

Vision Bio



Digital solution for analysis, report generation and management of digital albums in microscopy

management, reports and analysis



New standards in the daily work

Applications



medicine



clinical laboratory



cytology



histology



hematology



pathology



forensics



microbiology



veterinary



life science



education



biology



botany



zoology



remote consultations



specialist training



telemedicine



Vision concept

Vision concept is a modern approach to diagnostics, combining microscopy, digital image processing and analysis data. Specialists, that are looking for professional development and recognize new digital technologies, are presented with unlimited resources in their field.

Vision digital solutions

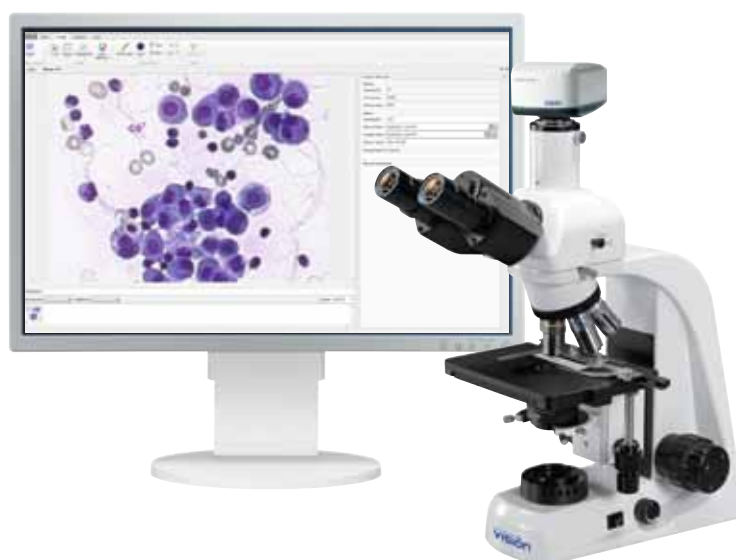
Vision digital solution is a workplace to obtain, manage, analyze and interpret digital microscopic samples. You work with a unified system where priority is given to efficiency.

Vision+ digital solutions

Vision+ digital solution combines the possibilities of digital solutions in microscopy and analytic medical devices to provide an integrated patient assay and a correct diagnosis.

Improve your standards and enhance the quality of your work! Take control of the increasing amount of information in your laboratory.

Vision solution



Digital microscopy

Digital microscopy (digital pathology) is a digital environment for managing and analyzing microscopy data, which is obtained using a microscope, a camera, software and a computer.

Digital microscopy allows you to attain qualitative and quantitative results, which are either impossible to receive by other means or cost and time consuming.

Vision Bio



The professional solution for digital sample analysis — calculation and classification of elements. Tools to create marks and comments directly on the microscopic image. Easy and convenient management of microscopic samples, analysis results and reports in a mutual digital environment.

Efficient unified system



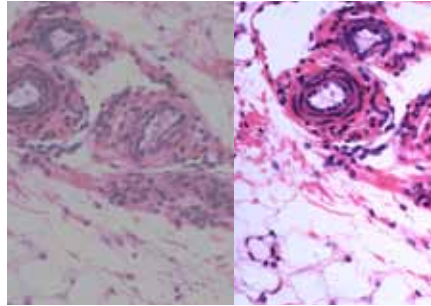
- 1 Vision software
 - 2 Personal computer
 - 3 Biological microscope with Vision camera
-
- ↓
- Local network
 - LIS/HIS
 - Internet

Vision Bio digital solution combines microscopy and digital imaging to create superior quality digital samples, facilitate report generation and perform effective analysis

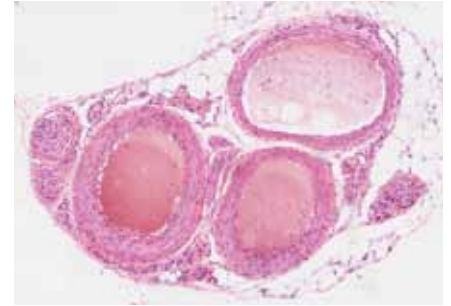
Main benefits



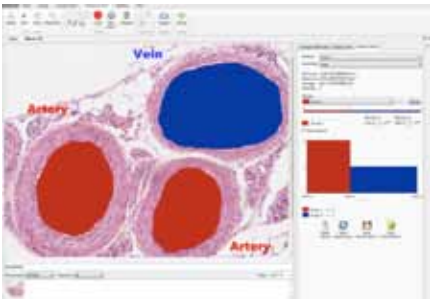
1 Professional microscopic examination and generation of superior quality digital samples



