Name:	**GVB^o (GVB without Ca^{++} and Mg^{++})**
Catalog Numbers:	**B101 and B103**
Sizes Available:	**1000 mL and 250 mL**
Composition:	0.1 % gelatin, 5 mM Veronal, 145 mM NaCl, 0.025 % NaN_3 , pH 7.3.
Form:	Liquid
Buffer:	Sodium veronal
Preservative:	Sterile filtered with 0.025% sodium azide as a bactericidal agent
Storage:	$+4^oC$ Avoid freezing which causes gelatin to gel. If frozen, heat to redissolve gelatin.
Precautions:	Azide is poisonous to all living organisms.
Origin:	Manufactured in the USA.

General Description

GVB^o is a basic buffer that can be used to make other traditional buffers used for complement assays. Ca^{++} and Mg^{++} may be added to GVB^o to make GVB^{++} for classical pathway and lectin pathway assays. MgEGTA may be added to GVB^o for alternative pathway assays. EDTA may be added to GVB^o to prepare GVBE to inhibit complement activation. GVB^o is also used for dilution of serum and other assay components in many complement assays especially in alternative pathway assays (Morgan, B.P. (2000; Dodds, A.W. and Sim, R.B. (1997)).

Ordering Requirements

Buffers such as GVB^o, GVB^{++} and GVBE need to be ordered by Friday in order to receive them the next week. They are shipped Monday afternoon by overnight courier for delivery on Tuesday or Wednesday. They can usually be used for 3 months after preparation if kept cold @ 4^oC. They are shipped cold, but are not harmed at room temperature and must be warmed to 37^oC for assays.

Buffer Components

Veronal is used as the buffer because in the mid-1900s this was the only buffer for pH range 7.2-7.4 that did not chelate metal ions and did not to inhibit complement reactions as did other buffers. Sodium chloride is present to provide an isotonic environment so that cells do not lyse due to osmotic pressure. Gelatin is present to prevent loss of protein components due to adsorption onto tips or tubes during dilutions and in the assays themselves. Azide is present to prevent bacterial growth.

Physical Characteristics

The concentration of gelatin in this buffer is below the concentration that forms solid gels. However, because of the gelatin is close to its gelling concentration at 4^oC some strings of gelatin form during standing at this temperature. They can be redissolved easily by heating to 37^oC or by brief heating in a microwave oven.

Applications

GVB^o should be used to prepare Er and to wash them before their use in assays. GVB^o is used to dilute all of the components of alternative pathway assays. The General

Description section above describes the use of GVB^{o} to prepare GVB^{++} , MgEGTA for alternative pathway assays and EDTA to prepare GVBE. GVB^{o} is also used for dilution of serum and other assay components in many complement assays especially in alternative pathway assays.

References

Morgan, B.P. ed. (2000) Complement Methods and Protocols. Humana Press.

Dodds, A.W. and Sim, R.B. editors (1997). Complement A Practical Approach (ISBN 019963539) Oxford University Press, Oxford.

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