

**510(k) SUBSTANTIAL EQUIVALENCE DETERMINATION  
DECISION SUMMARY  
ASSAY ONLY TEMPLATE**

**A. 510(k) Number:**

K0822905

**B. Purpose for Submission:**

Clearance of a new device

**C. Measurand:**

Factor VIII

**D. Type of Test:**

ELISA

**E. Applicant:**

Genetic Testing Institute, Inc. (GTI)

**F. Proprietary and Established Names:**

Factor VIII Antibody Screen

**G. Regulatory Information:**

1. Regulation section:

21 CFR 864.7290

2. Classification:

Class II

3. Product code:

GGP

4. Panel:

81 Hematology

#### **H. Intended Use:**

1. Intended use(s):

The GTI Diagnostics Factor VIII Antibody Screen assay is a qualitative solid phase enzyme linked immunosorbent assay (ELISA) designed to detect IgG antibodies reactive with recombinant human factor VIII (FVIII) in human serum and plasma.

2. Indication(s) for use:

3. Special conditions for use statement(s):

4. Special instrument requirements:

#### **I. Device Description:**

The GTI Diagnostics Factor VIII Antibody Screen assay is an ELISA with a colorimetric endpoint. The assay kit is made of a 96 well microwell plate (in 1 X 8 strips), alkaline phosphatase conjugated goat antibody to human immunoglobulin G, p-nitrophenyl phosphate substrate, positive and negative control, Stop Solution, diluents, buffers, wash solutions, and plate sealers.

#### **J. Substantial Equivalence Information:**

1. Predicate device name(s):

GTI Factor VIII Inhibitor Assay

2. Predicate 510(k) number(s):

K993553

3. Comparison with predicate:

<b>Similarities</b>		
Item	Device	Predicate
Intended Use	To detect IgG antibodies reactive with recombinant human factor VIII (FVIII) in human serum and plasma.	same
Technology	ELISA with a colorimetric endpoint	same

<b>Differences</b>		
Item	Device	Predicate
Reagents	Tris buffer containing NaCl, Na azide, bovine serum albumin for specimen diluent	Tris buffer containing NaCl and Na azide as the specimen diluent
Formulation	Low-volume, flat bottom microwells with Kogenate FS as the source of Factor VIII. Microwells are not blocked	Starwells with Recombinant as the Factor VIII source. Microwells are blocked with bovine serum albumin
Control	Kit control used to determine positive samples	Negative Control used to determine cutoff for positive samples
Sample Matrix	Plasma collected in ACD or 3.2% Na citrate, and serum	Plasma collected in ACD or 3.2% Na citrate

**K. Standard/Guidance Document Referenced (if applicable):**

CLSI EP-5A2, Evaluation of Precision Performance of Quantitative Measurement Methods; Approved Guideline.

CLSI - EP7A2, Interference testing in Clinical Chemistry; Approved Guideline

CLSI – EP12A2, User Protocol for Evaluation of Qualitative Test Performance; Approved Guideline

CLSI – H21A5, Collection, Transport, Processing of Blood Specimens for Testing Plasma Based Coagulation Assays and Molecular Hemostasis Assays; Approved Guideline

CLSI EP9-A2; Method Comparison and Bias Estimation Using Patient Samples;  
Approved Guideline

BS EN 13612:2002; Performance Evaluation of in vitro Diagnostic Medical Devices

BS EN 13640:2002; Stability Testing of in vitro Diagnostic Reagents

#### **L. Test Principle:**

Diluted patient sample is added to microwells coated with recombinant FVIII, and antibody, if present will bind. Unbound material is washed away, and an alkaline phosphatase labeled anti-human immunoglobulin reagent (anti IgG) is added to the wells and incubated. Unbound anti-IgG is washed away and then PNPP (p-nitrophenyl phosphate) substrate is added. After a 30 minute incubation period, the reaction is stopped, and the optical density of the color that develops is measured at 405nm.

#### **M. Performance Characteristics (if/when applicable):**

##### **1. Analytical performance:**

###### *a. Precision/Reproducibility:*

8 samples were tested in duplicate in 10 separate assays, and analyzed by ANOVA for agreement within and between runs. Results demonstrated a within run imprecision of  $\leq 20\%$  CV and a between run CV of  $\leq 24\%$ .

Lot-to Lot Reproducibility was demonstrated by testing 12 samples (7 neg, 5 pos) in duplicate in 3 separate assays, on 3 different kit lots. Results demonstrated 100% agreement between reportable results for all 3 kit lots.

###### *b. Linearity/assay reportable range:*

###### *c. Traceability, Stability, Expected values (controls, calibrators, or methods):*

###### *d. Detection limit:*

###### *e. Analytical specificity:*

3 samples (negative, medium, and high FVIII antibody reactivity) were used

to demonstrate interference of hemoglobin, bilirubin, lipid, Gammagaurd (IVIG) and Rituxan (rituximab). Samples were spiked with interferents and tested in replicates of 10. Results showed no interference in hemoglobin and lipemia at 500mg/dL, bilirubin at 10 mg/dL, , IVIG 200mg.dL, Rituxan 10µg/mL.

*f. Assay cut-off:*

The cutoff value for the Factor VIII Antibody Screen is determined by the kit control. Any sample with an average OD value > than the average OD value of the kit control is positive. Any sample with an average OD value ≤ the average OD value of the kit control is negative.

2. Comparison studies:

*a. Method comparison with predicate device:*

Accuracy was demonstrated by a 2 site study in which the Factor VIII Antibody Screen was compared to the Factor VIII Inhibitor Assay and the Bethesda Assay.

		Factor VIII Inhibitor Assay		
Factor VIII Antibody Screen		Pos	Neg	Total
	Pos	89	1	90
	Neg	7	40	47
	Total	96	41	137

		Bethesda Assay		
Factor VIII Antibody Screen		Pos	Neg	Total
	Pos	35	4	39
	Neg	2	40	42
	Total	37	44	81

*b. Matrix comparison:*

Normal and spiked sample studies were conducted. Paired 3.2% Na citrate and serum samples was collected from 59 normal donors. Serum, 3.2% Na citrate, and ACD plasma samples were collected form 14 normal donors.

Antibody positive plasma was spike in 12 serum and 3.2% Na citrate samples. 24 ACD plasma and 3.2% sodium citrate pairs were spiked with FVIII antibody positive plasma. All studies demonstrated no difference was observed between the reportable results obtained from samples collected as 3.2% sodium citrate plasma, ACD Plasma or as serum.

3. Clinical studies:

a. *Clinical Sensitivity:*

b. *Clinical specificity:*

c. Other clinical supportive data (when a. and b. are not applicable):

4. Clinical cut-off:

5. Expected values/Reference range:

**N. Proposed Labeling:**

The labeling is sufficient and it satisfies the requirements of 21 CFR Part 809.10.

**O. Conclusion:**

The submitted information in this premarket notification is complete and supports a substantial equivalence decision.