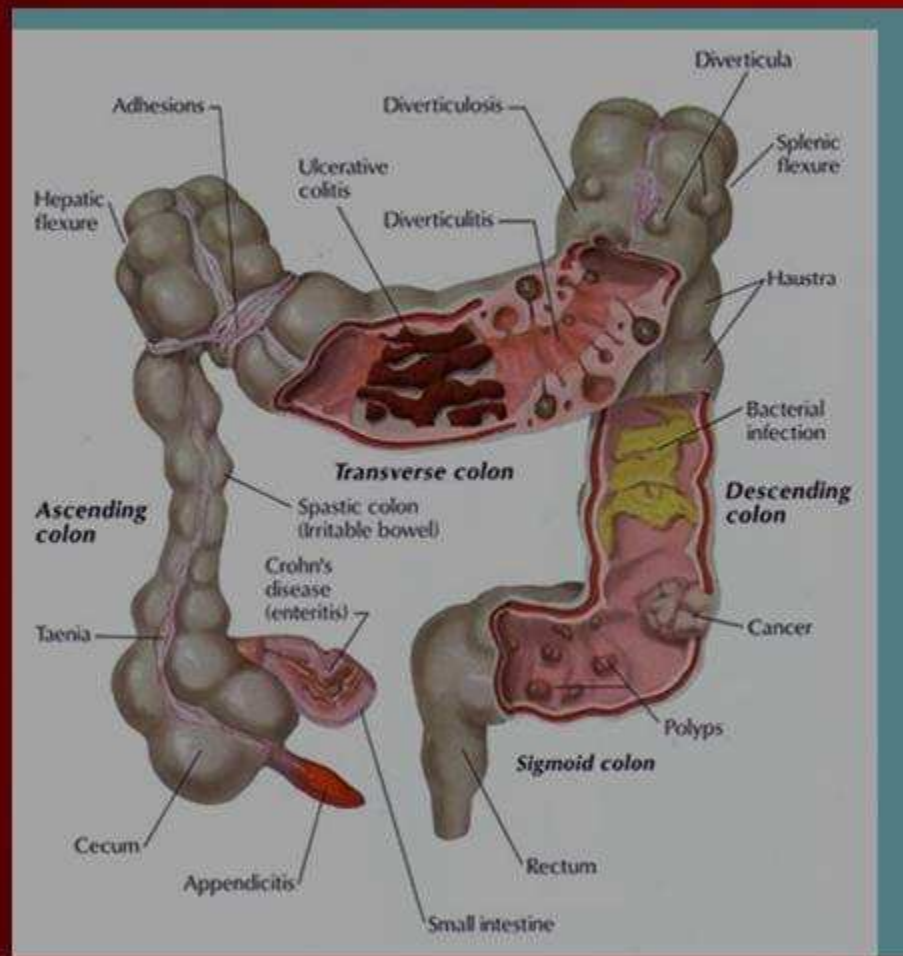


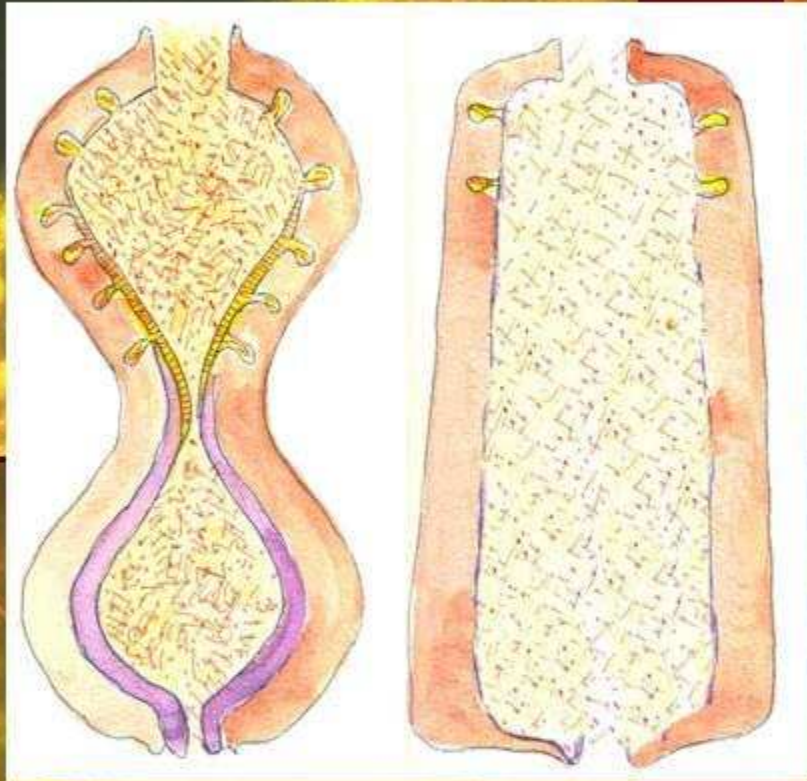
# Тот о ком не говорят

- при нарушениях иммунитета  
непереносимостях
  - аллергиях
  - гестозах

# Зачем нам толстая кишка?



# естественный биореактор



Рабочая концентрация  
>  $10^{13}$

<  $10^{10}$

# Риски кишечной биоферментации

Вакkerien  $10^{13}$



- $>10^{10}$
- **Clostridium perfringens** (газовая гангрена)
- **Enterococci** (Endocarditis, Abszesse)
- **Bacteroides** (Abszesse)
- **E.coli** (Sepsis)
- 1/5 has Clostridium botulinum !!!

A fluorescence microscopy image of a tissue section. The image shows a complex network of cells and fibers. The cells are primarily stained in a bright yellow/gold color, with some green staining visible in the lower right quadrant. The overall appearance is that of a dense, interconnected tissue structure.

Biopsie  
Сесит,  
здоровье

**биопсия здорового  
(sigma)**



**отсутствие барьера**  
*Bacteroides fragilis*, M. Crohn



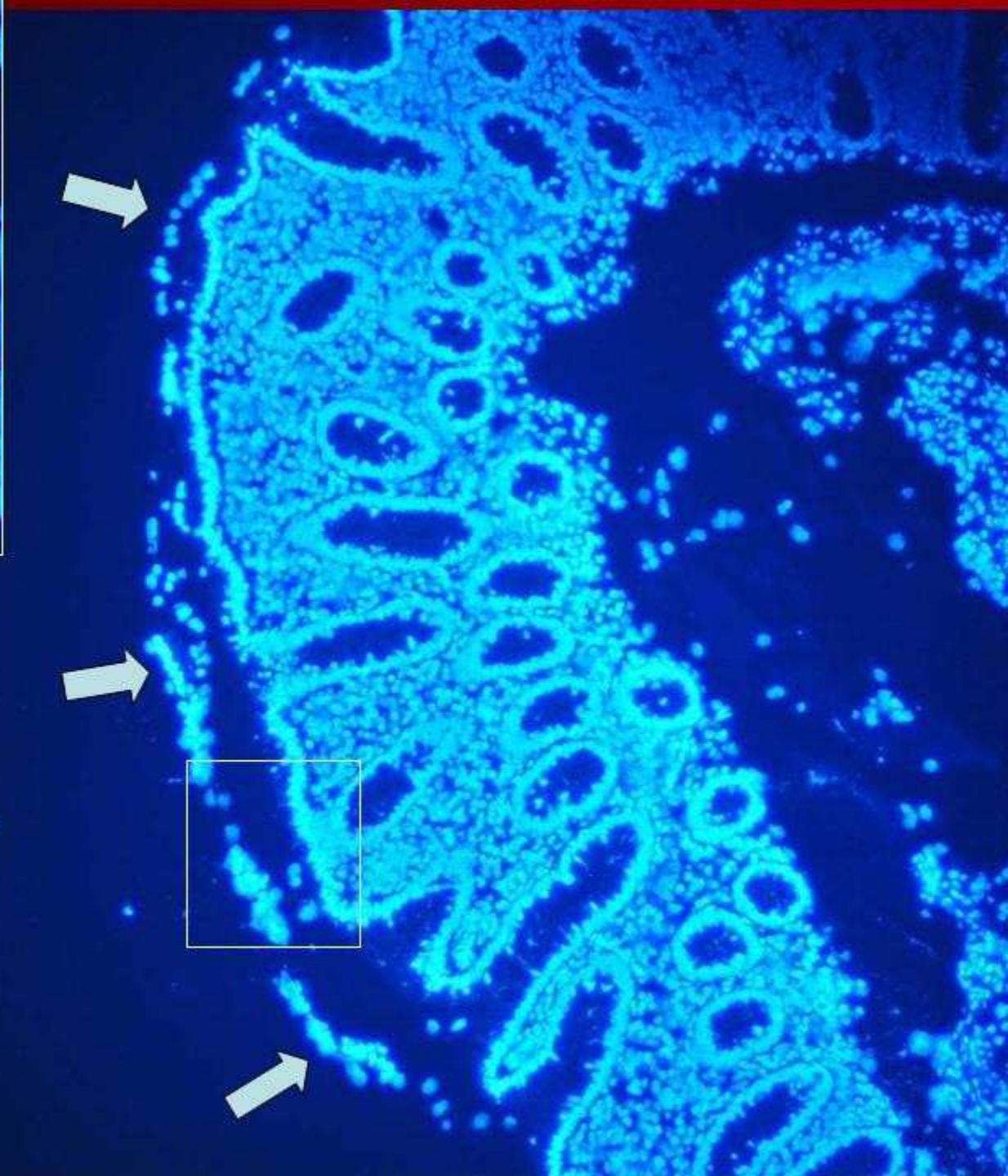
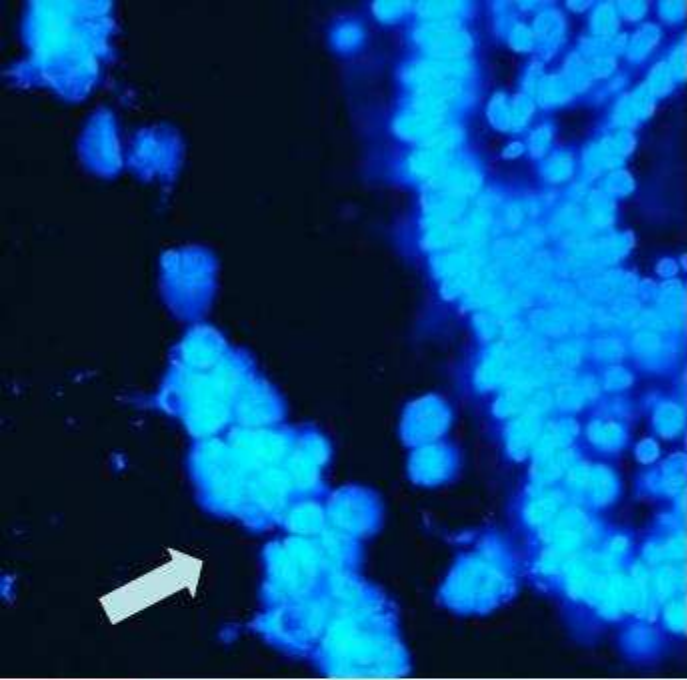
**внутриклеточное расположение бактерий надне крипт**



UC





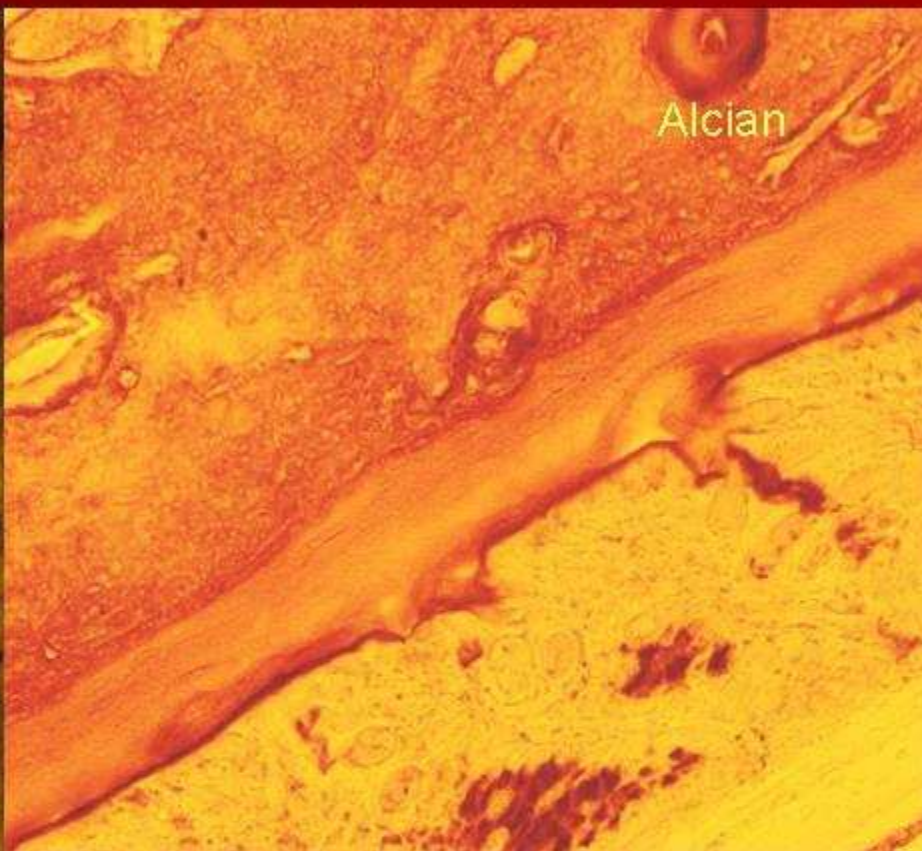
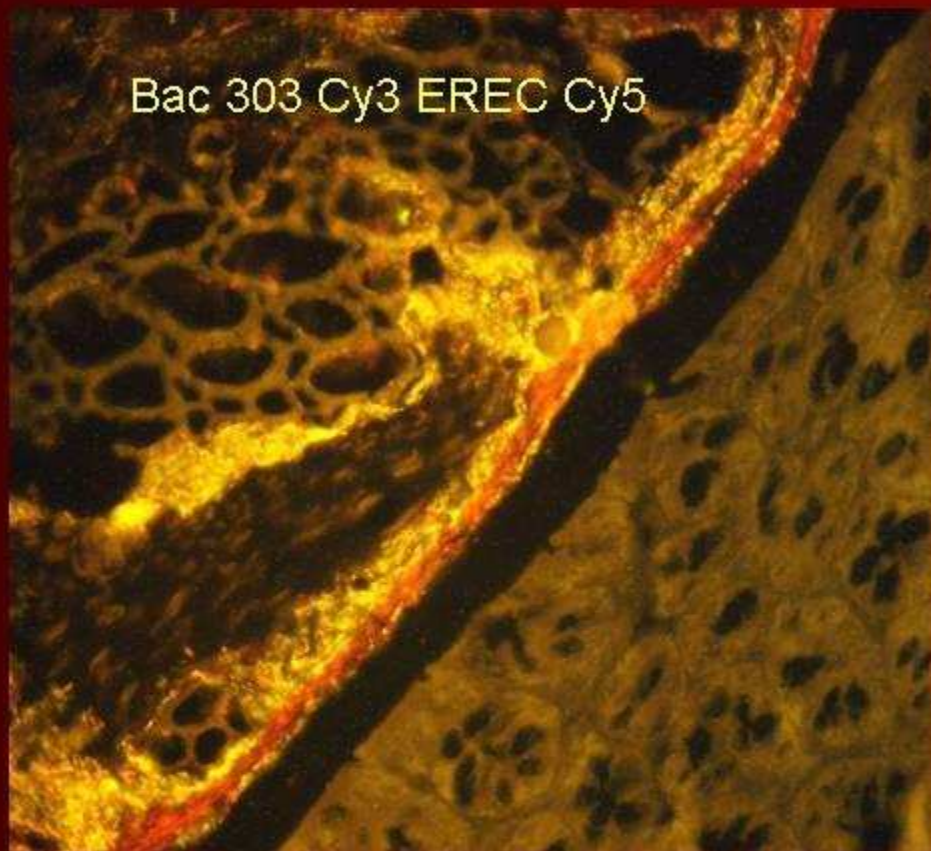


миграция лейкоцитов  
в слой слизи, UC

Плевм

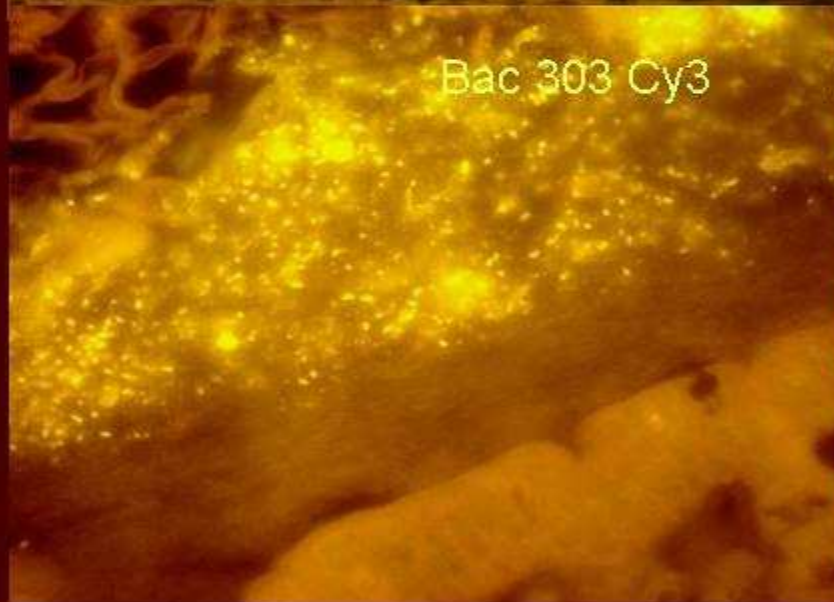
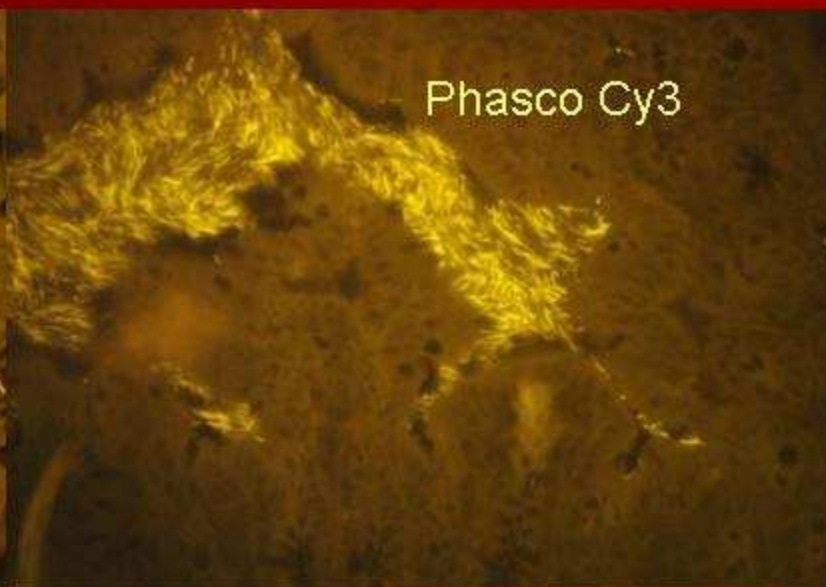
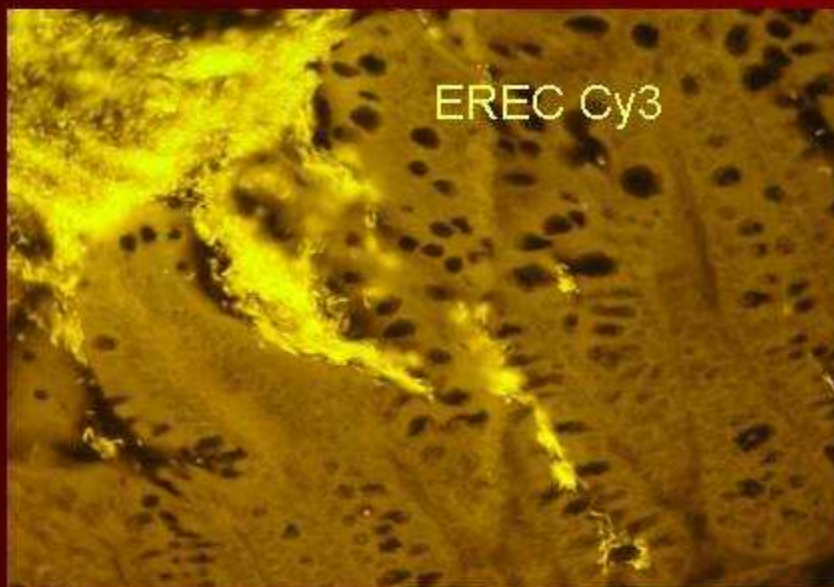
здоровая мышь





**distal colon**

**полное разделение бактерий и стенки слизистым слоем  
здоровая мышь**

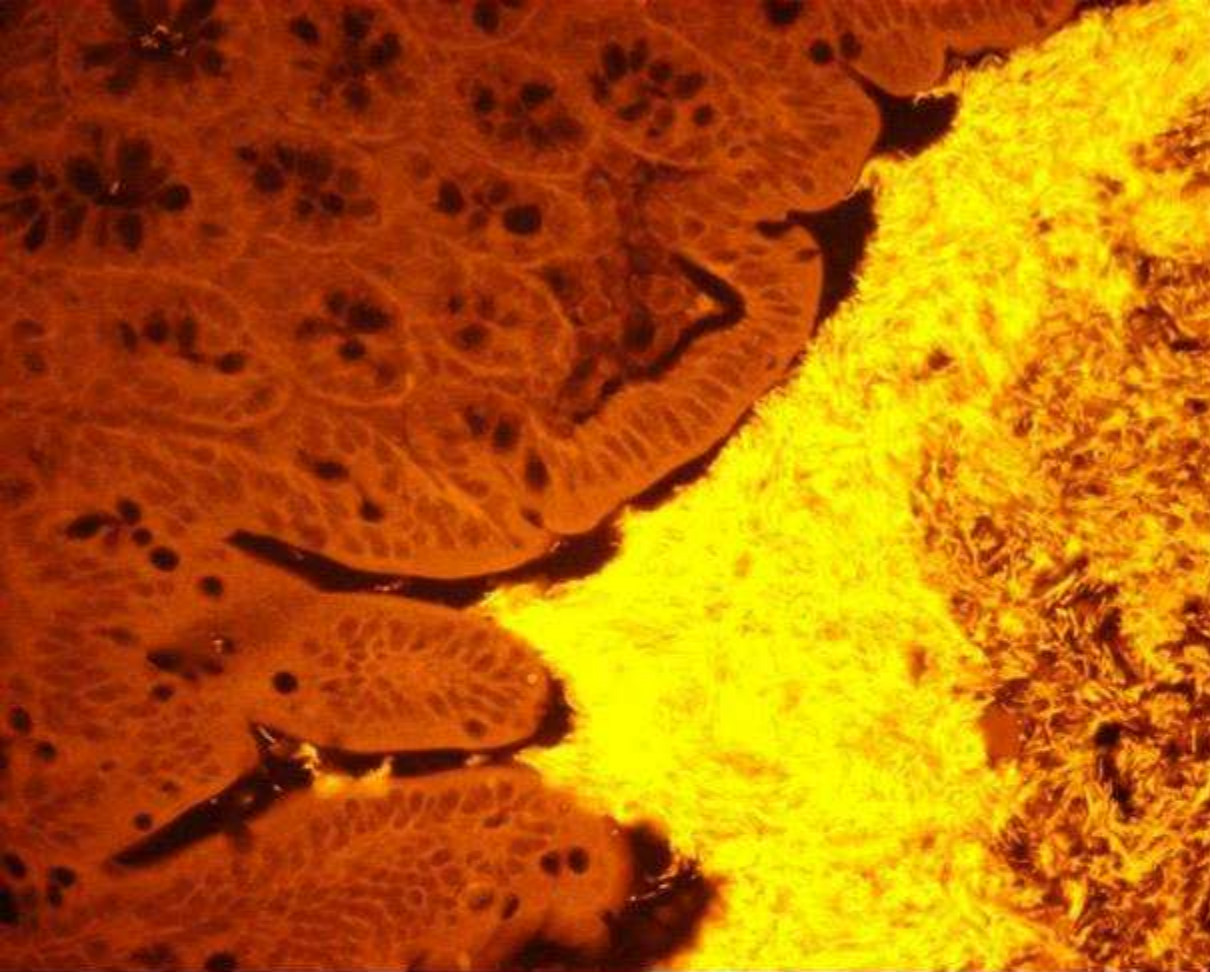


proximal Colon  
здоровая мышь



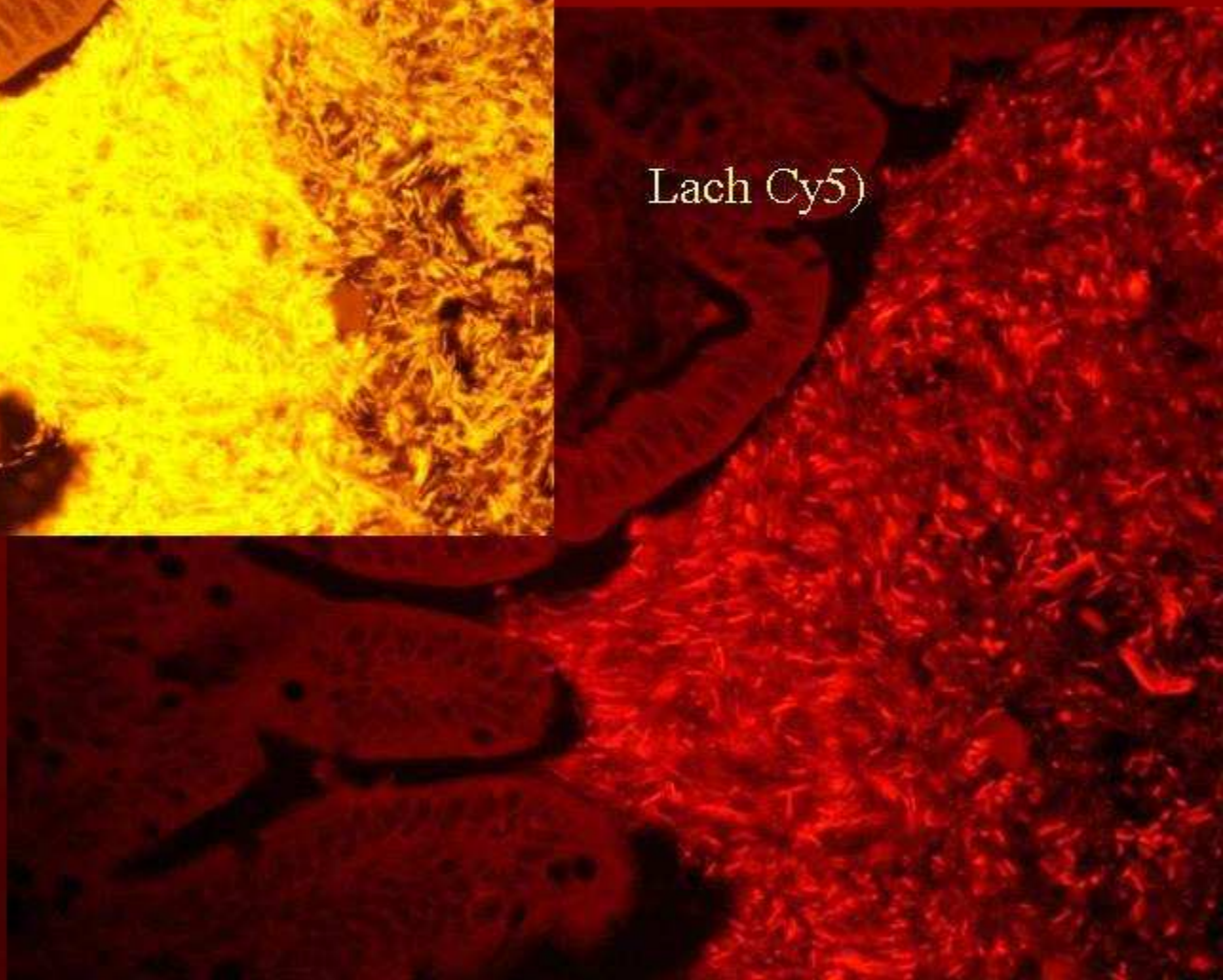
*Bacteroides,*  
*Enterobacteriaceae,*  
*Clostridium difficile,*  
*Veillonella* groups





