

ANDRO-Androstendion	Ser/Pla	1854-9	Androst SerPI-mCnc	Massenkonz.	ng/ml	ANDRO-Androstendion
Beta-hCG (gesamt)	Ser	20415-6	B-HCG Ser EIA 3rd IS-aCnc	arbitr.Konz.	mIU/ml	Beta-hCG (gesamt)
Calcitonin	Ser/Pla	1992-7	Calcit SerPI-mCnc	Massenkonz.	pg/ml	Calcitonin
Cortisol	Ser/Pla	2143-6	Cortis SerPI-mCnc	Massenkonz.	ng/dl	Cortisol
C-Peptid	Ser/Pla	14633-2	C Peptide SerPI-sCnc	Substanzkonz.	nmol/l	C-Peptid
DHEA-S	Ser/Pla	2191-5	DHEA-S SerPI-mCnc	Massenkonz.	ng/dl	DHEA-S
EPO-Erythropoetin	Ser/Pla	15061-5	EPO SerPI-aCnc	arbitr.Konz.	U/l	EPO-Erythropoetin
Folsäure	Ser	1284-1	Folate Ser-mCnc	Massenkonz.	ng/ml	Folsäure
FSH <Follikelstimulierendes Hormon>	Ser/Pla	5061-1	FSH SerPI-aCnc	arbitr.Konz.	mIU/ml	FSH <Follikelstimulierendes Hormon>
FT3	Ser/Pla	3051-0	T3Free SerPI-mCnc	Massenkonz.	pg/ml	FT3
FT4	Ser/Pla	3024-7	T4 Free SerPI-mCnc	Massenkonz.	ng/dl	FT4
HGH	Ser/Pla	2963-1	GH SerPI-mCnc	Massenkonz.	ng/ml	HGH
Homocystein	Ser/Pla	20646-1	Homocystin SerPI-sCnc	Substanzkonz.	nmol/l	Homocystein
Insulin	Ser/Pla	20448-7	Insulin SerPI-aCnc	arbitr.Konz.	µU/ml	Insulin
LH <Luteinisierendes Hormon>	Ser/Pla	10501-5	LH SerPI-aCnc	arbitr.Konz.	mIU/ml	LH <Luteinisierendes Hormon>
Osteocalcin	Ser	2691-1	Osteocalcin Ser-mCnc	Massenkonz.	ng/ml	Osteocalcin
Östradiol	Ser/Pla	2241-1	Estradiol SerPI-mCnc	Massenkonz.	pg/ml	Östradiol
Östradiol, bioverfügbares (BAE)	Ser/Pla	13881-2	Estradiol Bioavail SerPI-mCnc	Massenkonz.	pg/ml	Östradiol, bioverfügbares (BAE)
Östradiol, bioverfügbares (BAE) %	Ser/Pla	13883-4	Estradiol Bioavail fr SerPI	Massenfraktion %	%	Östradiol, bioverfügbares (BAE) %
Progesteron	Ser/Pla	2839-9	Progest SerPI-mCnc	Massenkonz.	ng/ml	Progesteron
Prolaktin	Ser/Pla	20568-2	Prolactin SerPI EIA-mCnc	Massenkonz.	ng/ml	Prolaktin
PTH intakt	Ser/Pla	2731-8	PTH-Intact SerPI-mCnc	Massenkonz.	pg/ml	PTH intakt
SHBG	Ser	13967-5	SHBG Ser-sCnc	Substanzkonz.	nmol/l	SHBG
TBG (alpha Anti-Thyreoglobulin) ??????	Ser	8098-6	Thyroglob Ab Ser-aCnc	Massenkonz.	µg/ml	Anti-Thyreoglobulin

# THE LOINC PROJECT OF THE KAV\*

\* 10 Viennese state hospitals, around 8000 beds



**Why do we have  
to do this?**

# One test, various ways of reporting

<b>Laboratory</b>	<b>Name</b>	<b>Unit</b>
Laboratory 1	Eiweiß im Harn	g/l
Laboratory 2	Protein im Urin	g/l
Laboratory 3	Gesamteiweiß im Harn	mg/l
Laboratory 4	Gesamteiweiß im Urin	mg/dl
Laboratory 5	Totalprotein im Harn	g/l

# One test, various codes

<b>Laboratory</b>	<b>Name</b>	<b>Code</b>
Laboratory 1	Eiweiß im Harn	111
Laboratory 2	Protein im Urin	TP
Laboratory 3	Gesamteiweiß im Harn	CK8
Laboratory 4	Gesamteiweiß im Urin	S19
Laboratory 5	Totalprotein im Harn	100

