510(k) SUBSTANTIAL EQUIVALENCE DETERMINATION
DECISION SUMMARY

I Background Information:

A 510(k) Number

K213426

B Applicant

Instrumentation Laboratory Co.

C Proprietary and Established Names

HemosIL ReadiPlasTin

D Regulatory Information

Product Code(s)	Classification	Regulation Section	Panel
GJS	Class II	21 CFR 864.7750 - Prothrombin Time Test	HE - Hematology
GIS	Class II	21 CFR 864.7340 – Fibrinogen determination system	HE- Hematology

II Submission/Device Overview:

A Purpose for Submission:

Formulation change to the HemosIL ReadiPlasTin reagent due to stability issues

B Measurand:

Prothrombin Time (PT)
Fibrinogen PT derived

C Type of Test:

Quantitative

III Intended Use/Indications for Use:

A Intended Use(s):

See Indications for Use below.

B Indication(s) for Use:

HemosIL ReadiPlasTin is an in vitro diagnostic thromboplastin reagent, based on recombinant human tissue factor, for the quantitative determination, in human citrated plasma, of Prothrombin Time (PT) and Fibrinogen, on the ACL TOP Family and ACL TOP Family 50 Series of analyzers.

The product is intended to be used for the evaluation of the extrinsic coagulation pathway and the monitoring of Oral Vitamin K Antagonist Therapy.

C Special Conditions for Use Statement(s):

Rx - For Prescription Use Only

For in vitro diagnostis use.

D Special Instrument Requirements:

ACL TOP Family Analyzer (K160276)
ACL TOP Family 50 Series of Analyzer (K150877)

IV Device/System Characteristics:

A Device Description:

The HemosIL ReadiPlasTin kit contains the HemosIL ReadiplasTin Reagent and HemosIL ReadiPlasTin Diluent. The HemosIL ReadiPlasTin Reagent is a tissue thromboplastin reagent, and the Diluent is a liposomal preparation that contains recombinant human tissue factor (RTF), re-lipidated in a synthetic phospholipid blend.

B Principle of Operation:

In the Prothrombin Time (PT) test, the addition of the tissue thromboplastin (ReadiPlasTin reagent) to the patient citrated plasma in the presence of calcium ions initiates the activation of the extrinsic pathway. This ultimately results in the conversion of fibrinogen to fibrin, with formation of a solid gel. Fibrinogen results are quantitated (PT-based method) by relating the absorbance or light-scatter during clotting to a calibrator.

V Substantial Equivalence Information:

A Predicate Device Name(s):

Hemosil Readiplas Tin

B Predicate 510(k) Number(s):

K122584

C Comparison with Predicate(s):

Device & Predicate Device(s):	K213426	K122584

Device Trade Name	HemosIL ReadiPlasTin	HemosIL ReadiPlasTin
General Device Characteristic Similarities		
Intended Use/Indications For Use	HemosIL ReadiPlasTin is an in vitro diagnostic thromboplastin reagent, based on recombinant human tissue factor, for the quantitative determination, in human citrated plasma, of Prothrombin Time (PT) and Fibrinogen, on the ACL TOP Family and ACL TOP Family 50 Series of analyzers. The product is intended to be used for the evaluation of the extrinsic coagulation pathway and the monitoring of Oral Vitamin K Antagonist Therapy.	Same
Test Principle	Prothrombin Time (PT): In the PT test, the addition of the tissue thromboplastin to the citrated patient plasma, in the presence of calcium, initiates the activation of the extrinsic pathway. This results in the conversion of fibrinogen to fibrin, with the formation of a solid gel. PT-derived Fibrinogen: Fibrinogen is quantitated (PT-based method) by relating the absorbance or light scatter during clotting to a calibrator.	Same
Sample Type	3.2% and 3.8% citrated plasma	Same
Measurement	Quantitative	Same
Instrumentation	ACL TOP Family (K160276) ACL TOP Family 50 Series (K150877)	Same
Testing Methodology	Coagulometric	Same
Quality Control	Automated QC	Same