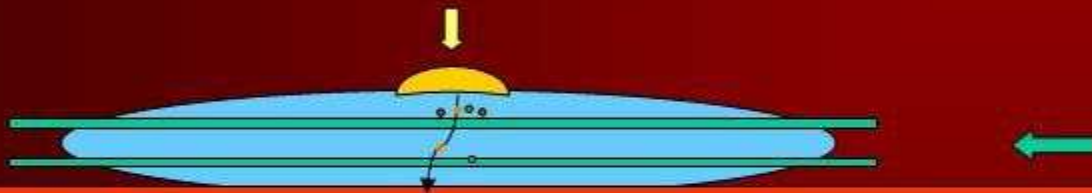
EREC  
Lab,  
Bif,  
Phasco  
Lach

Lach Cy5)

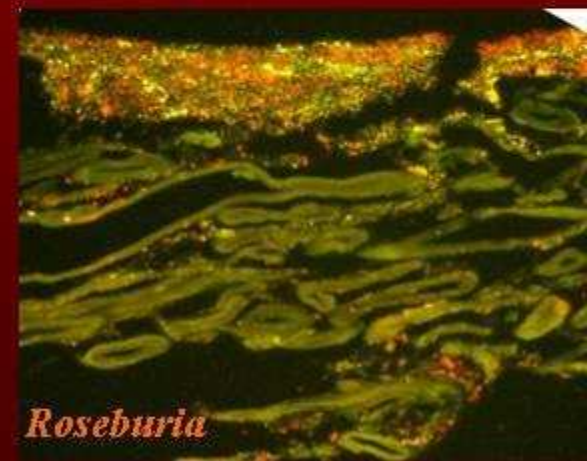
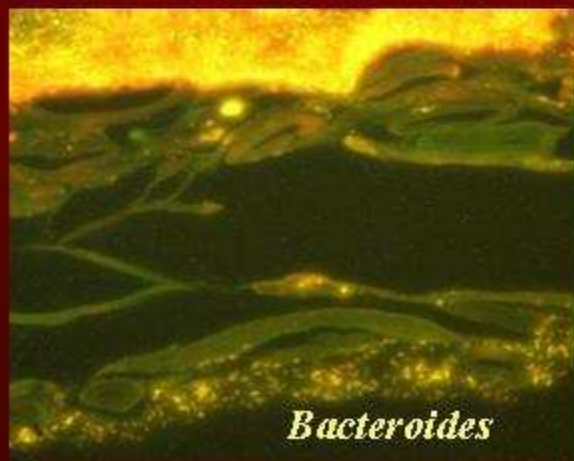
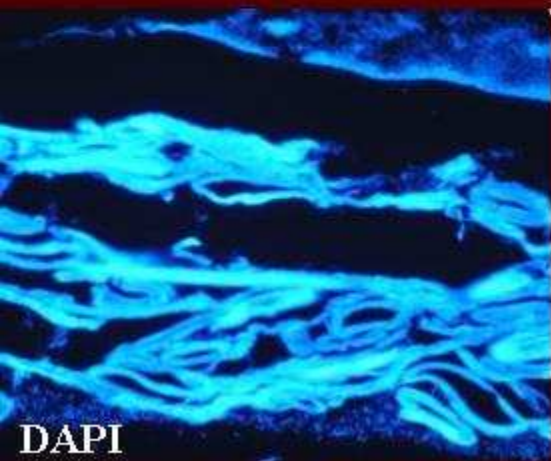


# Mukussimulation in vitro

взвесь фекальных бактерий



Blutagar



при низкой вязкости двигаются только коккоидные бактерии



0.2% Agarose



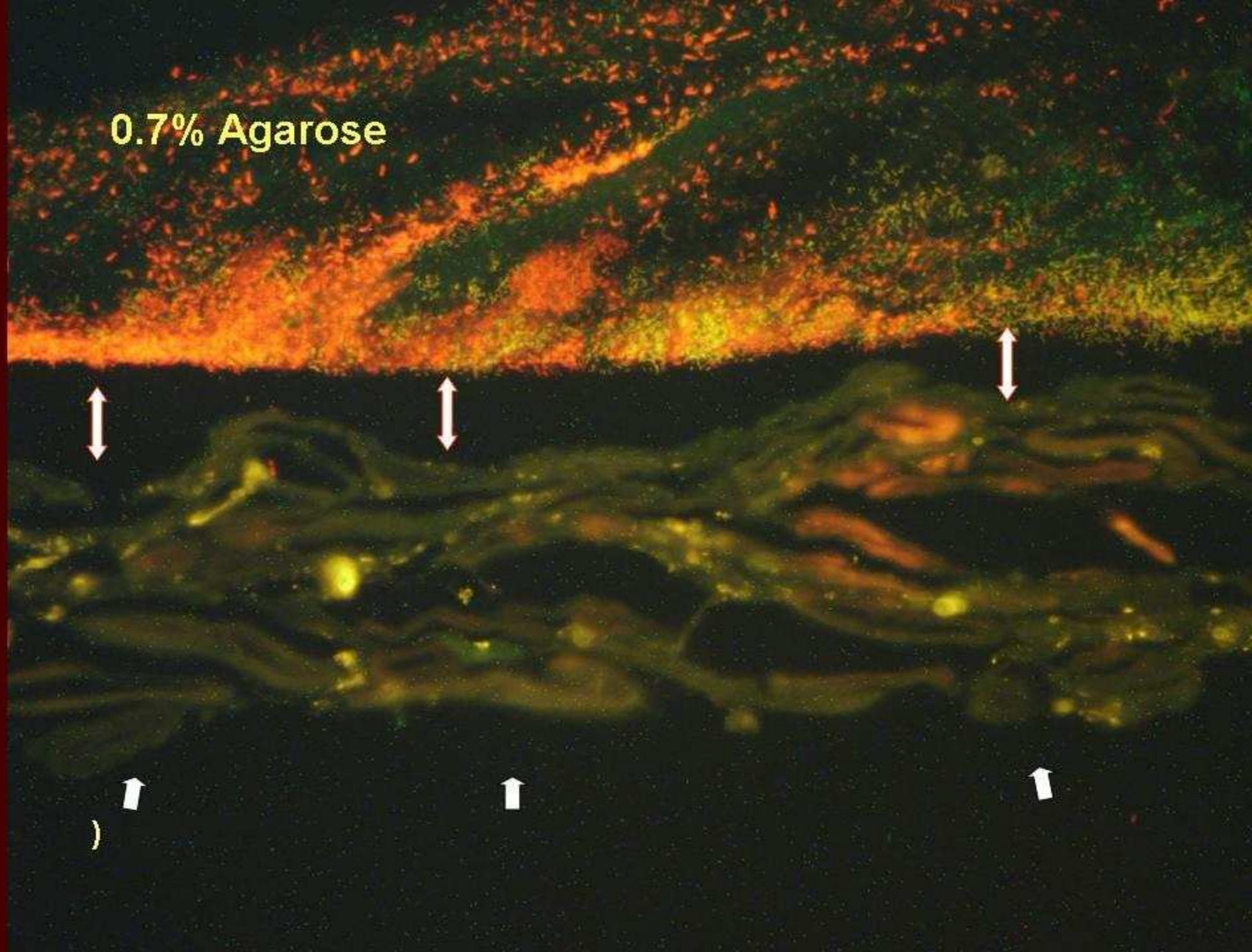
*(Roseburia, rot)*

при высокой вязкости двигаются только  
длинные штопорообразные бактерии

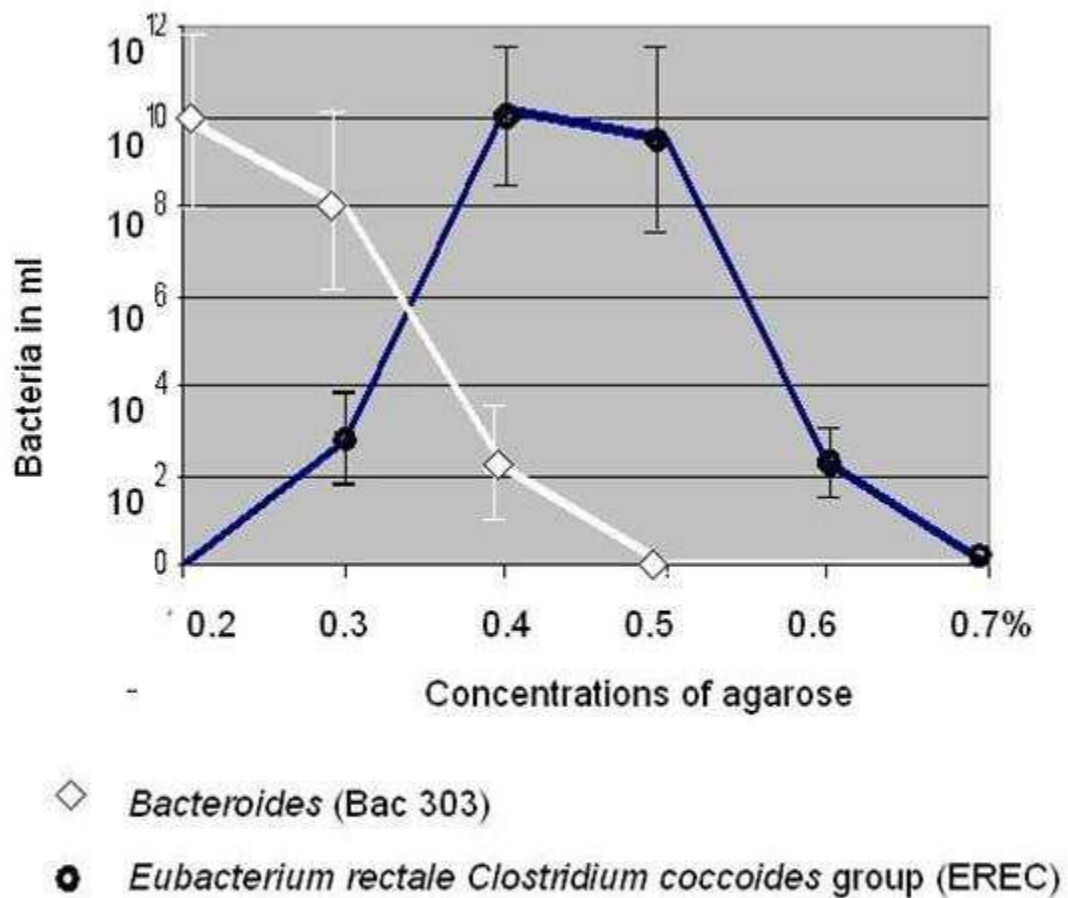
0.5% Agarose

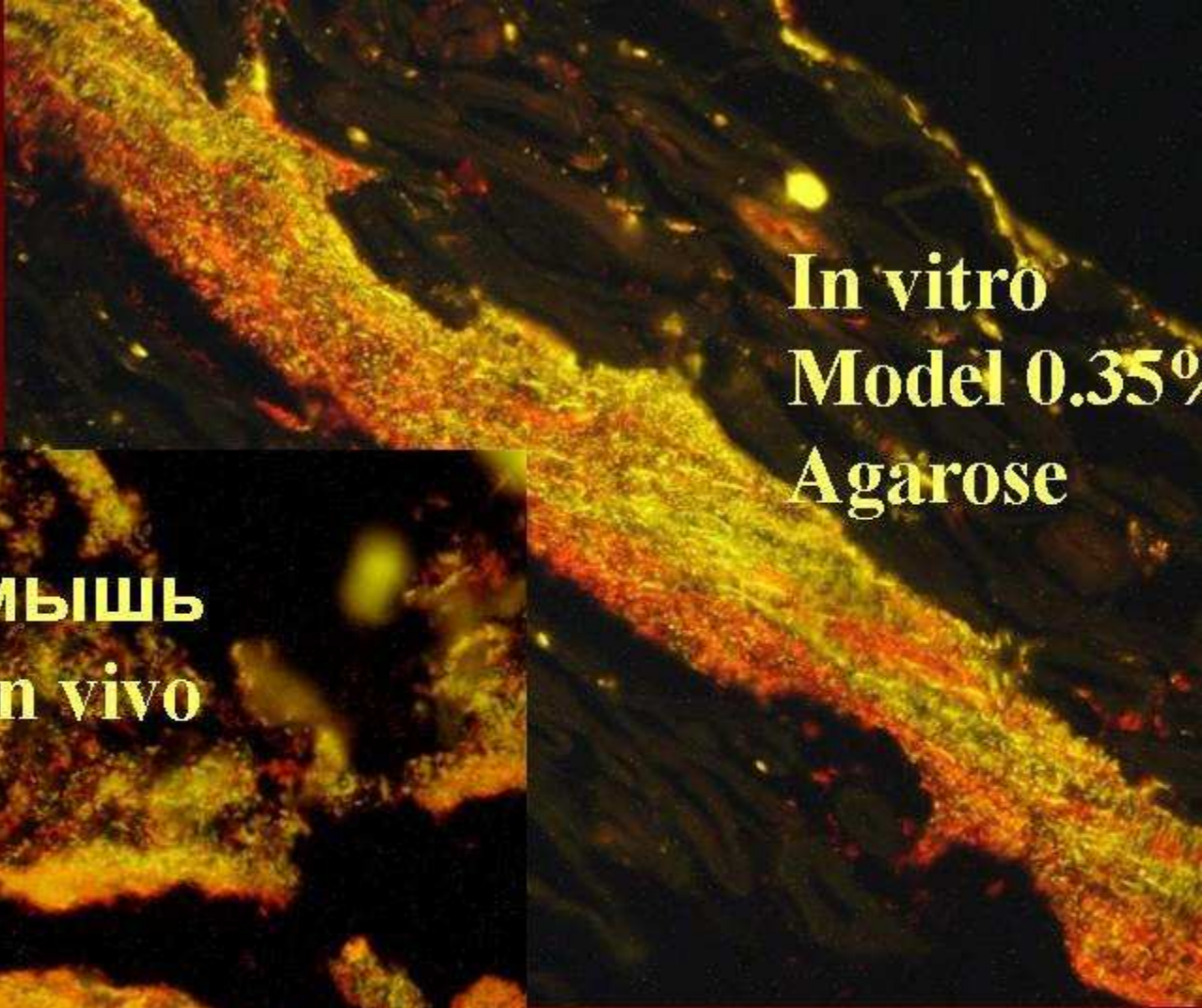


0.7% Agarose

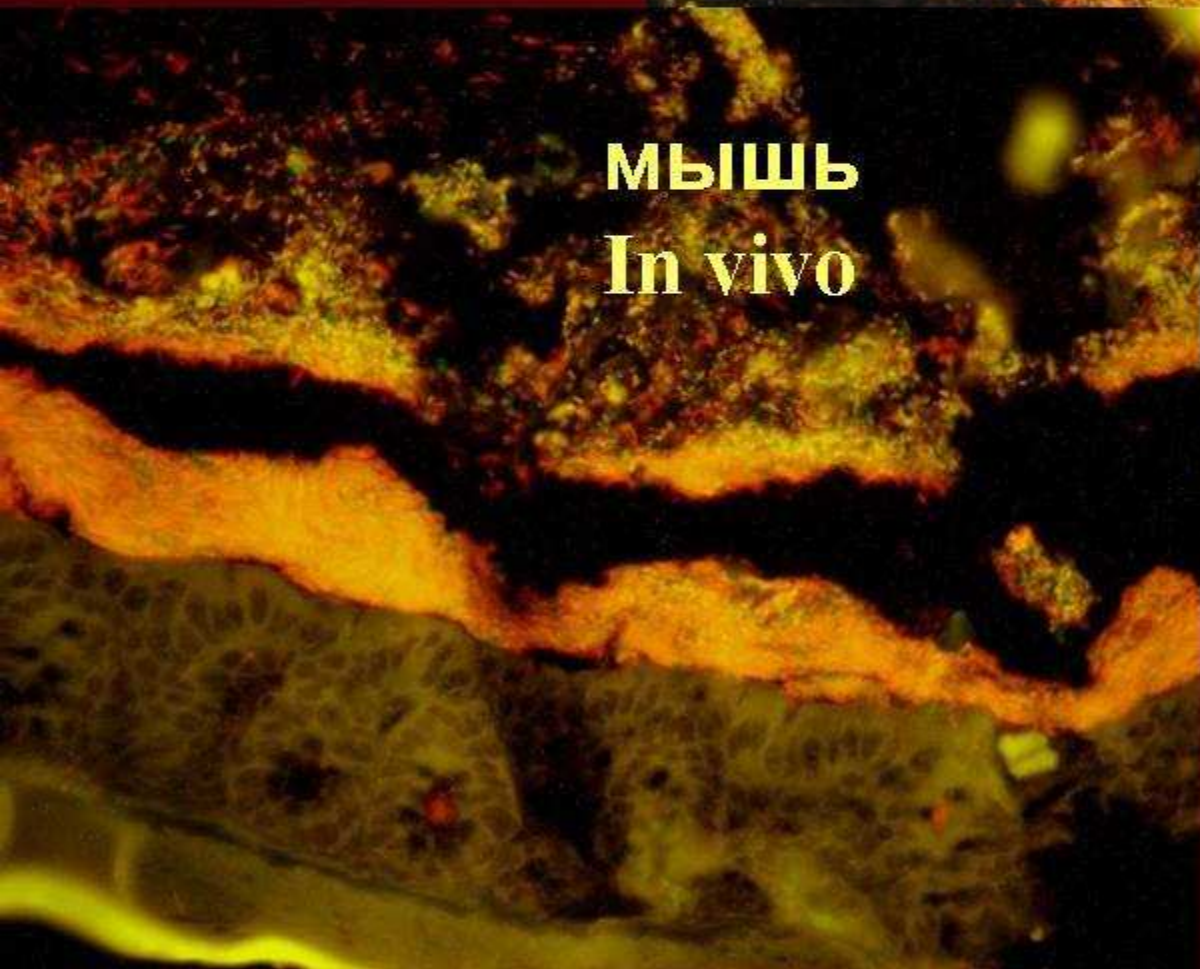


**Figure 2**

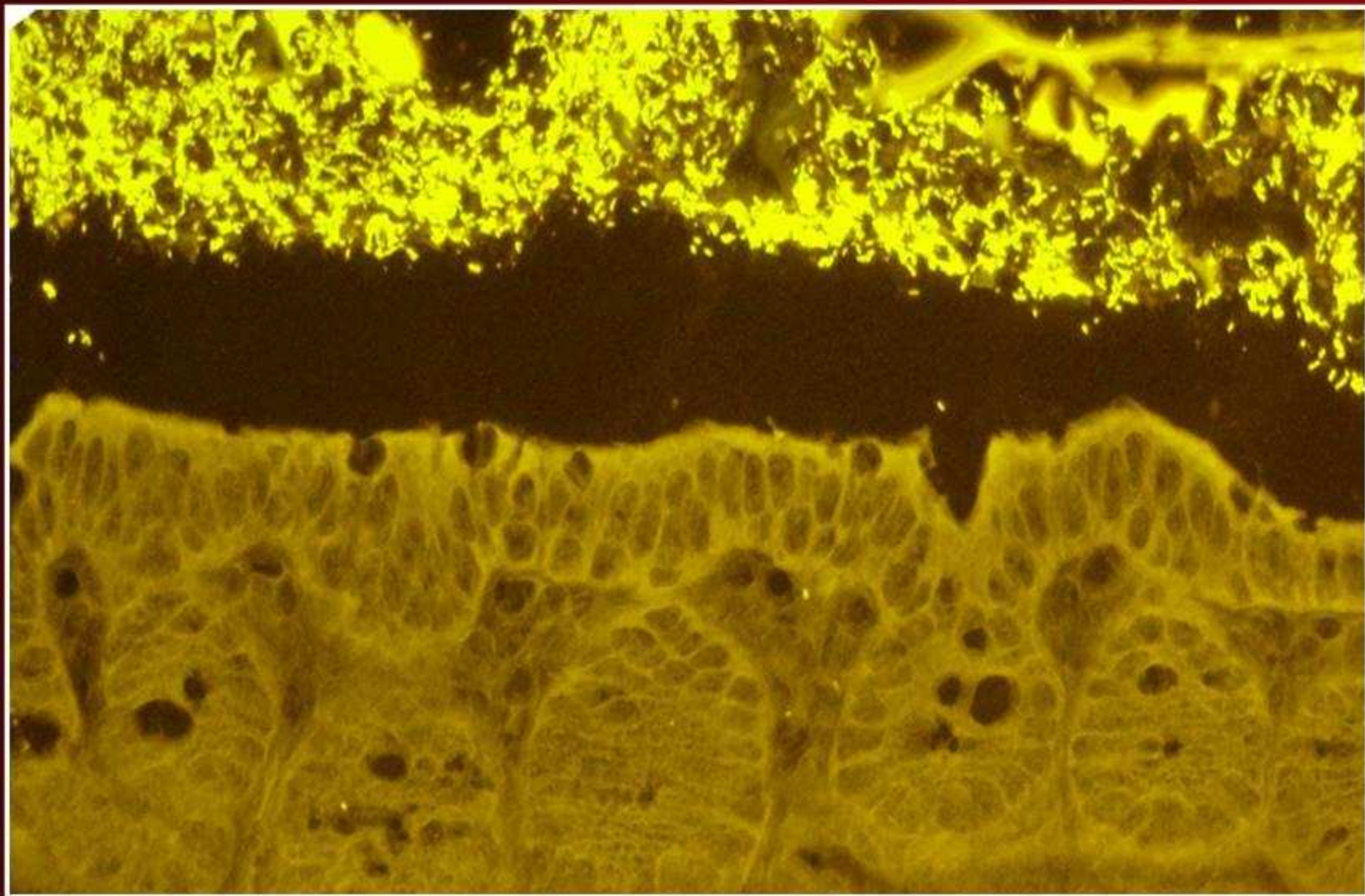




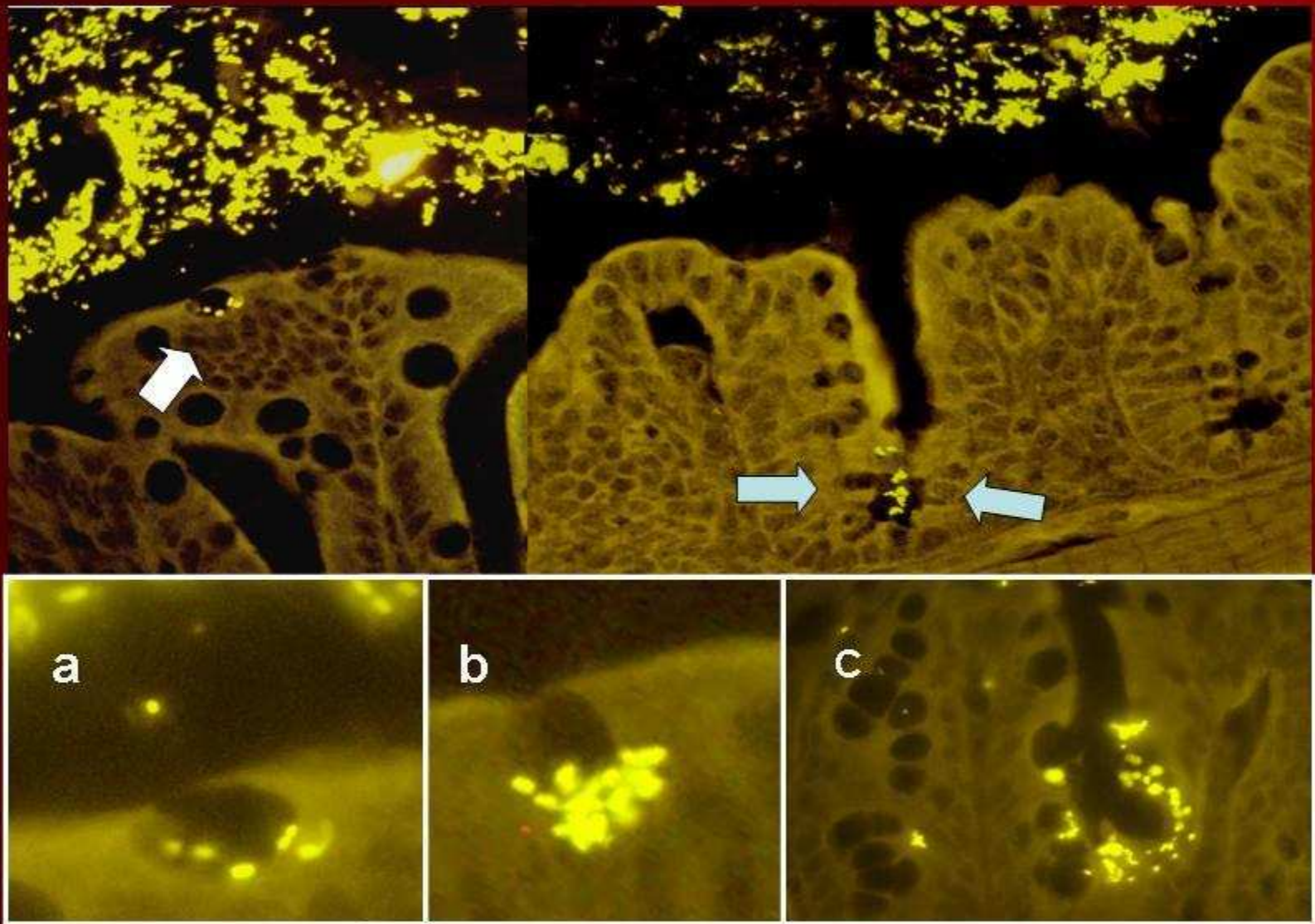
**In vitro**  
**Model 0.35%**  
**Agarose**



**МЫШЬ**  
**In vivo**



- **МЫШЬ**
- Distal Colon mono-ассоцииert, *Enterobacter cloacae*



**Мышь.** proximales Colon  
mono-assoziert *Enterobacter cloacae*

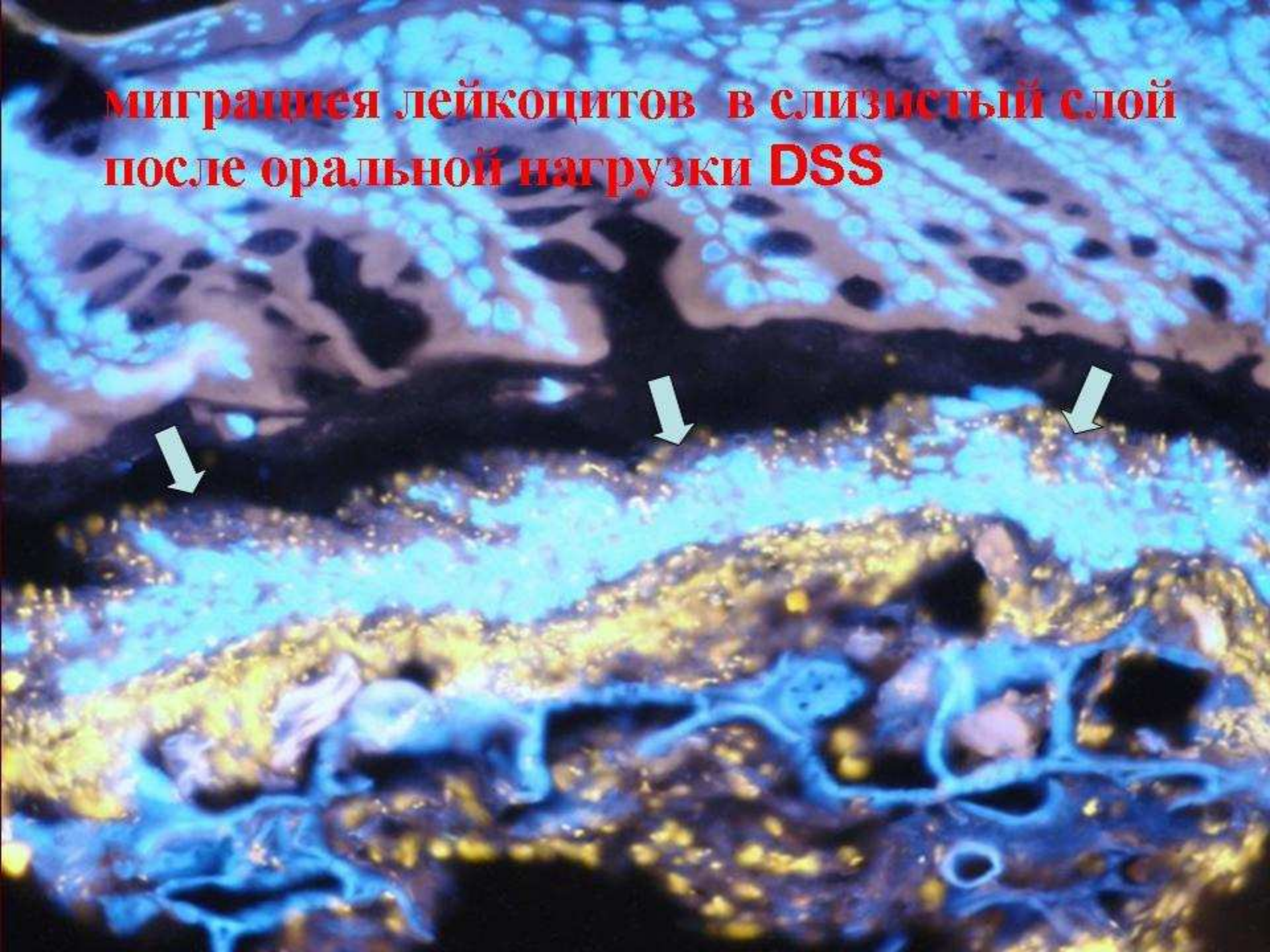
DSS

добавка мыл к агарозе позволяет бактериям двигаться  
до концентрации 0,9% (*Roseburia*)