# First Initiative in SMZ-Ost-Hospital

	A	B	C	D
1	KAV-IT CODE	DSP NUMMER	DSP CODE	LANGTEXT
2	Y00001	121	A1GK	alpha-1-Globulin Konz.
3	Y00002	114	A1GLOB	alpha-1-Globulin
4	Y00003	122	A2GK	alpha-2-Globulin Konz.
5	Y00004	115	A2GLOB	alpha-2-Globulin
6	Y00005	300	A2GLYC	A 2 Glycoprotein
7	Y00006	295	AAT	A1 Antitrypsin
8	Y00007	971	AATF	A1 Antitrypsin Stuhl
9	Y00008	7501	ACEN	Angiotensin conv.Enzym
10	Y00009	905	ACETR	Aceton qual.
11	Y00010	7571	AFPE	A-Fetoprotein S - E
12	Y00011	758	AFPX	A-Fetoprotein X
13	Y00012	5201	ALATN	ALAT (GPT)
14	Y00013	5203	ALATPN	ALAT (GPT) Plasma
15	Y00014	291	ALB	Albumin
16	Y00015	113	ALB1	Albumin
17	Y00016	120	ALBK	Albumin Konz.
18	Y00017	499	ALBP	Albumin im Plasma

# LOINC

**L**ogical  
**O**bservation  
**I**dentifiers  
**N**ames and  
**C**odes

# Goals of the LOINC Catalogue

**“The purpose of the LOINC® database is to facilitate the exchange and pooling of results, such as blood hemoglobin, serum potassium, or vital signs, for clinical care, outcomes management, and research.”**



**LOINC is an initiative of the** Regenstrief Institute, a non-profit organisation of the Indiana University. In 1994, LOINC was started by the Regenstrief Institute and the LOINC-Committee to cope with the necessity to store, pool and exchange medical data.

# **Facts about LOINC**

**(© Regenstrief Inst.)**

- **>50 000 Parameters, most of which laboratory parameters**
- **Recommended by the American Clinical Laboratory Association and the College of American Pathologists.**
- **Used by large commercial laboratories wie Quest, LabCorp, Mayo Medical Laboratoryatories, and MDS Labs**
- **large HMOs ...,**
- **Federal organisations: CDC, DOD, VA, and NLM**
- **... has also been adopted by Germany, Switzerland and two Canadian provinces.**

# Should we use IUPAC instead?

**I**nternational

**U**nion of

**P**ure and

**A**ppplied

**C**hemistry

Search for properties by  
NPU code:

OR

Search for properties by element:

Search all parts



Search within results of the previous query

Restrict to certain specialties:

Allerg,  Chem,  Pharm,  IEM,  MolB,  Immuno,  Micro,  Repro,  
 Thromb

Display format:

HTML Long



[Info](#)

Query for: 'glucose' [Download results of](#)

[\[NPU01523\] Csf—Glucose; rel.subst.c.\(0](#)

[\[NPU18842\] Synf\(spec.\)—Glucose; arb.c](#)

[\[NPU18017\] P—Glucose; subst.c.\(T24\) =](#)

[\[NPU18097\] Pericardialf.—Glucose; sub](#)

[\[NPU17566\] U—Glucose; am.s.\(proc.\) =](#)

[\[NPU17050\] Drain fluid\(spec.\)—Glucos](#)

[\[NPU17079\] Dialysis solution\(perit.\)—C](#)

[\[NPU14352\] B—Glucose; subst.c.\(5 min](#)

[\[NPU14353\] B\(cB\)—Glucose; subst.c.\(5](#)

[\[NPU14165\] U—Glucose; subst.c.\(150 n](#)

[\[NPU14166\] U—Glucose; subst.c.\(210 n](#)

[\[NPU14167\] U—Glucose; subst.c.\(270 n](#)

[\[NPU14168\] U—Glucose; subst.c.\(330 min\) = ? mmol/l](#)

[\[NPU10652\] P—Glucose; subst.c.\(110 min\) = ? mmol/l](#)

http://dior.imt.liu.se/cnpu/XMLProperty.asp?npu=14352&xsl=1 - Micr...