On-Board Stability	10 days at 15°C on the instrument	Same
Open Vial Stability	10 days at 2–8°C in closed original vial	Same
General Device Characteristic Differences		
Reporting Units	PT: Seconds, INR Fibrinogen: mg/dL, g/L	PT: Seconds, % Activity, INR Fibrinogen: mg/dL, g/L
Formulation	Same as the predicate except the following formulation changes: 1. Addition of EDTA to ReadiPlasTin Reagent as a stabilizer for improved stability. 2. Removal of bovine gamma globulin (BGG) and trehalose from ReadiPlasTin Reagent and trehalose from ReadiPlasTin Diluent as inactive ingredients (fillers) with no intended purpose in liquid reagents. These ingredients are a carryover from a previous generation of lyophilized reagents.	Each ReadiPlasTin kit consists of: ReadiPlasTin Reagent: A solution of recombinant human tissue factor, synthetic phospholipids with stabilizers, preservative and buffer ReadiPlasTin Diluent: An aqueous solution of calcium chloride, polybrene and a preservative.

VI Standards/Guidance Documents Referenced:

- CLSI EP05-A3: *Evaluation of Precision of Quantitative Measurement Procedures; Approved Guideline – Third Edition*
- CLSI EP06: *Evaluation of the Linearity of Quantitative Measurement Procedures;2nd Edition*
- CLSI EP07: *Interference Testing in Clinical Chemistry; 3rd Edition*
- CLSI H21-A5: *Collection, Transport, and Processing of Blood Specimens for Testing Plasma-Based Coagulation Assays and Molecular Hemostasis Assays; Approved Guideline – Fifth Edition*
- CLSI EP25-A: *Evaluation of Stability of In Vitro Diagnostic Reagents; Approve Guideline*
- CLSI H47-A2: *One-Stage Prothrombin Time (PT) Test and Activated Partial Thromboplastin Time (APTT) Test; Approved Guideline – Second Edition*

VII Performance Characteristics (if/when applicable):

A Analytical Performance:

1. Precision/Reproducibility:

Intermediate precision testing for PT, INR, and Fibrinogen was performed at a single internal location by a single operator on one ACL TOP 700 and one ACL TOP 750. The study was conducted for 20 days, with two runs per day and two replicates per run. Each run was at least two hours apart. Three lots of reformulated HemosIL ReadiPlasTin reagent were used with tri-level controls to evaluate PT and Fibrinogen. Six native patient samples were tested for PT/INR at various INR ranges seen in the tables below. Six fibrinogen clinical samples were used and two sample pools at each concentration were tested, ~100 mg/dL, ~300 mg/dL, and ~600 mg/dL. The acceptance criteria were met for all samples in the studies.

Summary Precision Results for PT (sec) on ACL TOP 700

Sample	N	Mean	Repeatability		Between Run		Between Day		Within Lot		Between Lot		Within Lab	
			SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%
Normal Control	80	11.4	0.10	0.9	0.00	0.0	0.06	0.5	0.09	0.8	0.18	1.6	0.20	1.1
Low Abn Control	80	22.5	0.22	1.0	0.16	0.7	0.11	0.5	0.29	1.3	0.43	2.0	0.52	1.3
High Abn Control	80	37.5	0.22	0.6	0.18	0.5	0.18	0.5	0.34	0.9	0.92	2.5	0.98	0.8
1.5–2.5 INR	80	20.8	0.17	0.8	0.09	0.4	0.09	0.4	0.21	1.0	0.45	2.2	0.50	1.1
1.5–3.0 INR	80	31.4	0.28	0.9	0.45	1.4	0.00	0.0	0.53	1.7	0.57	1.9	0.78	1.7
2.5–3.5 INR	80	34.5	0.25	0.7	0.08	0.2	0.12	0.4	0.29	0.9	0.70	2.1	0.76	0.8
2.5–4.0 INR	80	39.6	0.31	0.8	0.05	0.1	0.14	0.4	0.34	0.9	0.73	1.9	0.81	0.8
4.0–4.5 INR	80	48.3	0.43	0.9	0.32	0.7	0.36	0.8	0.65	1.4	0.64	1.3	0.91	1.4
≥ 4.5 INR	80	52.1	0.64	1.0	0.32	0.6	0.51	1.0	0.88	1.7	0.73	1.4	1.14	1.7