2 All the necessary tools for digital image enhancement



3 Reliable data management system stores all digital samples and analysis results



4 Analysis and classification of elements



5 Report generation according to individual requirements

Date	External ID	Analysis
Monday, August 22, 2011 4:49:01 PM	245	Allergy
Monday, August 22, 2011 4:48:52 PM	244	Pathology (histology sample)
Saturday, August 20, 2011 4:48:11 PM	246	Basic metabolic analysis
Friday, August 19, 2011 4:47:28 PM	238	Microbiology analysis
Thursday, August 18, 2011 4:47:14 PM	237	Microbiology analysis
Sunday, August 14, 2011 4:48:26 PM	242	Virology examination
Saturday, August 13, 2011 4:47:44 PM	239	Urine sediment stain analysis
Tuesday, August 09, 2011 4:48:14 PM	241	Stool analysis
Friday, August 05, 2011 4:48:02 PM	240	Parasitology analysis
Tuesday, August 02, 2011 4:48:34 PM	243	Stomach content analysis
Thursday, June 23, 2011 10:48:33 AM	000194	Sputum smear analysis
Wednesday, June 15, 2011 2:19:41 PM	000137	Cerebro-spinal fluid analysis
Wednesday, June 15, 2011 2:18:50 PM	000136	Female vaginal discharges analysis

6 Automated statistical processing



7 Easy access to analysis results and digital samples



8 Telemedicine and remote consultations with colleagues



9 Education for specialists: scientists, doctors, lab technicians and students



Workflow optimization

1



Quick and easy patient registration

Creating and managing patient records became much easier. All patient data are shown in a chart form and can individually be adjusted by selecting the necessary fields: ID, name, surname, date of birth, age, etc.

2

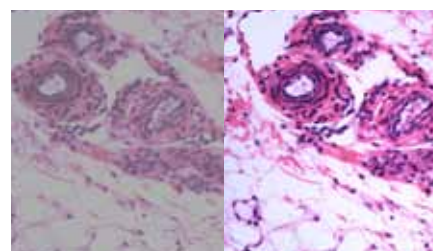


Samples are conveniently organized in digital albums

Digital album is a modern approach to create, edit, manage and classify digital samples.

To each stored album you can add marks and comments.

3



Professional tools to work with digital samples

Find a required object on the microscopy sample in video mode, and capture its perfectly crisp digital image in one quick step.

4



Report generation in accordance with modern requirements

Ready-made templates allow specialists to create reports of the microscopic study without spending valuable time on routine paperwork.

Saved reports are available for search, preview, edit, print, send by e-mail and export to popular formats: PDF, DOC, XLS, JPEG, GIF, PNG and many others.

5



Secure and reliable data storage

Vision database stores all patient records, microscopic samples, analysis results, and reports. Information is shown in a form of a patient record with his/her analysis result. Possibility to assess quickly the dynamics in analysis results over a period of time.

The system saves all data automatically, excluding any possibility of losing valuable information.

6



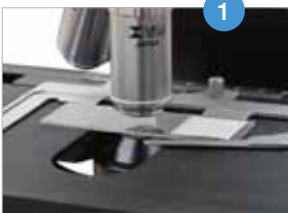
Benefits of Internet connection

Connect several workplaces to a remote server and hold video conferences with colleagues from around the world, exchange digital albums, analysis results and reports, publish your research on specialized social networks.



Image enhancement

Image capture procedure



Find object of interest



Save captured image in the album



Edit image if necessary

Camera control tools



Camera settings

Different modes when working with color (8 or 16 bit) allow color depth adjustment. "Field alignment" function removes any image defects: uneven field illumination, dust and scratches on optical components of the system.