**Blood—**  
**Glucose;**  
**substance concentration(5 minutes after challenge)**  
**millimole/litre**  
*M* = 180,16 g/mol  
**NPU14352**  
B—Glucose; subst.c.(5 min) = ? mmol/l

# Should we use IUPAC?

International Union of Pure and Applied Chemistry

[NPU01349] B—Basophilocytes; num.c. = ? × 10<sup>9</sup>/l

[NPU18316] Lkcs(Syst; spec.)—Basophilocytes; num.fr. = ?

[NPU18344] B—Basophilocytes+Eosinophilocytes+Monocytes; num.c. = ? × 10<sup>9</sup>/l

[NPU18164] Lkcs(Asc)—Basophilocytes; num.fr. = ?

[NPU18293] Lkcs(Csf)—Basophilocytes; num.fr. = ?

Local Term File

Show All

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First

Last

View

Unmapped

Mapped to: Shortname:  [Local Term Details](#)

OBR-4 Code:  OBX-3 Code:  Units:  Sample Values:  Limit to Default Specimen:

Extra Search Words:  Accept or enter OBR name and/or OBX name

**GLUCOSE CSF**

**SEARCH** | Hierarchy & Search Limits | Clear Inputs | Propose Term | Lookup Term By #

Hide Words | Clear Most Limits | Common tests 99. + %tile

Use	Local Words	# Hits	Use	Local Words	# Hits
<input type="checkbox"/> 1	<input type="text"/>		<input type="checkbox"/> 5	<input type="text"/>	
<input type="checkbox"/> 2	<input type="text"/>		<input type="checkbox"/> 6	<input type="text"/>	
<input type="checkbox"/> 3	<input type="text"/>		<input type="checkbox"/> 7	<input type="text"/>	
<input type="checkbox"/> 4	<input type="text"/>		<input type="checkbox"/> 8	<input type="text"/>	

Row	Short Common Name	LOINC #	Component	Property	Time	System	Scale	Method	Class	Type	Or
[Empty Table Body]											

[View Details](#)

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Mapped to:  Shortname:  [Local Term Details](#)

OBR-4 Code:  OBX-3 Code:  Units:  Sample Values:  Limit to Default Specimen:

Extra Search Words:  Accept or enter OBR name and/or OBX name

**GLUCOSE CSF**

**SEARCH** | Hierarchy & Search Limits | Clear Inputs | Propose Term | Lookup Term By #

Hide Words | Clear Most Limits | Common tests 99.+ %tile

Use	Local Words	# Hits	Use	Local Words	# Hits
<input checked="" type="checkbox"/> 1	GLUCOSE	669	<input type="checkbox"/> 5	<input type="text"/>	
<input checked="" type="checkbox"/> 2	CSF	1386	<input type="checkbox"/> 6	<input type="text"/>	
<input type="checkbox"/> 3	<input type="text"/>		<input type="checkbox"/> 7	<input type="text"/>	
<input type="checkbox"/> 4	<input type="text"/>		<input type="checkbox"/> 8	<input type="text"/>	

Row	Short Common Name	LOINC #	Component	Property	Time	System	Scale	Method	Class	Type	Or
1	Glucose CSF-sCnc	14744-7	Glucose	SCnc	Pt	CSF	Qn		CHEM	1	BC
2	Glucose CSF-mCnc	2342-4	Glucose	MCnc	Pt	CSF	Qn		CHEM	1	BC
3	Glucose CSF:SerPl	2352-3	Glucose CSF/Glucose plas	RIMCnc	Pt	Plas+CSF	Qn		CHEM	1	OE
4	Prot + Glucose Prnl CSF	34546-2	Protein & Glucose panel	MCnc	Pt	CSF	Qn		PANEL.CHEM	1	OF

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Mapped to: Shortname:   [Local Term Details](#)

OBR-4 Code:  OBX-3 Code:  Units:  Sample Values:  Limit to Default Specimen:

Extra Search Words:  Accept or enter OBR name and/or OBX name

**GLUCOSE CSF**

**SEARCH** | Hierarchy & Search Limits | Clear Inputs | Propose Term | Lookup Term By #

Hide Words | Clear Most Limits | Common tests 99.+ %tile

Use	Local Words	# Hits	Use	Local Words	# Hits
<input checked="" type="checkbox"/> 1	<input type="text" value="GLUCOSE"/>	669	<input type="checkbox"/> 5	<input type="text"/>	
<input checked="" type="checkbox"/> 2	<input type="text" value="CSF"/>	1386	<input type="checkbox"/> 6	<input type="text"/>	
<input type="checkbox"/> 3	<input type="text"/>		<input type="checkbox"/> 7	<input type="text"/>	
<input type="checkbox"/> 4	<input type="text"/>		<input type="checkbox"/> 8	<input type="text"/>	