Summary of Precision Results for PT (sec) on ACL TOP 750

Sample	N	Mean	Repeatability		Between Run		Between Day		Within Lot		Between Lot		Within Lab	
			SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%
Normal Control	80	11.8	0.09	0.7	0.00	0.0	0.06	0.5	0.11	0.9	0.07	0.6	0.13	1.0
Low Abn Control	80	23.3	0.22	0.8	0.10	0.5	0.10	0.4	0.26	1.1	0.26	1.1	0.37	0.9
High Abn Control	80	38.4	0.55	1.0	0.00	0.0	0.24	0.6	0.60	1.6	0.51	1.4	0.79	1.0
1.5–2.5 INR	80	21.4	0.23	0.7	0.07	0.3	0.13	0.6	0.27	1.3	0.39	1.8	0.48	1.0

Sample	N	Mean	Repeatability		Between Run		Between Day		Within Lot		Between Lot		Within Lab	
			SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%
1.5–3.0 INR	80	33.0	0.33	0.8	0.16	0.5	0.17	0.5	0.40	1.2	0.54	1.7	0.68	1.0
2.5–3.5 INR	80	36.2	0.28	0.7	0.22	0.6	0.16	0.4	0.39	1.1	0.44	1.2	0.59	1.0
2.5–4.0 INR	80	41.6	0.30	0.7	0.35	0.9	0.19	0.4	0.50	1.2	0.44	1.1	0.67	1.2
4.0–4.5 INR	80	48.6	0.60	0.9	0.38	0.8	0.55	1.1	0.90	1.9	0.31	0.6	0.95	1.6
≥ 4.5 INR	80	53.2	0.61	1.1	0.56	1.1	0.60	1.1	1.02	1.9	1.32	2.5	1.67	1.7

Summary of Precision Results for PT (INR) on ACL TOP 700

Sample	N	Mean	Repeatability		Between Run		Between Day		Within Lot		Between Lot		Within Lab	
			SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%
1.5–2.5 INR	80	1.81	0.02	1.0	0.01	0.4	0.01	0.4	0.02	1.1	0.01	0.7	0.02	1.2
1.5–3.0 INR	80	2.76	0.03	1.7	0.04	1.5	0.00	0.0	0.05	1.8	0.01	0.4	0.05	2.0
2.5–3.5 INR	80	3.04	0.02	0.7	0.01	0.2	0.01	0.4	0.03	0.9	0.02	0.7	0.03	0.9
2.5–4.0 INR	80	3.52	0.03	0.7	0.00	0.1	0.01	0.4	0.03	0.9	0.02	0.5	0.04	0.8
4.0–4.5 INR	80	4.31	0.04	1.2	0.03	0.7	0.03	0.8	0.06	1.4	0.01	0.3	0.06	1.5
≥ 4.5 INR	80	4.66	0.06	1.2	0.03	0.6	0.05	1.0	0.08	1.7	0.05	1.0	0.09	1.7

Summary of Precision Results for PT (INR) on ACL TOP 750

Sample	N	Mean	Repeatability		Between Run		Between Day		Within Lot		Between Lot		Within Lab	
			SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%
1.5–2.5 INR	80	1.79	0.02	0.8	0.00	0.2	0.01	0.5	0.02	1.3	0.03	1.4	0.03	1.1
1.5–3.0 INR	80	2.79	0.03	1.0	0.02	0.5	0.00	0.0	0.03	1.2	0.02	0.7	0.04	1.0
2.5–3.5 INR	80	3.09	0.03	0.9	0.02	0.6	0.01	0.3	0.03	1.1	0.02	0.5	0.04	1.0
2.5–4.0 INR	80	3.54	0.03	1.2	0.03	0.9	0.01	0.4	0.04	1.2	0.03	0.7	0.05	1.4
4.0–4.5 INR	80	4.16	0.05	1.2	0.03	0.8	0.05	1.2	0.08	1.9	0.04	0.9	0.09	1.7
≥ 4.5 INR	80	4.56	0.05	1.5	0.05	1.1	0.04	0.9	0.09	1.9	0.08	1.6	0.11	2.0