Color settings and exposure/brightness control

Manual or automatic color settings give the possibility of image adjustment according to illumination (LED or halogen). If its necessary to change image brightness, adjust exposure.



Histogram

Histogram explores contrast, saturation and exposure of the image, as well as estimates what is required when capturing/enhancing an image.



Preview

Live image preview. "Zoom" function lets you magnify the sample. "Resolution" function sets the size of the captured image in pixels.

Image editing tools

Crop

Select a fragment of an image and save it as a separate digital sample.

Scale

Reduce the image size for easier online operations.

Rotate

To make examination easier, turn your microscopic image at a certain angle.

Color

Select a color from a preset palette, use the 'Pipette' tool to select it from the image directly or set precise RGB values with alpha blending (transparency).

Color adjustment

To ensure the best quality of your digital image, use color adjustment tools such as brightness, contrast and saturation settings.

Edit

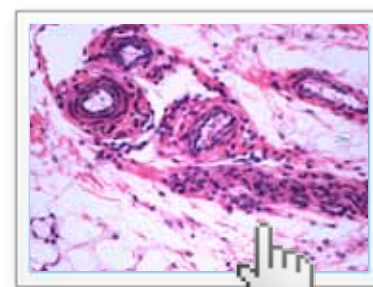
You can easily remove minor defects if they hamper your work.

Export/import

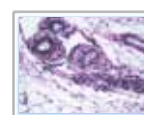
To exchange samples with your colleagues, it is easy to import and export images from your database.

Ergonomic image editing tools facilitate fast enhancement of a microscopic sample image

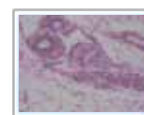
One click on a 'Color settings' button to correct an image and get a superior quality digital sample.



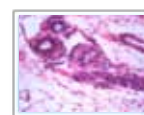
1 click



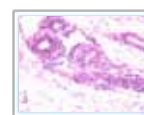
hue/saturation



brightness/contrast



sharpness



color balance



Image analysis

Built-in image analysis tools facilitate automation of scientific research and practical work

Image analysis procedure



Select objects for analysis



Analyze the distribution



Print out your report

Simplified analysis procedure

Preset methods of analysis

- volume fraction
- particle measurement
- count and classification
- phase analysis

Volume fraction

Calculate the ratio (%) of the volume fraction to the area of the selected image fragment.

Particle measurement

Measure linear and optical parameters of particles automatically or manually.

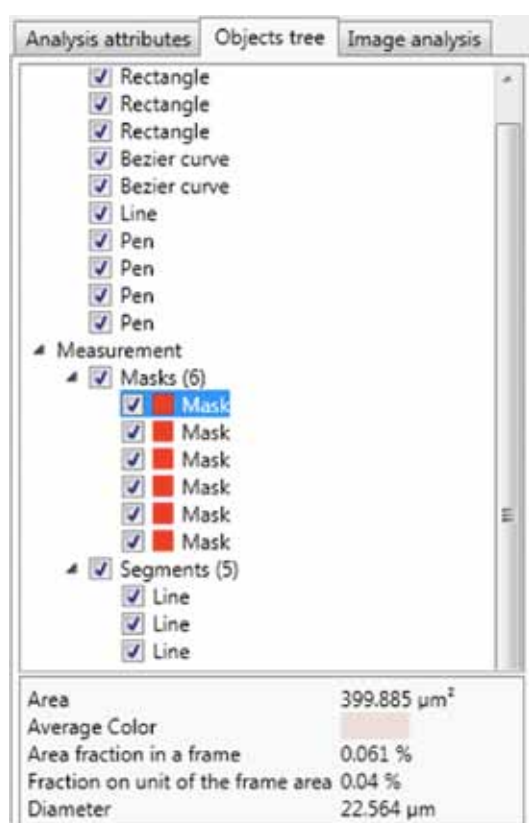
Count and classification

Manual or automatic object identification, their count and classification based on the criteria set by the user.

Phase analysis

Segmentation of objects in a histogram. Analysis of distribution in an image by color or one of the color channels (RGB).

Object tree



Select an object in the object tree and the system will display all information regarding its measurement parameters.

