K071239

SEP 14 2007

510(k) Summary – Total Protein Urine/CSF Gen. 3

Introduction and purpose of submission

Roche Diagnostics Corporation hereby submits this Special 510(k): Device Modification to provide notification of modifications to our Total Protein Urine /CSF (TPUC) test system. The reagent was originally cleared for use as: Roche Hitachi Urinary/CSF Protein via K913615.

The modification that triggered the need for this filing was the development of a new application of the TPUC reagent to the COBAS INTEGRA family of analyzers, which featured a new calibrator (C.f.a.s. TPUC 200). This application did not meet all of its predetermined acceptance criteria and therefore did not qualify for Internal Documentation under the Reagent Replacement Policy.

Since the original clearance of the test system under K913615, other modifications have occurred, which have not themselves resulted in the need for a new submission. These modifications include:

- Application of reagent to new members of the Roche/Hitachi family as those family members have been introduced
- Development of a new application for the Roche/Hitachi family member cobas c501 platform and that included the 'new' calibrator C.f.a.s TPUC 200, which is simply a single level of the originally cleared Preciset U/CSF Calibrator
- Other editorial labeling changes

Continued on next page

Submitter name, address, contact

Roche Diagnostics
9115 Hague Rd
Indianapolis IN 46250
(317) 521-4569

Contact person: Jennifer Tribbett

Date prepared: September 11, 2007

Device Name

Proprietary name: Total Protein Urine/CSF Gen. 3
Common name: Total Protein
Classification name: Total Protein test system

Establishment registration

The establishment registration number for Roche Diagnostics Gmbh Penzberg is 9610529.

The establishment registration number for Roche Diagnostics Corporation Indianapolis is 1823260.

Classification

The FDA has classified Total protein test system in Class II.

Panel	Classification Number	Classification Name	Regulation Citation
75 Clinical Chemistry	JGQ	Total Protein test system	21 CFR 862.1635

Device Description

The COBAS INTEGRA Total Protein Urine/SCG Gen. 3 reagent is intended for use on the COBAS INTEGRA systems for the quantitative determination of protein in urine and cerebrospinal fluid.

Continued on next page

510(k) Summary – Total Protein Urine/CSF Gen. 3, Continued

Intended use and Summary

TOTAL PROTEIN URINE / CSF Gen 3.

Intended Use:
In vitro diagnostic test intended for the quantitative determination of the total protein concentration in urine and cerebrospinal fluid on COBAS INTEGRA systems.

Summary:
Protein measurements in urine are used in the diagnosis and treatment of disease conditions such as renal or heart diseases, or thyroid disorders, which are characterized by preteinuria or albuminuria.

CSF protein measurements are used in diagnosis and treatment of disease conditions such as meningitis, brain tumors and infections of the central nervous systems.

C.f.a.s. TPUC 200
C.f.a.s. (Calibrator for automated systems) TPUC 200 is for use in the calibration of quantitative determination of protein in urine (U) and cerebrospinal fluid (CSF) on COBAS INTEGRA analyzers and Roche/Hitachi **cobas c** systems.

Predicate Device

We claim substantial equivalence to the Urinary/CSF Protein test system cleared as K913615.

Substantial equivalency – Similarities

The table below indicates the similarities and differences between the modified Total Protein reagent and the predicate device.

Feature	Predicate device: Roche/Hitachi Total Protein Urine/CSF K913615	Modified device: Total Protein Urine/CSF Gen. 3
General		
Intended Use/ Indications for Use	In vitro test for the quantitative determination of protein in urine (U) and cerebrospinal fluid (CSF)	Same
Specimen	Urine and CSF	Same
Application	Endpoint assay	Same
Test Principle		
Reference method	Turbidimetric	Same
Reagent information		
Reagent composition	R1: Sodium hydroxide 530 mmol/L, EDTA sodium, 74 mmol/L R2=SR: Benzethonium chloride 32 mmol/L	Same