Summary of Precision Results for Fibrinogen (mg/dL) on ACL TOP 700

Sample	N	Mean	Repeatability		Between Run		Between Day		Within Lot		Between Lot		Within Lab	
			SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%
Normal Control	80	329	3.69	1.1	0.00	0.0	2.03	0.6	4.21	1.3	3.32	1.0	5.36	1.2
Low Abn Control	80	171	2.24	1.2	0.94	0.6	0.94	0.6	2.61	1.6	2.89	1.7	3.89	1.5
Low Fib Control	80	130	3.29	1.8	0.00	0.0	1.04	0.8	3.45	2.7	2.22	1.7	4.10	2.0
~100 mg/dL Fib	80	111	1.31	1.1	0.00	0.0	0.00	0.0	1.31	1.2	2.42	2.2	2.75	1.2
~100 mg/dL Fib	80	116	1.28	1.1	0.00	0.0	1.46	1.3	1.94	1.7	2.40	2.1	3.09	1.5
~300 mg/dL Fib	80	315	2.36	0.6	1.03	0.3	1.54	0.5	3.00	1.0	4.34	1.4	5.27	0.8
~300 mg/dL Fib	80	338	2.57	0.8	1.27	0.4	0.44	0.1	2.90	0.9	4.36	1.3	5.24	0.9
~600 mg/dL Fib	80	626	4.03	0.6	1.90	0.3	2.30	0.4	5.02	0.8	8.85	1.4	10.17	0.8
~600 mg/dL Fib	80	636	5.00	0.8	2.32	0.4	3.31	0.5	6.43	1.0	8.22	1.3	10.44	1.0

Summary of Precision Results for Fibrinogen (mg/dL) on ACL TOP 750

Sample	N	Mean PT	Repeatability		Between Run		Between Day		Within Lot		Between Lot		Within Lab	
			SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%	SD	CV%
Normal Control	80	319	3.79	1.3	0.31	0.1	1.20	0.4	3.99	1.2	1.29	0.4	4.19	1.4
Low Abn Control	80	157	1.92	1.0	1.46	0.9	0.00	0.0	2.41	1.5	1.44	0.9	2.81	1.4
Low Fib Control	80	120	2.73	2.0	0.86	0.7	0.70	0.6	2.95	2.4	2.57	2.1	3.91	2.3
~100 mg/dL Fib	80	106	1.50	1.2	0.00	0.0	0.54	0.5	1.60	1.5	1.40	1.3	2.12	1.4
~100 mg/dL Fib	80	110	1.42	1.1	0.57	0.5	0.00	0.0	1.53	1.4	1.58	1.4	2.20	1.3
~300 mg/dL Fib	80	307	2.81	0.9	2.06	0.7	1.08	0.3	3.64	1.2	0.56	0.2	3.69	1.2
~300 mg/dL Fib	80	330	3.10	0.6	1.62	0.5	0.48	0.1	3.53	1.1	0.93	0.3	3.65	0.9
~600 mg/dL Fib	80	624	5.02	0.7	3.15	0.5	2.89	0.5	6.59	1.1	5.72	0.9	8.73	1.1
~600 mg/dL Fib	80	635	5.05	0.8	4.52	0.7	3.83	0.6	7.79	1.2	6.52	1.0	10.16	1.2

2. Linearity:

Fibrinogen linearity testing was performed using three lots of reformulated HemosIL ReadiPlasTin reagent. Ten samples were ran on an ACL TOP 700 analyzer and an ACL TOP 750 analyzer. A normal donor plasma was used as the high fibrinogen sample (> 700 mg/dL), while a low fibrinogen sample (< 60 mg/dL) was prepared by mixing 7 mL cryo-precipitated

low fibrinogen plasma with 9 mL ultra-low fibrinogen plasma. The two samples were used to prepare 10 samples ranging from ~60 mg/dL to ~800 mg/dL. The result demonstrates that HemosIL ReadiPlasTin reagent is linear within the range of 60 to 700 mg/dL for fibrinogen.