If there is any information you don't need at the moment, for example, marks and comments that interfere with your work, just deselect the checkbox, and they will be hidden. Select the checkbox to view your comments again.

All analysis elements are at hand

Object tree is an organized list that contains all analyzed objects.

Each element can be modified at any time directly on the digital sample or in the object tree.

Tools to create marks and comments



Select and edit

Move, rotate and edit your comments, marks and other objects.



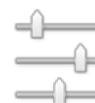
Graphic tools

Draw the necessary elements on the image using the line tool, Bezier curve, pencil, rectangle marker and oval.



Text comments

Create comments right on the digital image.



Object parameters

Set the required outline thickness and color, and filling of the object.



Order and group

Move objects to the foreground or background. Center or align your marks and comments.

Selection tools



Region (Mask)

In order to measure regions, select it using manual or automatic tools.



Segments

To measure the length of a segment of any complexity use one of three tools: Line, Bezier Curve or Pencil.



Angles

Set three points of an angle, and the system will calculate it for you in degrees and radians.

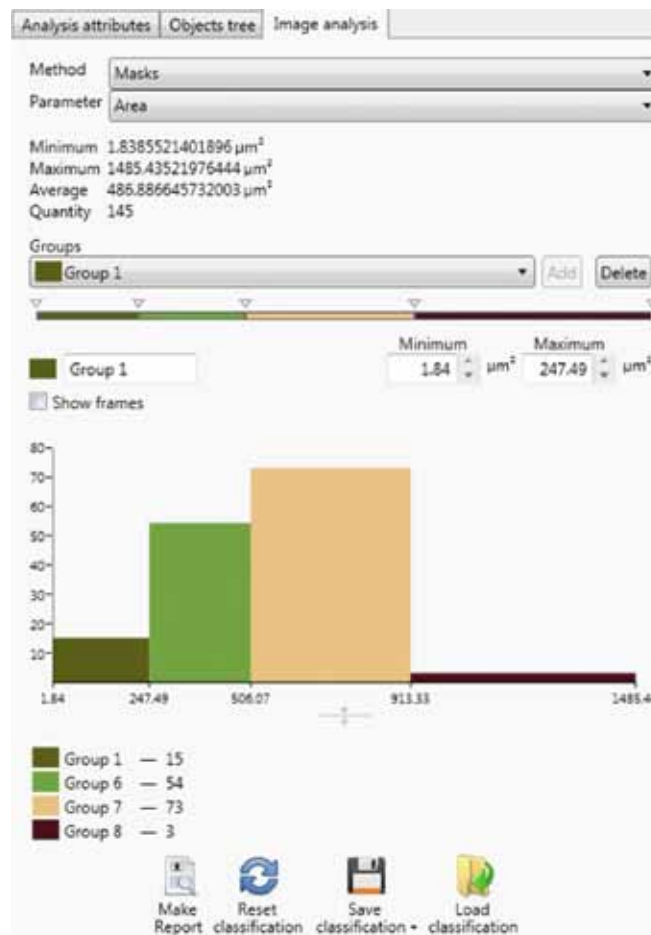


Points

Mark an object of analysis with points and the system will calculate their number and color characteristics.

Classification and object analysis

Flexible and powerful classification adapted to required analysis tasks



Classify analyzed objects using required criteria to generate a report.

Select a required number of groups and define a measurement range for each one of them:

- size of selected objects
- location
- optical parameters
- quantity

The system will automatically measure and display the results visually in a histogram form.

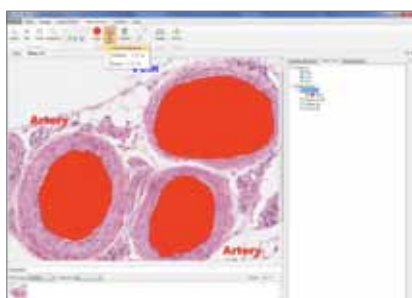
You can save frequently used methods to make them easily accessible in the future. Methods can also be downloaded from a computer hard drive.

