



din dragoste pentru prietenii necuvântători

**Microbiologia umană și veterinară,
două ramuri ale aceleiași științe cu
un scop comun:
performanță în diagnostic.**

**Asist. Univ. Dr. Cristea Violeta
SYNEVO București**

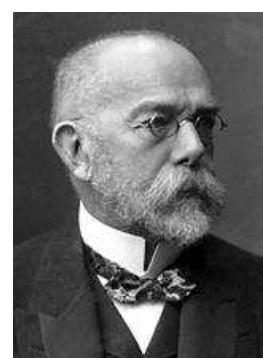


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Evoluția bacteriologiei medicale - istoric



Louis Pasteur
1860



Robert Koch
1882



Hans C. Gram
1884



William Kirby and Al Bauer
1966

Germ Theory → Culture and ID → Gram Stain → Susceptibility Testing



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Probleme vechi - provocări actuale

Probleme:

- Prea puțin
- Prea târziu

Rezolvări:

- o mai mare acuratețe în identificare
- scăderea timpului de eliberare a rezultatului



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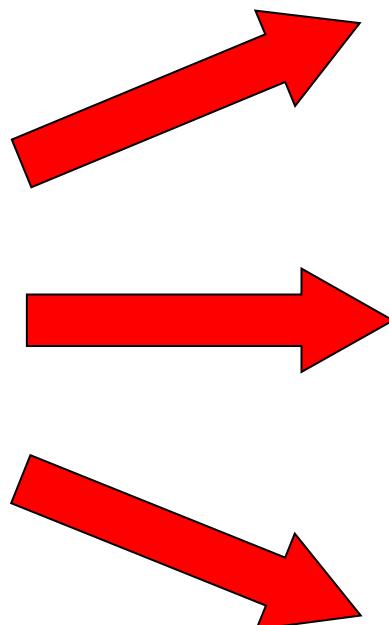
Sisteme recoltă