Row	Short Common Name	LOINC #	Component	Property	Time	System	Scale	Method	Class	Type	Or
1	Glucose CSF-sCnc	14744-7	Glucose	SCnc	Pt	CSF	Qn		CHEM	1	BC
2	Glucose CSF-mCnc	2342-4	Glucose	MCnc	Pt	CSF	Qn		CHEM	1	BC
3	Glucose CSF:SerPl	2352-3	Glucose CSF/Glucose plas	RIMCnc	Pt	Plas+CSF	Qn		CHEM	1	OE
4	Prot + Glucose Prl CSF	34546-2	Protein & Glucose panel	MCnc	Pt	CSF	Qn		PANEL.CHEM	1	OF

**DETAILS**

Tree View

Print Grid

Map

Same

Copy to Clipboard

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Reset Col Order

# 14744-7 Glucose CSF-sCnc

## NAME

Component	Property	Time	System	Scale	Method
Glucose	SCnc	Pt	CSF	Qn	

## BASIC PROPERTIES

Class/Type:	CHEM/Lab
Mole ID:	50-99-7
Order vs. Obs.:	BOTH
Units Required:	Y
US or EU Property:	S

## UNITS

Unit	Source Type
mmol/L	CHI

# **LOINC Principle: Specimen**

**„We are guided by the pragmatics of conventional usage:**

**If Laboratories define separate tests for the same measurements done on different specimens, we will define different tests in our dictionary“**

# **LOINC Principles: Method**

**„The extent to which we include methods as part of the name is also guided by pragmatics:**

**Where Laboratories do not tend to include the method in the name -- e.g. most of chemistry -- we do not include the method in the name. Where they tend to -- e.g. in immunochemistry -- we do.“**

**Finding the correct LOINC  
Codes is not as easy as it may  
seem!**

# The problem with C1-Est-INH

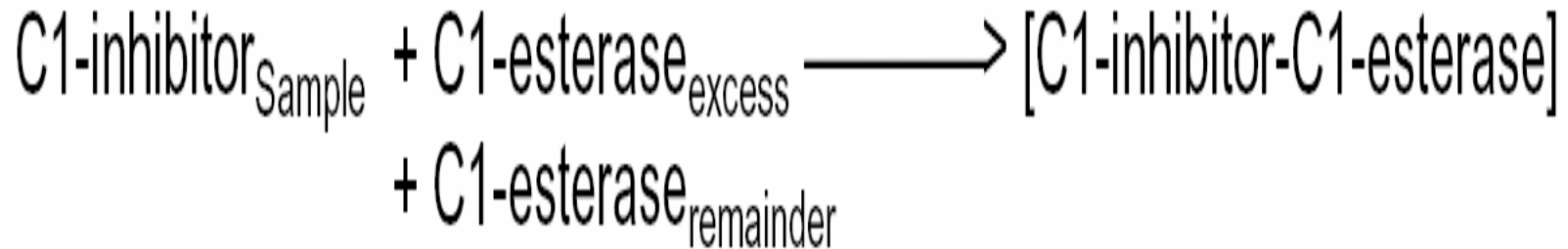
C1 Esterase- Inhibitor	Ser	% der Norm
---------------------------	-----	---------------

# The problem with C1-Est-INH

Row	Short Common Name	LOINC #	Component	Property
10	C1INH SerPl-mCnc	4477-6	Complement C1 esterase inhibitor	MCnc
9	C1INH Functional SerPl-mCnc	4476-8	Complement C1 esterase inhibitor.functional	MCnc
2	C1INH Functional SerPl Ql	15161-3	Complement C1 esterase inhibitor.functional	ACnc
1	C1INH Functional Fr SerPl	10634-4	Complement C1 esterase inhibitor.functional/Complement C1 esterase inhibitor.total	MFr
7	C1INH Functional Fld-mCnc	34619-7	Complement C1 esterase inhibitor.functional	MCnc
6	C1INH Free IgM SerPl-mCnc	18213-9	Complement C1 esterase inhibitor free Ab.IgM	MCnc
5	C1INH Free IgG SerPl-mCnc	18212-1	Complement C1 esterase inhibitor free Ab.IgG	MCnc
8	C1INH Fld-mCnc	36906-6	Complement C1 esterase inhibitor	MCnc
4	C1INH Bnd IgM SerPl-mCnc	18211-3	Complement C1 esterase inhibitor bound Ab.IgM	MCnc

try #: 70 of 70   Units   Specimen   Methodless   Common   Battery   Max Words:   Grid   No Dups   Start-U

