



June 7, 2013

Dear Valued Customer,

On June 14, 2013, NMS Labs will change its method for measuring titanium in serum/plasma, blood, and urine samples. This change will result in a shift with our reported findings and reference comments. A comparison to a previous result will depend on the sample matrix tested. To compare a previous serum/plasma sample finding to a current result, multiply the old value by 1.44 and then subtract 66 for an approximate corresponding new value; for a blood sample, multiply the old value by 1.06 and then subtract 74; and for a urine sample, multiply the old value by 1.1 and then subtract 14. The normal concentration for titanium in these bio-fluids is typically less than 5 mcg/L. The reporting limit for our new method is 10 mcg/L; therefore, any measured value less than 10 mcg/L will be reported as "None detected". In patients with a titanium-based implant/prosthesis, sample concentrations greater than 10 mcg/L may be indicative of wear. However, a reported titanium value alone is not predictive of prosthesis wear or failure.

At NMS Labs, it is our continued quality mission to provide you with reliable testing that positively impacts patient care; therefore, we are making this method improvement to assist you in this regard. If there are any questions, please call our client support representatives at 1-866-522-2206.

Respectfully,

A handwritten signature in black ink, appearing to read "Lee Blum", is written over a light grey circular stamp.

Lee Blum, Ph.D., DABFT  
Assistant Laboratory Director

Cc: Robert A. Middleberg, Ph.D., DABFT, DABCC-TC  
Laboratory Director and VP of Quality Assurance  
NMS Labs



Effective Date:  
Friday, June 14, 2013

## New Tests and Test Updates

### Immediate Action

In our continuing effort to provide you with the highest quality toxicology laboratory services available, we have compiled important changes regarding a number of tests we perform. Listed below are the types of changes that may be included in this notification, effective Friday, June 14, 2013

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**New Tests** - Tests recently added to the NMS Labs test menu. *New Tests are effective immediately.*

**Test Changes** - Tests that have had changes to the method/ CPT code, units of measurement, scope of analysis, reference comments, or specimen requirements.

**Discontinued Tests** - Tests being discontinued with alternate testing suggestions.

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Please use this information to update your computer systems/records. These changes are important to ensure standardization of our mutual laboratory databases.

If you have any questions about the information contained in this notification, please call our Client Support Department at (866) 522-2206. Thank you for your continued support of NMS Labs and your assistance in implementing these changes.

The CPT Codes provided in this document are based on AMA guidelines and are for informational purposes only. NMS Labs does not assume responsibility for billing errors due to reliance on the CPT Codes listed in this document.



Effective Date:  
Friday, June 14, 2013

## New Tests and Test Updates

Test Code	Test Name	New Test	Test Name	Method / CPT Code	Specimen Req.	Stability	Scope	Units	Reference Comments	Discontinue
4486H	Titanium, Hair				•					
4486B	Titanium, Blood				•				•	
4486FL	Titanium, Fluid				•					
4486R	Titanium, RBCs									•
4486SP	Titanium, Serum/Plasma				•	•			•	
4486U	Titanium, Urine				•	•			•	



# New Tests and Test Updates

## Test Changes

### 4486H Titanium, Hair

Summary of Changes: Specimen Requirements (Special Handling) were changed.

- Specimen Requirements: 500 mg Hair
- Transport Temperature: Room Temperature
- Specimen Container: Plastic container (Acid washed or Trace metal-free)
- Light Protection: Not Required
- Special Handling: Collect a pencil-thick segment of hair. Bundle, cut at roots, wrap with non-metal tie at root end.
- Rejection Criteria: None

### 4486B Titanium, Blood

Summary of Changes: Specimen Requirements were changed.  
Reference Comment was changed.