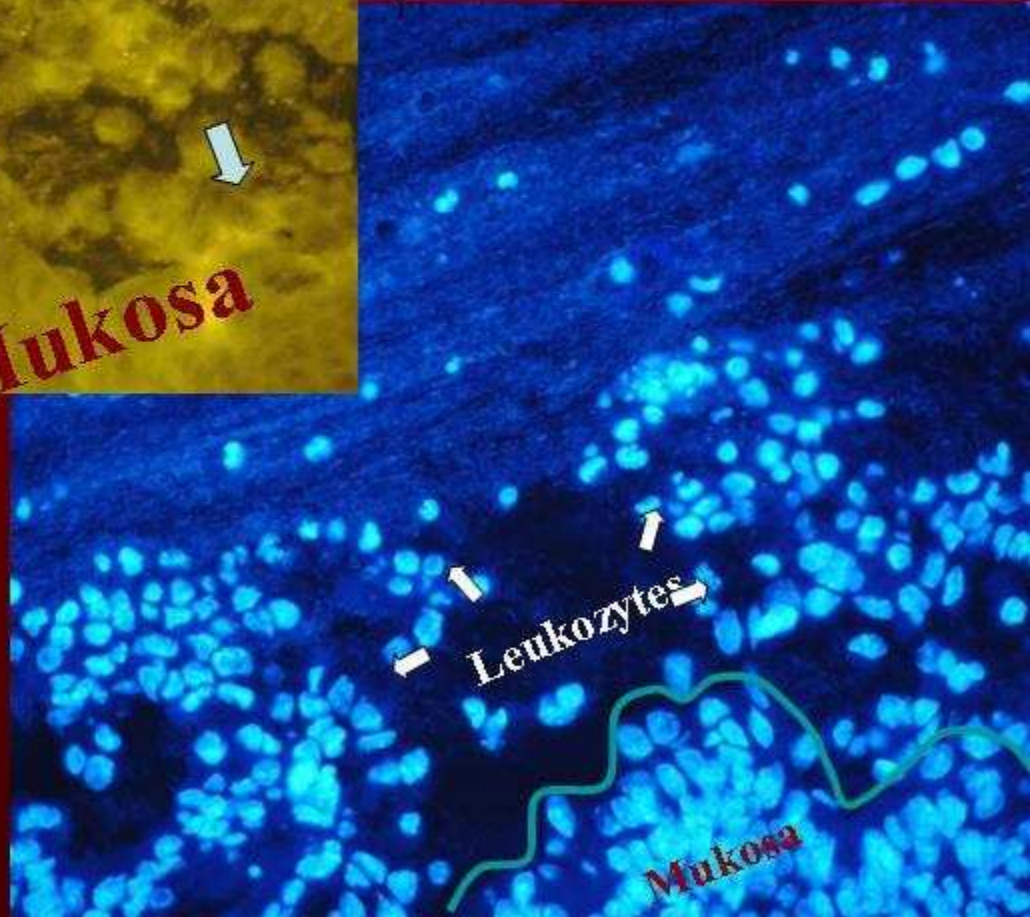
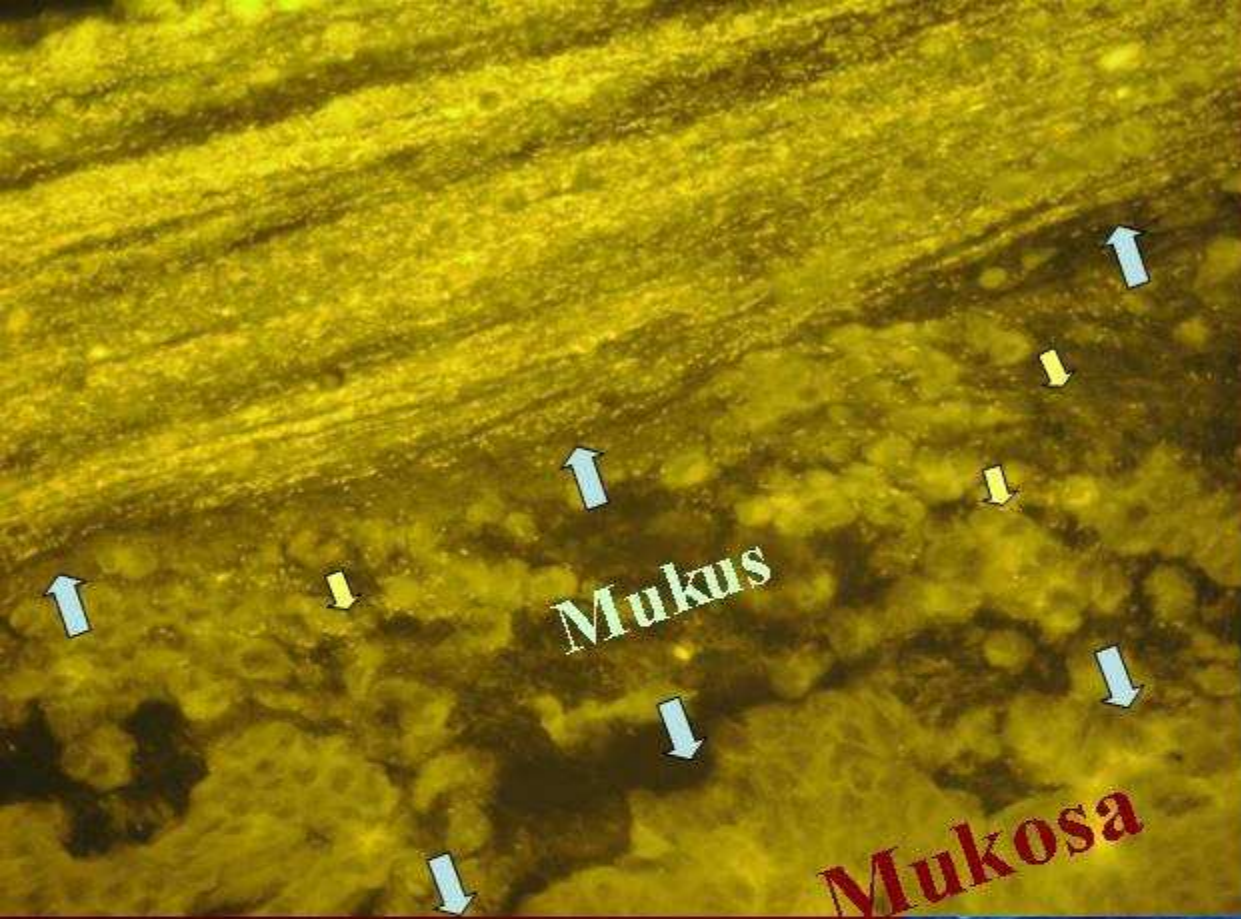
0.6% Agarose

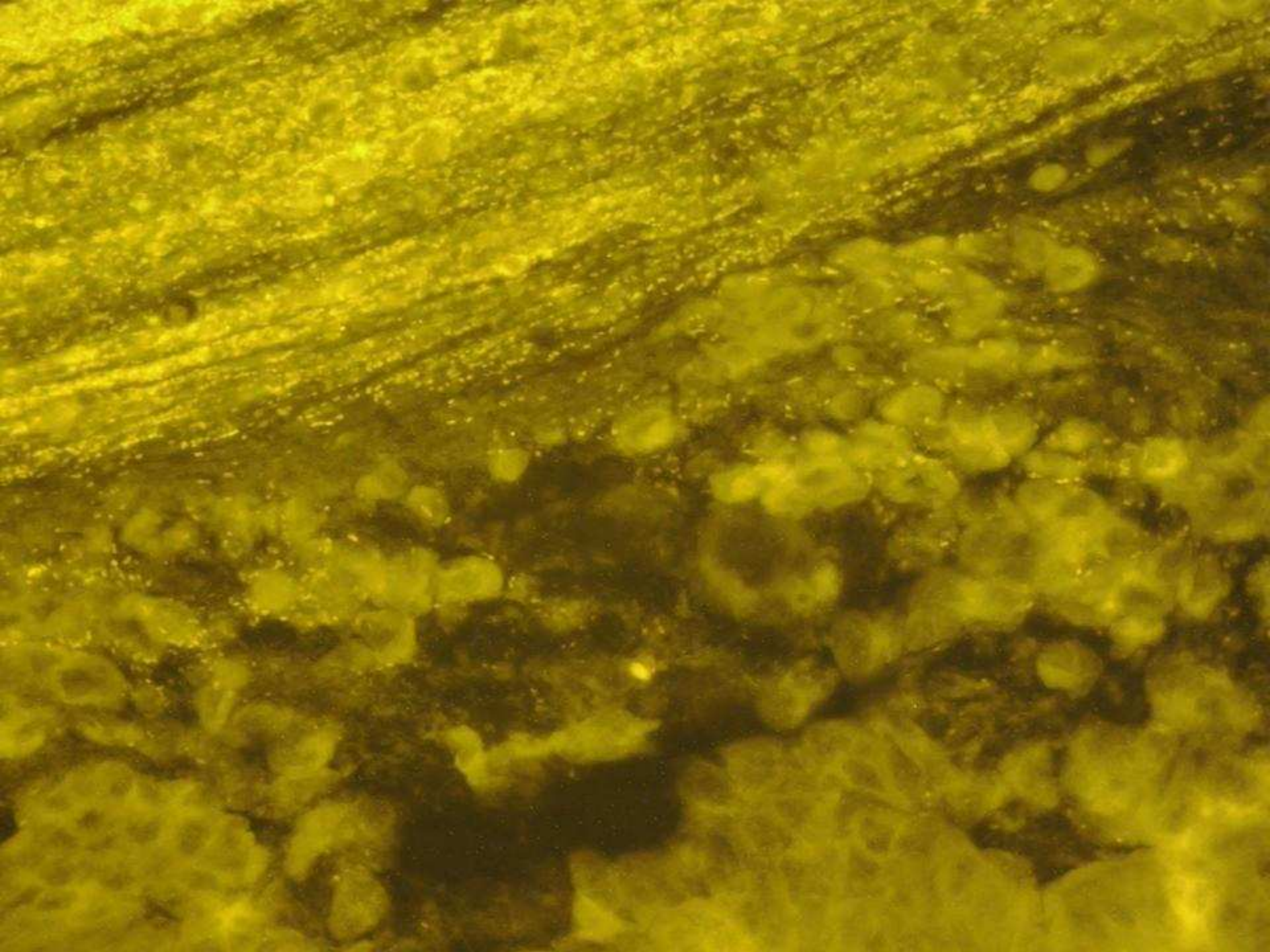
A fluorescence microscopy image showing a dense population of bacteria, likely Roseburia, on a 0.6% agarose surface. The bacteria are stained with a green fluorescent marker, and their movement is tracked by a yellow and orange trail. The background is dark, highlighting the bacterial structures and their migration paths.

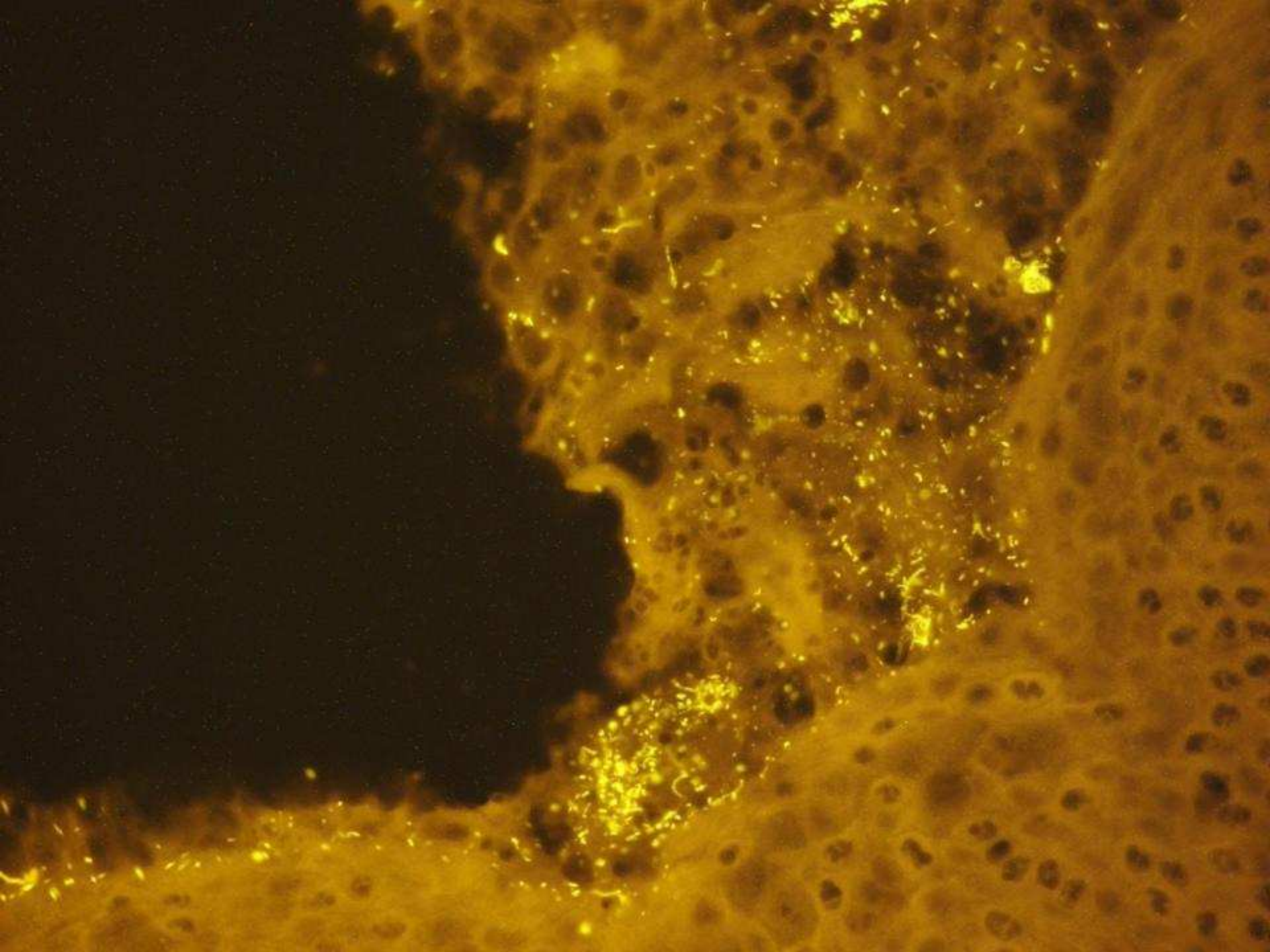
**миграция лейкоцитов в слизистый слой  
после оральной нагрузки DSS**

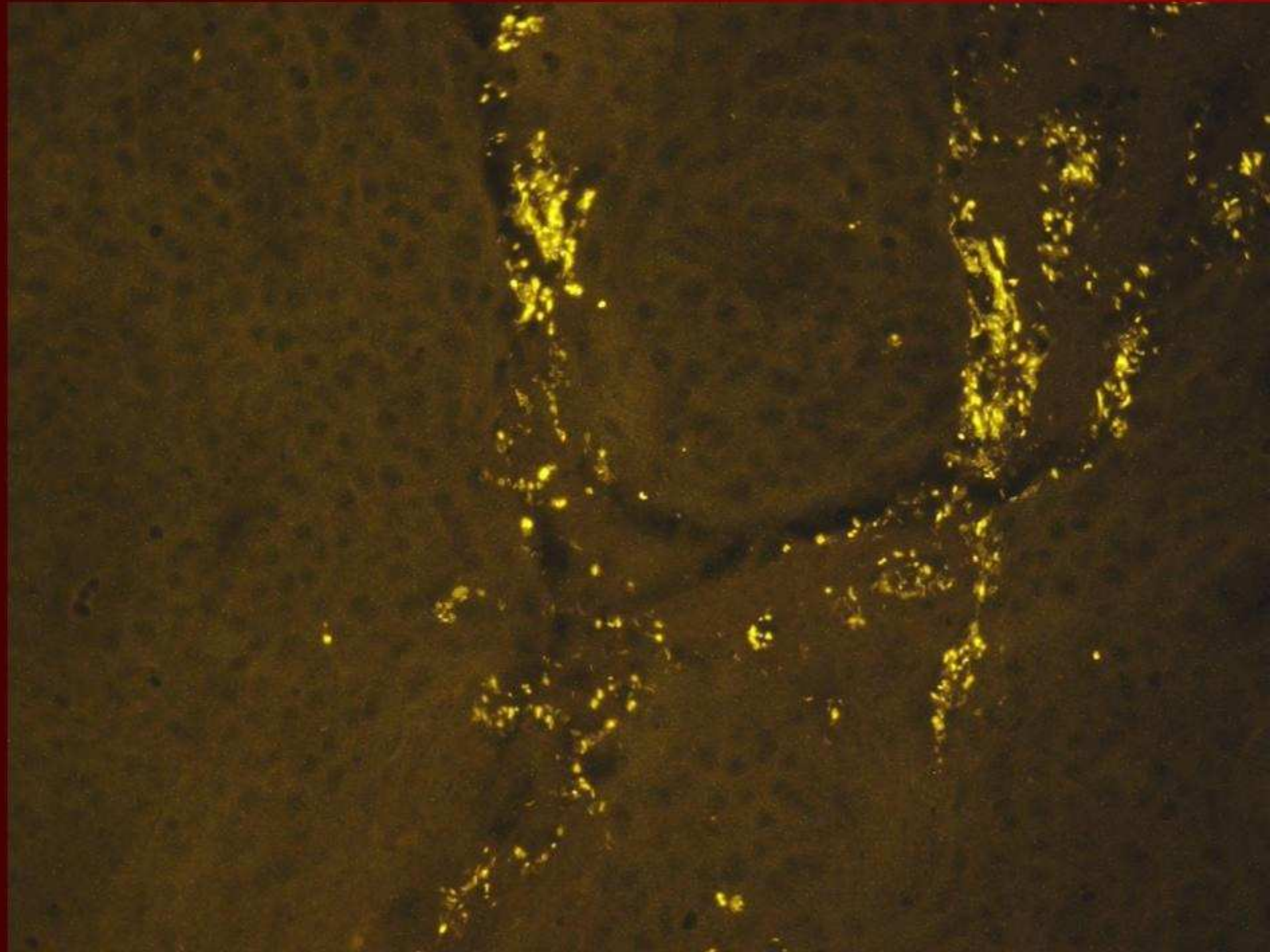






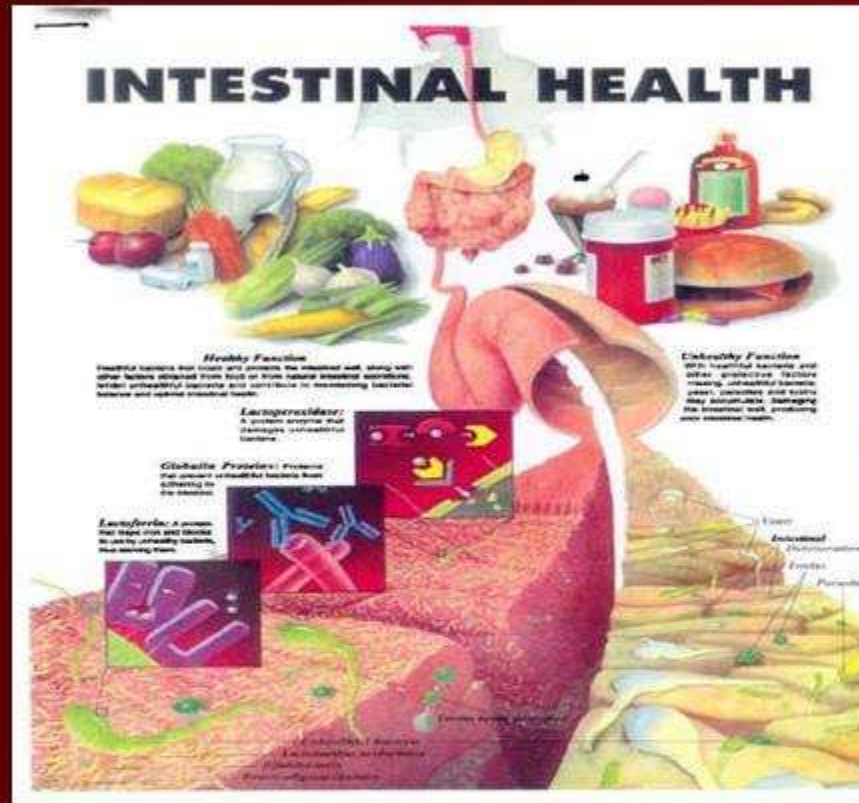






# Toleranz

Здоровая  
флора



# Immunity

патогенная  
флора



*E. coli*

*Bacteroides*

*Clostridium difficile, perfringens, botulinum.....*

*Enterococci*

*Salmonella*

*Shigella*

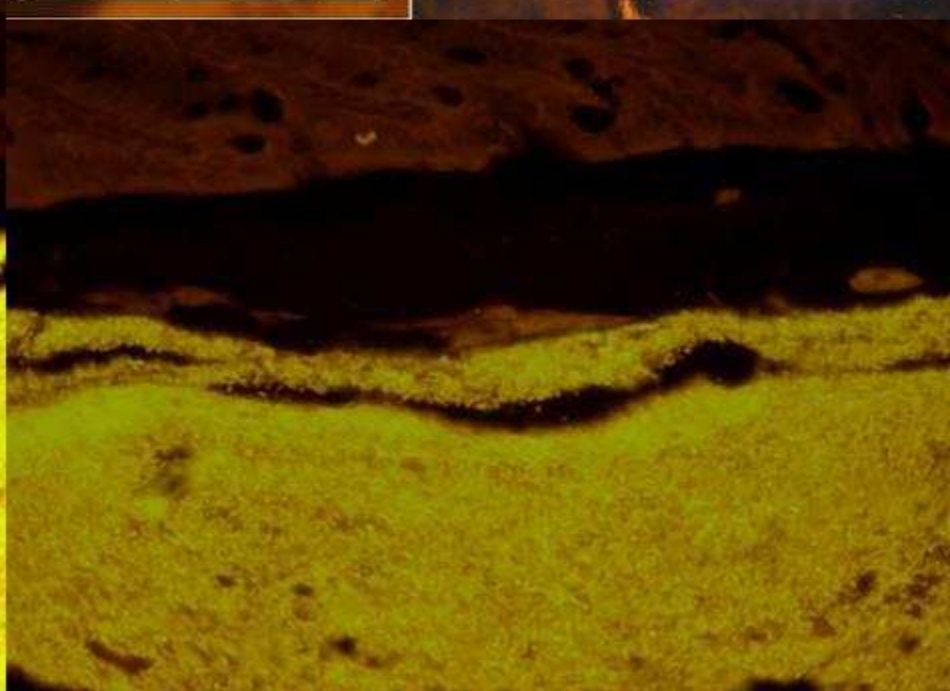
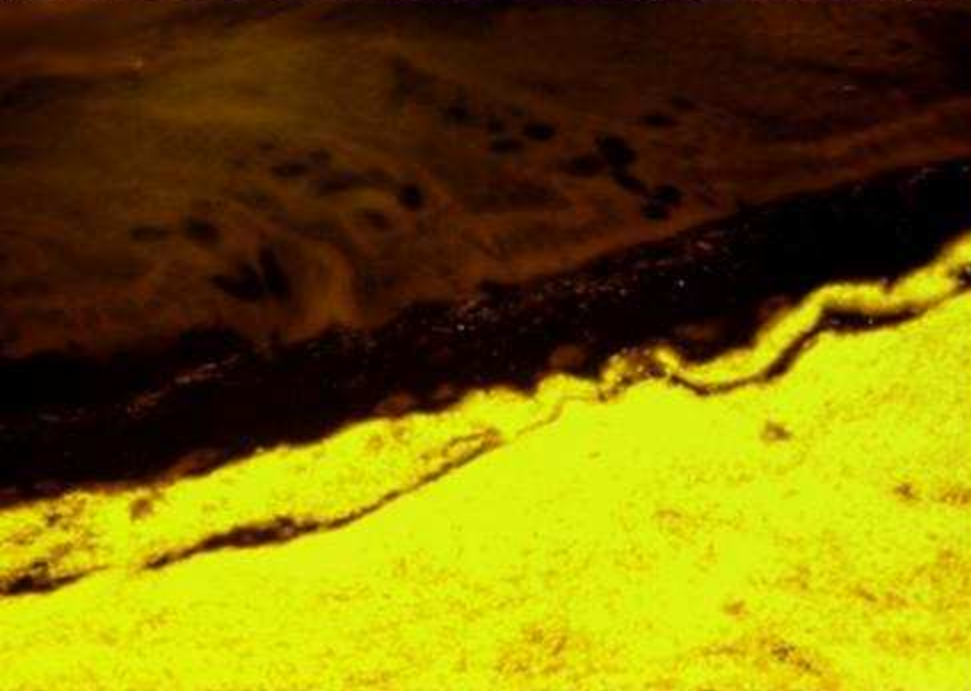
здоровая слизистая защищена изолирующим слоем  
мукуса от высоко концентрированных возбудителей

*Bacteroides, Entero-bacteriaceae, Enterococci, Clostridium  
difficile* können

в хронических воспалительных заболеваниях кишечника  
этого разграничения нет и воспаление безгранично

50  $\mu\text{m}$

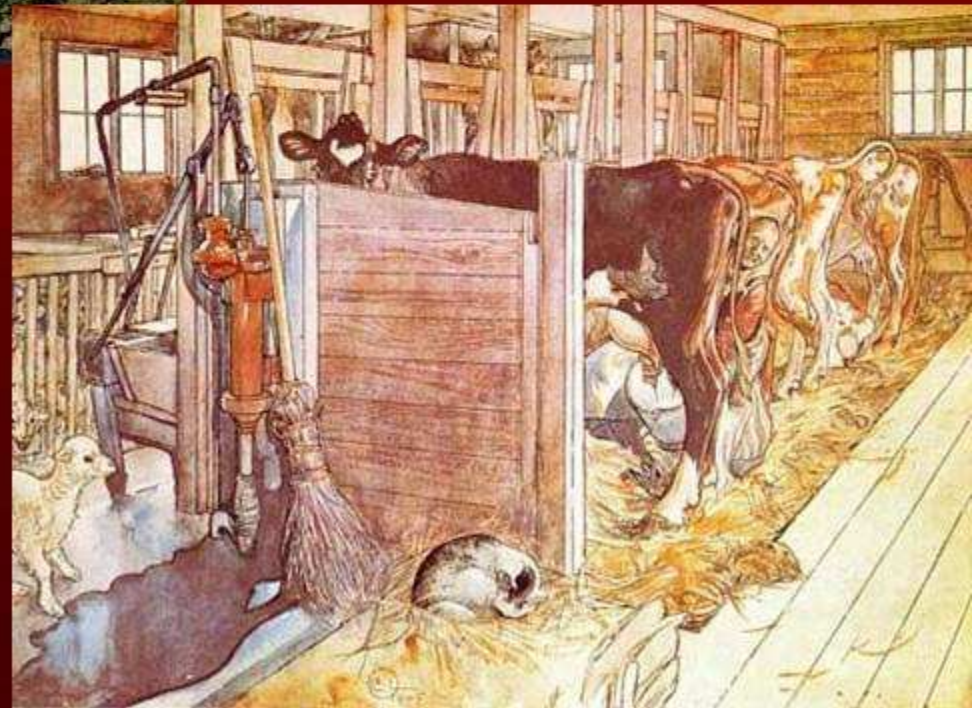
100  $\mu\text{m}$





## Hygienehypothese

GO  
BACK!