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Avantaje e-Swab

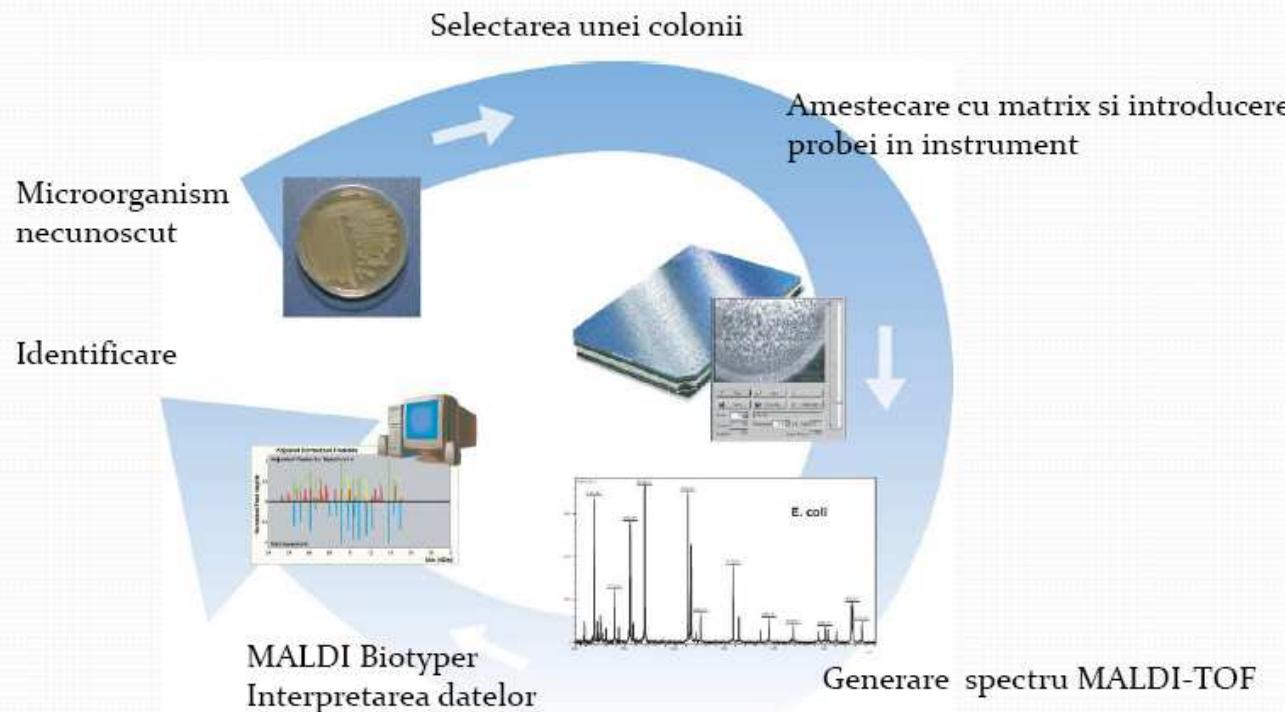




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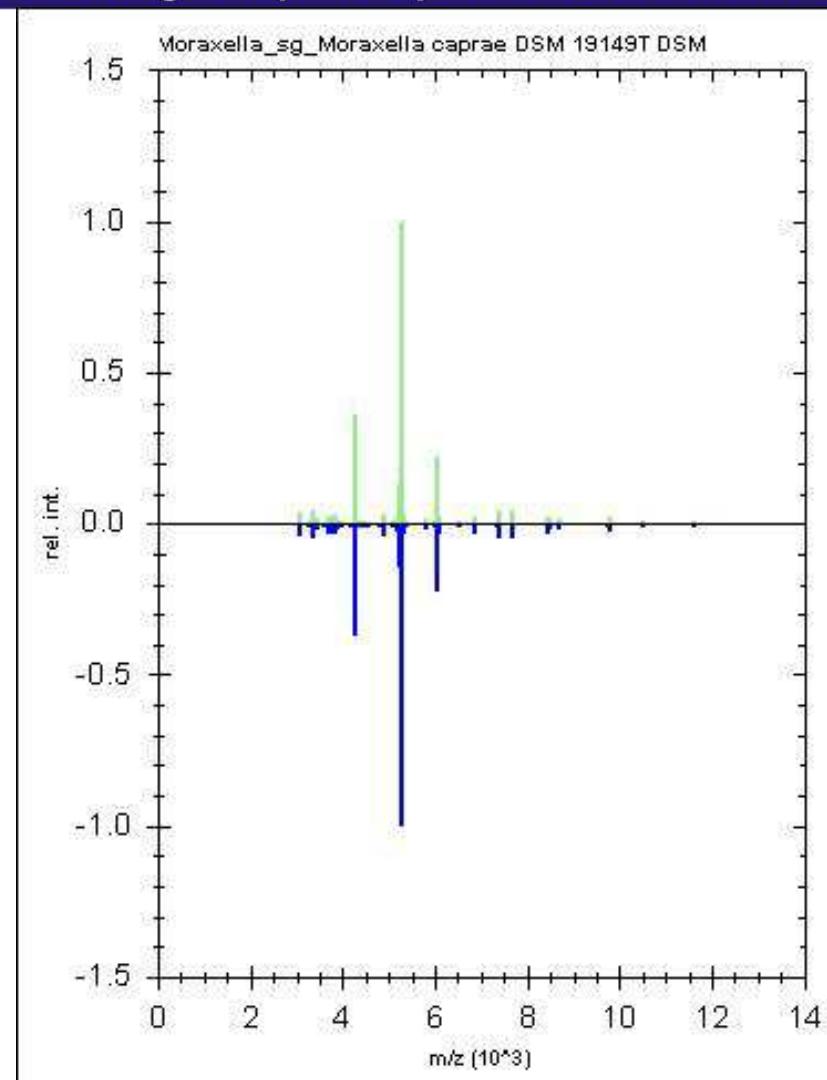
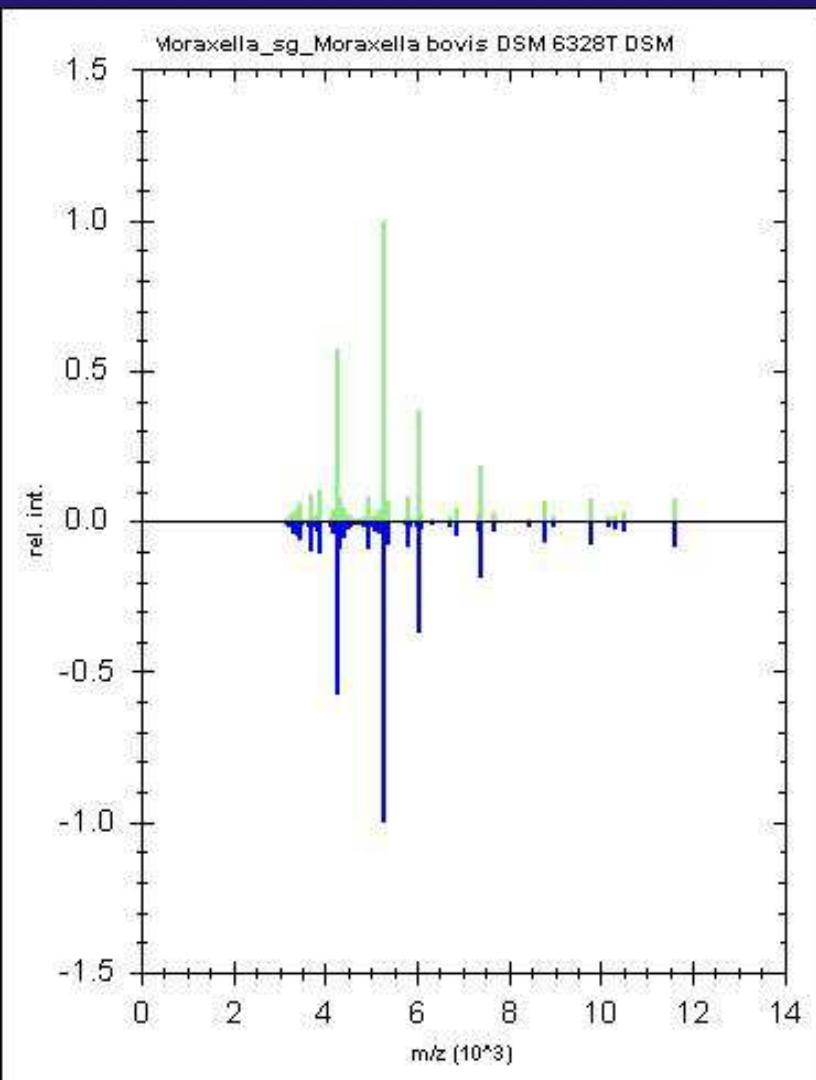
Identificări automate

MALDI Biotype Workflow





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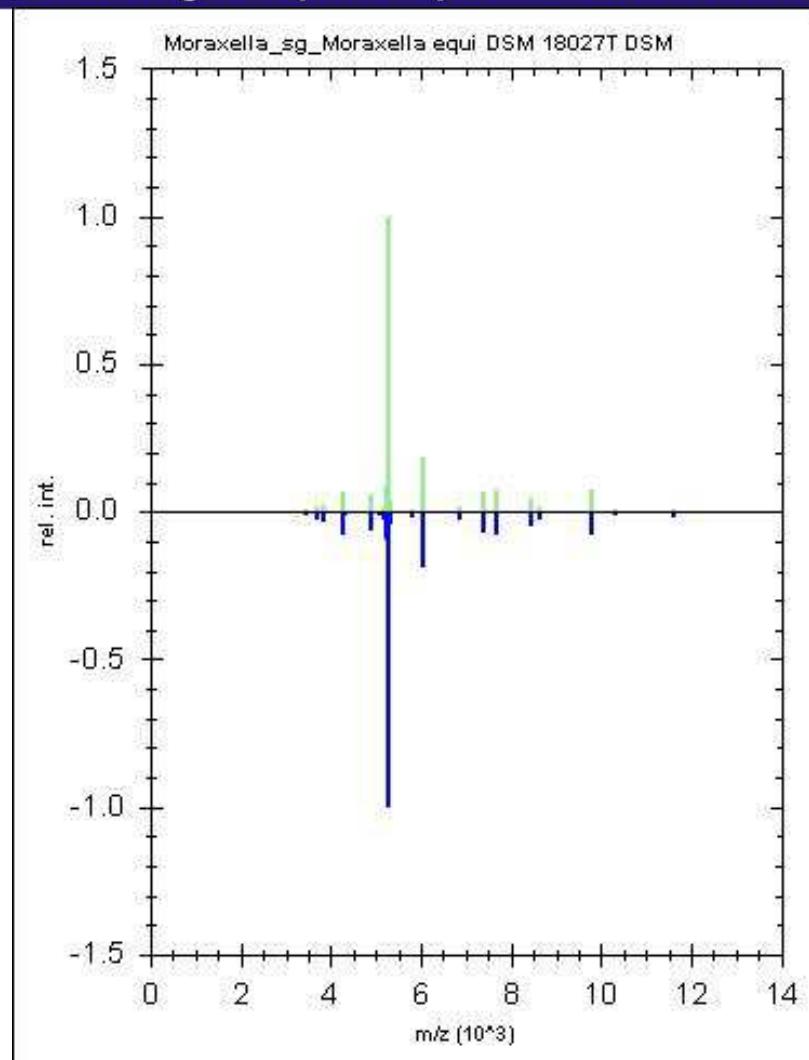
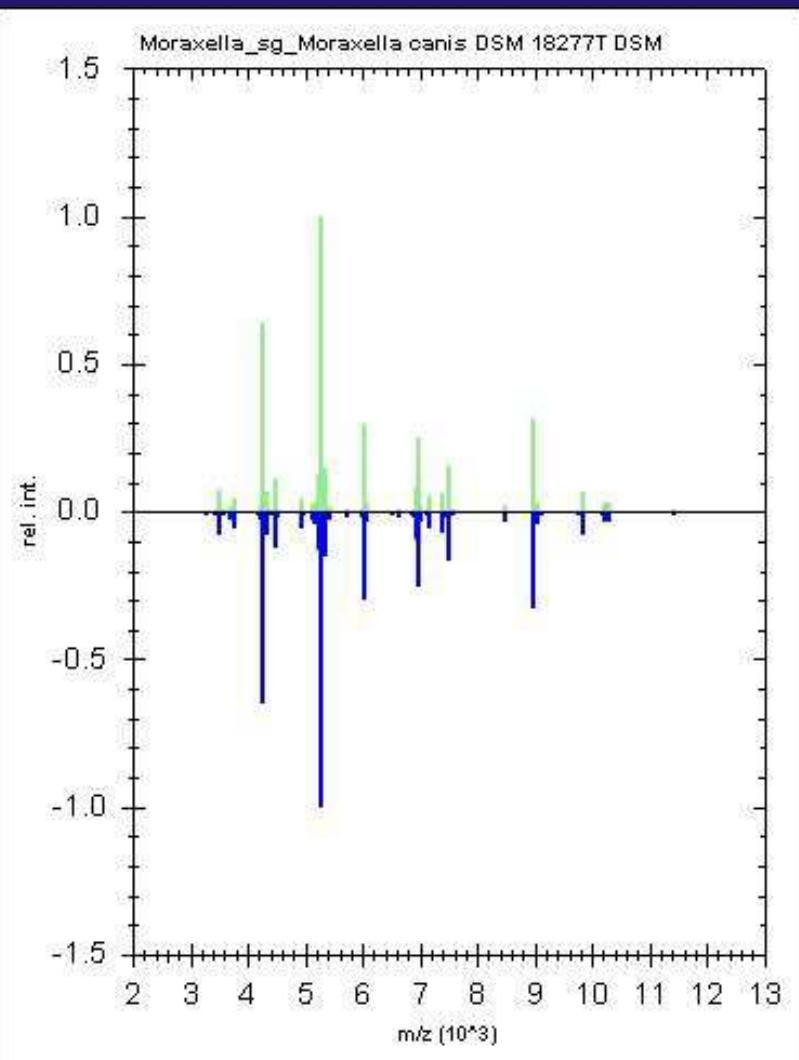