A factor linearity study for extrinsic factors II, V, VII and X was performed with one lot of reformulated HemosIL ReadiPlasTin on an ACL TOP 700 analyzer and an ACL TOP 750 analyzer. Results met acceptance criteria.

Factor Linearity Summary Results

Factor	Analyzer	Fibrinogen Linearity Results			
		Range Tested	Slope	Intercept	Correlation Coefficient (r)
Factor II (K050661)	ACL TOP 700 (K160276)	0.1–151.1%	0.93	6.25	0.99
	ACL TOP 750 (K150877)	0.1–167.2%	0.91	6.19	0.99
Factor V (K023839)	ACL TOP 700 (K160276)	0.5–155.4%	0.98	2.25	1.00
	ACL TOP 750 (K150877)	0.4–163.7%	0.97	3.82	1.00
Factor VII (K024082)	ACL TOP 700 (K160276)	0.3–173.4%	0.97	1.59	1.00
	ACL TOP 750 (K150877)	0.3–186.0%	1.01	0.69	1.00
Factor X (K031122)	ACL TOP 700 (K160276)	0.6–196.0%	1.08	-1.32	1.00
	ACL TOP 750 (K150877)	0.5–186.7%	1.06	0.28	1.00

3. Analytical Specificity/Interference:

Interference Study

An interference study was performed for unfractionated (UF) heparin, low molecular weight heparin (LMWH), hemoglobin, triglycerides, bilirubin (conjugated and unconjugated), and daptomycin with one lot of reformulated HemosIL ReadiPlasTin for prothrombin time and fibrinogen on an ACL TOP Family Analyzer.

Two levels of plasma were used: 1) a commercially available normal pooled plasma 2) a commercially available pool of oral anticoagulant patient samples with an INR 2.0–3.0. The two sample levels were spiked with multiple levels of the indicated interferent and tested in quadruplicate. The data was then compared to the un-spiked control result. Interference limits are found in the table below.

Interference Limits

Assay	UFH	LMWH	Hemoglobin	Triglyceride	Bilirubin Conjugated and Unconjugated	Daptomycin
PT	1.0 IU/mL	1.4 IU/mL	500 mg/dL	1000 mg/dL	50 mg/dL	100 µg/mL
Fibrinogen	1.5 IU/mL	1.7 IU/mL	500 mg/dL	600 mg/dL	50 mg/dL	200 µg/mL

Extrinsic Factor Sensitivity

To demonstrate extrinsic factor sensitivity, a study was performed to evaluate the performance of the reformulated HemosIL ReadiPlasTin (K213426) to a released on-market lot of HemosIL ReadiPlasTin (K122584) and determine the factor level at which the

prothrombin time rises above the upper limit of the reference interval. Samples were prepared by mixing HemosIL factor deficient plasma with normal pool plasma of known assayed factors to create eight dilutions. Concentrations ranged from 7.8% to 95.1% factor activity. Prothrombin time was determined on each plasma dilution in duplicate on an ACL TOP 700 analyzer.

Reagent/Extrinsic Factor	Factor II	Factor V	Factor VII	Factor X
Reformulated ReadiPlasTin	36%	58%	52%	68%

Vial Stopper Compatibility

Five vials of each prototype ReadiPlasTin reagent (P1119220) and diluent (P1119221) were packed into HemosIL ReadiPlasTin kit cartons (4 kits total) and stored inverted at 2–8°C. One kit per timepoint (7, 14, 21 and 51 days) was removed and tested for PT recovery of tri-level controls (Normal, Low Abnormal, and High Abnormal). Vials were reconstituted by pouring the contents of the diluent directly into the reagent. The mean of five inverted vials were compared to the mean of five vials stored upright. There was no observed change or deposits on the stoppers. The results from the study indicate that the reagent and diluent are compatible with the stopper material.