# The problem with C1-Est-INH



# The problem with C1-Est-INH

Row	Short Common Name	LOINC #	Component	Property
10	C1INH SerPl-mCnc	4477-6	Complement C1 esterase inhibitor	MCnc
9	C1INH Functional SerPl-mCnc	4476-8	Complement C1 esterase inhibitor.functional	MCnc
2	C1INH Functional SerPl Ql	15161-3	Complement C1 esterase inhibitor.functional	ACnc
1	C1INH Functional Fr SerPl	10634-4	Complement C1 esterase inhibitor.functional/Complement C1 esterase inhibitor.total	MFr
7	C1INH Functional Fld-mCnc	34619-7	Complement C1 esterase inhibitor.functional	MCnc
6	C1INH Free IgM SerPl-mCnc	18213-9	Complement C1 esterase inhibitor free Ab.IgM	MCnc
5	C1INH Free IgG SerPl-mCnc	18212-1	Complement C1 esterase inhibitor free Ab.IgG	MCnc
8	C1INH Fld-mCnc	36906-6	Complement C1 esterase inhibitor	MCnc
4	C1INH Bnd IgM SerPl-mCnc	18211-3	Complement C1 esterase inhibitor bound Ab.IgM	MCnc

try #: 70 of 70   Units   Specimen   Methodless   Common   Battery   Max Words:   Grid   No Dups   Start-U

# The way of dealing with missing LOINC-Codes

- **Assignment a local code**  
*aka „the-No Future solution“*
- **Submission at the Regenstrief-Institut**



48494-9 C1INH Act/Nor SerPl

**this code is  
Viennese**

**NAME**

<b>Component</b>	<b>Property</b>	<b>Time</b>	<b>System</b>	<b>Scale</b>
Complement C1 esterase inhibitor actual/Normal	RICCnc	Pt	Ser/Plas	Qn