syneovet

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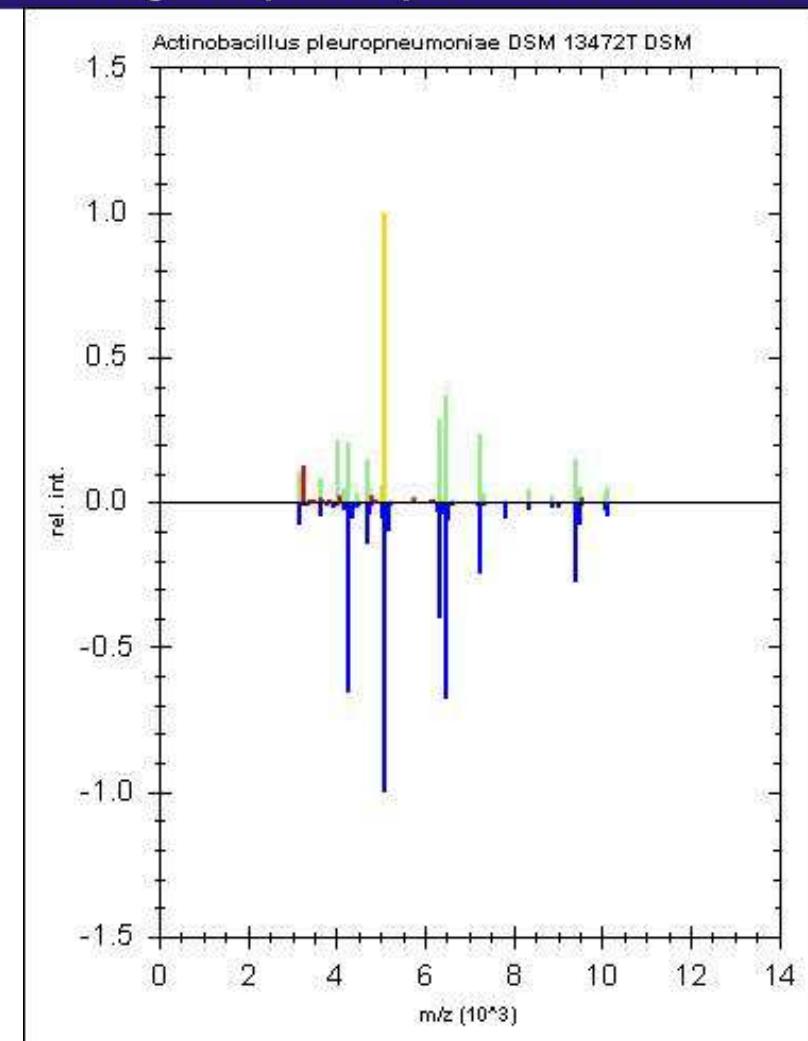
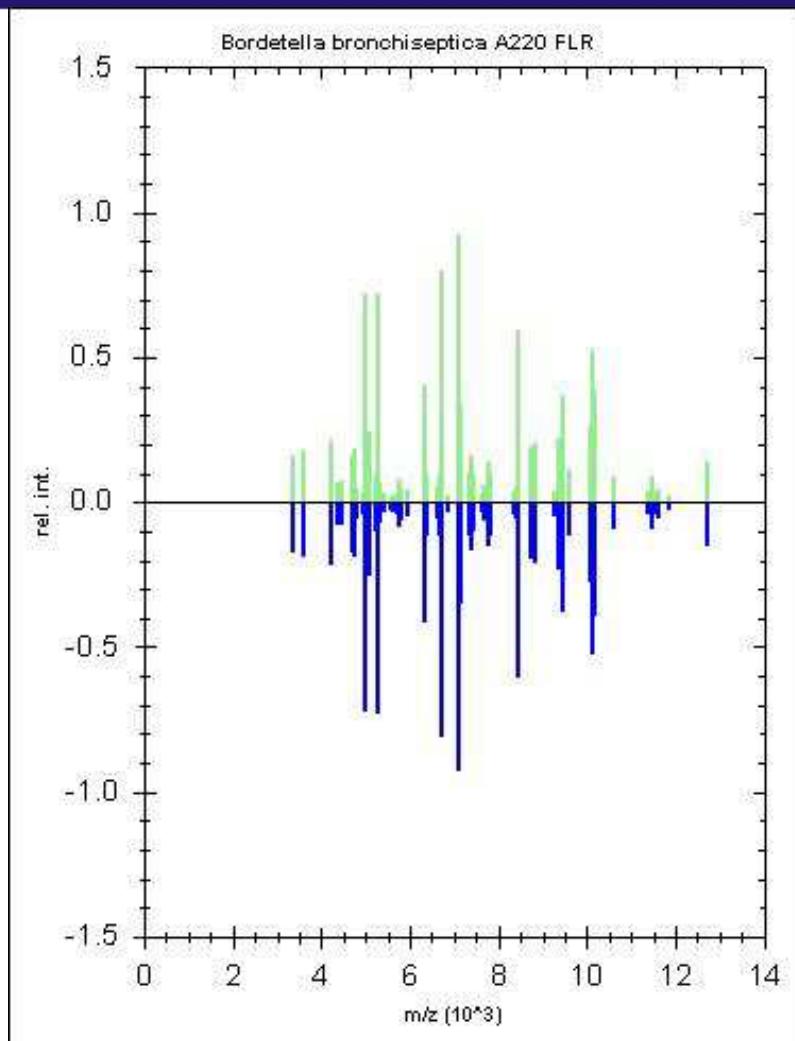