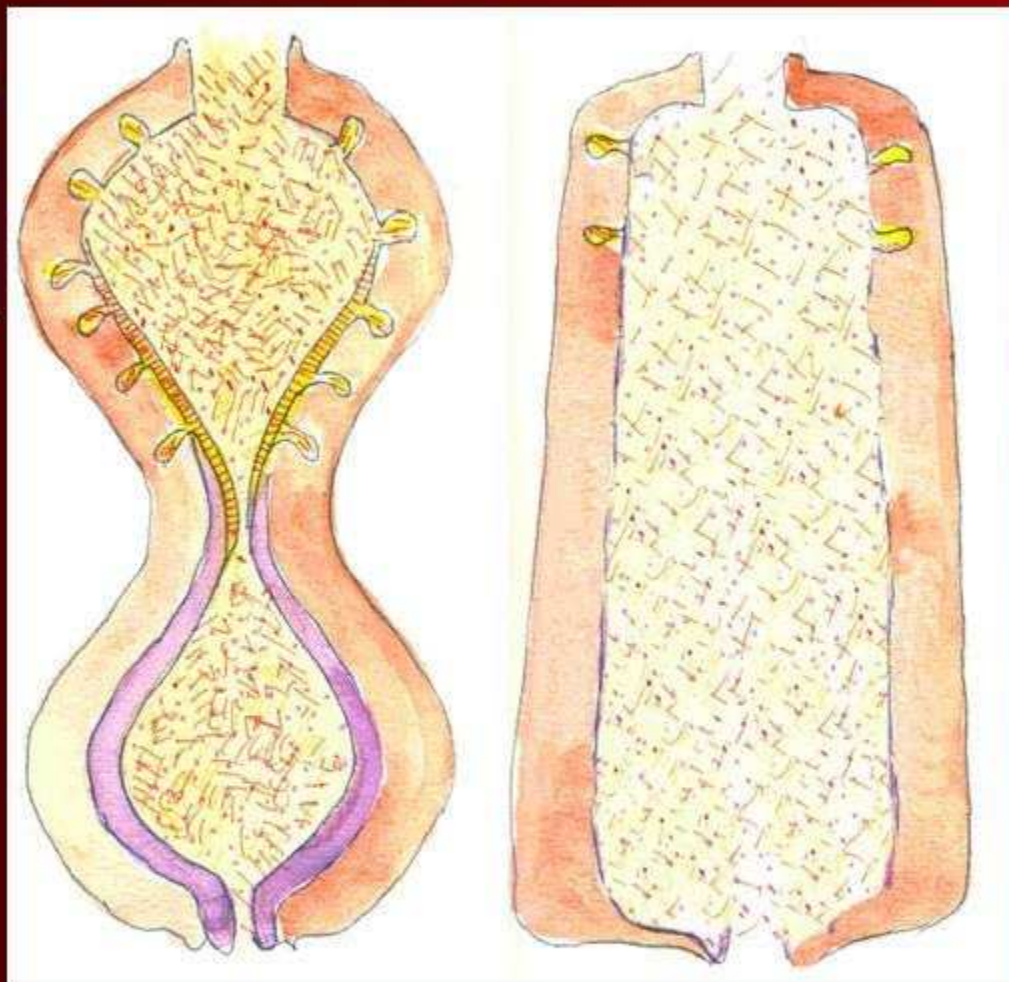
*Kochen mit dem WOK*



Indien, **Mini Auberginen**,  
Südafrika, **Mini Zucchini**,  
Peru, **Mini Spargel grün oder**  
Kenia, **Kaiserschoten**  
Kl. I, 100 g = 1.00, **je 200-g-Packung**

**1 99**  
◆





детергенты чистят е только вокруг но и внутри  
навроде DSS у мышки

## Факторы влияния на слизистый барьер

### Exogen

Detergentien:

Pathogene:

Glutene

Курение

### Endogen

желчные кислоты

Defensine,

Probiotika, Prebioticka,

Immunanty

Peristaltik

Neuroregulation

### Genetisch

NOD 2 Mutation und andere

[E425](#), Konjak

[E432 bis E436](#), Polysorbat

- E432, Polyoxyethylen-sorbitan-monolaurat (Polysorbat 20)
- E433, Polyoxyethylen-sorbitan-monoololat (Polysorbat 80)
- E434, Polyoxyethylen-sorbitan-monopalmitat (Polysorbat 40)
- E435, Polyoxyethylen-sorbitan-monostearat (Polysorbat 60)
- E436, Polyoxyethylen-sorbitan-tristearat (Polysorbat 65)

[E440](#), Pektine, Amidiertes Pektin

[E442](#), Ammoniumsalze von Phosphatidsäuren

[E444](#), Saccharose-acetat-isobutyrat

[E445](#), Glycerinester aus WurzelharzKolophonester

[E450 bis E452](#), Phosphate

[E459](#), Beta-Cyclodextrin

[E460 bis E469](#) Cellulose und Celluloseverbindungen

- E460, Cellulose, Mikrokristalline Cellulose, Cellulosepulver
- E461, Methylcellulose
- E463, Hydroxypropylcellulose
- E464, Hydroxypropylmethylcellulose
- E465, Ethylmethylcellulose
- E466, Carboxymethylcellulose, Natriumcarboxymethylcellulose
- E468, Vernetzte Natrium-Carboxymethylcellulose
- E469, Enzymatisch hydrolysierte-Carboxymethylcellulose
- [E470a und E470b](#), Salze von Speisefettsäuren
- E470a, Natrium-, Kalium- und Calciumsalze von Speisefettsäuren
- E470b, Magnesiumsalze von Speisefettsäuren

[E471 bis E472f](#), Mono- und Diglyceride von Speisefettsäuren

- E471, Mono- und Diglyceride von Speisefettsäuren, Monoglycerid
- E472a, Essigsäureester von Mono- und Diglyceriden von Speisefettsäuren
- E472b, Milchsäureester von Mono- und Diglyceriden von Speisefettsäuren
- E472c, Citronensäureester von Mono- und Diglyceriden von Speisefettsäuren
- E472d, Weinsäureester von Mono- und Diglyceriden von Speisefettsäuren
- E472e, Mono- und Diacetylweinsäureester von Mono- und Diglyceriden von Speisefettsäuren
- E472f, Gemischte Essig- und Weinsäureester von Mono- und Diglyceriden von Speisefettsäuren

[E473](#), Zuckerester von Speisefettsäuren

[E474](#), Zuckerglyceride

[E475](#), Polyglycerinester von Speisefettsäuren, Polyglycerinester

[E476](#), Polyglycerin-Polyricinoleat

[E477](#), Propylenglycolester von Speisefetten

[E479](#), Thermooxidiertes Sojaöl mit Mono- und Diglyceriden von Speisefettsäuren

[E481 bis E483](#), Natriumstearoyl-2-lactylat, Calciumstearoyl-2-lactylat,

Stearyltartrat

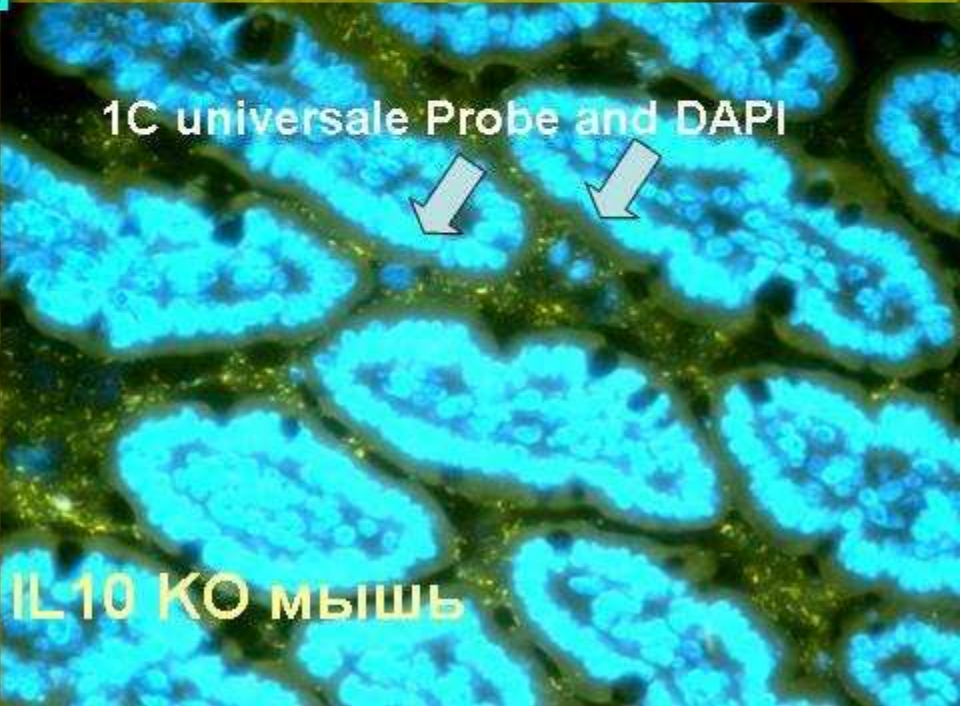
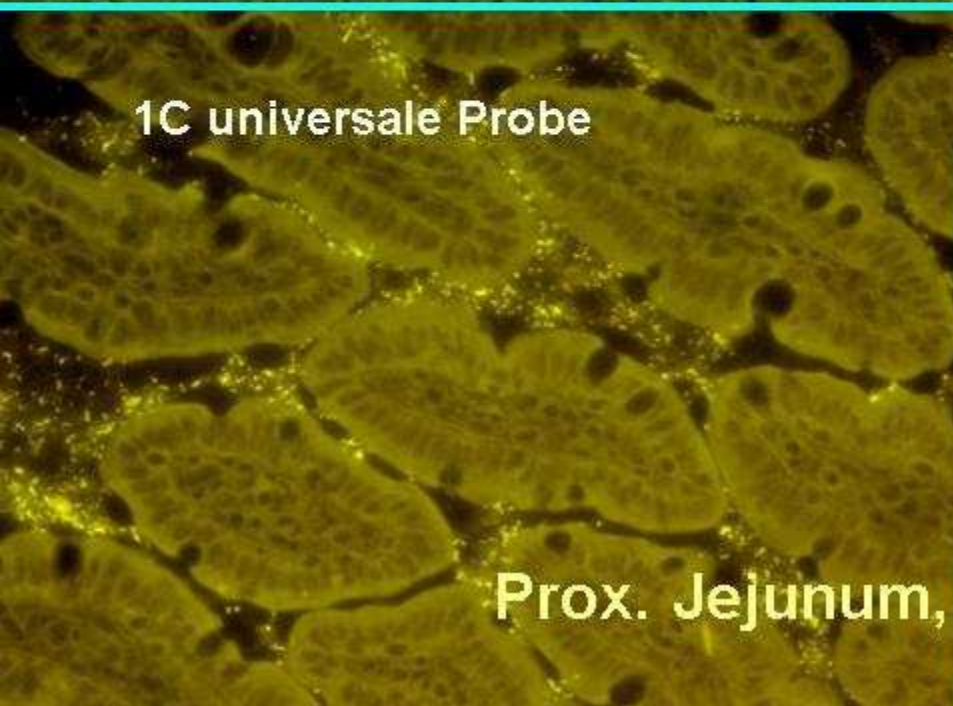
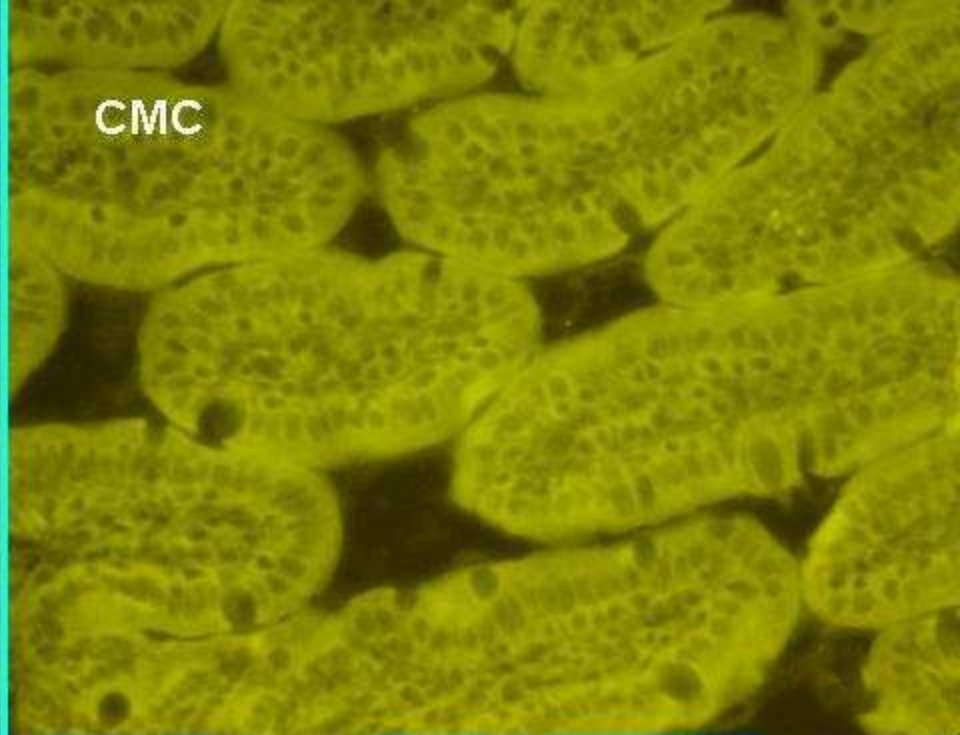
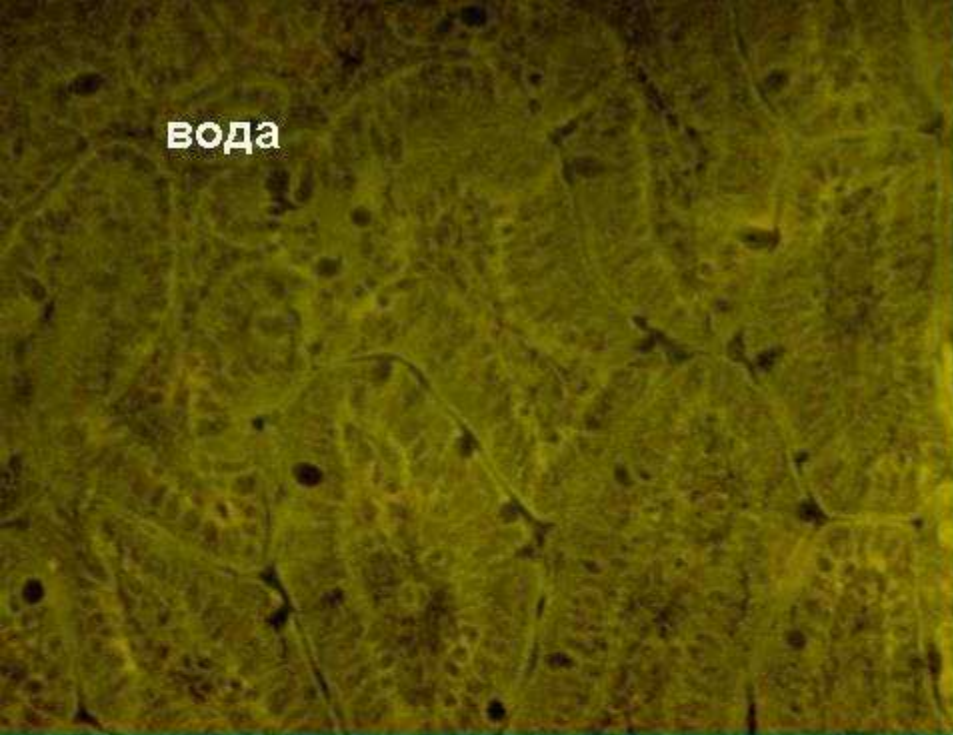
[E491 bis E495](#), Stearin- und Palmitatverbindungen

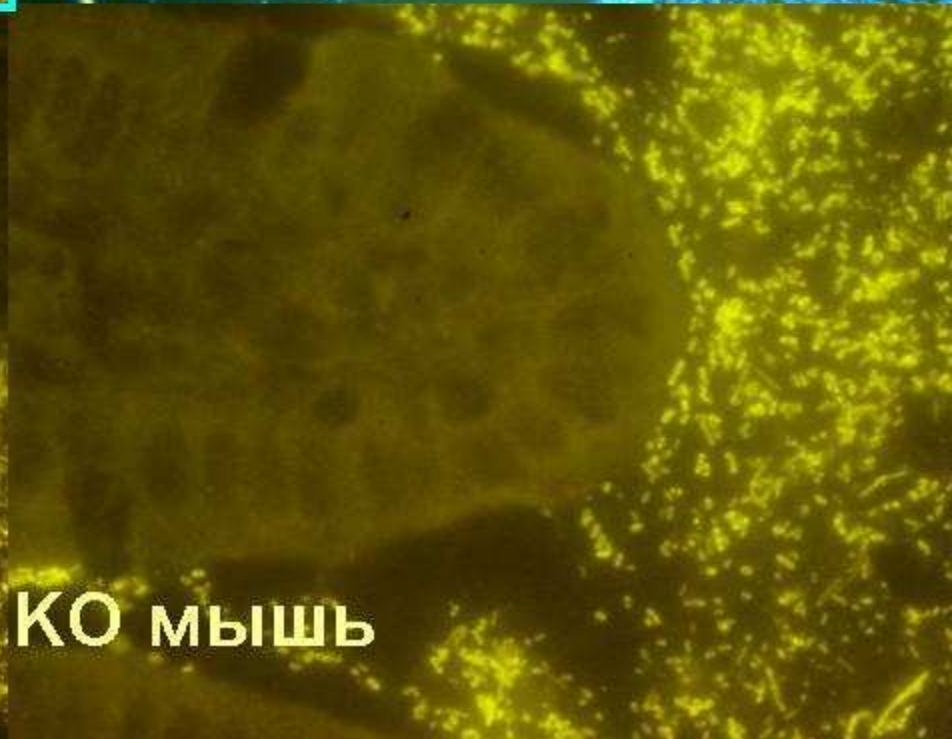
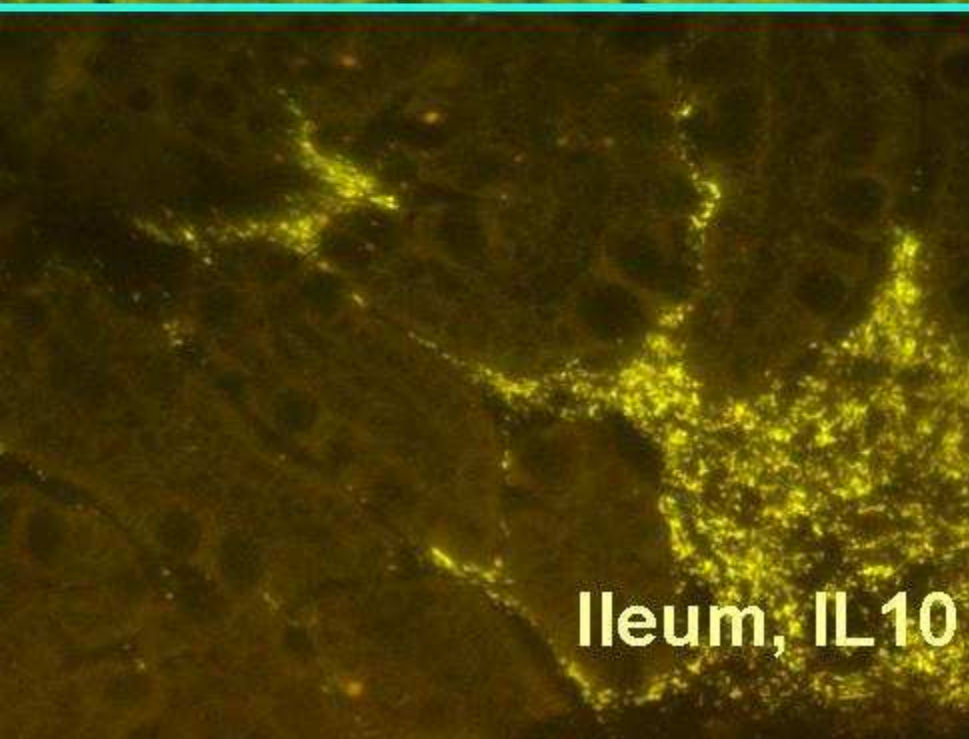
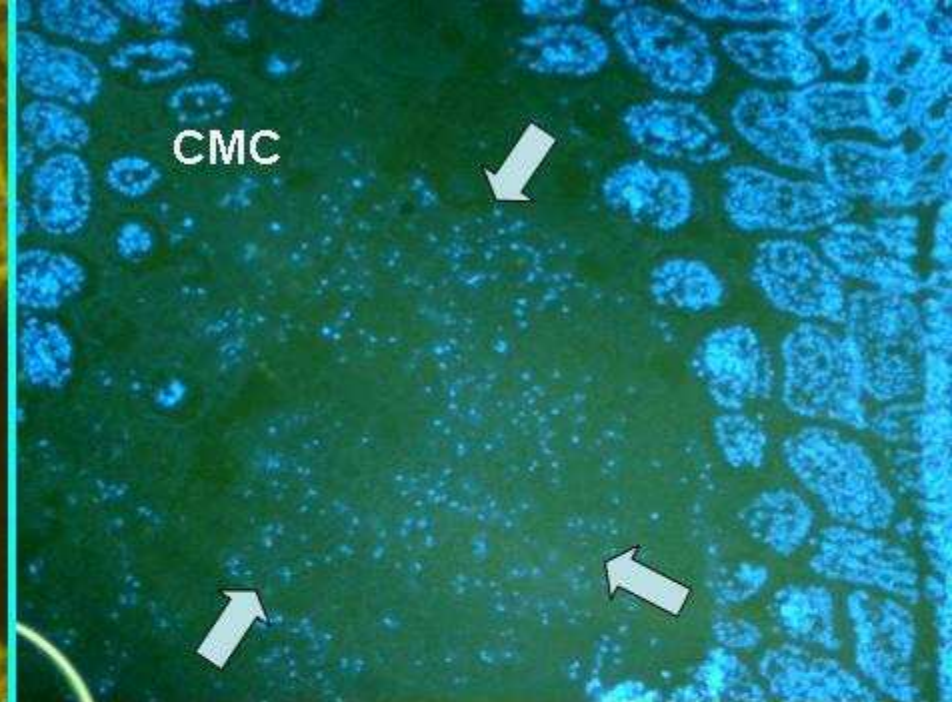
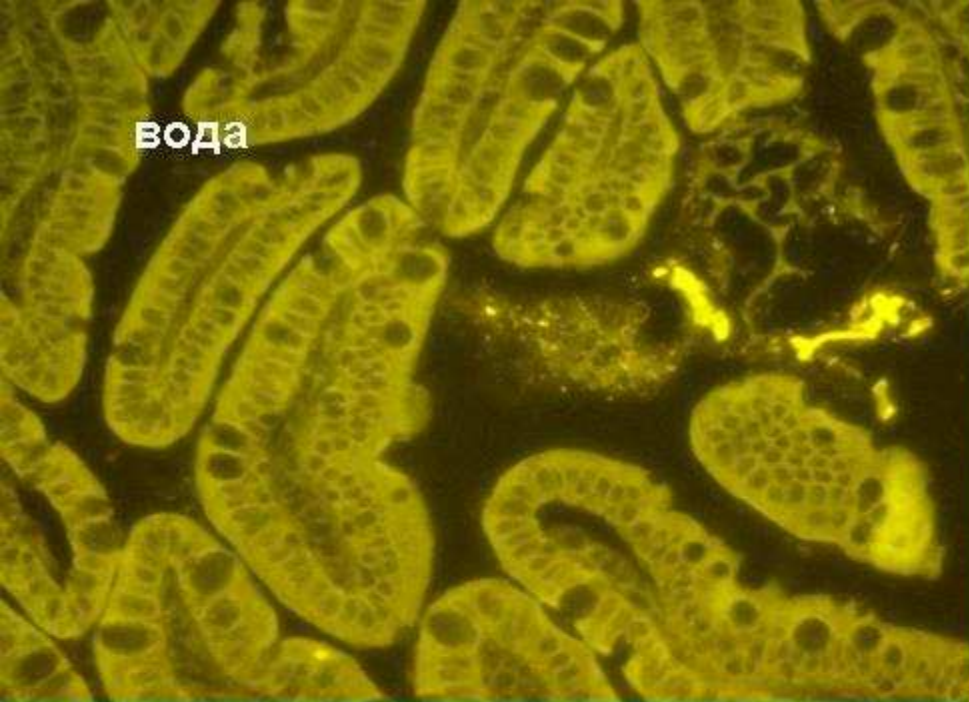
[E491](#), Sorbitanmonostearat

**CMC**

**Carboxymethylzellulose**

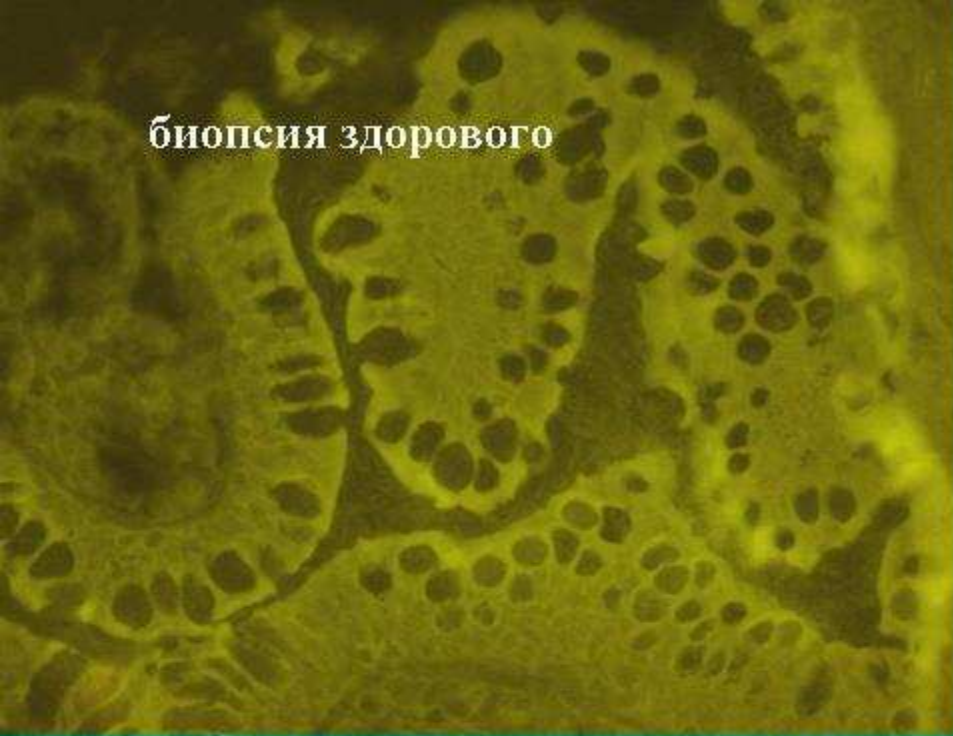
**IL 10 KO Maus**



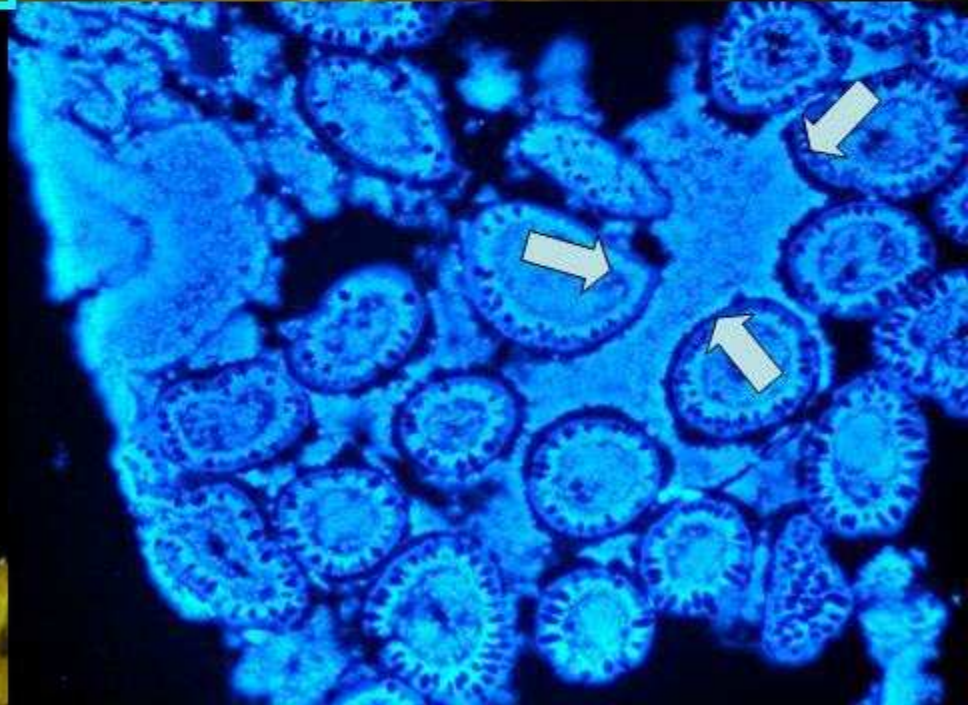
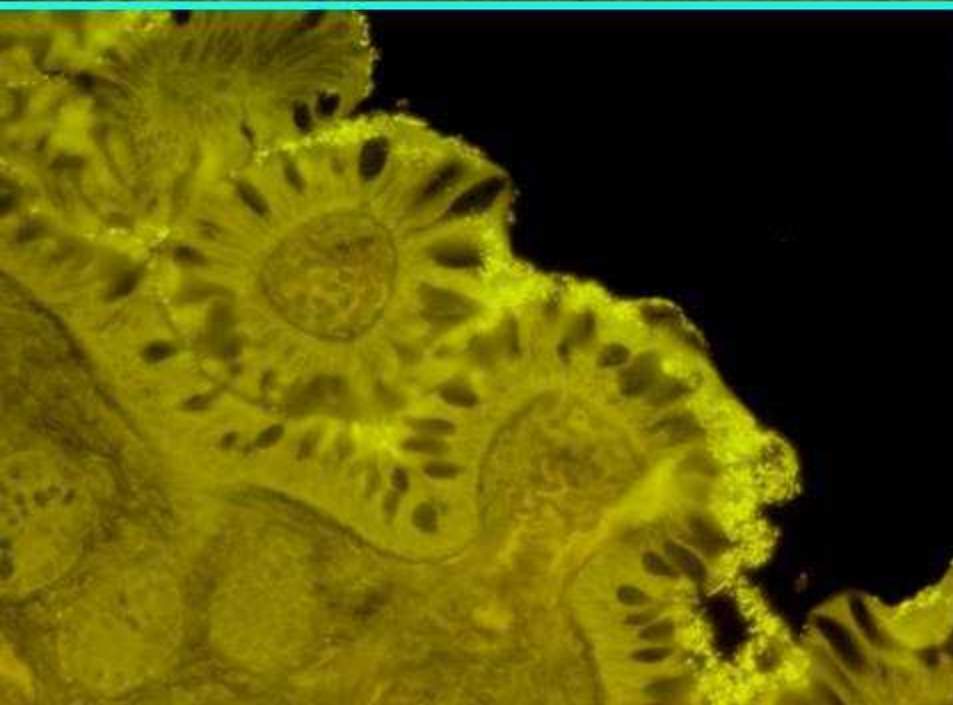
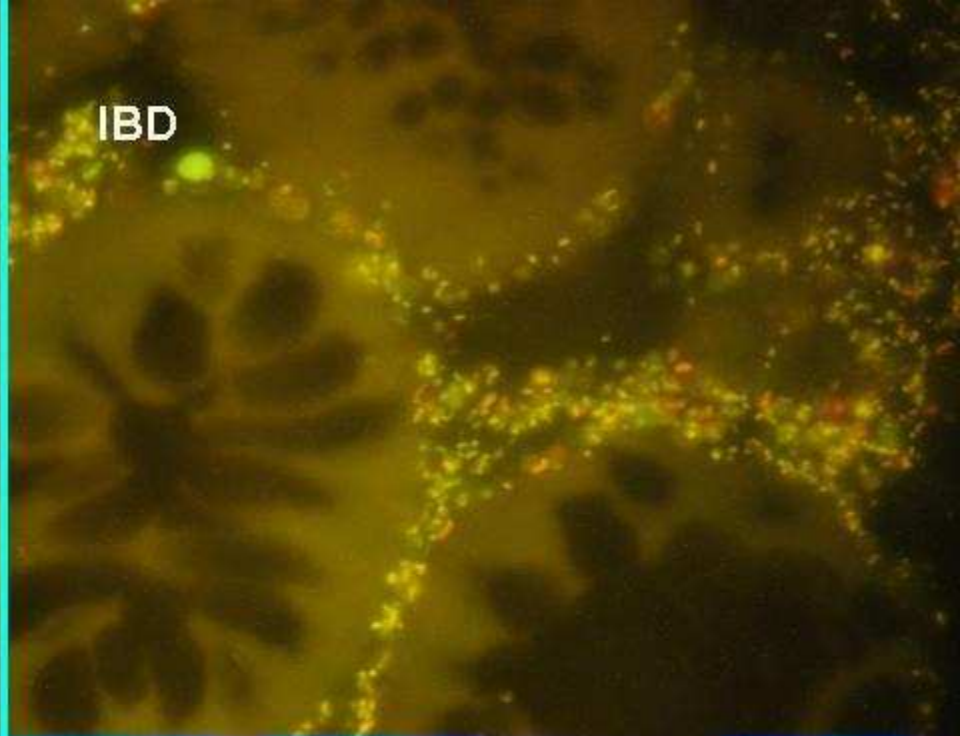


