagents and specimens should be handled in accordance to good laboratory practices. Dispose of unused reagents, samples and wastes in accordance with local regulations.
- Do not use out-of-date reagents.

5 – INSTRUCTIONS FOR USE

Sample volume may be scaled up or down. Scale up sample if low micro-organisms titers are suspected. Final buffer concentration must be 1X after sample dilution. Vortex sample after dilution.

- Small size sample (1-199 µL): dilute Buffer TTGB 10X to 1X concentration in sterile water. Add enough 1X Buffer TTGB in sample to reach 1 mL total volume.
- Medium size sample (0.2-5.0 mL): dilute Buffer TTGB 10X to 2X concentration in sterile water. Add 1 volume of Buffer TTGB 2X to 1 volume of sample.
- Large size sample (5.1-100 mL): add 10X concentrated Buffer TTGB directly into the sample to reach 1X final buffer concentration.

11 – TROUBLESHOOTING

Some guidelines are given below. Please contact our technical support for any remaining questions, for further information or for protocols tailored to your specific application:
info@apohtech.com

- Use sterile distilled water for buffer dilution. Check that Buffer TTGB is indeed **1X concentrated** when mixed in the sample.
- Check that Buffer TTGB is not contaminated.
- According to the micro-organism or the sample, the choice and the quantity of capture buffer may be optimized.
- Choose a test tube big enough to ensure correct agitation, for example: use a 1.5 mL tube for a 1 mL reaction.
- Check the reaction tubes: glass or plastic (polypropylene only, avoid polystyrene) tubes must be used if ApoH magnetic beads or Peps6 magnetic beads are added.

12 – BIBLIOGRAPHY

1. Stefas E et al. Human plasmatic apolipoprotein H binds human immunodeficiency virus type 1 and type 2 proteins. AIDS Res Hum Retroviruses 1997, 13(1):97-104.
2. Stefas I et al. Hepatitis B virus Dane particles bind to human plasma apolipoprotein H. Hepatology 2001, 33(1):207-17
3. Calvino JR et al. Use of magnetic nanoparticles for the specific separation and the molecular detection of micro-organisms on whole blood. ePoster for the 2015 ECCMID, Copenhagen, Denmark
4. Zhang L et al. Staphylococcus aureus expresses a cell surface protein that binds both IgG and beta2-glycoprotein I. Microbiology 1999, 145 (Pt1):177-83.
5. Agar C et al. β2-glycoprotein I: a novel component of innate immunity. Blood 2011, 117(25):6939-47.
6. Bouma B. et al. Adhesion mechanism of human b2-glycoprotein I to phospholipids based on its crystal structure, The EMBO Journal 1999, 18 (19): 5166-5174.
7. Veas F et al. Apolipoprotein H, an acute phase protein, a performing tool for ultra-Sensitive detection and isolation of microorganisms from different origins. Ch. 2 pages 21-42 in « Acute phase proteins as early non-specfic biomarkers of Human and veterinary diseases » 408 pages. Edited by Francisco Veas, 2011. Publisher InTech, Vienna, Austria and Rijeka, Croatia.
8. Adlhoch C et al. Highly sensitive detection of the group A Rotavirus using Apolipoprotein H-coated ELISA plates compared to quantitative real-time PCR. Virology Journal 2011, 8:63.
9. Stefas I et al. Interactions between Hepatitis C Virus and the Human Apolipoprotein H Acute Phase Protein: A Tool for a Sensitive Detection of the Virus. PlosOne 2015, Oct 26 (10):1-24.
10. Vutukuru MR et al. A rapid, highly sensitive and culture-free detection of pathogens from blood by positive enrichment. J Microbiol Methods. 2016 Dec; 131:105-109. doi: 10.1016/j.mimet.2016.10.008. Epub 2016 Oct 17.