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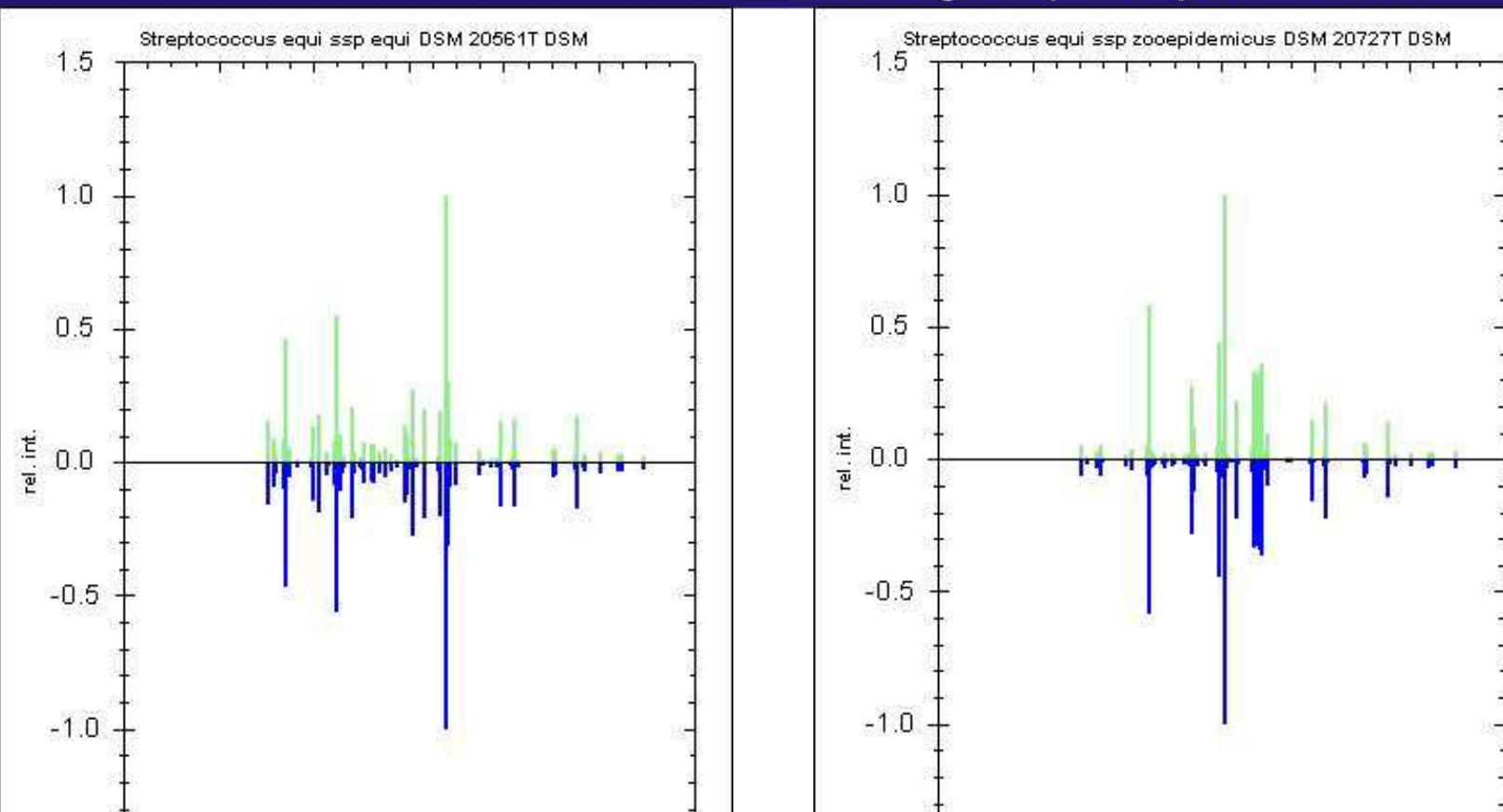


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din dragoste pentru prietenii necuvântători



Research

Streptococcus equi subsp. *zooepidemicus* isolates from equine infectious endometritis belong to a distinct genetic group
Camilla D.R., Maria M.H., Morten R.P., Jesper M. N.⁴, Hanne G. P. and Anders M. B.



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MALDI-TOF Mass Spectrometry as a Diagnostic Tool for Identification of Important Veterinary *Streptococcus* Species

Abdulwahed Ahmed Hassan¹, Anja Rothkamp^{1/2}, Muaz Hijazin³, Christoph Lämmler³,
Tobias Eisenberg⁴, Michael Zschöck⁴, Markus Timke⁵, Markus Kostrzewa⁵

¹ De Gezondheidsdienst voor Dieren (Animal Health Service), Deventer, The Netherlands

² vaxxinova GmbH diagnostics, Münster, Germany

³ Institut für Pharmakologie und Toxikologie, Justus-Liebig-Universität Gießen, Gießen, Germany

⁴ Landesbetrieb Hessisches Landeslabor, Gießen, Germany

⁵ Entwicklung Bioanalyse, Bruker Daltonik GmbH, Bremen

Challenging the problem of clostridial identification with matrix-assisted laser desorption and ionization–time-of-flight mass spectrometry (MALDI–TOF MS)

Anke Grosse-Herrenthey^a  , Thomas Maier^b, Frank Gessler^c, Reiner Schaumann^d, Helge Böhnel^c,
Markus Kostrzewa^b, Monika Krüger^a

^a Institute of Bacteriology and Mycology, Faculty of Veterinary Medicine, University of Leipzig, An den Tierkliniken 29, 04103 Leipzig, Germany

^b Bruker Daltonik GmbH, Leipzig, Germany

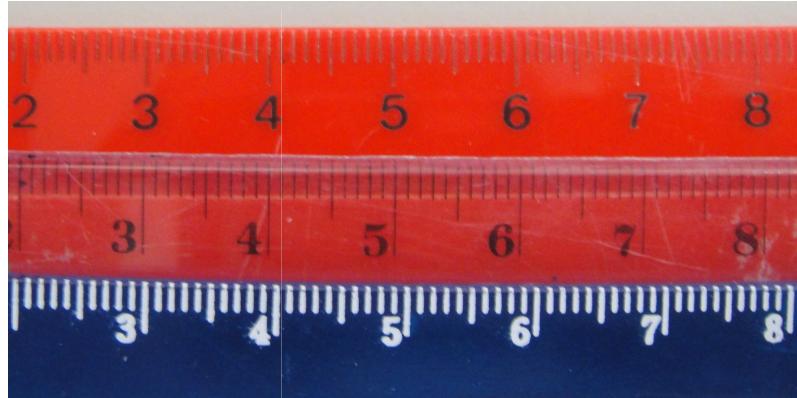
^c Institute of Agronomy and Animal Production in the Tropics, University of Göttingen, Germany

^d Institute of Medical Microbiology, Faculty of Medicine, University of Leipzig, Leipzig, Germany



din dragoste pentru prietenii necuvântători

Antibiograma





din dragoste pentru prietenii necuvântători

22

Number 8

Table 2A. (Continued)