Example of analysis

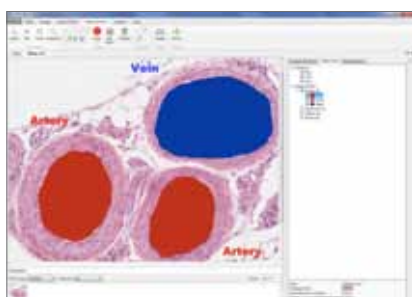
Blood vessel analysis



1 Capture an image of a microscopic sample.



2 Select vessel lumens with the "magic wand" tool. Edit the selected area to remove unnecessary elements and correct the area to enhance analysis accuracy.



3 Analyze the selected area. Analyzed objects are saved in the object tree.



4 Classify objects into groups, selecting a range for each one.



5 Generate and print out your analysis report.



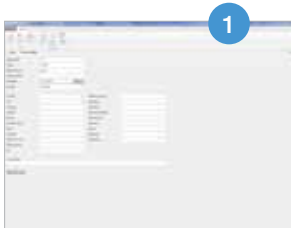
Due to built-in analysis methods I can study microscopic samples without spending time on quantitative measurements: Vision system classifies and counts the elements by itself



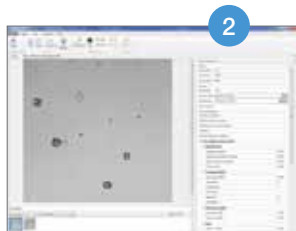


Report generation

Report generation procedure



Create new record in the database



Save image and enter report parameters



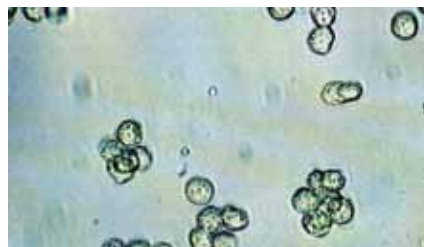
Print out your report

Analysis procedure

Analysis procedure is easier than ever with report templates



Prepare a microscopic sample and install it on the microscope stage. You will see a digital image in your album immediately.



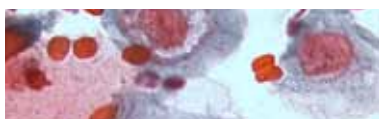
Proceed with examination by capturing required microscopic images and entering analysis results in the database. The system saves all data in real time, securing analysis reliability.



Completed report can be printed out, sent by e-mail or exported to other applications in many different formats, such as PDF, DOC, XLS, JPEG, GIF, PNG, etc.

Microscopy report templates

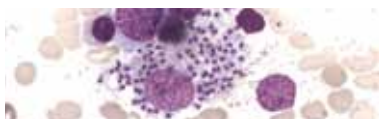
With your Vision system, you get a set of standard microscopy report templates which is constantly expanding.



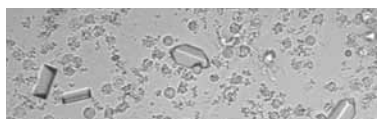
cytology analysis



histology analysis



myelogram analysis



urine analysis



stool analysis



parasitology analysis



gastric content analysis



duodenal content analysis



exudative effusion analysis



sputum analysis



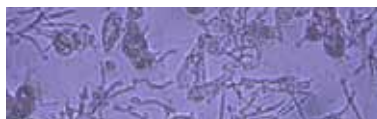
cerebral spinal fluid analysis



vaginal discharge analysis



microbiology analysis



mycology analysis



Thanks to the Vision system I have report templates for every case: from a simple analysis of a few sentences up to a detailed conclusion report on an assay conducted. I sometimes use a standard template, but more often I customize the form to fit my own requirements





Report reference guide

Customize the reference guide to meet your needs

The report reference guide is customizable to meet your needs and analysis requirements. Set your preferences only once and use the ready-made report template in your daily routine.

Add required analysis fields (texts, numbers, lists, etc.) to display them in a report. Set reference ranges to certain fields, depending on age and sex. If the entered value falls out of range, the system will inform you automatically.



Atlas

Atlas of analysis objects is an indispensable tool for object identification

Click on the “hint” button and you will see the images in the atlas, corresponding to the object of study.

Images can be added to the atlas by simply dragging and dropping them to the object field.



