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SUPPLEMENTAL TECHNICAL BULLETIN ST – 2011 – 03

Title: Collagen Solubility and Performance

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Collagen (Soluble Calf Skin, Type I) – C/N 101562

Collagen is a lyophilized preparation of soluble calf skin collagen (Type I). The working concentration of the reconstituted reagent is 1.9mg/mL. Collagen is for use in routine platelet aggregation studies for the evaluation of platelet dysfunction or platelet activation.

Collagen Solubility and Performance

Due to collagen's polymer nature, it is difficult to define solubility. "Soluble" collagen solutions may range from "water clear" to "turbid" colloidal suspensions. Collagen solubility is greatly dependent on the source of the raw material, the method of extraction and the fraction selected for conversion into a reagent grade material. The Type 1, Calf Skin collagen provided by Bio/Data Corporation will vary in solubility due to the source and processing of the Raw Material as well as the processing to a lyophilized powder.

Bio/Data Corporation Type I collagen is prepared from calf skin using the acid extraction method developed to provide Type I collagen for platelet aggregation. Born, Cross and others used this type of collagen in their seminal work on platelet function.

Fortunately, collagen's ability to aggregate platelets is not a direct function of solubility. This means that collagen's performance as an agonist for platelet aggregation is independent of common solubility issues.

When you see inert, insoluble material after the collagen is reconstituted, it is a nuisance, but does not compromise the collagen's performance. This inert material does not affect results but precaution must be taken when reconstituting the vial and pipetting the reconstituted collagen from the vial.

Recommended Method for Reconstitution of Collagen:

- Allow the unopened vial to equilibrate to room temperature before reconstitution.
- Open the vial and inspect for powder on the stopper. If powder is observed on the stopper, recap and tap top of vial to move powder to bottom of vial.
- Slowly add 0.5mL of purified water to the vial. It is best to allow the water to run down the side of the vial.
- Re-stopper vial and let sit undisturbed for 15 minutes. After 15 minutes, inspect the contents. If there is no un-dissolved material, the collagen is ready for use.
- If on inspection there appears to be some un-dissolved material, slowly “roll” the vial to assure that the un-dissolved material is wet. Wait an additional 5 minutes, then re-inspect.
- If there are still some strands of inert material present, the collagen may still be used without affecting the efficacy or stability of the reconstituted collagen.
- When pipetting from the vial – tilt the vial and the inert material will stay to one side, pipette the liquid collagen from the opposite side.

Additional Tips:

Do not vortex or mix strongly as air may be introduced into the material. A combination of collagen powder, air and water may develop and lead to some insoluble material remaining in the vial.

Generally, un-dissolved material is inactive. Active material will be dissolved or form a turbid colloidal suspension.