Antimicrobial Agent	Disk Content	Zone Diameter (mm)			MIC Breakpoint ($\mu\text{g/mL}$)			Comments
		S	I	R	S	I	R	
Lincomamides								
Clindamycin								
Dogs (skin, soft tissue) <i>Staphylococcus</i> spp. Streptococci - β -hemolytic group	2 μg	≥ 21	15-20	≤ 14	≤ 0.5	1-2	≥ 4	(23) Clindamycin is also used to test for susceptibility to lincomycin. Clindamycin is more active than lincomycin against most staphylococcal strains.
Pirlimycin								
Bovine mastitis <i>Staphylococcus aureus</i> <i>Streptococcus agalactiae</i> <i>Streptococcus dysgalactiae</i> <i>Streptococcus uberis</i>	2 μg	≥ 13	-	≥ 12	≤ 2	-	≥ 4	
Macrolides								
Tilmicosin								
Bovine Respiratory Disease <i>Mannheimia haemolytica</i>	15 μg	≥ 14	11-13	≤ 10	≤ 8	16	≥ 32	(24) For injectable product only.
Swine Respiratory Disease <i>Pasteurella multocida</i> <i>Actinobacillus pleuropneumoniae</i>	15 μg	≥ 11	-	≤ 10	≤ 16	-	≥ 32	
Tulathromycin								
Bovine Respiratory Disease <i>Mannheimia haemolytica</i> <i>Pasteurella multocida</i> <i>Histophilus somni</i>	30 μg	≥ 18	15-17	≤ 14	≤ 16	32	≥ 64	
Swine Respiratory Disease <i>Pasteurella multocida</i> <i>Bordetella bronchiseptica</i> <i>Actinobacillus pleuropneumoniae</i>	30 μg	≥ 18	15-17	≤ 14	≤ 16	32	≥ 64	
		≥ 10	-	-	≤ 64	-	-	(25) Hazy growth or double zones should be ignored. The outer, discrete zone of inhibition should be read. To detect isolates nonsusceptible to tulathromycin, broth microdilution testing is required.

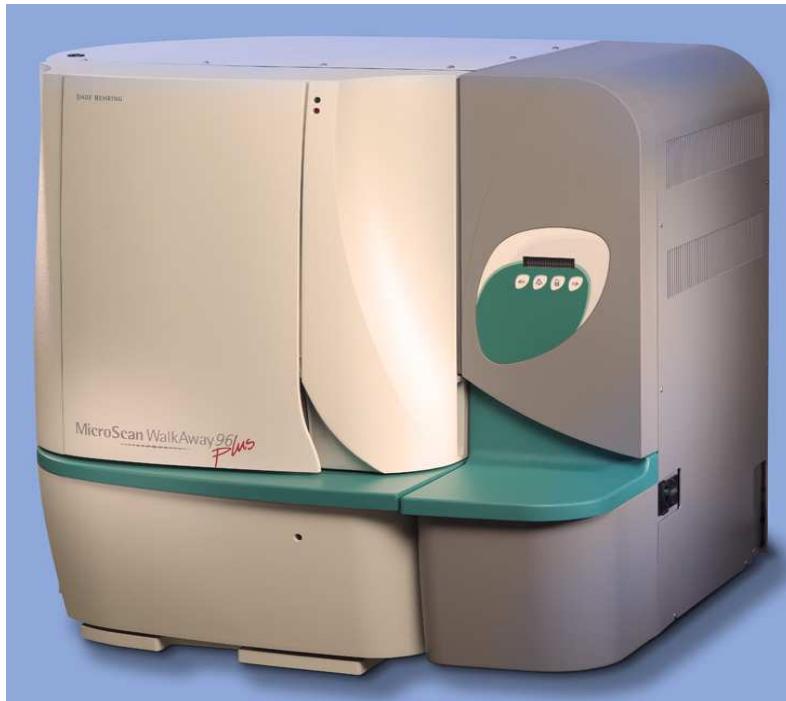
Table 2A. (Continued)

Antimicrobial Agent	Disk Content	Zone Diameter (mm)			MIC Breakpoint ($\mu\text{g/mL}$)			Comments
		S	I	R	S	I	R	
Phenicols								
Florfenicol								
Bovine Respiratory Disease								
<i>Mannheimia haemolytica</i>	30 μg	≥19	15–18	≤14	≤2	4	≥8	
<i>Pasteurella multocida</i>								
<i>Histophilus somni</i>								
Swine Respiratory Disease								
<i>Actinobacillus pleuropneumoniae</i>	30 μg	≥22	19–21	≤18	≤2	4	≥8	(26) For premix product only.
<i>Bordetella bronchiseptica</i>								
<i>Pasteurella multocida</i>								
<i>Streptococcus suis</i>								
<i>Salmonella cholerasuis</i>		–	–	–	≤4	8	≥16	
Pleuromutilins								
Tiamulin								
Swine Respiratory Disease								
<i>Actinobacillus pleuropneumoniae</i>	30 μg	≥9	–	≤8	≤16	–	≥32	
Tetracyclines								
Bovine Respiratory Disease								
<i>Mannheimia haemolytica</i>	–	–	–	–	≤2	4	≥8	(27) Breakpoints derived from pharmacokinetic data of oxytetracycline at 20 mg/kg IM, once, and pharmacodynamic data.
<i>Pasteurella multocida</i>								
<i>Histophilus somni</i>								
Swine Respiratory Disease								
<i>Actinobacillus pleuropneumoniae</i>	–	–	–	–	≤0.5	1	≥2	(29) Breakpoints derived from pharmacokinetic data of oxytetracycline at 20 mg/kg IM, once, and pharmacodynamic data.
<i>Pasteurella multocida</i>								
<i>Streptococcus suis</i>								(30) These interpretive criteria are applicable only for the injectable formulations. Tetracycline is the class representative.



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Antibiogramă sistem automat



“Between animal and human medicine there are no dividing lines—nor should there be. The object is different but the experience obtained constitutes the basis of all medicine.”



Rudolf Virchow, MD





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'One medicine—one pathology': are veterinary and human pathology prepared?

Robert D Cardiff^{1,2}, Jerrold M Ward³ and Stephen W Barthold^{1,2,4}

The American Medical Association and the American Veterinary Medical Association have recently approved resolutions supporting 'One Medicine' or 'One Health' that bridge the two professions. The concept is far from novel. Rudolf Virchow, the Father of Modern Pathology, and Sir William Osler, the Father of Modern Medicine, were outspoken advocates of the concept. The concept in its modern iteration was re-articulated in the 1984 edition of Calvin Schwabe's 'Veterinary Medicine and Human Health.' The veterinary and medical pathology professions are steeped in a rich history of 'One Medicine,' but they have paradoxically parted ways, leaving the discipline of pathology poorly positioned to contribute to contemporary science. The time has come for not only scientists but also all pathologists to recognize the value in comparative pathology, the consequences of ignoring the opportunity and, most importantly, the necessity of preparing future generations to meet the challenge inherent in the renewed momentum for 'One Medicine.' The impending glut of new genetically engineered mice creates an urgent need for prepared investigators and pathologists.