- Specimen Requirements: 2 mL Blood
- Transport Temperature: Refrigerated
- Specimen Container: Royal Blue top tube (Trace metal-free; EDTA)
- Light Protection: Not Required
- Special Handling: Clotted Blood specimens are not acceptable.  
Submit in container with a non-Heparin based anticoagulant. Tubes containing Heparin based anticoagulants are not acceptable.
- Rejection Criteria: Light Green top tube (Lithium Heparin). Tan top tube - glass (Sodium Heparin).  
Royal Blue top tube (Trace metal-free; Sodium Heparin). Green top tube (Sodium Heparin).
- Scope of Analysis: ICP/MS (83018): Titanium
- Method (CPT Code)

Compound Name	Units	Reference Comment
Titanium	mcg/L	On 06/14/2013 a change in the method for measuring titanium in blood has resulted in a shift with the reported findings. To compare a previous finding to a current result, multiply the old value by 1.06 and then subtract 74 for an approximate corresponding new value. The reporting limit for the new method is 10 mcg/L; therefore, any measured value less than 10 mcg/L will be reported as 'None Detected'. The normal value for titanium is generally less than 5 mcg/L. In patients with a titanium-based implant/prosthesis, a blood concentration greater than 10 mcg/L may be indicative of wear. However, a reported titanium value alone is not predictive of prosthesis wear or failure.



# New Tests and Test Updates

## Test Changes

### 4486FL Titanium, Fluid

Summary of Changes: Specimen Requirements were changed.

Specimen Requirements: 4 mL Fluid  
Transport Temperature: Refrigerated  
Specimen Container: Plastic container (Acid washed or Trace metal-free)  
Light Protection: Not Required  
Special Handling: None  
Rejection Criteria: None

### 4486SP Titanium, Serum/Plasma

Summary of Changes: Specimen Requirements were changed.  
Stability was changed.  
Reference Comment was changed.

Specimen Requirements: 2 mL Serum or Plasma  
Transport Temperature: Refrigerated  
Specimen Container: Plasma: Royal Blue top tube (Trace metal-free; EDTA), Serum: Royal Blue top tube (Trace metal-free; No additive)  
Light Protection: Not Required  
Special Handling: Promptly centrifuge and separate Serum or Plasma into an acid washed plastic screw capped vial using approved guidelines.  
Rejection Criteria: Polymer gel separation tube (SST or PST).  
Stability: Room Temperature: 30 day(s)  
Refrigerated: 30 day(s)  
Frozen (-20 °C): 30 day(s)  
Scope of Analysis: ICP/MS (83018): Titanium  
Method (CPT Code)

Compound Name	Units	Reference Comment
Titanium	mcg/L	On 06/14/2013 a change in the method for measuring titanium in serum has resulted in a shift with the reported findings. To compare a previous finding to a current result, multiply the old value by 1.44 and then subtract 66 for an approximate corresponding new value. The reporting limit for the new method is 10 mcg/L; therefore, any measured value less than 10 mcg/L will be reported as "None Detected". The normal value for titanium is generally less than 5 mcg/L. In patients with a titanium-based implant/prosthesis, a serum concentration greater than 10 mcg/L may be indicative of wear. However, a reported titanium value alone is not predictive of prosthesis wear or failure.



## New Tests and Test Updates

### Test Changes

#### 4486U Titanium, Urine

Summary of Changes: Specimen Requirements were changed.  
Specimen Requirements (Transport Temperature) were changed.  
Stability was changed.  
Reference Comment was changed.

Specimen Requirements: 2 mL Urine  
 Transport Temperature: Frozen  
 Specimen Container: Plastic container (Acid washed or Trace metal-free)  
 Light Protection: Not Required  
 Special Handling: Avoid exposure to gadolinium-based contrast media for 48 hours prior to sample collection.  
 Rejection Criteria: Received Room Temperature. Received Refrigerated.  
 Stability: Room Temperature: Not Stable  
 Refrigerated: Not Stable  
 Frozen (-20 °C): 30 day(s)  
 Scope of Analysis: ICP/MS (83018): Titanium  
 Method (CPT Code)

Compound Name	Units	Reference Comment
Titanium	mcg/L	On 06/14/2013 a change in the method for measuring titanium in urine has resulted in a shift with the reported findings. To compare a previous finding to a current result, multiply the old value by 1.1 and then subtract 14 for an approximate corresponding new value. The reporting limit for the new method is 10 mcg/L; therefore, any measured value less than 10 mcg/L will be reported as 'None Detected'. The normal value for titanium is generally less than 5 mcg/L. In patients with a titanium-based implant/prosthesis, a urine concentration greater than 10 mcg/L may be indicative of wear. However, a reported titanium value alone is not predictive of prosthesis wear or failure.



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## New Tests and Test Updates

### Discontinued Tests

Test Code	Test Name	Alternative Test
4486R	Titanium, RBCs	4486B - Titanium, Blood