

**510(k) SUBSTANTIAL EQUIVALENCE DETERMINATION
DECISION MEMORANDUM**

A. 510(k) Number:

k142132

B. Purpose for Submission:

Clearance of a new human normal plasma control

C. Measurand:

Assayed control for the activated partial thromboplastin time (APTT) and dilute Russell's viper venom time (dRVVT)

D. Type of Test:

Quantitative

E. Applicant:

Diagnostica Stago

F. Proprietary and Established Names:

Pool Norm

G. Regulatory Information:

1. Regulation section:

21 CFR 864.5425, Multipurpose system for in vitro coagulation studies

2. Classification:

Class II

3. Product code:

GGN, Plasma, Coagulation Control

4. Panel:

(81) Hematology

H. Intended Use:

1. Intended use(s):

The Pool Norm is a normal human plasma pool intended for use as a normal control for the activated partial thromboplastin time (APTT) and dilute Russell's viper venom time (dRVVT) assays carried out with the following tests:

– APTT: STA® - PTT A (REF 00595) on STA-R®, STA Compact® and STA Satellite® analyzers

– dRVVT: STA® - Staclot® dRVV Screen (REF 00339, 00333), STA® - Staclot® dRVV Confirm (REF 00334) on STA-R® and STA Compact® analyzers.

This reagent is to be used in clinical laboratories by certified medical laboratory personnel. For *in vitro* diagnostic use only. For prescription use.

2. Indication(s) for use:

Same as intended use

3. Special conditions for use statement(s):

For prescription use only

4. Special instrument requirements:

– APTT: STA-R®, STA Compact® and STA Satellite® analyzers

– dRVVT: STA-R® and STA Compact® analyzers

I. Device Description:

Pool Norm is a lyophilized pool of at least 20 citrated normal human plasmas, containing buffer, stabilizers and preservatives.

Each blood donation is tested and found to be negative for the antibodies to HIV 1, HIV 2, HCV and for hepatitis B surface antigen.

The Pool Norm is to be used in the same manner as patients' samples. Users are asked to refer to the "Procedure" chapter of the package insert. The product is packaged in a box containing 12 x 1-mL vials.

J. Substantial Equivalence Information:

1. Predicate device name(s):

George King Bio-Medical, Inc. Pooled Normal Plasma

Diagnostica Stago STA® – Control LA 1

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

George King Bio-Medical, Inc. Pooled Normal Plasma is a pre-amendment device. The Sponsor provided a copy of FDA determination letter concerning the pre-amendment status of the Pooled Normal Plasma from George King Bio-Medical, Inc.

k061803 (STA® – Control LA 1

3. Comparison with predicate:

Similarities			
Item	Device	Predicate	Predicate
	Pool Norm (Diagnostica Stago)	Pooled Normal Plasma (George King Bio-Medical)	STA® – Control LA 1 (Diagnostica Stago)
Intended Use	Normal control for the activated partial thromboplastin time (APTT) and dilute Russell's viper venom time (dRVVT) assays carried out with the following tests: APTT: STA® PTT A (REF 00595) on STA-R®, STA Compact® and STA Satellite® analyzers dRVVT: STA® - Staclot® dRVV Screen (REF 00339, 00333), STA® Staclot® dRVV Confirm (REF 00334) on STA-R® and STA Compact® analyzers. This reagent is to be used in clinical laboratories by certified medical laboratory personnel. For in vitro diagnostic use only. For prescription use.	Control plasma intended to be used to monitor coagulation tests. For <i>in vitro</i> diagnostic use only.	Lupus anticoagulant (LA) negative plasma intended for the quality control of the tests for LA detection carried out with the following tests: - STA® - Staclot® dRVV Screen (REF 00339, 00333) - STA® - Staclot® dRVV Confirm (REF 00334) - Staclot® LA (REF 00600, 00594). For <i>in vitro</i> diagnostic use only.
Test procedure	Same manner as patients' samples	Same	Automatically used by the instruments
Matrix	Citrated human plasma from normal donors	Same	LA negative citrated human plasma