Laboratory Investigation (2008) **88**, 18–26; doi:10.1038/labinvest.3700695; published online 26 November 2007



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Staphylococcus aureus

Patologie umană

- Foliculite
- Furuncule
- Mastite
- Artrite

Patologie veterinară

- Dermatite
- Mastite
- Artrite
- Septicemie



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Enterobacteriaceae

Patologie umană

- *Salmonella*
- *Shigella*
- *E. coli*
- *Yersinia*

Patologie veterinară

- *Salmonella*
- *E. coli*
- *Yersinia*



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Levuri

Patologie umană

- Candida spp.
- Cryptococcus
- Malassezia
- Trichosporon

Patologie veterinară

- Candida albicans
- Cryptococcus
- Malassezia
- Trichosporon



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Faecal Parasitology: Concentration methodology really does matter!

M. Manser, A Saez, PL Chiodini: Department of Clinical Parasitology, Hospital for Tropical Diseases, London

Abstract

Since the establishment of UKNEQAS Faecal Parasitology in 1986, failure to report the parasite species present in EQA specimens and recovering lower numbers of parasite stages than those seen pre-distribution by UKNEQAS Parasitology have always been performance issues. Therefore a questionnaire was sent to the 618 participants in the Scheme to establish the routine method they used to examine for parasite stages in faecal samples. Of the 200 laboratories who responded, all used a concentration method based on the Modified Ridley-Alan technique (1) but with variations in the centrifugal force, centrifugal time, pore size of the sieve and use of a solvent. Therefore faecal concentrations were done in UK NEQAS to assess the effect of these parameters. The number of parasite stages recovered increased with centrifugal force, centrifugal time and use of a solvent.

Introduction

The use of a faecal concentration method for the examination of faeces for parasitic diseases increases the likelihood of finding ova, cysts and larvae in faecal specimens particularly in those specimens, where they are present in too few numbers to be seen by direct microscopy.

In response to concerns by UK NEQAS Parasitology regarding participants failing to report parasites in UK NEQAS faecal parasitology specimens and also noting that they were recovering lower numbers of ova and cysts than those seen by UK NEQAS in the pre-distribution examination of the specimens, we enquired regarding the routine method they used to examine for parasite stages in faecal samples.

Methods

618 participants subscribe to the UKNEQAS Parasitology Scheme. A questionnaire was sent to all participants to establish their method for concentrating faecal samples for the examination of parasites. 200 laboratories responded and their results were analysed. Following the analysis, faecal concentrations using the Parasep® faecal concentration method were performed in UK NEQAS on specimens containing a range of ova and cysts incorporating the variation in centrifugal force and centrifugal time reported in the participants questionnaires.

- A faecal concentration method is essential to increase the sensitivity of finding parasite stages.
- Poor concentration technique leads to poor recovery of parasites.
- All laboratories should use the recommended centrifugal speed (3000rpm) and time (3 minutes) when using this technique to optimise diagnosis of faecal parasites by microscopy.



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Concentrarea elementelor parazitare

Mini sistem



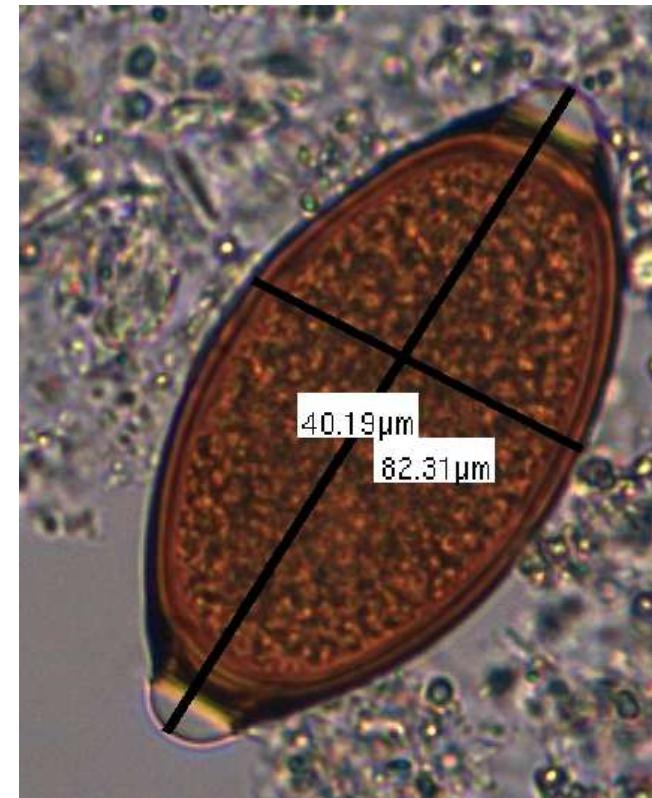
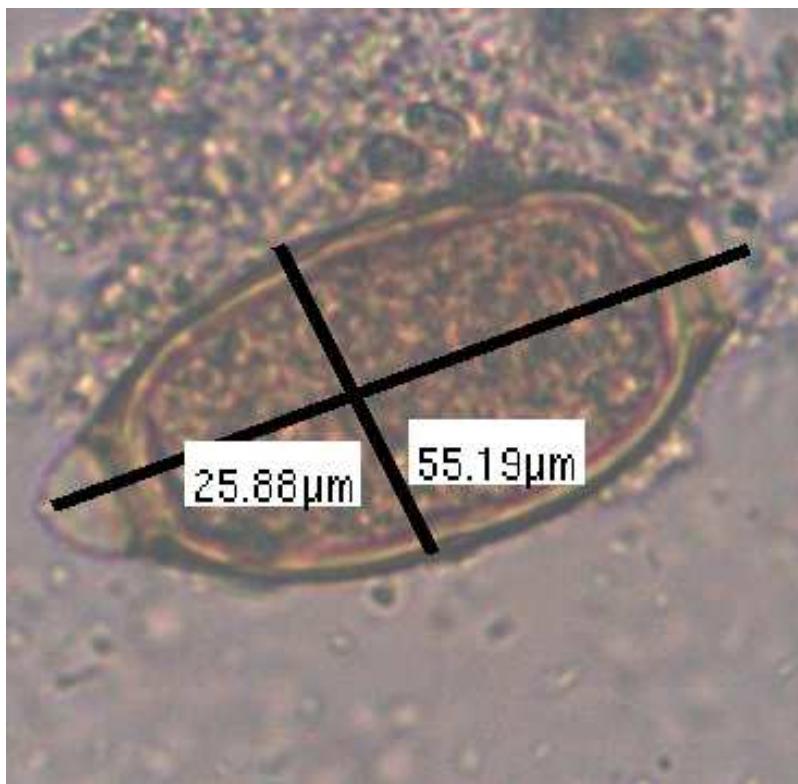
Proba preparată





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Trichuris trichura / Trichuris vulpis