4. Assay Reportable Range:

Not Applicable.

5. Traceability, Stability, Expected Values (Controls, Calibrators, or Methods):

Real-time Shelf-Life (closed vial)

Real-time shelf-life stability testing was performed using three lots of reformulated HemosIL ReadiPlasTin tested on one ACL TOP 700 analyzer. Prothrombin time (PT) was tested using low, normal, and high PT controls as well as four native PT patient samples (1.5–4.0 INR). Fibrinogen was tested using normal and low fibrinogen controls, as well as two samples at each of the following three levels of pooled fibrinogen: ~100 mg/dL, ~300 mg/dL, and ~600 mg/dL. The HemosIL ReadiPlasTin reagent was stored at 2–8°C and tested for eight replicates at different time points. The shelf-life test is ongoing and the current results support a 15-month shelf-time claim for HemosIL ReadiPlasTin at 2–8°C.

Open Vial Stability

Open vial stability testing at 2–8°C was performed using three lots of reformulated HemosIL ReadiPlasTin tested on one ACL TOP 700 analyzer. PT was tested using low, normal, and high PT controls as well as four native PT patient samples (1.5–4.0 INR). Fibrinogen was tested using normal and low fibrinogen controls, as well as two samples at three levels: ~100 mg/dL, ~300 mg/dL, and ~600 mg/dL pooled fibrinogen. The HemosIL ReadiPlasTin reagent was stored at 2–8°C and tested for eight replicates at different time points. The results support an open vial stability claim of 10 days at 2–8°C.

On-Board Instrument Stability

On-board instrument stability testing was performed using three lots of reformulated HemosIL ReadiPlasTin tested on one ACL TOP 700 analyzer. PT was tested using low, normal, and high PT controls as well as four native PT patient samples (1.5–4.0 INR). Fibrinogen was tested using normal and low fibrinogen controls, as well as two samples at three levels: ~100 mg/dL, ~300 mg/dL, and ~600 mg/dL pooled fibrinogen. The HemosIL ReadiPlasTin reagent was stored on-board the analyzer and tested for eight replicates at different time points. The test results support an on-board stability claim of 10 days.

Simulated Shipping Study

Two lots of reformulated ReadiPlasTin were subjected to simulated shipping conditions of vibration and drop, and summer thermal shipping stress based on the ISTA summer temperature profile. In addition, a separate set of vials with reformulated ReadiPlasTin were subjected to -20°C freeze/thaw stress. After the simulated stress, the same vials were tested for functionality with plasma controls. The results demonstrate transport stability of reformulated ReadiPlasTin at temperatures ≤ -20°C and 35°C.

37°C Thermal Stability with EDTA Concentration Study

A thermal stress stability study at 37°C for 28 and 35 days was conducted using two lots of HemosIL ReadiPlasTin. The HemosIL ReadiPlasTin liquid reagent was spiked with EDTA at different concentrations (0, 0.15, 0.25, 0.35, 0.5 1.0, 1.5 mM EDTA) prior to the addition of the diluent and tested for PT. Three levels of quality control material, HemosIL normal, low abnormal, and high abnormal were ran in duplicate with three reagent vials at each time point (Day 0, 7, 14, 20, and 28; Day 35 for 1 lot). To determine the optimal EDTA concentration, the % drift was calculated from the baseline PT (sec) at 2–8°C. This study indicated that 0.5 mM is the optimal amount of EDTA that can be added to the HemosIL ReadiPlasTin reagent.