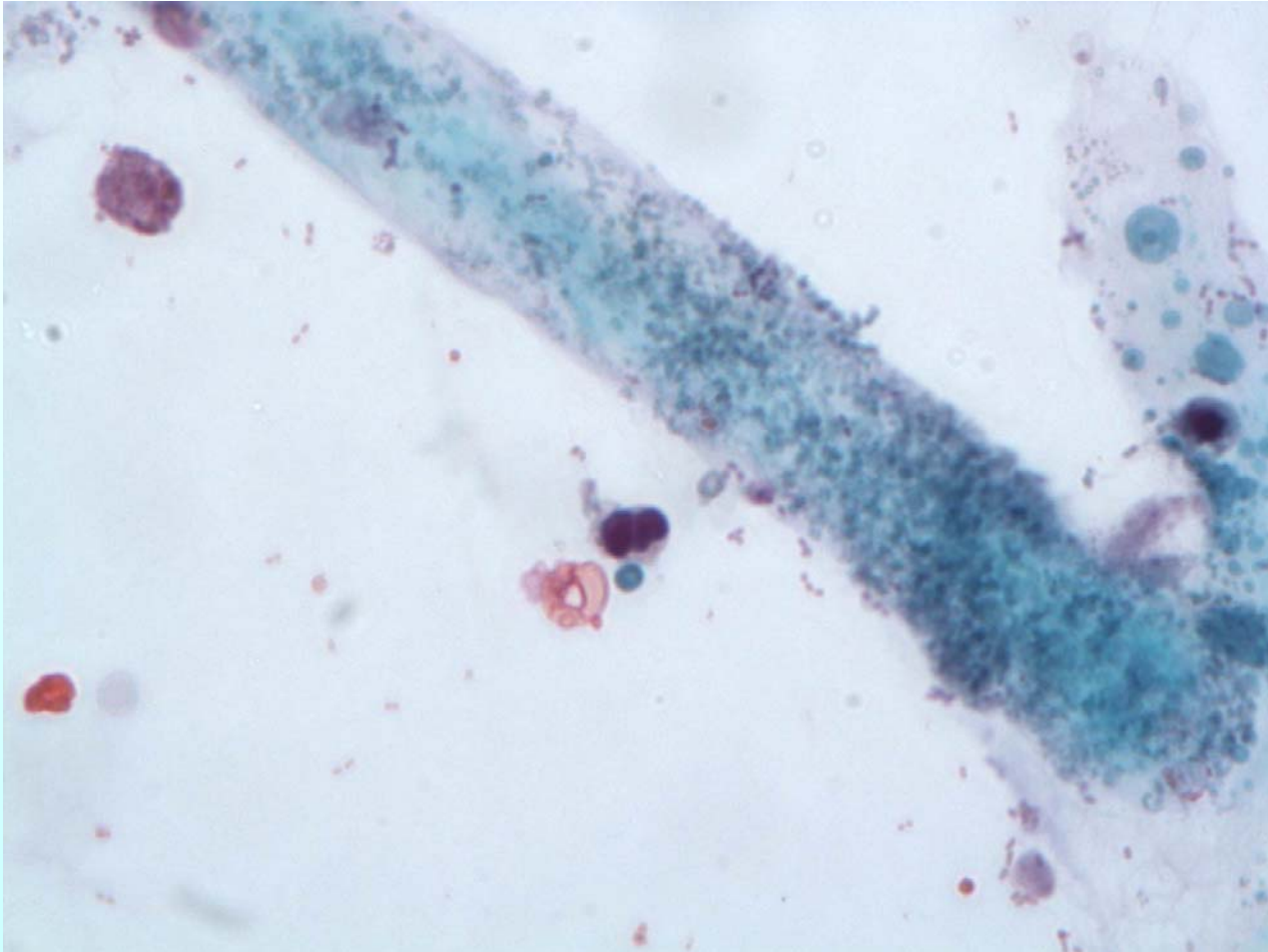
**BASIC PROPERTIES**

Class/Type: HEM/BC/Lab  
Order vs. Obs.: BOTH  
Units Required: N

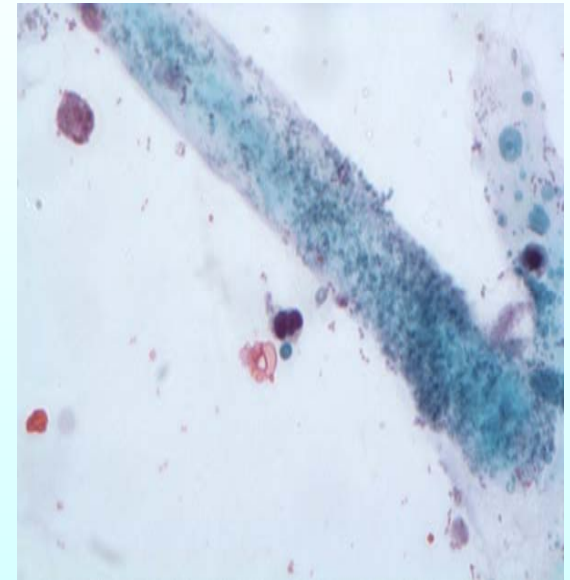
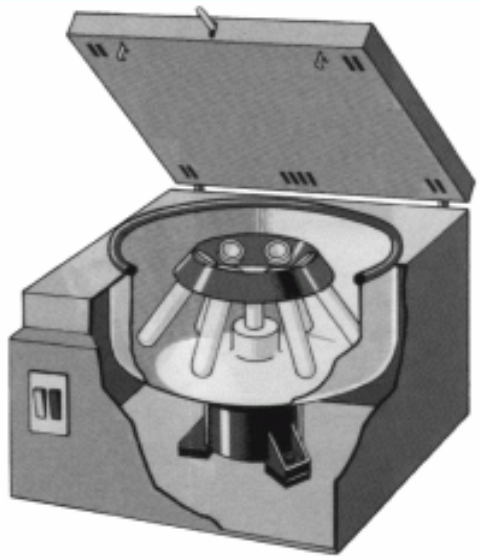
**UNITS**

Unit Source Type  
% SUBMITTER

# **Problem Urinary Sediment - the machines take over**



# Problem Urinary Sediment - the machines take over



**25160-3 Granular casts [Presence] in  
Urine sediment by Light microscopy**

# Problem Urinary Sediment - the machines take over



**53282-0 Granular casts [# /volume] in  
Urine by Computer assisted method**

# **Magnitude of Project**

**Ca. 2500 Analytes in the KAV**

**Ca. 400 submissions**

**Neverending story**