Иеum, IL10 КО мышь

биопсия здорового



IBD



## Wege zur Modulation des Mukus

- Selektive Kontrolle der Mukusekretion und Dehydratation (Glukokortikosteroide)
  - Höhere Differenzierung epithelaler Zellen (anti TNF, MTX, Azathioprin)
- Suppression adherenter Biofilme ( 5-ASA)
- Minderung der Detergenzienlast (Colestyramin, Ursosalk)
- Eradikation der Pathogene mit pot. Störung der Mukusbarriere (Entero-adhesive E.coli, Fusobacterium nucleatum, Serpulina (antibiotics, probiotics?))
- Neuronale Regulation zentral und peripher (Amitriptilin, Loperamid, etc)
- Stimulation der Immunität (GM CSF, Interferon, Probiotika?)
  - Neuronale Regulation zentral (Amitriptylin) und lokal (Imodium)
- Suppression einer kontraproduktiven Entzündung



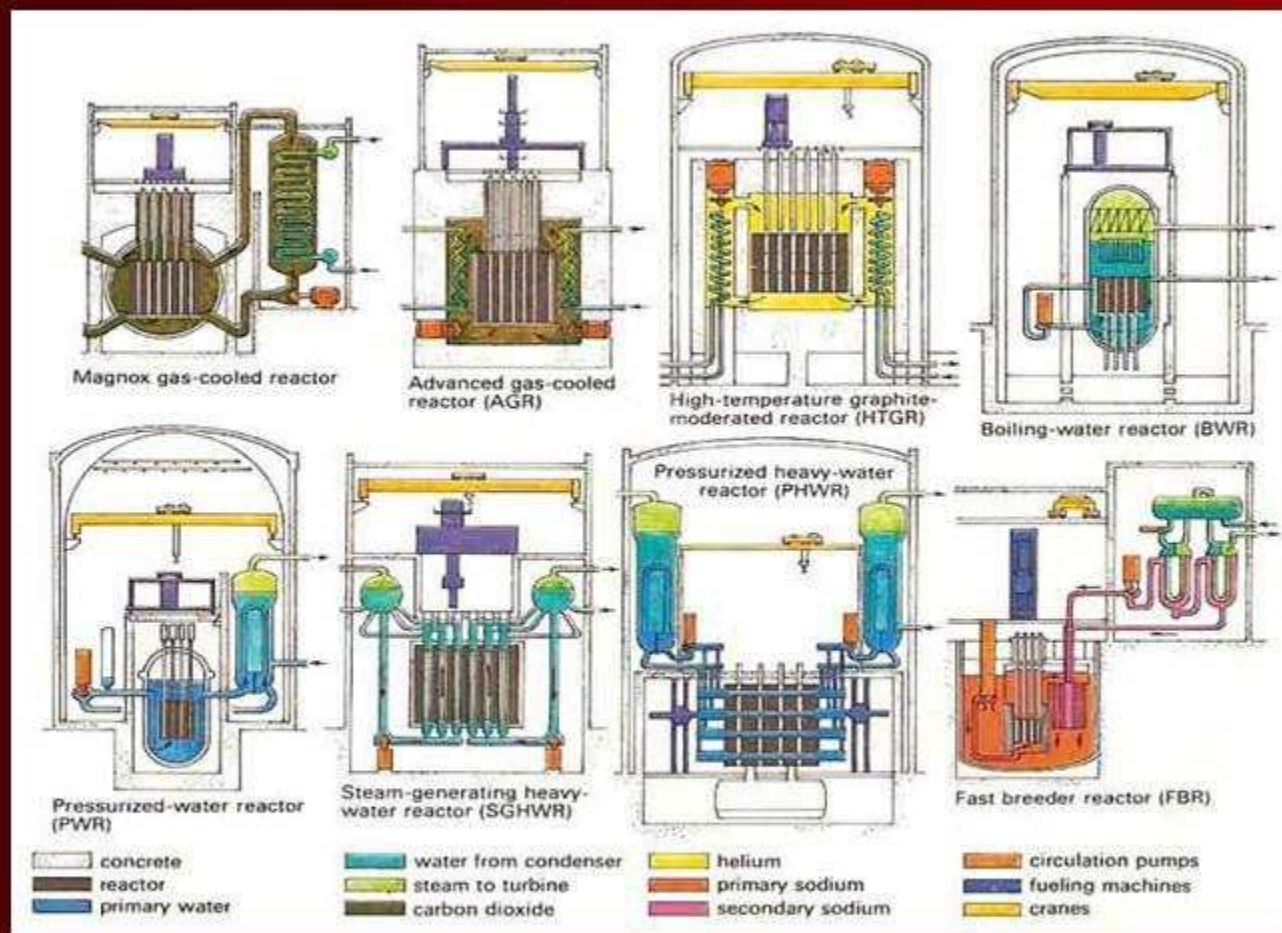








**хорошие и плохие бактерии?**



Какова роль радиоизотопов (бактерий) в построении и работе (био) реактора?  
 Какие компоненты хорошие а какие плохие?



# Struktur-Funktion-Analyse Colon Mikrobiota

The screenshot shows a web browser window displaying the homepage of a research group. The browser's address bar shows the URL [www.charite.de/arbmk/](http://www.charite.de/arbmk/). The page title is "Polymikrobielle Infektionen und bakterielle Biofilme".

The main content area features a grid of navigation links:

- Darm** (Publications)
- Galle** (Publications)
- HNO** (Publications)
- Haut** (Seite in Arbeit)
- Übersichts-Arbeiten** (Publications)
- Uro-genital** (Publications)
- Portrait** (Publications)

Below the grid, a text block reads: "Die ärztliche Tätigkeit am Krankenbett, im Labor, Lehre, Forschung, Gesellschaft und Kultur lässt sich nicht in den engen Rahmen einer wissenschaftlichen Publikation unterbringen. So geht eine Fülle an wertvollem Material verloren. Die vorliegende Homepage soll nach und nach Beiträge zugänglich machen, die wegen ihrer Größe oder Form nicht publiziert worden sind." - A. Swidsinski

At the bottom of the grid, there are three more links: **Sprechstunde**, **FISH-Methode**, and an unlabeled purple box.

On the right side of the page, a vertical sidebar contains a list of links: **Publikationen**, **Präsentationen**, **Tagungen**, **Nachdenkliches**, **Zusätzliche Informationen**, **Sprechstunde**, **Appendizitis**, **CED**, **Darmkrebs**, **Tonsillitis**, **Vaginose**, **Harnwegsinfektionen**, **Schlaganfall**, **Hp Gastritis**, **NET/Karzinoid**, and **Rheuma**.

The browser's taskbar at the bottom shows various application icons, including Internet Explorer, Firefox, and several Microsoft Office applications.

Home



1 Sie erhalten für jede Untersuchung ein Röhrchen mit Konservierungslösung, 6-6,1 Teile Alkohol Essig Chloroform - die Bestandteile der Konservierungslösung sind beim unbewuschten Kontakt mit der Haut ungefährlich. Spreizen sie die Augen oder auf die Schleimhäute sollen mit reichlich Wasser ausgespült werden. Der Stuhl ist weich. Die „Strohungen“ aus Stuhl lassen sich mit dem Strohhalm durchföhren. Der Strohhalm schützt später den Stabylinder vor mechanischer Zerstörung.



2 Auf jedem Röhrchen sind zwei Strohhalmröhrchen mit Klebeband fixiert. Die Farbe der Strohhalme ist unbedeutend. Von jedem zu untersuchenden Stuhlgang sollen zwei Zylinder an zwei verschiedenen Stellen entnommen werden (daher zwei Strohhälme).



3 Die Toilettenpapierrolle können Sie gut als Ständer benutzen.



4 Eine kleine Portion Stuhl gesät.



5 Die Strohhalm bohrt man tiefend bis zur Tiefe von 5-10 mm in den Stuhl.



6 Beim Herausziehen aus dem Stuhl soll man darauf achten, dass der Stabylinder in dem Strohhalm bleibt, andernfalls es erneut an einer anderen Stelle versuchen.



7 Gefüllte Strohhalm steckt man in das Röhrchen mit der Fixierung. Das obere Ende muss stets offen und für die Konservierungslösung zugänglich bleiben. Mit dem 2. Strohhalm ebenso verfahren.



8 Nach dem Schließen des Deckels soll das Röhrchen ein Mal nach geschüttelt werden, damit die Konservierungslösung an das Innere der Strohhalm gelangt und dabei die Schleimoberfläche des Strohs verwezt. Eine nicht scheitern, da die Strohl-Zylinder sonst aus dem Strohhalm herausfallen. Eine legen sie auch keine leeren Strohhalmteile in das Gefäß mit Konservierungslösung ein. Diese machen die Untersuchung unsicher, da bei größeren Strohungen die Konservierungslösung nicht zureicht um den Stuhl zu fixieren. Die Menge der Konservierungslösung ist genau berechnet. Wenn der Stuhl sehr brezig ist und aus dem Strohhalm wiederholt ausfällt, ist es möglich nach der Stuhlentnahme das untere Ende des Strohhalms mit weißer Vaseline zu verschließen. Das obere Ende muss stets offen und für die Konservierungslösung zugänglich bleiben.



9 Eine kleben Sie auf jedes Röhrchen ein Klebchen mit Ihrem Namen und dem Entnahmedatum der Stuhlprobe. Die frisch entnommenen Stuhlproben sollen bei Raumtemperatur bis zum nächsten Tag stehen, um optimal fixiert zu sein. Anschließend können die Röhrchen mit den entnommenen Stabylindern in Kühlschrank 2-4 Wochen aufbewahrt werden. Dadurch ist es möglich 3-4 Proben zu sammeln und dann alle auf ein Mal zur Untersuchung zu bringen.

Die Röhrchen legen Sie im Hauptgebäude der Inneren Klinik an der Pforte in das blaue Körbchen. Sie werden dort täglich abgeholt. Vorläufig kann die Anlieferung der Befunde lediglich im Rahmen der Sprechstunde erfolgen. Wegen der Komplexität können die Befunde noch nicht an den Hausarzt weitergegeben werden.



Рабочая зона

The image shows a microscopic cross-section of a biological tissue, likely a part of a mollusk's mantle. It is divided into three distinct layers. The top layer is a thick, yellowish, fibrous-looking material. The middle layer is a thin, dark, wavy line. The bottom layer is a thick, brownish, porous-looking material with a regular pattern of small, dark, circular or oval openings. The layers are separated by thin, dark lines.

Зародышевая зона

Разделяющая слизь/мукус



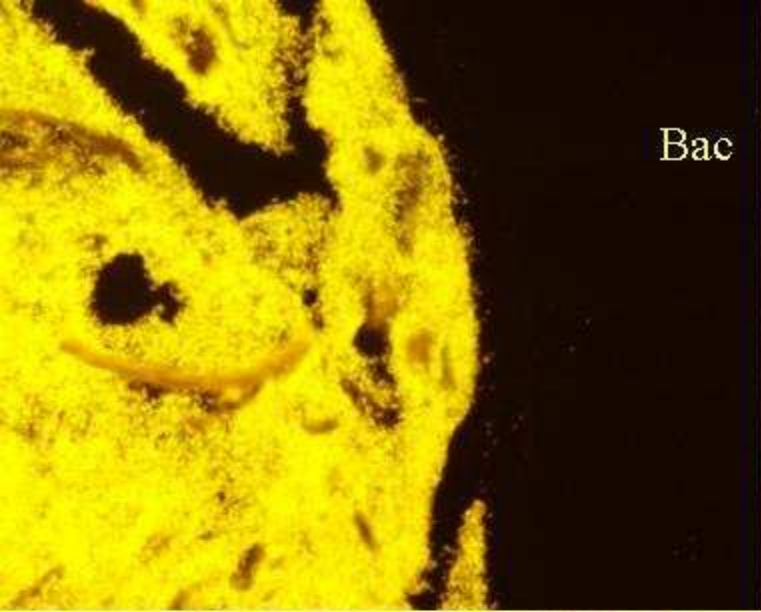
**I. Здоровье**

**II. Функциональные нарушения**

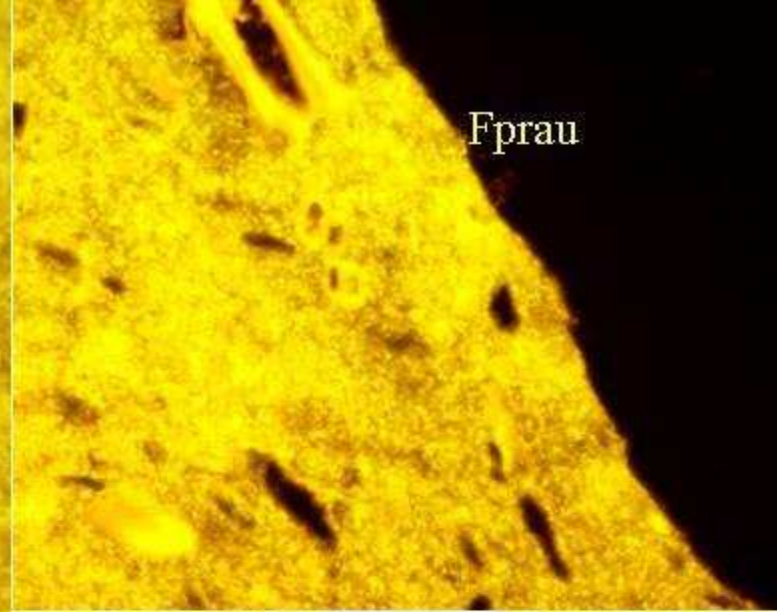
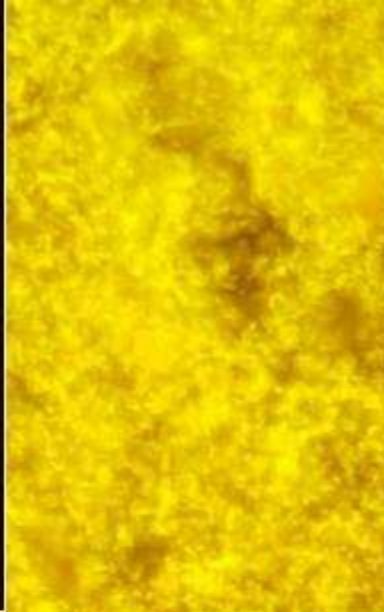
**III. реконвалесценция,  
инсульт**

**IV. Болезнь Крона, Колит**





Bac



Fprau

## Несущие группы

Erec x400

*Bacteroides,*  
*Roseburia,*  
*Faecalibacterium prausnitzii*

sind immer vorhanden mit je 10 bis 50% der  
Biomasse

Ato x400

Bif x400

дополняющие группы

(заместители несущих групп)

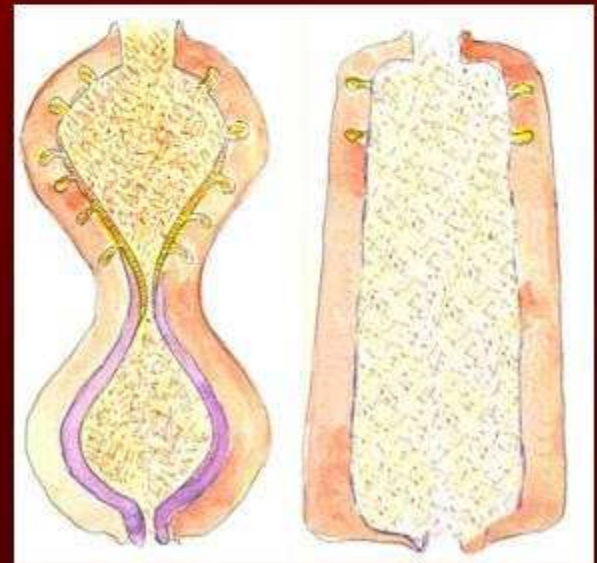
индивидуальные группы  
образуют индивидуальный профиль бактерий

EcyI x1000

Chis x1000

# • Функциональные нарушения

- Защита
- Зачистка
- Деконтаминация
- Перезагрузка



Здоровье

•Функциональные нарушения

# 1. Защита

Газообразование,  
Колики,  
Слизь

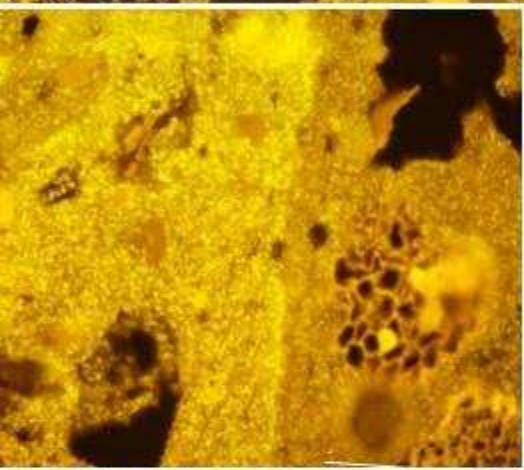
Septen

Septen im Durchfall



Понос

# Деконтаминация

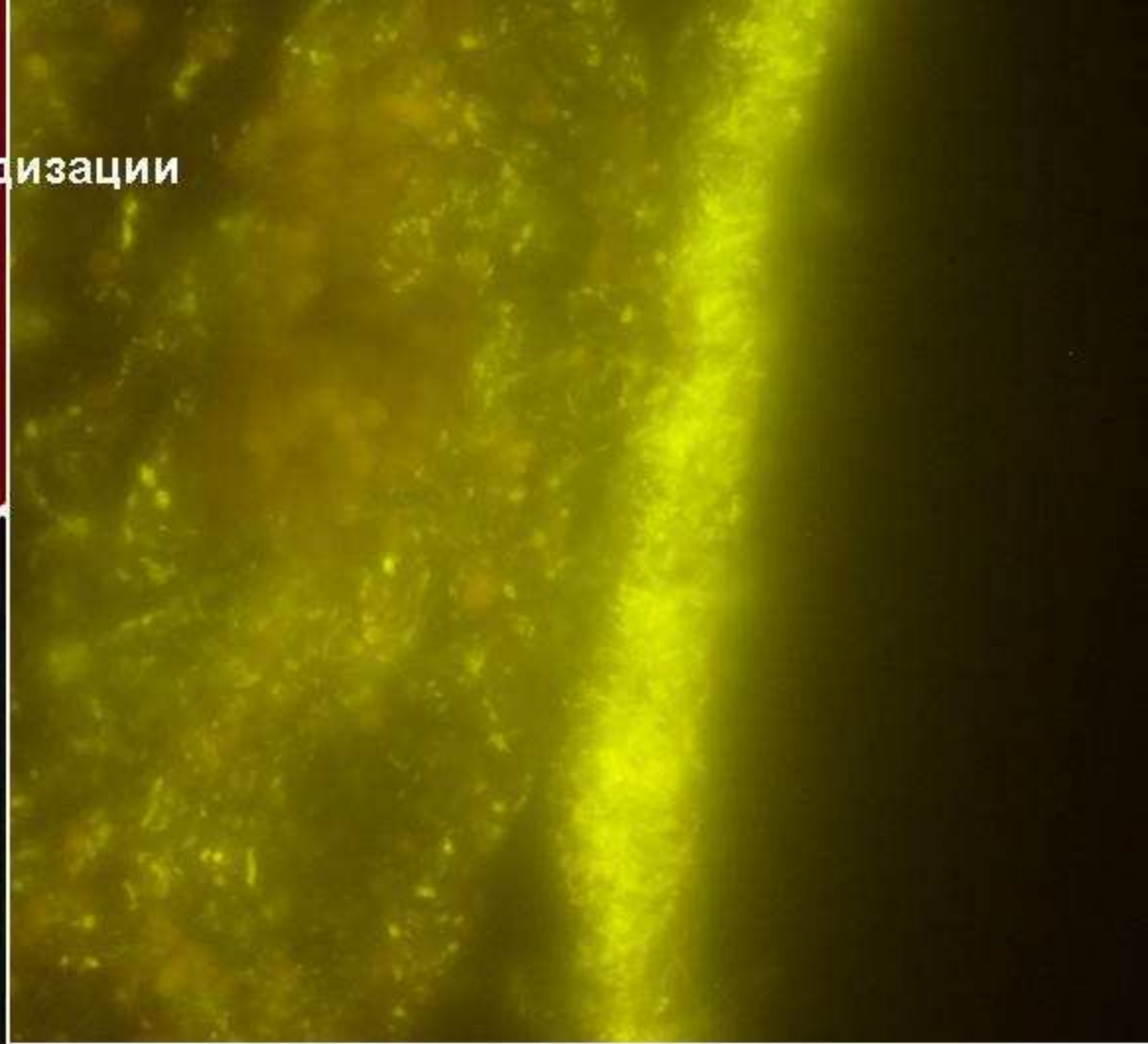
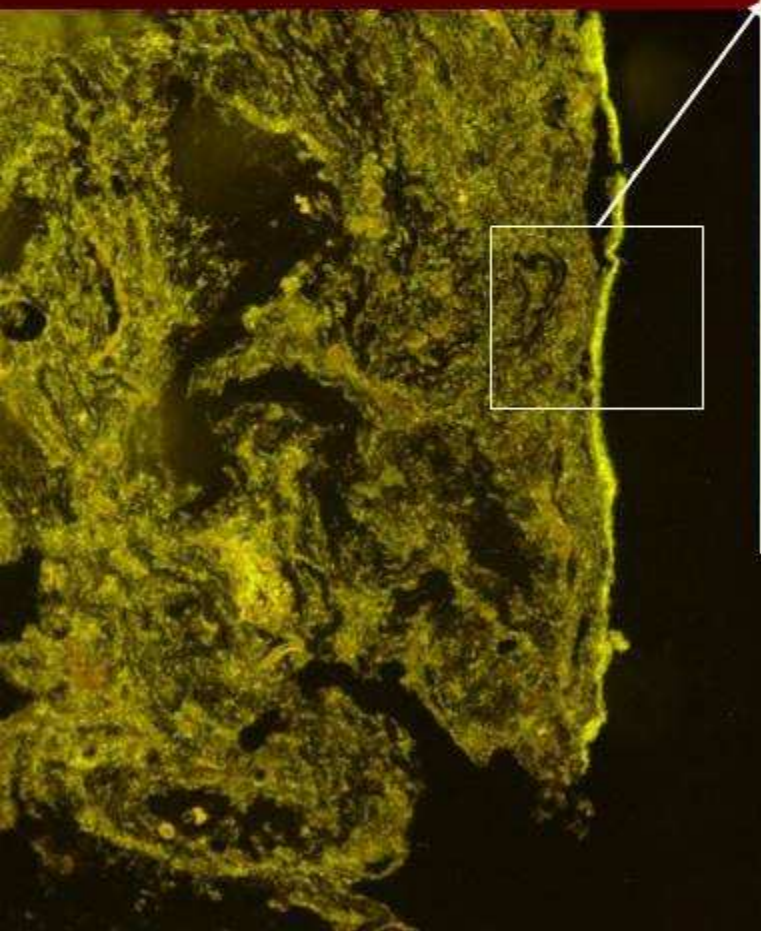


Вас

Несущие бактерии исчезают из рабочей зоны в соответствии с тяжестью реакции заистки = затухание гибридизации



массивное затухание гибридизации  
до зародышевой зоны  
Вас



# Функциональные нарушения

1. Много слизи
2. Упадок биоферментации, разбавление и зачистка всех групп  
(особо заметна по несущим группам)
3. устойчивый индивидуальный профиль