Continued on next page

Substantial equivalency – Similarities

Feature	Predicate device: Roche/Hitachi Total Protein Urine/CSF K913615	Modified device: Total Protein Urine/CSF Gen. 3
Stability - shelf life and on-board	20-25 °C until expiration date R1: 3 weeks on board at 2-12 °C R2: 3 weeks on board at 2-12 °C	Roche/Hitachi: 15-25 °C until expiration date R1: 21 days on board and refrigerated on the analyzer R2: 21 days on board and refrigerated on the analyzer COBAS INTEGRA 400/400 plus: 12 weeks on board at 10 to 15°C COBAS INTEGRA 700/800 plus: 6 weeks on board at 10 to 15°C
Quality control	Commercially available urine and CSF protein controls	Roche/Hitachi: Same COBAS INTEGRA: Same
Traceability	Standardized against National Bureau of Standards Reference Material SRM 927 using the biuret method for the quantitation of protein.	Same

Continued on next page

Substantial equivalency – Similarities (continued)

Feature	Predicate device: Roche/Hitachi Total Protein Urine/CSF K913615	Modified device: Total Protein Urine/CSF Gen. 3
Performance characteristics		
Precision	Urine: Within run (Urine): 2.25% @ 17.9 mg/dL 0.5% @ 102.2 mg/dL Total: 3.05% @ 17.9 mg/dL 0.8% @ 102.2 mg/dL CSF: Within run (Urine): 3.05% @ 17.9 mg/dL 0.8% @ 102.2 mg/dL Total: 1.9% @ 18.1 mg/dL 1.03% @ 102.4 mg/dL	Roche/Hitachi: Urine Within run: 1.9% @ 21 mg/dL 1.0% @ 67.3 mg/dL Between day: 1.7% @ 34.5 mg/dL 1.1% @ 114.37 mg/dL CSF: Within run: 0.9% @ 23.1 mg/dL 0.7% @ 53.6 mg/dL Between day: 1.0% @ 29.3 mg/dL 0.6% @ 90.2 mg/dL COBAS INTEGRA: Urine Within run: 2.8%@ 89 mg/L 1.4% @ 227 mg/L 0.4% @ 616 mg/L Between day: 1.3% @ 91 mg/L 1.0% @ 229 mg/L 0.6% @ 613 mg/L CSF: Within run: 0.5% @ 345 mg/L 0.3% @ 867 mg/L Between day: 0.9% @ 346 mg/L 0.6% @ 867 mg/L

Continued on next page

510(k) Summary – Total Protein Urine/CSF Gen. 3, Continued

Substantial equivalency – Similarities (continued)

Feature	Predicate device: Roche/Hitachi Total Protein Urine/CSF K913615	Modified device: Total Protein Urine/CSF Gen. 3
Measuring range	Analyzer specific linearity claims 2-200 mg/dL (Hitachi 717)	Roche/Hitachi: 2-200 mg/dl (20-2000 mg/l) Specimen dilution Determine samples with U/CSF protein concentrations > 200 mg/dl (2000 mg/l) via the rerun function. On instruments without rerun function, manually dilute samples with 0.9% NaCl. Multiply the result by the appropriate dilution factor. COBAS INTEGRA: 40-2000 mg/L Extended measuring range: 40-6000 mg/L with post dilution factor of 3 recommended
Lower detection limit	Not specified	Roche/Hitachi: 20 mg/L COBAS INTEGRA: 40 mg/L
Expected values (literature reference)	Urine 24h: < 150 mg/24 h CSF: < 150-450 mg/L	Roche/Hitachi: Same COBAS INTEGRA: Same

Continued on next page

510(k) Summary – Total Protein Urine/CSF Gen. 3, Continued

Substantial equivalency – Similarities (continued)