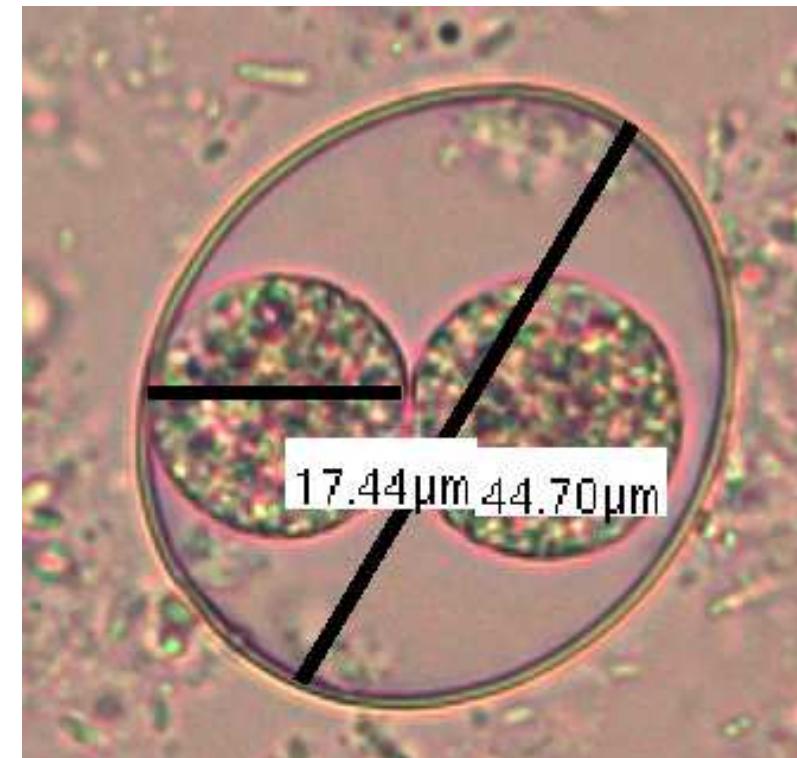
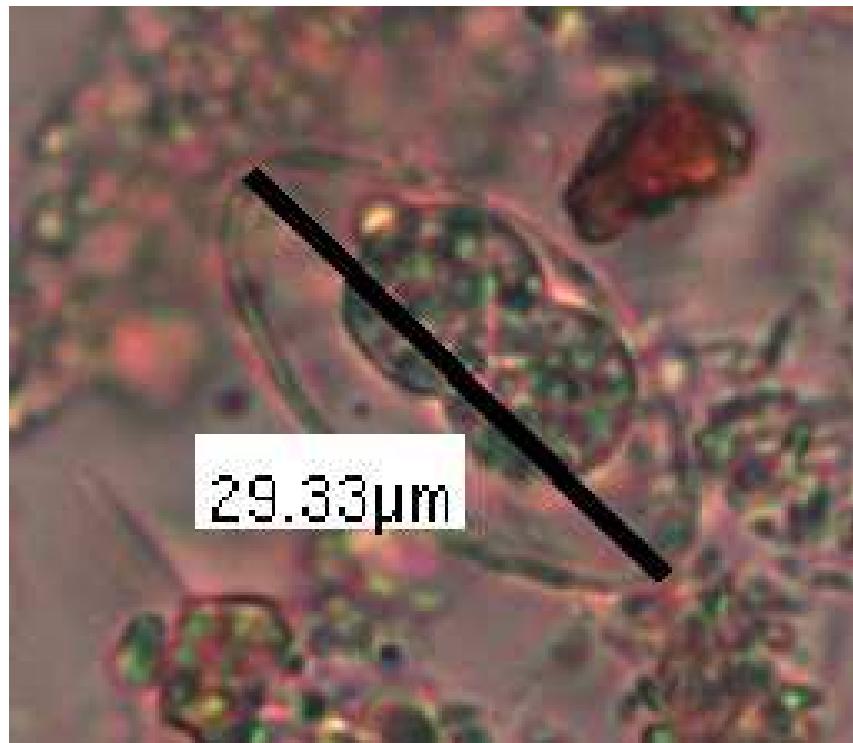
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Isospora belli / Isospora felis





din dragoste pentru prietenii necuvântători

Strongyloides stercoralis / S. ransomi



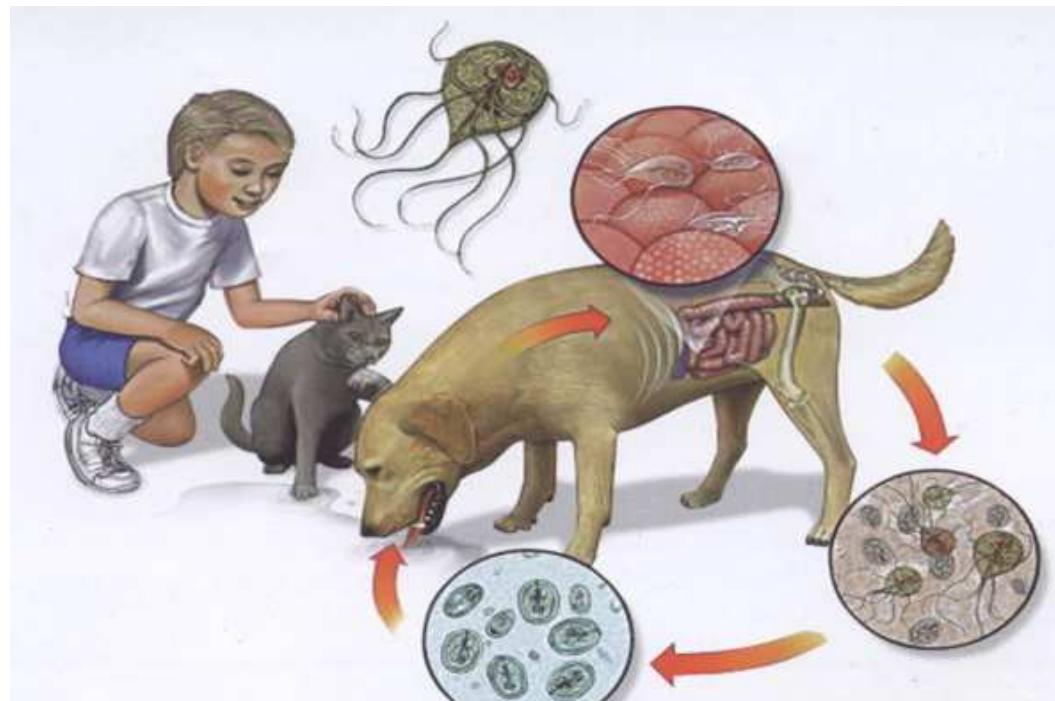


din dragoste pentru prietenii necuvântători

Giardia la animalele domestice

Specii:

- Canine
- Feline
- Ovine
- Bovine





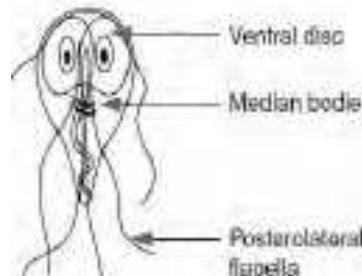
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SERVICIU VETERINARE DE LABORATOR

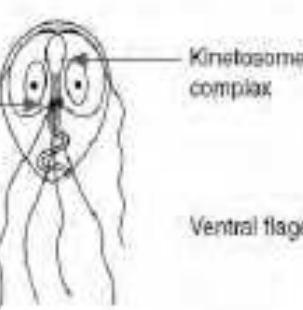


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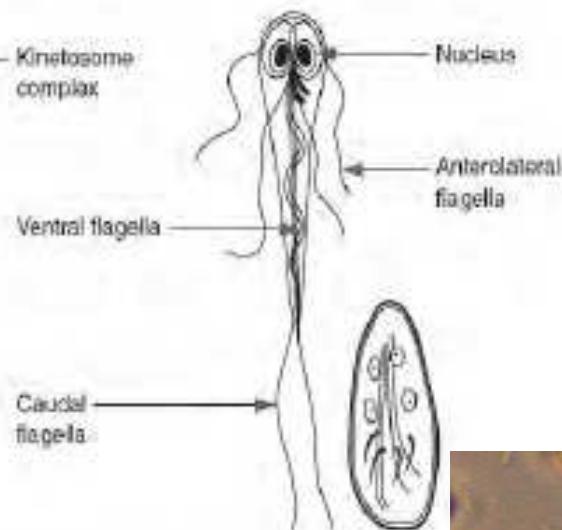
G. duodenalis