Report customization

You decide how your report will look like

You can take into account different template requirements (form and content). Add and delete analysis parameters, patient information fields and images.

If you need a special report template, we can design it for you based on your requirements and in your language.

Report form

- 1 Report name
- 2 Laboratory logo
- 3 Analysis information
- 4 Patient information
- 5 Date and time of sample collection/delivery/report
- 6 Institution information
- 7 Comments about a patient/sample, etc.
- 8 Analysis results
- 9 Images
- 10 Interpretation of results
- 11 Recommendation
- 12 Validation
- 13 Date and time of validation
- 14 Signature
- 15 Page number

Report example on one page

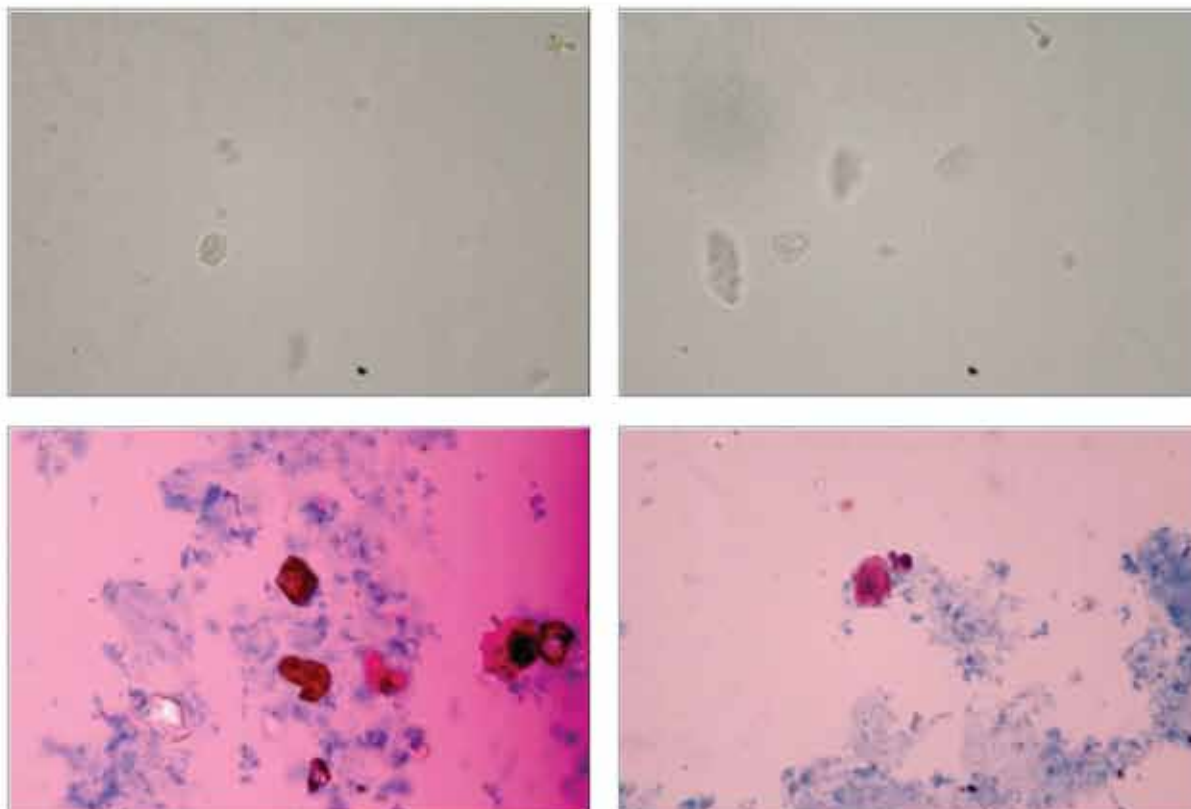
1 URINE ANALYSIS REPORT		2 UriLAB		
3 Category	Medical examination	Sample collection date / time	6/10/2011 11:27 AM	
Sample ID	113	Analysis date / time	6/10/2011 11:41 AM	
4 Patient ID	123456	Institution	Apollo Hospital	
Name	Howard John	Address	25, Yongue str	
8 Physical and chemical parameters				
Parameters	Result	Measurement unit	Reference range	< = >
Physical urine parameters				
Quantity	130	ml		
Color	straw yellow			
Specific gravity	1028			
Clarity	slightly cloudy			
Chemical urine parameters				
pH	6,5		5,0–6,0	>
Bilirubin	neg.	umol/L	neg. (<17)	
Urobilinogen	norm	umol/L	norm. (<35)	
Ketones	neg.	umol/L	neg	
Ascorbic acid	neg.	g/L	neg	
Glucose	neg.	umol/L	neg	
Protein	0,3	g/L	neg	
Blood	neg. (<5)	RBC/uL	neg (<5)	
Nitrites	pos.		neg	>
Leucocytes	75	WBC/uL	neg (<5)	>
Urine sediment				
Colored specimen (supravital)				
RBC				
- Isomorphic	0-1	p./HPF	0-1	
- Dismorphic	0-1	p./HPF	0-1	
Leucocytes				
- Neutrophils	3-10	p./HPF	0-2	>
- Lymphocytes	0-2	p./HPF		
Epithelial cells				
- Superficial squamous ep.cell	Small	p./HPF		
- Transitional rp.cells	Small	p./HPF		
- Transitional	Small	p./HPF		
- Renal	Small	p./HPF		
Crystals				
- Uric acid	Small	p./HPF		
Bacteria				
- Cocci	Moderate	p./HPF		
- Rodes	Absent	p./HPF		
Mucus				
-	Small	p./HPF		
10 Interpretation of results				
Moderate leukocyturia, signs of bacteruria				
11 Recommendation				
Bacterial study				
12				
Name	Dr. Chris Mayers	Date	6/10/2011	
Signature _____				
13				
14				
15				