Feature	Predicate device: Roche/Hitachi Total Protein Urine/CSF K913615	Modified device: Total Protein Urine/CSF Gen. 3
Endogenous interferences	Reference to Young et al and Friedman et al	Roche/Hitachi: Icterus: No significant interference up to an I index of 45 (approximate conjugated and unconjugated bilirubin concentration: 45 mg/dL). Hemolysis: Hemoglobin interferes. COBAS INTEGRA: *Urine* Icterus No significant interference up to an I index of 35 (approximate conjugated bilirubin concentration: 599 µmol/L or 35 mg/dL). Hemolysis Hemoglobin interferes. CSF: Hemolysis: hemoglobin interferences

Continued on next page

Substantial equivalency – Similarities (continued)

Feature	Predicate device: Roche/Hitachi Total Protein Urine/CSF K913615	Modified device: Total Protein Urine/CSF Gen. 3
Exogenous interferences	15 drugs test – no interferences	Hitachi/Roche: No significant interference from: Ascorbic Acid, Creatinine, Glucose, Phosphorus, Urea, Magnesium, Sodium Citrate, Caffeine, Cefazolin Sodium, Chlorpromazine, Calcium L-Dopa, Gentamicin Sulfate, Sodium Oxalate and Uric Acid COBAS INTEGRA: Of the drugs tested in vitro, Levodopa, Methyldopa and Cefoxitin sodium cause interference at therapeutic concentrations (artificially high total protein levels). In very rare cases gammopathy, in particular type IgM (Waldenstrom's macroglobulinemia) may cause unreliable results.

Continued on next page

Substantial equivalency – Similarities (continued)

Feature	Predicate device: Roche/Hitachi Total Protein Urine/CSF K913615	Modified device: Total Protein Urine/CSF Gen. 3
Method comparison	A comparison of this method on the Hitachi 717 analyzer using the Dupont ACA method as a reference resulted in the following linear regression statistics: Urine: y= 1.051x +2.78 r = 0.996 n=34 CSF: y = 0.982x – 0.957 r = 0.982 n=59	COBAS INTEGRA 800: Total protein values for human urine and CSF samples obtained on a COBAS INTEGRA 800 analyzer with the COBAS INTEGRA Total Protein Urine/CSF Gen.3 reagent and C.f.a.s. TPUC 200 calibrator were compared with those determined using the same reagent on a Roche/Hitachi 917 analyzer. **vs. 917** Urine Sample size (n) = 54 Passing/Bablok y = 1.003x + 2.0 mg/L τ = 0.951 Linear regression y = 1.007x + 4.2 mg/L r = 0.999 The sample concentrations were between 40 and 1989 mg/L. CSF Sample size (n) = 68 Passing/Bablok y = 1.018x + 1.9 mg/L τ = 0.991 Linear regression y =1.019x + 2.3 mg/L r = 1.000 The sample concentrations were between 59 and 1996 mg/L.

Continued on next page

510(k) Summary – Total Protein Urine/CSF Gen. 3,
Continued

Substantial Differences

The table below indicates the differences between the modified Protein direct or total reagents and their predicate devices.

Feature	Predicate device: Roche/Hitachi Total Protein Urine/CSF K913615	Modified device: Total Protein Urine/CSF Gen. 3
Instrument platforms	Roche/Hitachi analyzers	Roche/Hitachi family of analyzers and COBAS INTEGRA family of analyzers
Calibrator	Preciset U/CSF	Roche/Hitachi: Same COBAS INTEGRA: C.f.a.s. TPUC 200
Calibrator composition	62.5% albumin and 37.5% globulin	Same
Stability – shelf-life and on-board	Shelf-life – 2-8 C until expiry 4 weeks at 2-8 C after opening	Same
Traceability	NIST SRM 972	Same
Levels	5 levels: 100, 200, 400, 800, 2000 mg/L	1 level – 2000 mg/L

Proposed Labeling

Proposed labeling sufficient to describe the device, its intended use, and the directions for use care included. We believe the proposed version of the device labeling presented contains all of the technical information required per 21 CFR 809.10. Also, Roche/Hitachi and COBAS INTEGRA labeling is included in this submission for purpose of CLIA categorization.