G. muris



G. agilis



"Two large living nematodes were removed from the peritoneal cavity of a 17-year-old youth complaining of intense abdominal pain in the right lower quadrant. The worms measured 55 and 59 mm in length and were identified as fourth-stage larvae of *Eustrongylides*. The patient gave a history of swallowing live minnows while fishing"

Eberhard ML et al. Intestinal perforation caused by larval *Eustrongylides* (Nematoda: Dioctophymatidae) in New Jersey. Am J Trop Med Hyg. 1989 Jun;40(6):648-50





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Prezentare caz

C.C. ♂ 5,2 ani

- mediu urban
- părinti intelectuali
- ocasional, în parc contact cu animale



din dragoste pentru prietenii necuvântători





Data nasterei: 15/05/2006 Contract: MEDICOVER ABONATI
 CNP:
 Varsta: 5 ani 2 luni Doctor:
 Sex: M
 MRN: 766237 Medicover SF
 Adresa: no Address Given 0, Bucuresti
 Data recoltarii: 05/08/2011 13:23

Cod de bare: 10574591
 Data inregistrarii: 05/08/2011
 Numar cerere: 4027612
 Recoltat: External
 Punct de recoltare:
 Adresa:
 Data rezultat: 05/08/2011

Valori în afara limitelor admise
pentru varsta și sexul respectiv



enii necuvântători

Denumire	Rezultat	UM	Interval de referinta
Biochimie			

Alaninaminotransferaza (GPT/ALAT/ALT)

Ser / metoda kinetica IFCC cu piridoxal fosfat 29 U/L < 36

Aspartataminotransferaza (GOT/ASAT/AST)

Ser / metoda kinetica IFCC cu piridoxal fosfat 38 U/L < 53

Creatinina serica

Ser / metoda enzimatica colorimetrica 0.43 mg/dL < 0.4

Glucoza serica

Ser / metoda enzimatica colorimetrica 88 mg/dL Interpretare valori
 glicemie bazala (recomandari ADA):
 60-99: Normal
 100-125: Glicemie bazala modificata
 ≥ 126: Diabet zaharat
 Diagnosticul de diabet zaharat se va stabili pe baza a cel putin 2 valori crescute ≥ 126 ale glicemiei bazale obtinute in zile diferite.

Sideremie

Ser / metoda colorimetrica 133 µg/dL 25 - 115

Uree serica

Ser / metoda kinetica

* Urea 28 mg/dL < 48

* Urea nitrogen (BUN) 13 mg/dL < 20

Antistreptolizina O (ASLO)

Ser / metoda imunoturbidimetrica 20 UI/mL ≤ 150

Proteina C reactiva (CRP)

Ser / metoda imunoturbidimetrica 0.03 mg/dL < 0.5

Ig E

Ser / electrochemiluminiscenta (ECLIA) 552 UI/mL
 Nou nascutii : <1.5
 Copii: 5 săptămâni - 1 anii : <15
 1 - 5 ani : <60
 6 - 9 ani : <90
 10 - 15 ani : <200
 Adulti : <100



necuvântători

Buletin de rezultate



Nume pacient: C
Prenume pacient: C
Data nasterei: 15/05/2006 Contract: MEDICOVER ABONATI
CNP: Doctor:
Varsta: 5 ani 3 luni
Sex: M
MRN: 766237 Medicover SI
Adresa: no Address Given 0, Bucuresti
Data recoltarii: 31/08/2011 13:27
Cod de bare: 10580503
Data inregistrarii: 31/08/2011
Numar cerere: 4088670
Recoltat: External
Punct de recoltare:
Adresa:
Data rezultat: 02/09/2011

Valori în afara limitelor admise
pentru varsta și sexul respectiv



Denumire	Rezultat	UM	Interval de referinta
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Alergologie si boli autoimune

Dermatophagoides pteronyssinus			
Ser / IgE specific-FEIA	< 0.1	KU/L	< 0.35
Alternaria alternata IgE (m6)			
Ser / IgE specific-FEIA	< 0.1	KU/L	< 0.35
Albus de ou			
Ser / IgE specific-FEIA	0.48	KU/L	< 0.35
Lapte de vaca			
Ser / IgE specific-FEIA	0.25	KU/L	< 0.35

Biochimie

Ig A			
Ser / metoda Imunoturbidimetrica	77	mg/dL	48 - 345
Ig G			
Ser / metoda Imunoturbidimetrica	860	mg/dL	500 - 1300
Ig M			
Ser / metoda Imunoturbidimetrica	95	mg/dL	40 - 160

Imunochimie

Toxocara canis - Anticorpi IgG			
Ser / ELISA kit3	26.589	NTU	<9 : Negativ 9-11 : Echivoc - se recomanda repetarea recoltarii peste 2-4 saptamani >11 : Pozitiv

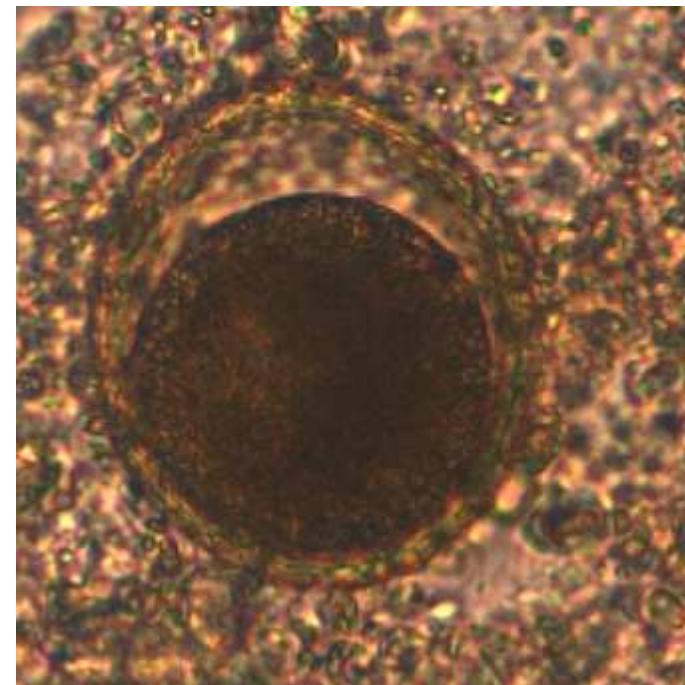
NTU= unitati NovaTec



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Toxocara

- Nematod ~ 2 mil. ouă/ zi
- Gazdă definitivă cainele și pisica - Dg. coproparazitologic
- Om - Larva migrans visceralis - Dg. serologic





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Vă mulțumesc !