URINE ANALYSIS REPORT		UriLAB		
Category	Medical examination	Sample collection date / time	6/9/2011 11:27 AM	
Sample ID	113	Analysis date / time	6/10/2011 11:41 AM	
Test number	3			
Patient ID	123456	Institution	Apollo Hospital	
Name	Howard John	Address	25, Yongue str	
Birth date	5/25/1979	Department	Surgery	
Gender	Male	Ward	6	
Address	53 Church str	Practice		
Insurance	Eurolife	Physician name	Rebecca Nelson	
Medical record	m532560053f			
Comments				
Direct to surgical treatment				
Physical and chemical parameters				
Parameters	Result	Measurement unit	Reference range	< = >
Physical urine parameters				
Quantity	130	ml		
Color	straw yellow			
Specific gravity	1028			
Clarity	slightly cloudy			
Chemical urine parameters				
pH	6,5		5,0–6,0	>
Bilirubin	neg.	umol/L	neg. (<17)	
Urobilinogen	norm	umol/L	norm. (<35)	
Ketones	neg.	umol/L	neg	
Ascorbic acid	neg.	g/L	neg	
Glucose	neg.	umol/L	neg	
Protein	0.3	g/L	neg	
Blood	neg. (<5)	RBC/uL	neg (<5)	
Nitrites	pos.		neg	>
Leucocytes	75	WBC/uL	neg (<5)	>
Urine sediment				
Colored specimen (supravital)				
RBC				
- Isomorphic	0-1	p./HPF	0-1	
- Dismorphic	0-1	p./HPF	0-1	
Leucocytes				
- Neutrophils	3-10	p./HPF	0-2	>
- Lymphocytes	0-2	p./HPF		
Epithelial cells				
- Superficial squamous ep.cell	Small	p./HPF		
- Transitional rp.cells	Small	p./HPF		
- Transitional	Small	p./HPF		
- Renal	Small	p./HPF		
Crystals				
- Uric acid	Small	p./HPF		
Bacteria				
- Cocci	Moderate	p./HPF		

- Rodes	Absent	p./HPF	
Mucus	Small	p./HPF	

9

Images



10

Interpretation of results

Moderate leukocyturia, signs of bacteruria

11

Recomendation

Bacterial study

Validated by

12

Name	Dr. Chris Mayers	Date	6/10/2011
Position	Pathologist	Time	3:37 PM

13

Signature _____

14



15

Database



*Thanks to the database
I can be sure that
my analysis results
are stored securely,
and, what is the most
important, statistical
reports no longer take
so much time to prepare*