Differences			
Item	Device	Predicate	Predicate
	Pool Norm (Diagnostica Stago)	Pooled Normal Plasma (George King Bio-Medical)	STA® – Control LA 1 (Diagnostica Stago)
Assay values reporting	Lot-specific Certificate of Analysis (COA): - reporting assay values for Activated Partial Thromboplastin Time (APTT) - certifying negative testing for lupus anticoagulant	Lot-specific COA: - reporting assay values for Prothrombin Time (PT), Activated Partial Thromboplastin Time (APTT), Fibrinogen, Factors V, VII, VIII, IX, X, XI and XII	Lot-specific COA: - reporting control values for STA® – Staclot® dRVV Screen, STA® – Staclot® dRVV Confirm and Staclot® LA
Storage	2-8°C	≤70°C	2-8°C
Manufacturing process	Lyophilized pooled normal citrated human plasma	Frozen pooled normal citrated human plasma	Lyophilized
In-use stability	8 hours at 20 ± 5°C	2 hours after thawing at 37°C	8 hours at 20 ± 5°C 8 hours on the STA® Compact® and STA-R®

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

CLSI EP05-A2; Evaluation of Precision Performance of Quantitative Measurement Methods, 2nd Edition

CLSI 25-A Evaluation of Stability of In Vitro Diagnostic Reagents: Approved Guideline

L. Test Principle:

The Norm Pool is to be used the same manner as patients' samples in the STA®- PTT A assay and the Staclot® dRVV Screen and Staclot® dRVV Confirm assays.

M. Performance Characteristics (if/when applicable):

1. Analytical performance:

a. *Precision/Reproducibility:*

Repeatability study/Within-Laboratory Precision Study: Three lots of Pool Norm were tested in house for 20 days, in two runs per day and two replicates per run, by three operators using one lot of assay reagent. The following instrument/assay combinations were tested:

- i. STA-R® and STA Compact®: STA® Staclot® dRVV Screen, STA® Staclot® dRVV Confirm (k061805)

ii. STA-R®; STA Compact® and STA Satellite®: STA® PTT A (k861190)

Precision was also tested using three (3) lots of Pool Norm across all instruments according to the following design. One lot of PTT A assay was tested with three (3) lots of Norm Pool on the STA-R® and STA Compact® and STA Satellite®. One lot of dRVV Screen and one lot of dRVV Confirm were tested with three (3) lots of Norm Pool on the STA-R® and STA Compact® only. Within-laboratory SD and %CV, as well as total SD and %CV were calculated. Study results met the pre-determined acceptance criteria.

Reproducibility study

Reproducibility was conducted at three (3) sites - two external and one internal site. The same three (3) lots of Pool Norm and one (1) lot of assay reagent were tested across all sites, over five non-consecutive days including two runs per day, three (3) replicates per run and three (3) operators.

The coefficient of variation (CV) and the standard deviation (SD) for within-run, between-run, between-day and within-laboratory/total precision were calculated separately for each site and each lot. In addition, the CV and SD for within-run, between-run, between-day, between-lot and within-laboratory/total precision were calculated for combined data of three lots of Pool Norm.

For pooled data obtained on the STA-R® at three sites (combined data from the three lots), the CV% and SD for within-run, between-run, between-lot, between-day, between-site and total precision were also calculated.