**реконвалесценция,**

**инсульт,**

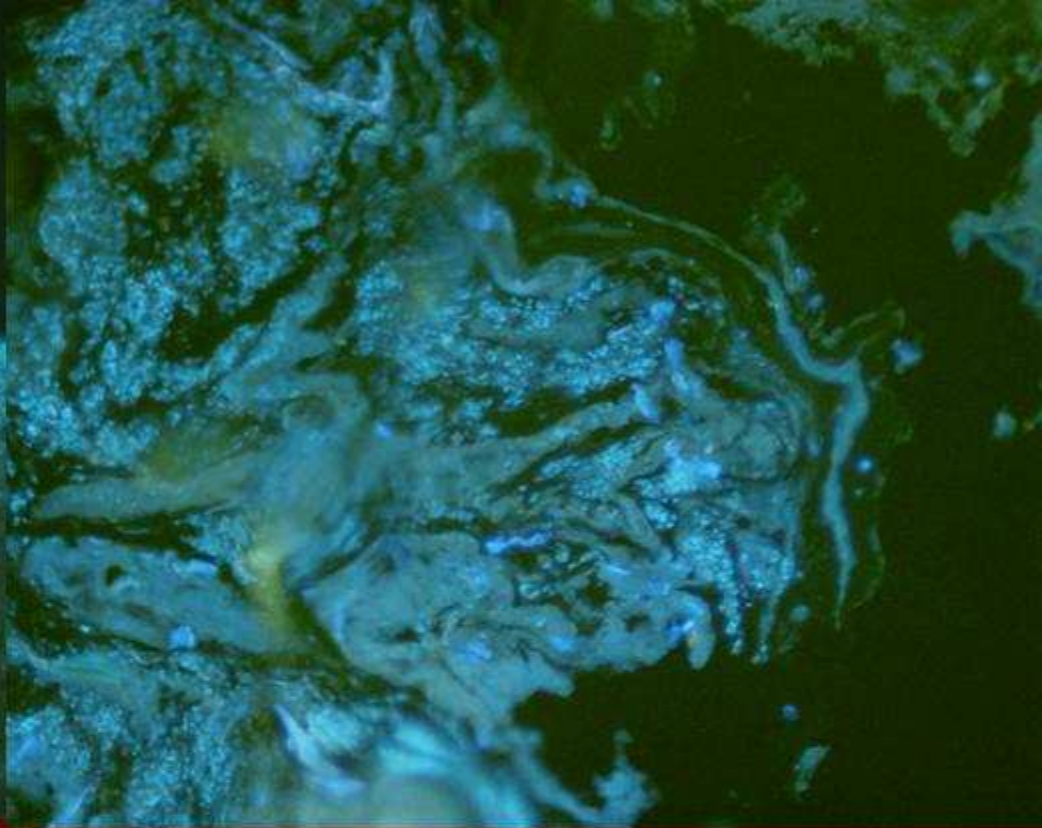
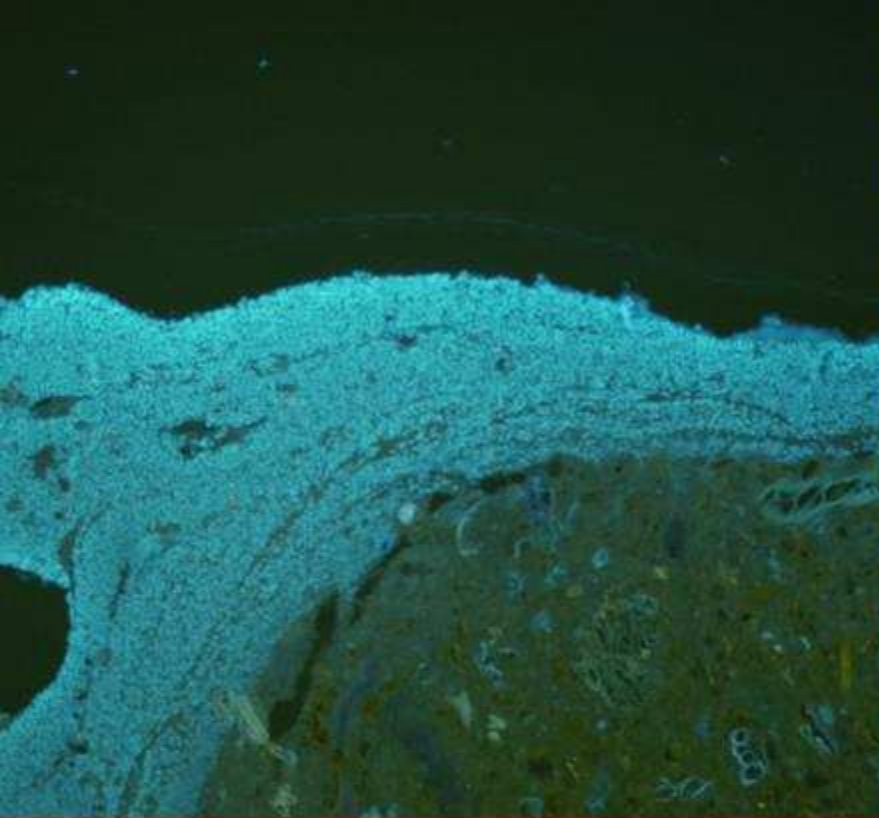
**Postantibiotische Colitis**

Крыса Сесум 2. день после Ligatur *A. cerebri media*





Цилиндр стула, Крыса 12. день после Ligatur  
*A. cerebri media*

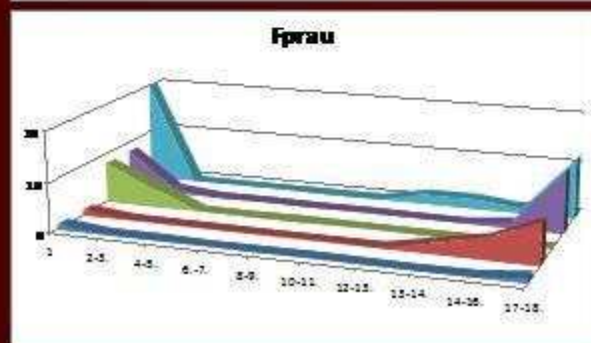
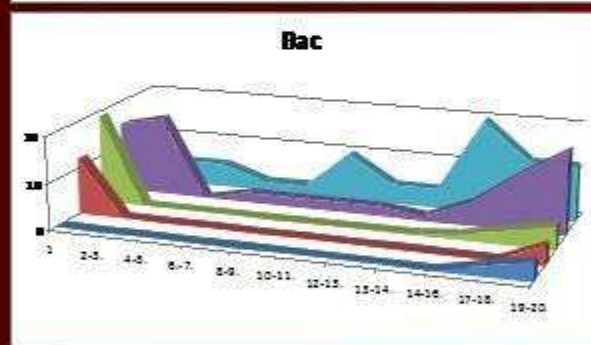
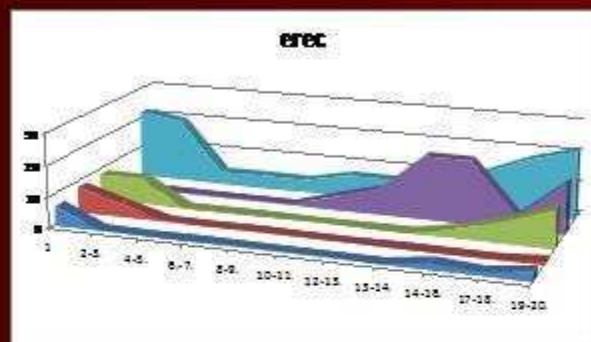


## Humaner Stuhlzylinder

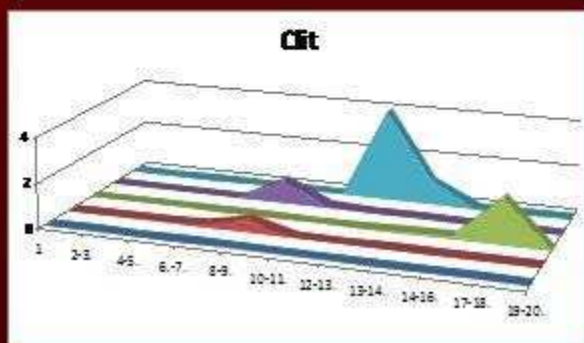
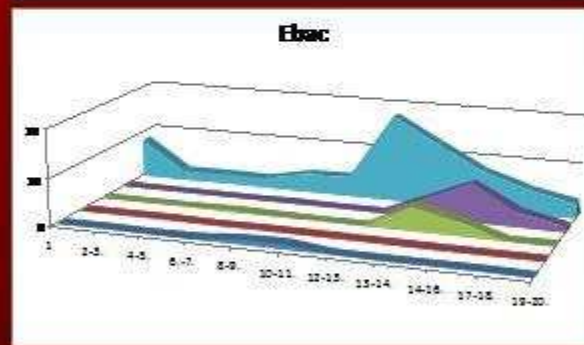
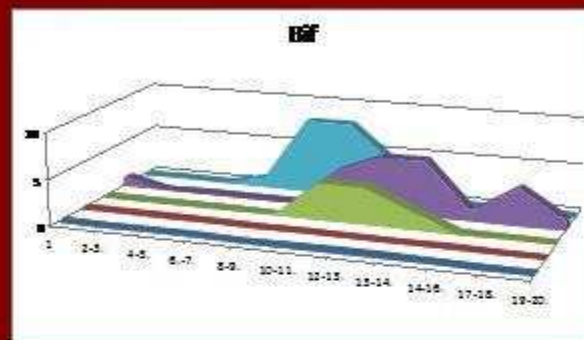
**UC**

Schlaganfall, Tag 2

## Несущие группы



## •индивидуальные группы (заместители несущих групп)



- **Перезагрузка и реконвалесценция**

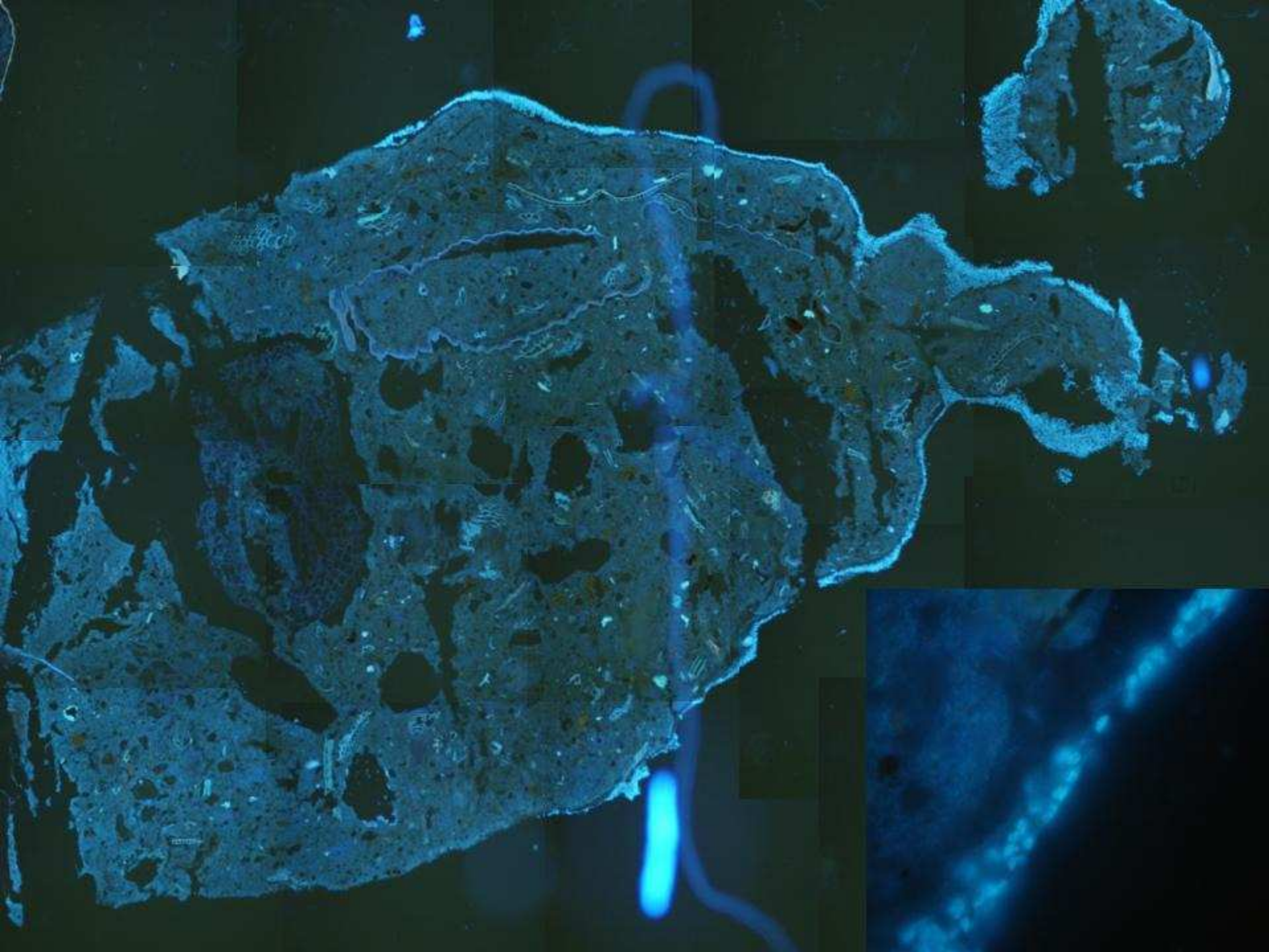
1. Много слизи, кратковременная миграция лейкоцитов в мукус
2. полная зачистка несущих групп
3. низкие концентрации дополняющих групп
4. массивный рост замещающих несущие группы бактерий
5. кратковременная дестабилизация индивидуального профиля

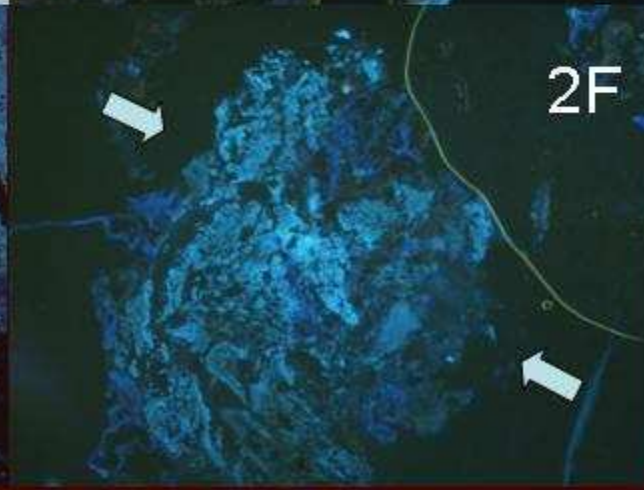
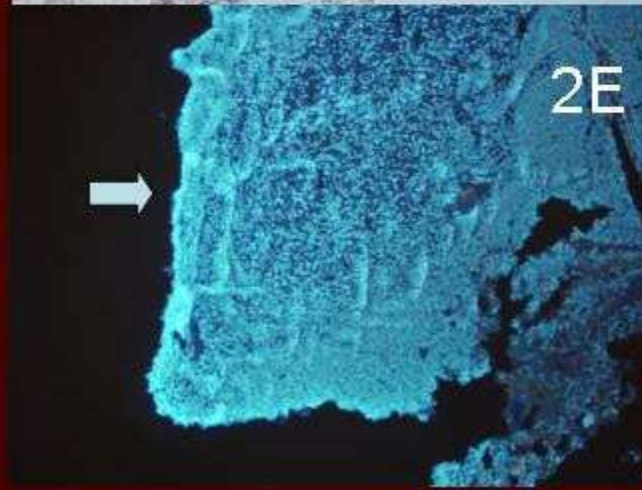
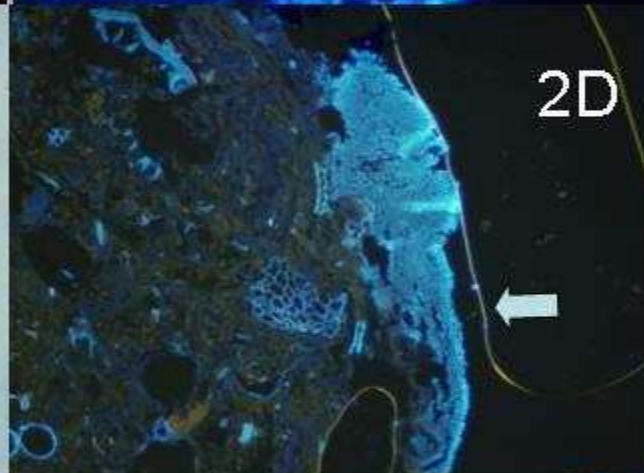
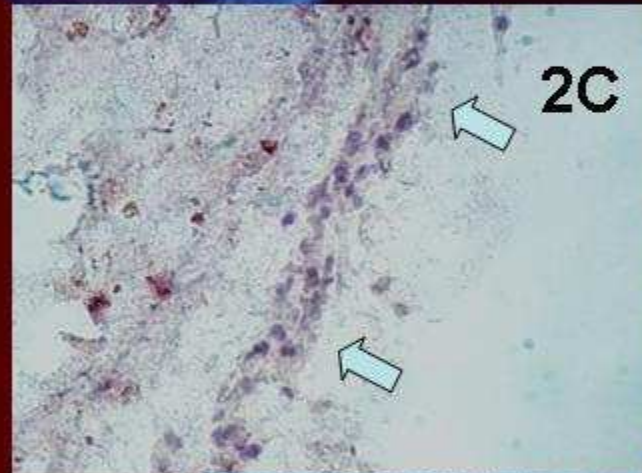
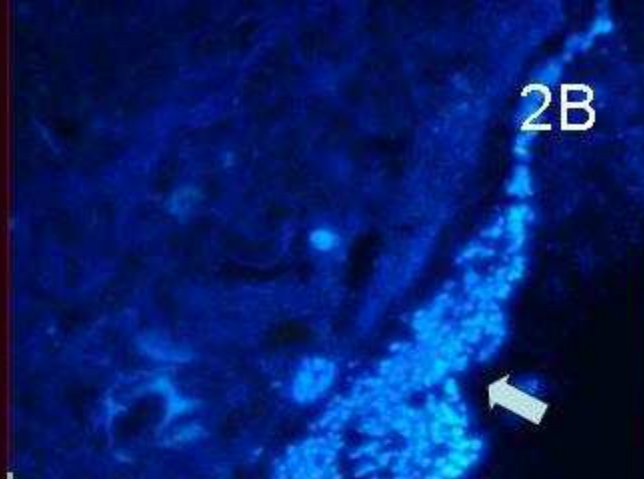
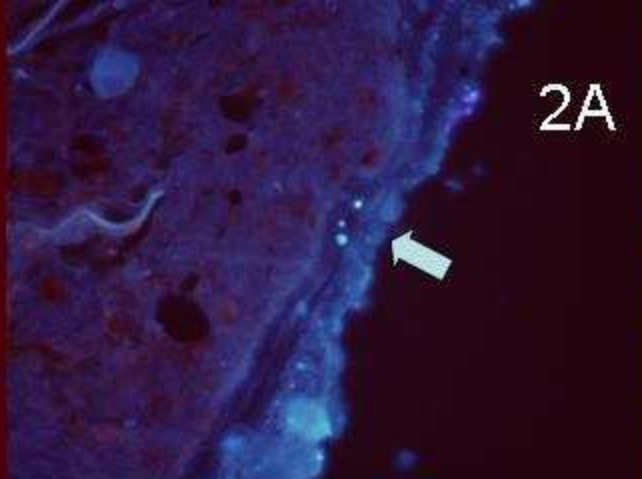


# хронические

# Болезнь Крона, Колит

типично продолжительное разрушение  
зародышевой зоны





# IBD

## 1. продолжительное разрушение зародышевой зоны

UC

миграцией лейкоцитов

CD

зачисткой несущих групп

(типично исчезновение *Faecalibacterium prausnitzii*  
на протяжении трех месяцев )

## 2. постоянная дестабилизация индивидуального профиля

[English](#)

www.charite.de/arbmk/

Arbeiten aus der Medizinischen Klinik der Charite

## Kontakt Molekulargenetisches Labor für polymikrobielle Infektionen und bakterielle Biofilme

[Darm](#)

Publikationen

[Galle](#)

Publikationen

[HNO](#)

Publikationen

[Haut](#)

Seite in Arbeit



[Übersichts-  
Arbeiten](#)

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[Veterinär](#)[Publikationen](#)[Präsentationen](#)[Projekte](#)[Nachdenkliches](#)[Zusätzliche Informationen](#)[Patientenseite](#)[Appendizitis](#)[CED](#)[Darmkrebs](#)[Tonsillitis](#)[Vaginose](#)[Harnwegsinfektionen](#)[Schlaganfall](#)[Hp Gastritis](#)[NET/Karzinoid](#)[Rheuma](#)

Die ärztliche Tätigkeit am Krankenbett, im Labor, Lehre, Forschung, Gesellschaft und Kultur lässt sich nicht in den engen Rahmen einer wissenschaftlichen Publikation unterbringen. So geht eine Fülle an wertvollem Material verloren. Die vorliegende Homepage soll nach und nach Beiträge zugänglich machen, die wegen ihrer Größe oder Form nicht publiziert worden sind.

A. Swidsinski

[Zusätzliche  
Informationen](#)

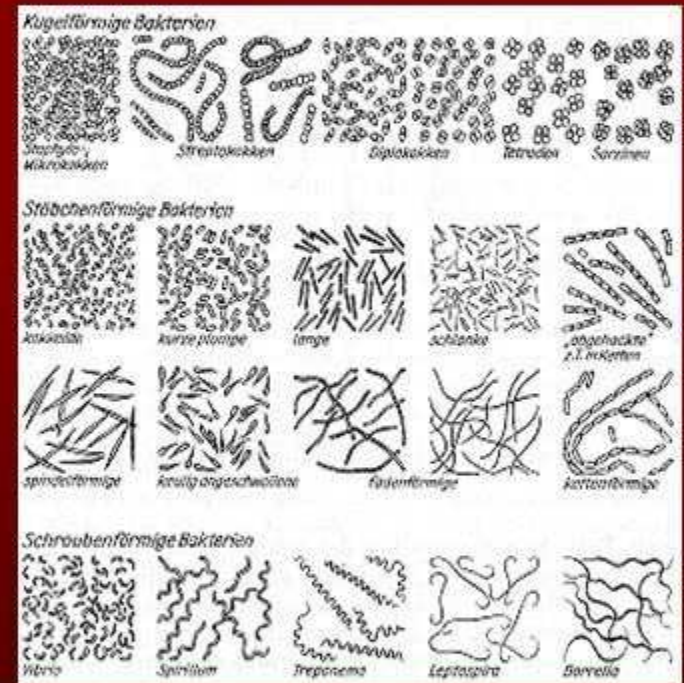
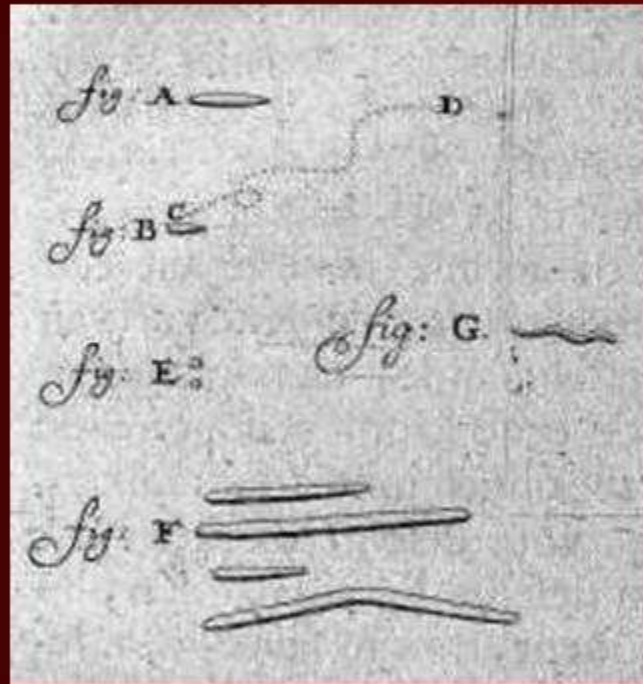
Darm von innen

[Patientenseite](#)[FISH-Methode](#)

Seite in Arbeit

[Nachdenkliches](#)

# Anno 1683



# Archeogenese Hypothese

**есть ли  
хорошие и плохие бактерии?**

# FISH mukosale Biofilme



- Eub 338
- A101b
- Sh42a
- Gam42a
- Dnac
- Ec 1531
- Y16s-69
- Srb385
- Sgd
- Hwy-1
- Arv1430
- HGC
- LGC
- Sfb
- Erec
- Lach
- Ehal
- Chis150
- Chil35
- Lah158
- Stre93
- Enc131
- Efaec
- Ato291
- Com63
- Ecy1
- Phasco
- Veil
- Rbro, Rfla
- UroA, UroB
- Ser1410
- Bifl64
- CFJ19a
- Bac303
- Bfra602
- Bdis656
- Fprau
- Dss658
- Arch915

r-RNA komplimentären Sonden

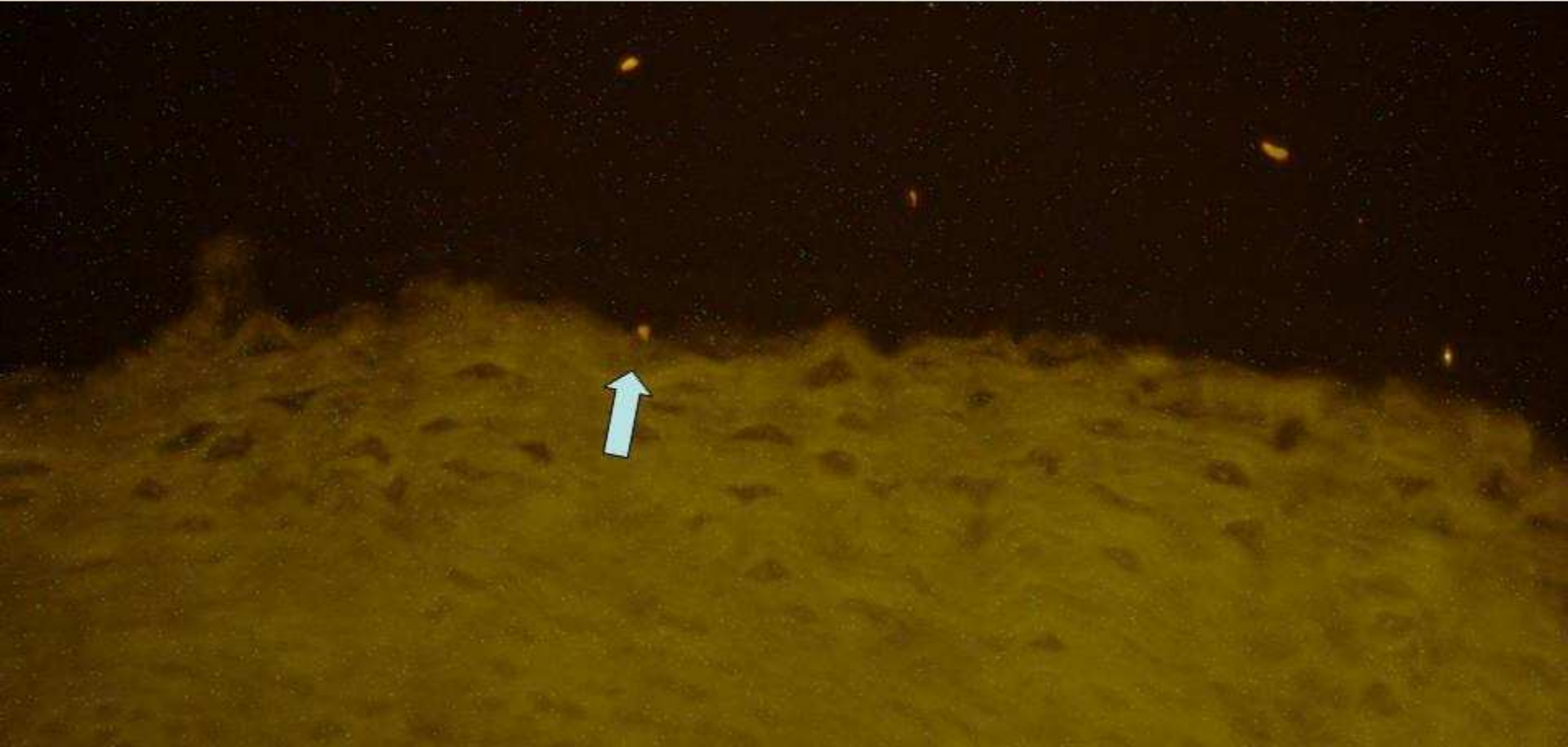
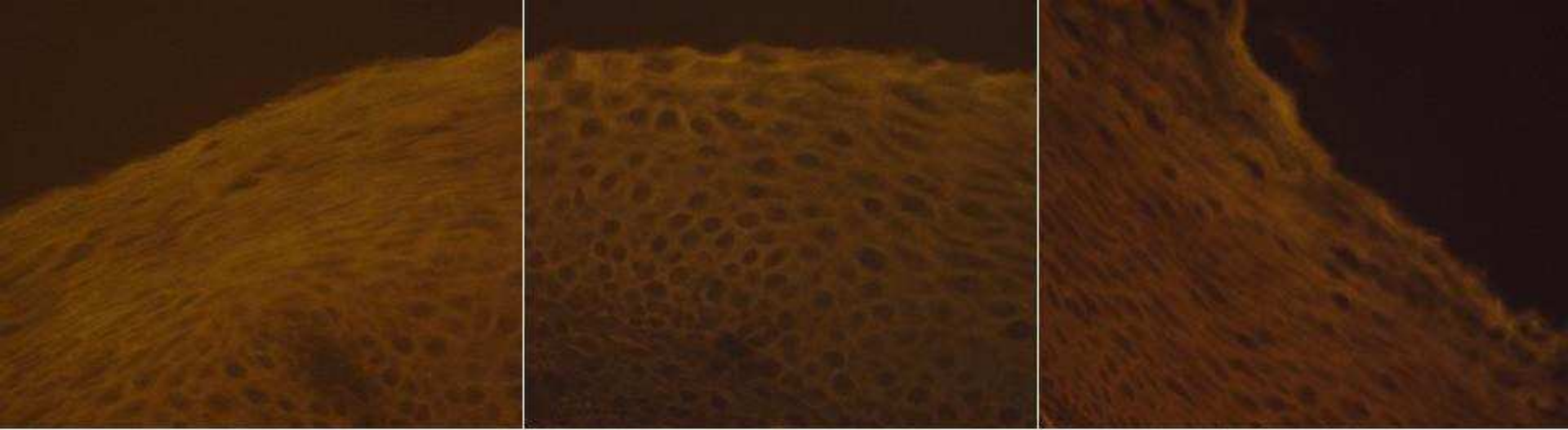