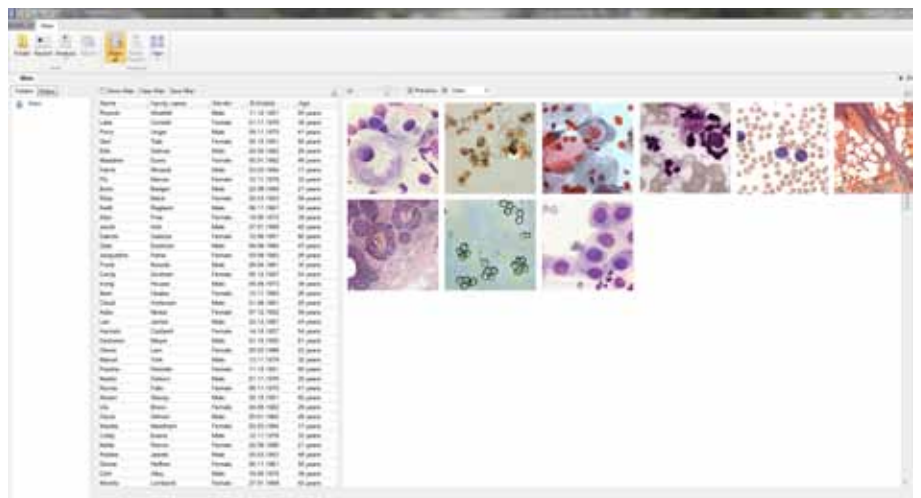
Reliable database

Vision database stores all patient records, microscopic samples, analysis results, and reports. Information is shown in a form of a patient record with his/her analysis result. Possibility to assess quickly the dynamics in analysis results over a period of time.

The system saves all data automatically, excluding any possibility of losing valuable information. Advanced data management tools, like filtering and sorting, will help you not to waste time on searching.

Storage, statistic handling, quick search, cooperation with colleagues, remote access via Internet and integration into other information networks (LIS/HIS).

If you need a special report template or additional data fields to a patient record, we can help you customize the database according to your requirements.



Network capabilities



View analysis results on the screen and discuss with your colleagues.



Print out your reports.



Data import/export to other information networks (LIS/HIS).



Share information with people wherever they are. Send your reports by email.



Organize video conferences with colleagues from around the world.










Connect, via Internet, multiple workplaces to a remote server.



Publish your research on specialized social networks.

Main characteristics

	Description	Vision Bio
	Biological trinocular microscope with “infinite” optics and Vision digital camera. Preview live video on a PC as well as capture a digital microscopic sample.	✓
	Personal computer with Vision Bio software, high resolution monitor and color printer.	✓
	A professional set of tools to work with digital samples: create, edit, organize, classify and comment.	✓
	Storage, statistic handling, quick search, cooperation with colleagues, remote access via Internet and integration into other information networks (LIS/HIS).	✓
	Calculation of geometric parameters in standard measurement units due to simple calibration of the optical system.	✓
	Calculation of optical and geometric parameters of a selected object. Tools to create marks and comments on the digital sample.	✓
	Classification of analyzed objects according to a required criteria and report generation. Analysis results are displayed in the form of histograms, charts and tables.	✓
	Analysis report templates. Customizable report reference guide to fit your personal requirements.	✓
	Report contains: images, analysis parameter fields, measurement units and reference range.	✓
	Report operations: search, preview, edit, print, e-mail and export in popular formats: PDF, DOC, XLS, JPEG, GIF, PNG and many more.	✓

Ordering information



Description	Code
Vision Bio system Set includes: MT4300L biological microscope, Vision CAM V1200 digital camera, Vision Bio software, PC, monitor, printer.	60.0003.00
Vision Bio software Set includes: Vision Bio software.	20.0003.02



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vienna@westmedica.com

www.vision-at.com

We reserve the right to change specification without notice.

Official distributor

Rev 3.0/09.2011 EN