Validation and Design Control

Development activities were conducted under appropriate design control procedures and the overall product specifications were met. The Declaration of Conformity with Design Controls and Results of Risk Analysis are provided.

Continued on next page

Closing

Modification of the Total Protein Urine/CSF reagent does not affect the intended use or indications for use of the device as described in the labeling, nor does it alter the fundamental scientific technology of the device. Therefore, we trust the information provided in this 510(k) will support a decision of substantial equivalence of the Total Protein Urine/CSF Gen. 3 to its predicate.

If you have any questions or require further information, please do not hesitate to contact this office.

- Phone: (317) 521-4569
- FAX: (317) 521-2324
- email: jennifer.tribbett@roche.com

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

Roche Diagnostics
c\o Ms. Jennifer Tribbet
Regulatory Principal
9155 Hague Rd.
PO BOX 50416
Indianopolis, IN 46250

SEP 14 2007

Re: k071239
Trade Name: Total Protein Urine/CSF Gen. Test System
Regulation Number: 21 CFR 862.1635
Regulation Name: Total Protein test system
Regulatory Class: Class II
Product Code: JGQ, JIX
Dated: August 16, 2007
Received: August 17, 2007

Dear Ms. Tribbet:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to such additional controls. Existing major regulations affecting your device can be found in Title 21, Code of Federal Regulations (CFR), Parts 800 to 895. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Parts 801 and 809); and good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820).

This letter will allow you to begin marketing your device as described in your Section 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific information about the application of labeling requirements to your device, or questions on the promotion and advertising of your device, please contact the Office of In Vitro Diagnostic Device Evaluation and Safety at (240) 276-0490. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (240) 276-3150 or at its Internet address at http://www.fda.gov/cdrh/industry/support/index.html.

Sincerely yours,

Jean M. Cooper, M.S., D.V.M.

Jean M. Cooper, M.S., D.V.M.
Director
Division of Chemistry and Toxicology
Office of *In Vitro* Diagnostic Device
Evaluation and Safety
Center for Devices and
Radiological Health

Enclosure

Indication for Use

510(k) Number (if known): **K071239**

Device Name: **Total Protein Urine/CSF Gen. Test System**

Indication For Use:

TOTAL PROTEIN URINE / CSF Gen 3.
In vitro test for the quantitative determination of the total protein in urine and cerebrospinal fluid on the COABS INTEGRA systems.

Measurements obtained by this device are used in the diagnosis and treatment of a variety of diseases involving the liver, kidney or bone marrow as well as metabolic or nutritional disorders.

Protein measurements in urine are used in the diagnosis and treatment of disease conditions such as renal or heart diseases, or thyroid disorders, which are characterized by proteinuria or albuminuria.

CSF protein measurements are used in diagnosis and treatment of disease conditions such as meningitis, brain tumors and infections of the central nervous systems.

C.f.a.s. TPUC 200
C.f.a.s. (Calibrator for automated systems) TPUC 200 is for use in the calibration of quantitative determination of protein in urine (U) and cerebrospinal fluid (CSF) on COBAS INTEGRA analyzers and Roche/Hitachi **cobas c** systems.

Prescription Use XXX (21 CFR Part 801 Subpart D)	And/Or	Over the Counter Use ____. (21 CFR Part 801 Subpart C)

(PLEASE DO NOT WRITE BELOW THIS LINE; CONTINUE ON ANOTHER PAGE IF NEEDED)

Concurrence of CDRH, Office of In Vitro Diagnostic Device Evaluation and Safety (OIVD)

Carol C Benson

Division Sign-Off
Office of In Vitro Diagnostic Device
Evaluation and Safety

510(k) K071239