Healthy vaginal epithelium, no bacteria detectable

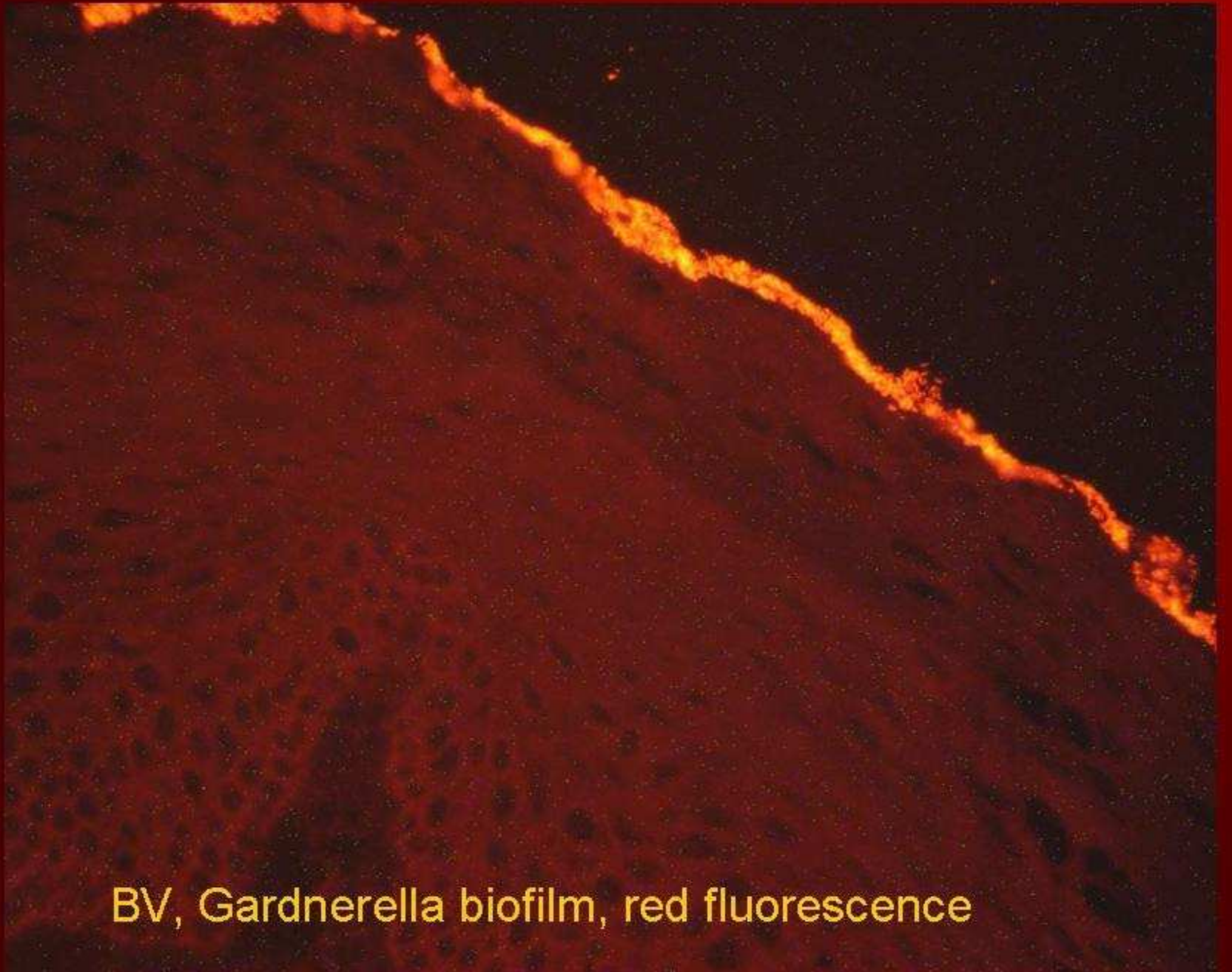




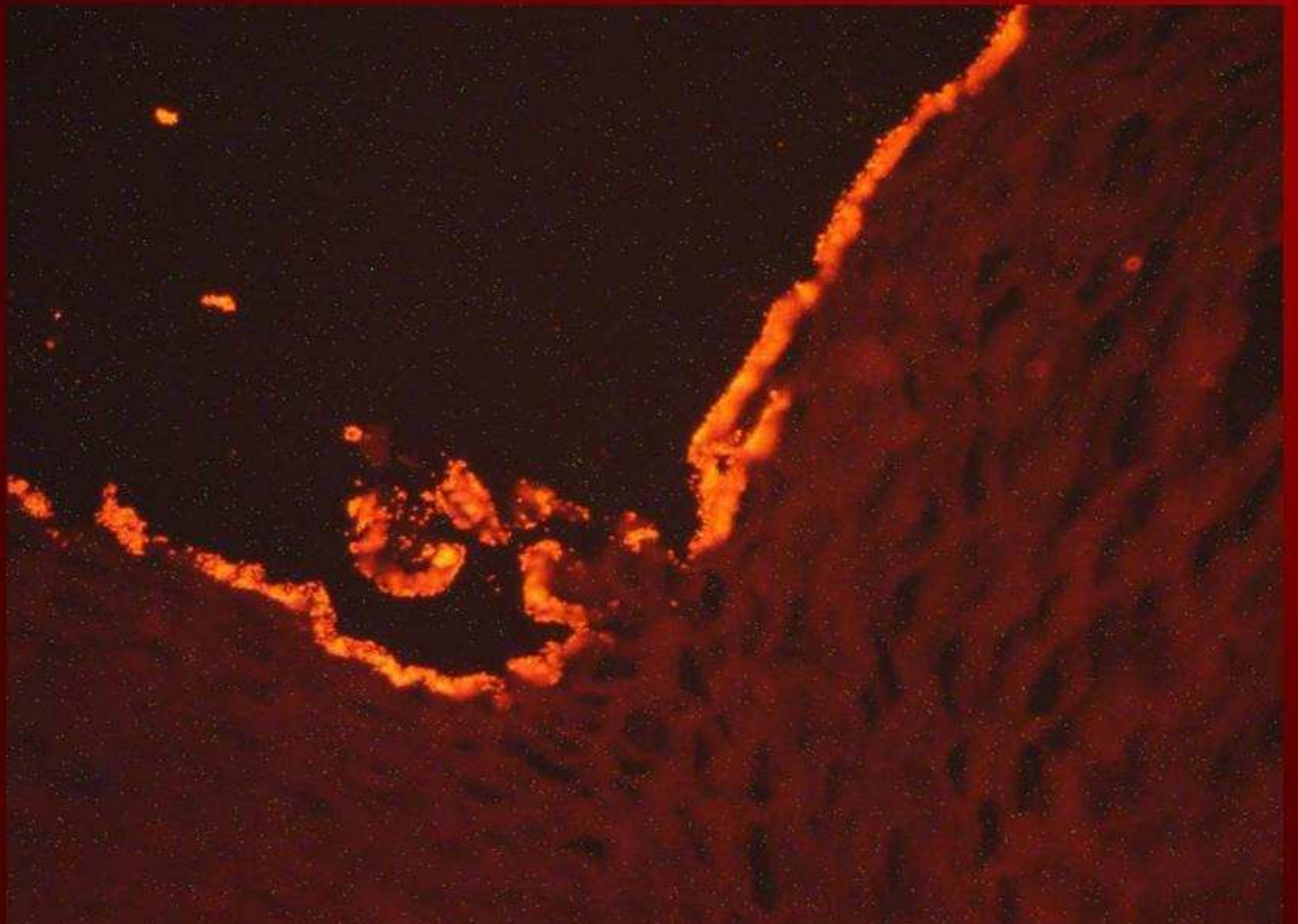


A high-magnification light micrograph showing a cross-section of tissue. The upper portion shows a layer of stratified squamous epithelium. Below this, the subepithelial connective tissue is exposed, showing a dense network of collagen fibers and scattered cells. Numerous small, dark, rod-shaped structures, identified as bacteria in the caption, are visible within the subepithelial tissue, particularly in the lower right quadrant. The overall appearance is that of a biopsy site where the epithelial barrier has been disrupted, allowing for the mechanical introduction of bacteria into the underlying tissue.

Subepithelial tissue exposed due to biopsy tear.  
Bacteria are introduced mechanically here.



BV, Gardnerella biofilm, red fluorescence



BV, Gardnerella biofilm, red fluorescence

- What is the role of
  - Gardnerella
  - Lactobacilli
  - Other bacterial groups?

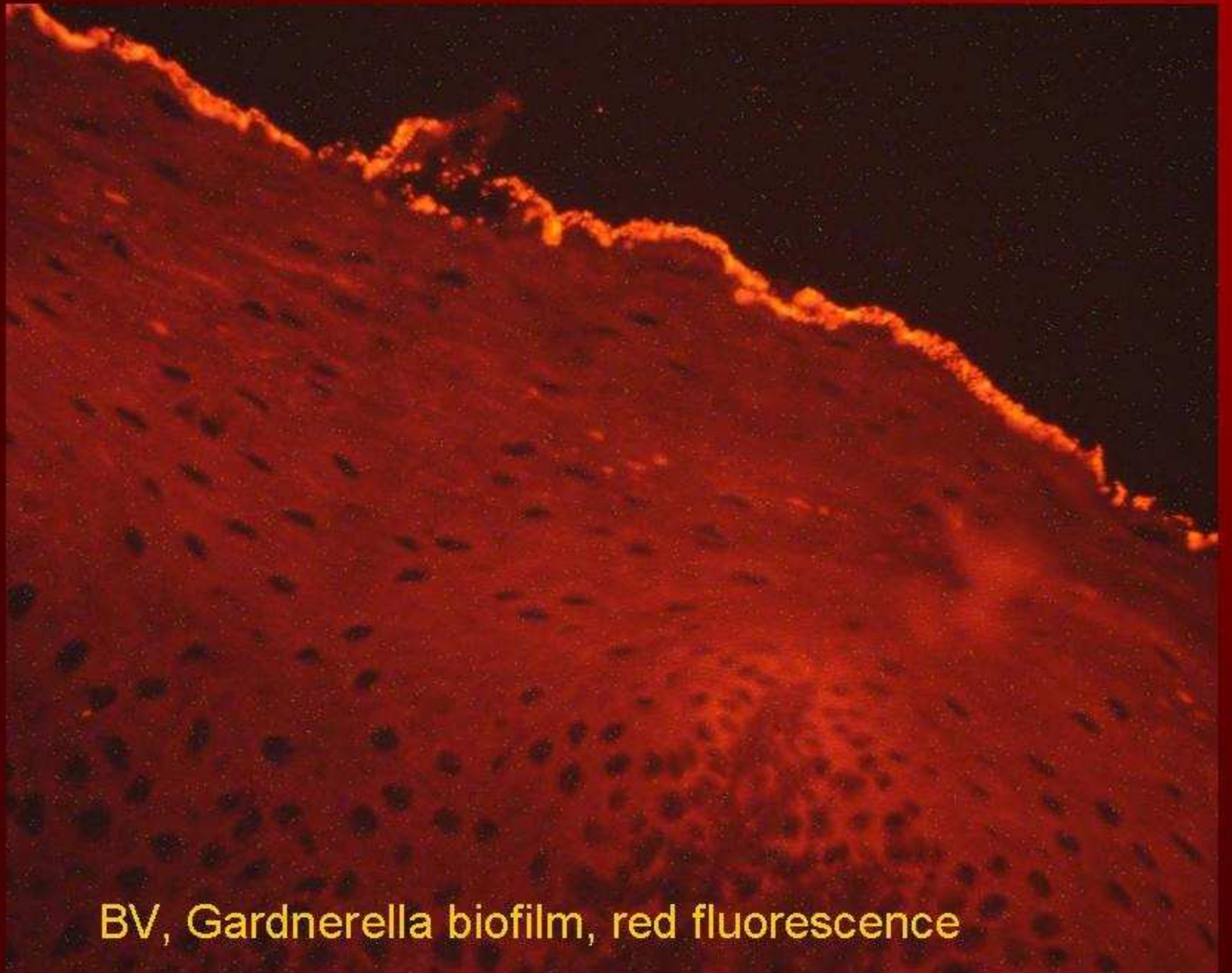


## Occurrence and mean concentrations of bacteria in the vaginal biopsies as detected by FISH

	Healthy N=51 (49)**		BV N=68	
	Mean±SD*/Max. concentration x 10 <sup>9</sup> /ml	Occurrence	Mean±SD*/Max. concentration x 10 <sup>9</sup> /ml	Occurrence
<b>Gardnerella (Gard 5)</b>	0.03±0.04/0.1x10 <sup>8</sup>	14% (7)	<b>31.8 ± 21.8/ 120 x 10<sup>8</sup></b>	<b>97% (66)</b>
Atopobium (Ato)	0.17±0.26/0.5x10 <sup>8</sup>	8% (4)	<b>5±4.1 /30 x 10<sup>8</sup></b>	<b>60% (41)</b>
Lactobacillus (Lab)	0.7 ±1/4x10 <sup>8</sup>	39% (20)	<b>2.8±3.8/20 x 10<sup>8</sup></b>	<b>81% (55)</b>
Enterobacteriaceae (Ebac)	0.01 - 3 x 10 <sup>8</sup>	4% (2)	0.5±0 /3 x 10 <sup>8</sup>	12% (8)
Coriobacterium (Cor)	0.01-0.1 x10 <sup>8</sup>	6% (3)	1.9±1.7/4 x 10 <sup>8</sup>	15% (10)
Cytophaga-Flavobacteria (CF)	0	0	1±1/3 x 10 <sup>8</sup>	13% (9)
Veillonella (Veil)	0	0	0.18 ± 0.35 /1 x10 <sup>8</sup>	12% (8)
Bacteroides (Bac)	0	0	0.17±0.19/0.5x10 <sup>8</sup>	10% (7)
Clostridien (Clit, Chis, Erec)	0	0	0.12±0.19/0.5x10 <sup>8</sup>	9% (6)
Fusobacterien (Fus)	0	0	0.2±0.05/0.1x10 <sup>8</sup>	6% (4)

Slime over vaginal surface, *Gardnerella* is red

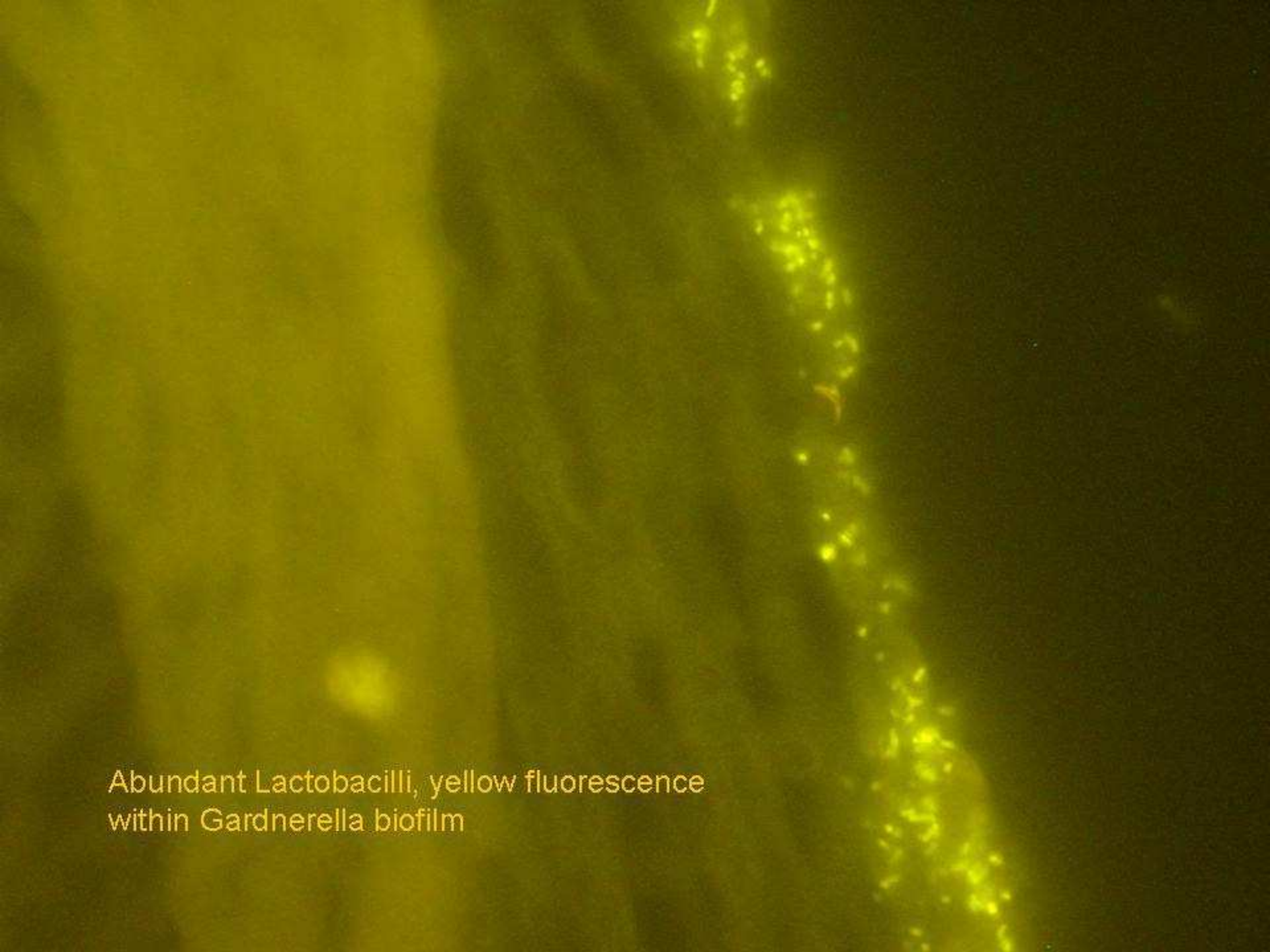




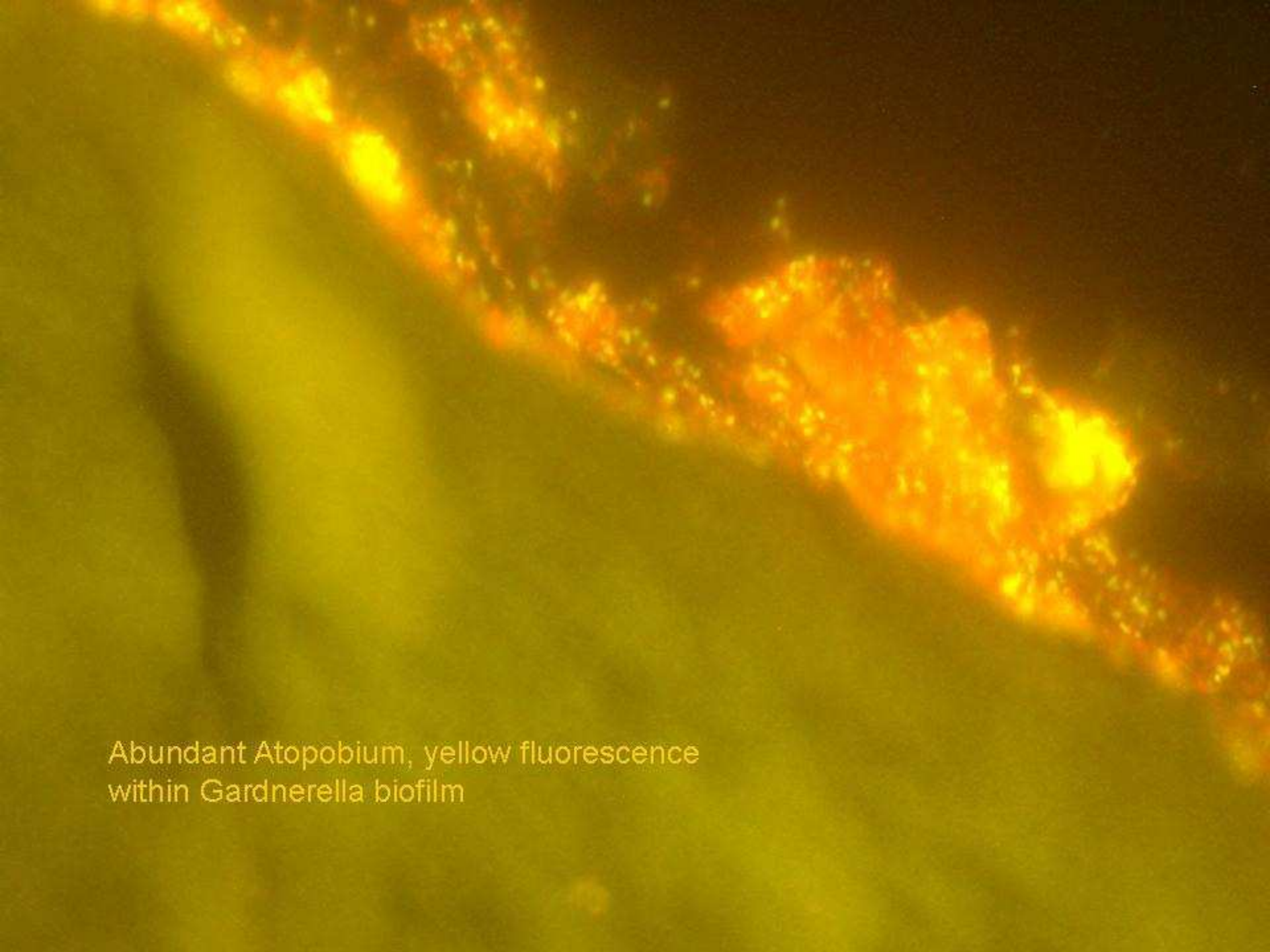
BV, Gardnerella biofilm, red fluorescence



Abundant Lactobacilli, yellow fluorescence  
within Gardnerella biofilm



Abundant Lactobacilli, yellow fluorescence  
within Gardnerella biofilm



Abundant *Atopobium*, yellow fluorescence within *Gardnerella* biofilm



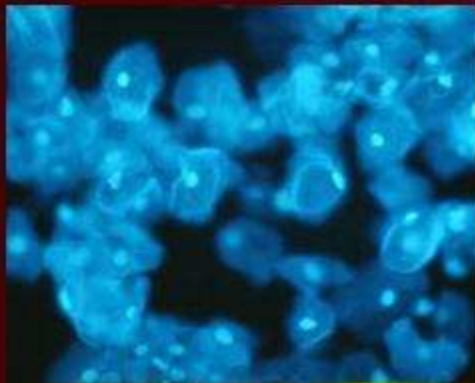


Clue cells

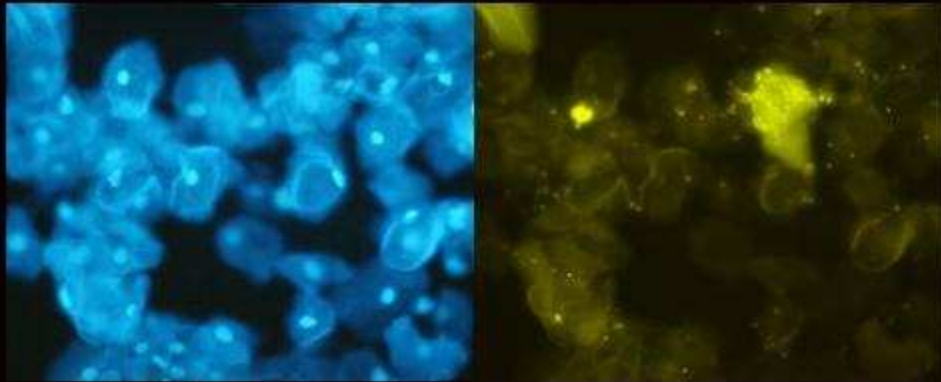


A fluorescence micrograph showing numerous vaginal epithelial cells. The cells are stained with DAPI, which highlights their nuclei in a bright blue color. The cells themselves appear as a dense field of irregular, polygonal shapes with varying shades of blue, indicating the presence of cytoplasm and cell membranes. The nuclei are centrally located and vary in size and intensity of fluorescence. The overall appearance is that of a healthy, multi-layered epithelium.

Urine sediment, vaginal epithelial cells,  
DAPI stain,  
healthy women



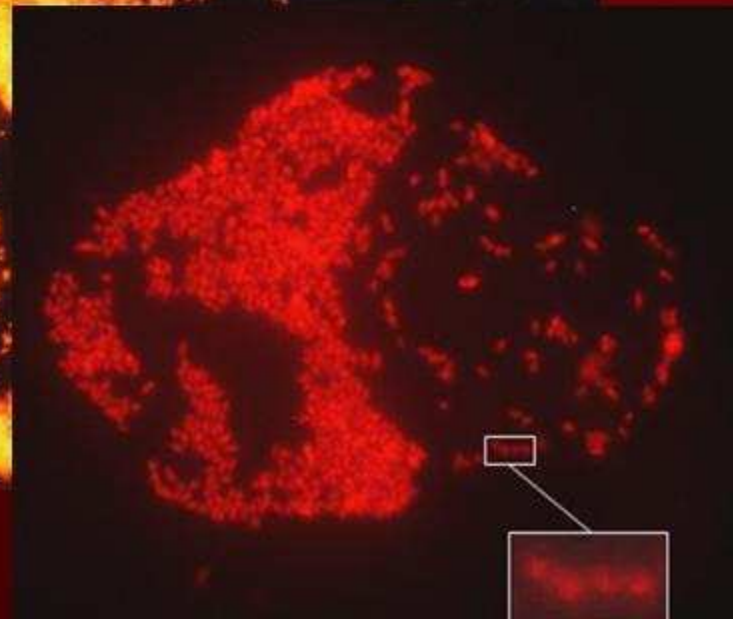
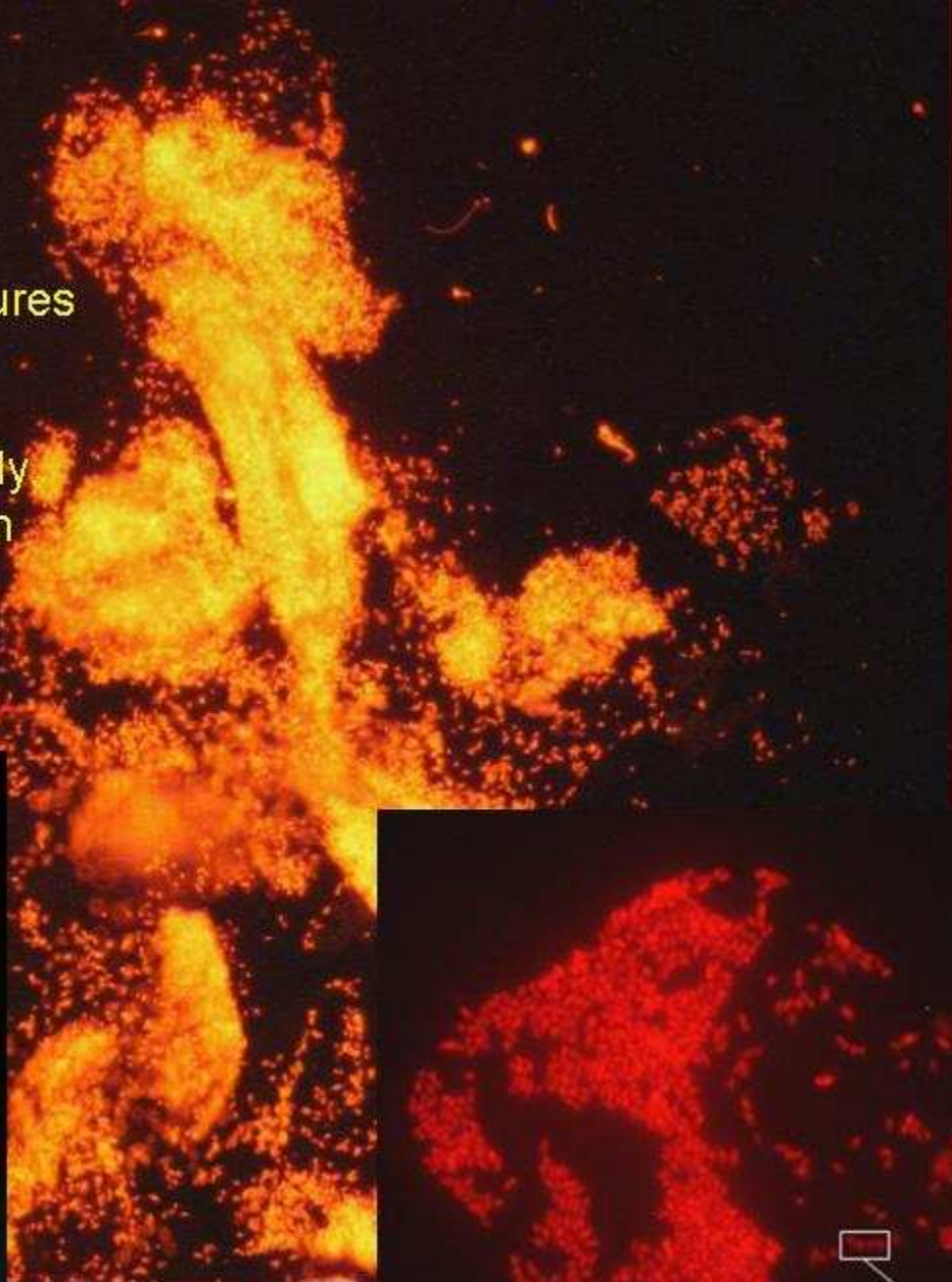
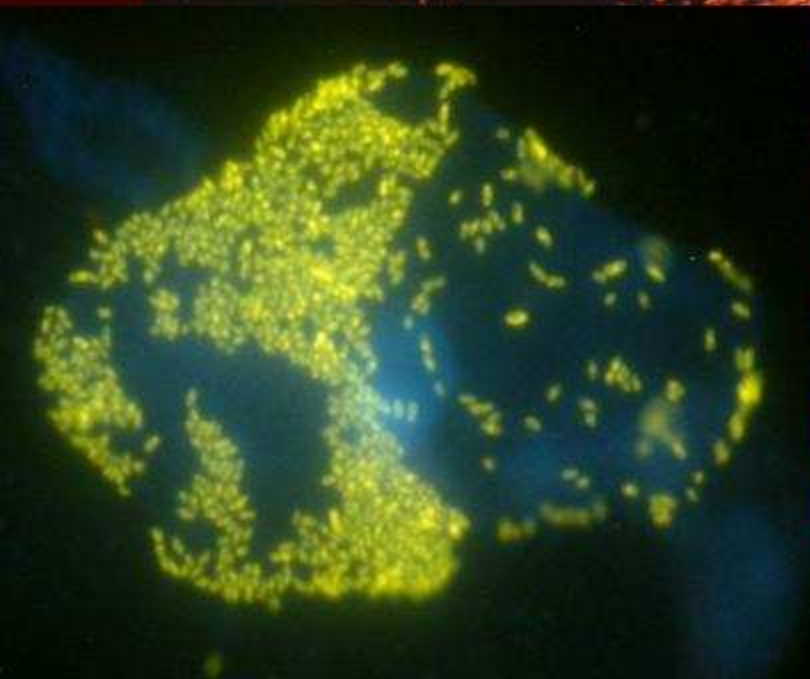
**All bacteria (universal bacterial probe – yellow fluorescence), healthy women**



**Dispersed Gardnerella (reds fluorescence) in relation to epithelial cells (DAPI, left insertion) and other bacteria (Eub 338, right insertion)**

*Gardnerella* arrangement to structures resembling masonry of brickwork.