High-performance liquid chromatography (HPLC) Analysis

Two pilot lots with 0.5 mM EDTA and without EDTA, were tested for lipid concentration by HPLC for 28 and 35 days respectively. Lipid concentration was evaluated quantitatively for change in concentration over time at 37°C (Day 0, 7, 14, 20, and 28; Day 35 for 1 lot). Lipid content was evaluated qualitatively by comparing peak shapes from HPLC chromatograms of reagent from unstressed vials and stressed vials, with and without EDTA. Pilot vials with 0.5 mM EDTA compared to 0 mM EDTA showed minimal change in lipid content over the 28 and 35 days.

Phospholipase Tolerance

Two pilot lots, with and without EDTA added, were spiked with phospholipases and thermally stressed at 37°C and then reconstituted with ReadiPlasTin kit matched diluent and tested with three levels (normal, low abnormal, and high abnormal) of quality control for PT(s) recovery. Percent (%) drift was calculated and demonstrated pilot lots without EDTA added do not exhibit tolerance against phospholipases after three days or less of stress. Pilots

with EDTA added demonstrated resistance against phospholipase effects, with 0.5 mM EDTA showing the greatest tolerance.

6. Detection Limit:

Not applicable.

7. Assay Cut-Off:

Not applicable.

B Comparison Studies:

1. Method Comparison:

An in-house method comparison study was performed to compare the performance of the reformulated HemosIL ReadiPlasTin assay versus the RecombiPlasTin 2G assay (K070005), on both one ACL TOP 700 and one ACL TOP 750. The reformulated HemosIL ReadiPlasTin performed comparably to the HemosIL RecombiPlasTin 2G. All acceptance criteria were met, including when only vitamin K antagonists (VKA) samples were evaluated.

Method Comparison: Reformulated vs 2G INR Summary

	ACL TOP 700	**ACL TOP 750**
Sample Count (n)	160	160
INR Range	0.84–14.66	0.85–13.53
Correlation coefficient (r)	0.997	0.996
Intercept (95% CI)	-0.043 (-0.068, -0.018)	-0.034 (-0.060, -0.009)
Weighted Deming Slope (95% CI)	1.031 (1.009, 1.053)	1.021 (0.999, 1.043)
Predicated Bias at MDL of 2.0 INR	0.9% (-0.1, 2.0%)	4.1% (2.6, 5.5%)

Method Comparison: Reformulated vs 2G INR Summary – VKA Samples Only

	ACL TOP 700	**ACL TOP 750**
Sample Count (n)	51	51
INR Range	1.55–14.66	1.63–13.53
Weighted Deming Slope (95% CI)	1.04 (1.006, 1.078)	1.029 (0.992, 1.067)
Intercept (95% CI)	0.011 (-0.072, 0.094)	0.023 (-0.061, 0.107)
Correlation coefficient (r)	0.998	0.997
Predicated Bias at MDL of 2.0 INR	4.8 % (3.5, 6.1%)	4.1% (2.6, 5.5%)

Method Comparison: Reformulated vs 2G Fibrinogen Summary

	ACL TOP 700	**ACL TOP 750**
Sample Count (n)	135	134
Fibrinogen Range	68–690	71–687
Correlation coefficient (r)	0.995	0.997
Intercept (95% CI)	7.171 (3.842, 10.50)	-0.811 (-4.148, 2.527)
Weighted Deming Slope (95% CI)	0.975 (0.963, 0.986)	1.015 (1.003, 1.027)

Predicated Bias at MDL of 2.0 INR (~282 mg/dL Fibrinogen)	-0.1% (-0.6, 0.6%)	0.8% (0.5, 1.9%)

2. Matrix Comparison:

Not applicable

C Clinical Studies:

1. Clinical Sensitivity:

Not applicable.

2. Clinical Specificity:

Not applicable.

3. Other Clinical Supportive Data (When 1. and 2. Are Not Applicable):

Not applicable.

D Clinical Cut-Off:

Not applicable.

E Expected Values/Reference Range:

See K122584.

VIII Proposed Labeling:

The labeling supports the finding of substantial equivalence for this device.

IX Conclusion:

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