Results show that data met pre-determined acceptance criteria and demonstrated acceptable reproducibility of the Pool Norm under tested conditions. Test data are presented below:

on STA-R®

Assay	Sample Pool Norm Lot	N	X (sec)	Repeatability		Within-Laboratory Precision	
				SD (sec)	CV (%)	SD (sec)	CV (%)
STA® - PTT A	110150	80	33.1	0.3	1.0	0.6	1.7
	110795		32.6	0.3	1.0	0.5	1.6
	111289		32.5	0.3	0.9	0.5	1.5
STA® - Staclot® dRVV Screen	110150	80	42.4	0.3	0.8	0.6	1.4
	110795		41.6	0.2	0.6	0.5	1.3
	111289		41.2	0.2	0.4	0.5	1.1
STA® - Staclot® dRVV confirm	110150	80	38.2	0.3	0.8	0.5	1.3
	110795		37.9	0.3	0.8	0.5	1.3
	111289		37.7	0.3	0.7	0.4	1.1

on STA Compact[®]

Assay	Sample Pool Norm Lot	N	X (sec)	Repeatability		Within-Laboratory Precision	
				SD (sec)	CV (%)	SD (sec)	CV (%)
STA [®] - PTT A	110150	80	33.0	0.5	1.6	0.7	2.1
	110795		32.7	0.4	1.2	0.6	1.7
	111289		32.5	0.5	1.5	0.7	2.1
STA [®] - StacLOT [®] dRVV Screen	110150	80	40.5	0.3	0.7	0.6	1.6
	110795		40.0	0.3	0.7	0.6	1.4
	111289		39.4	0.4	0.9	0.7	1.8
STA [®] - StacLOT [®] dRVV confirm	110150	80	37.0	0.3	0.9	0.5	1.4
	110795		36.5	0.5	1.4	0.7	1.9
	111289		36.4	0.4	1.0	0.5	1.4

on STA Satellite[®]

Assay	Sample Pool Norm Lot	N	X (sec)	Repeatability		Within-Laboratory Precision	
				SD (sec)	CV (%)	SD (sec)	CV (%)
STA [®] - PTT A	110150	80	33.5	0.1	0.4	0.3	0.9
	110795		33.1	0.1	0.2	0.3	0.9
	111289		33.1	0.1	0.3	0.3	0.9

b. Linearity/assay reportable range:

Not applicable

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

Stability study

The open-vial stability and real-time stability claims were verified using STA[®]-PTT A and STA[®]-StacLOT[®] dRVV Screen and STA[®]-StacLOT[®] dRVV Confirm on the STAR[®] analyzer. Three (3) lots of Pool Norm (three vials per lot) at each time point were tested. The acceptance criteria for open-vial and real time stability were $\leq 5\%$ and $\leq 10\%$, respectively. The results met the acceptance criteria and supported open-vial stability of 8 hours at $20\pm 5^{\circ}\text{C}$ and real-time stability for 24 months at $2-8^{\circ}\text{C}$.

Value assignment

Value assignment for the Pool Norm was based on data for both APTT and dRVVT assays. Testing was performed in triplicate using 3 different lots of assay reagent yielding 27 values. The determinations were carried out on a minimum of 3 analyzers and by a minimum of 2 laboratory technicians over a minimum two days. The

averaged clotting times obtained yielded a value of 31-35 seconds.

For dRVVT assays the final result is expressed as a ratio of mean clotting time of the Pool Norm and clotting time of the reference pool. Obtained results yielded a ratio range of 0.99-1.01.

d. Detection limit:

Not applicable

e. Analytical specificity:

Not applicable

f. Assay cut-off:

Not applicable

2. Comparison studies:

a. Method comparison with predicate device:

Not applicable

b. Matrix comparison:

Not applicable

3. Clinical studies:

a. Clinical Sensitivity:

Not applicable

b. Clinical specificity:

Not applicable

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

Not applicable

4. Clinical cut-off:

Not applicable

5. Expected values/Reference range:

A lot-specific Certificate of Analysis will be provided with each kit of the Pool Norm. The clotting time for STA®-PTT A will be reported in seconds. The reference value for dRVVT will be reported as ratio of mean clotting time of the Pool Norm and clotting time of the reference pool. The ratio less than 1.20 is reported as negative on the Certificate of Analysis.

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.