*Gardnerella* is a short rod with a dark spot in the center of the body. Because of this spot, the bacterium can be mistaken as a short chain of cocci (insertion)

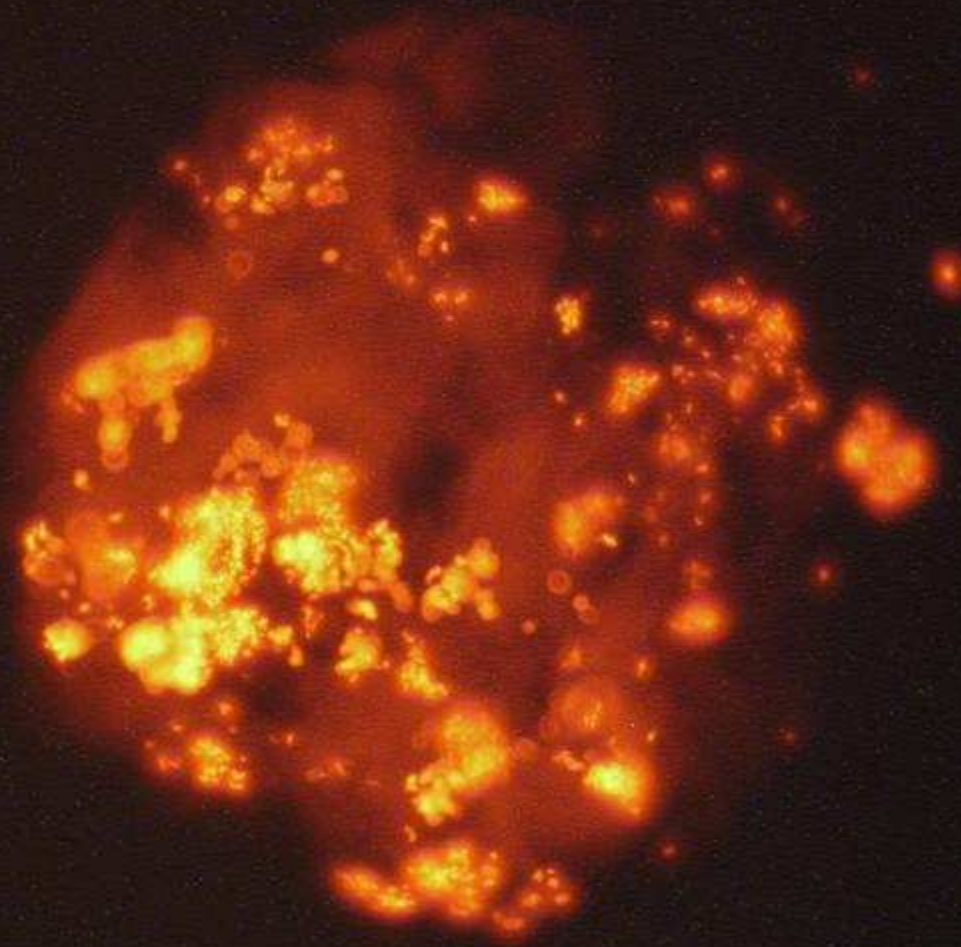


Occurrence (patients/samples) and concentrations of selected bacterial groups associated with desquamated vaginal epithelial cells in urine sediments of bacterial vaginosis and healthy women collected over duration of 8 weeks

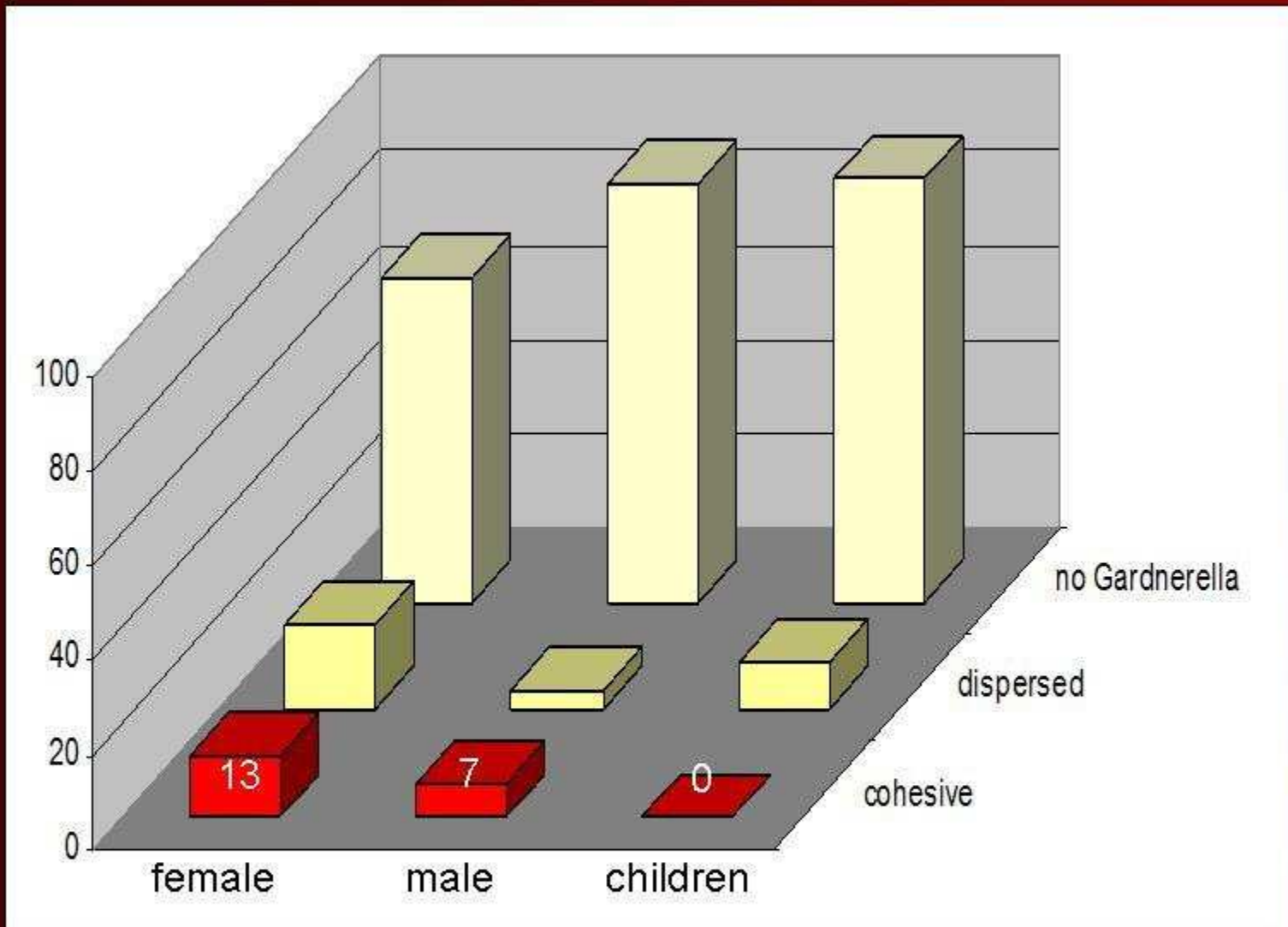
N=patients/ samples	StPM- <i>Gardnerella</i>	Disperced <i>Gardnerella</i>	Lab	Ato
Healthy N=10/150	0/150 (0)	18/150 (2) 12%	93/150 (10) 62%	10/150 (3) 7%
BV N=4/60	4/60 (56) 94/100%*		49/60 (4) 82%	42/60 (3) 70%

The image displays a complex, multi-colored fluorescence pattern. The background is a dark, mottled brown. Overlaid on this are several bright, irregular patches of red and orange-yellow light. The red patches are more numerous and form a dense, interconnected network, while the orange-yellow patches are fewer and appear as distinct, bright spots. The overall appearance is that of a highly fluorescent, textured surface.

Multicolor FISH. prolific *Gardnerella* biofilm (red fluorescence)  
is associated with high concentrations of *Lactobacilli* (orange fluorescence),  
symptomatic BV

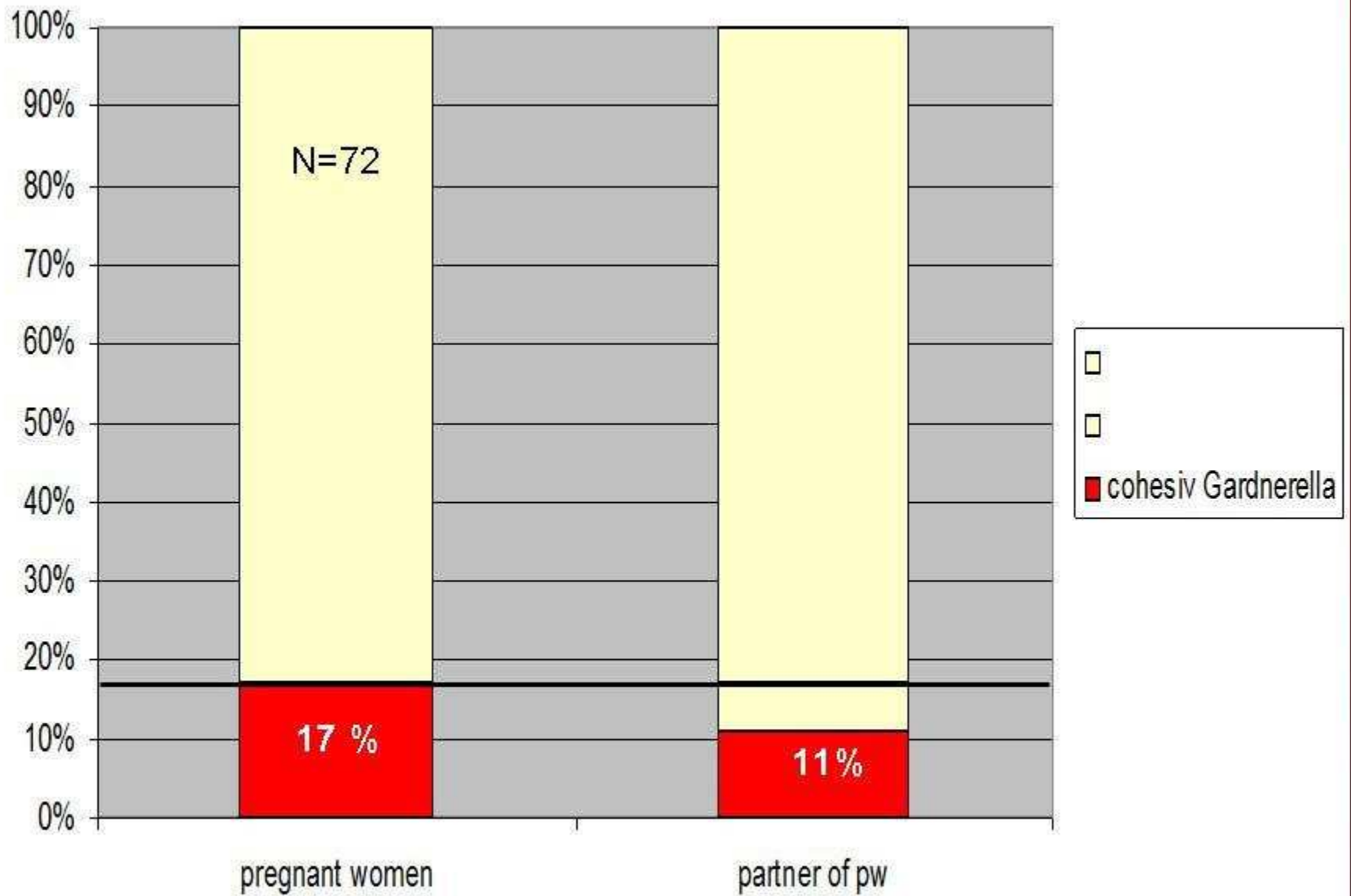


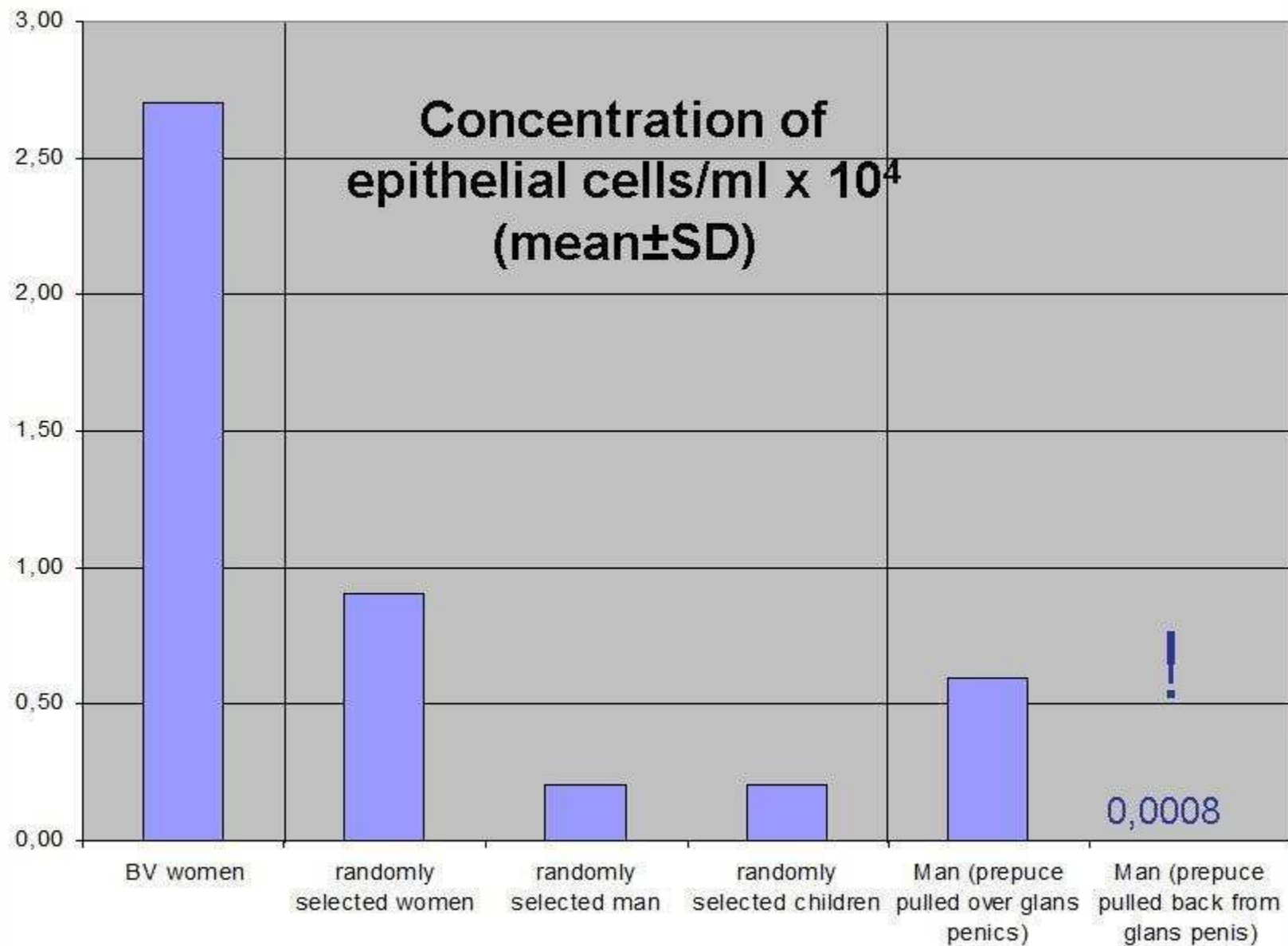
Urinesediment from male (Gardnerella Probe)



Randomly selected urine samples from hospitalized patients







# Fertilisation

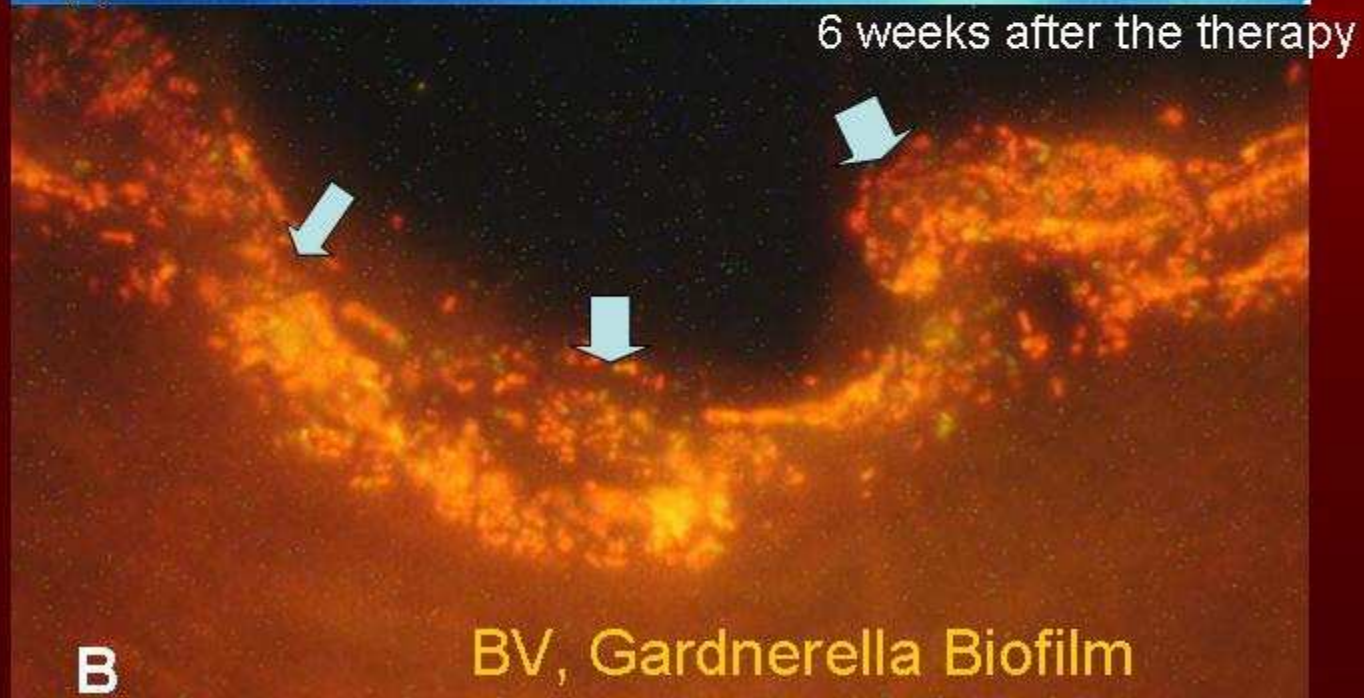
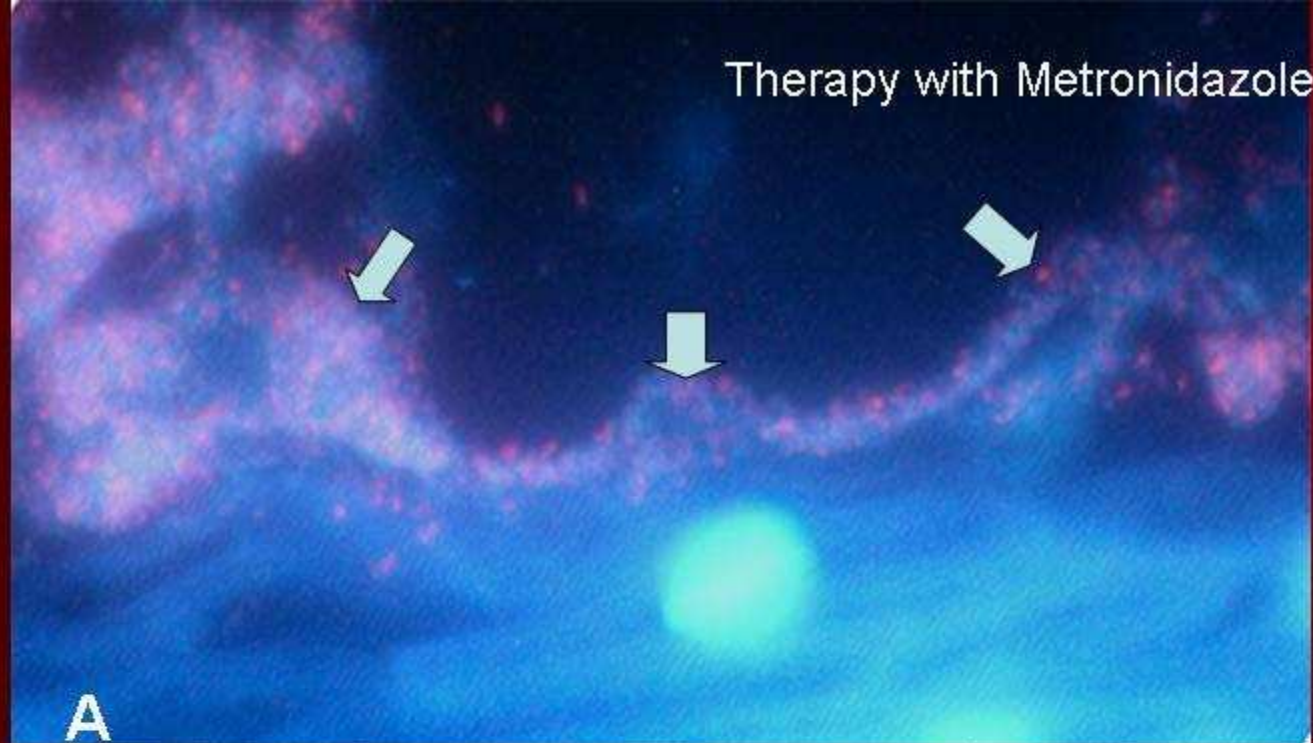


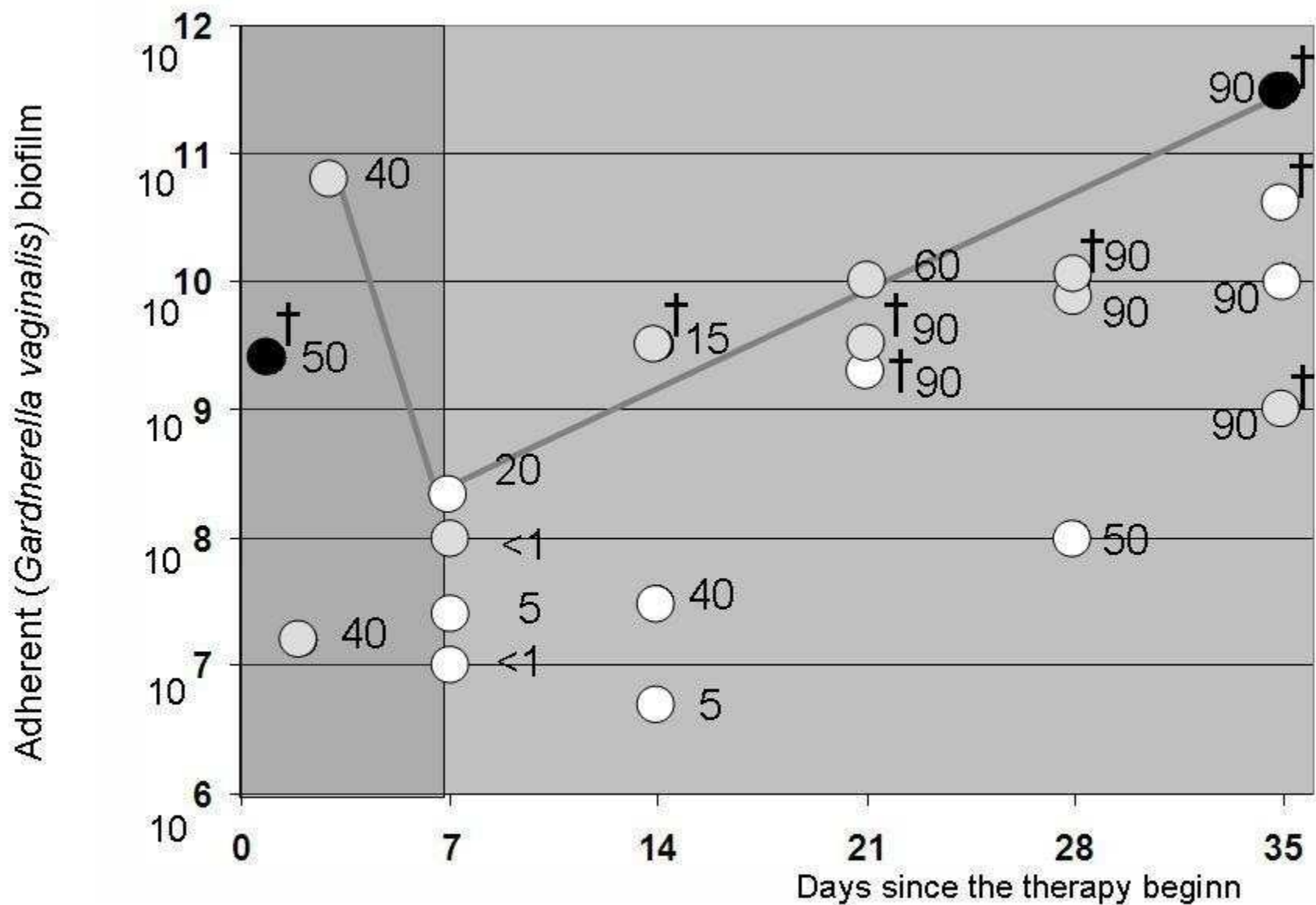
**Antibiotics**

**Metronidazole**

**Avalox (Moxifloxacin)**

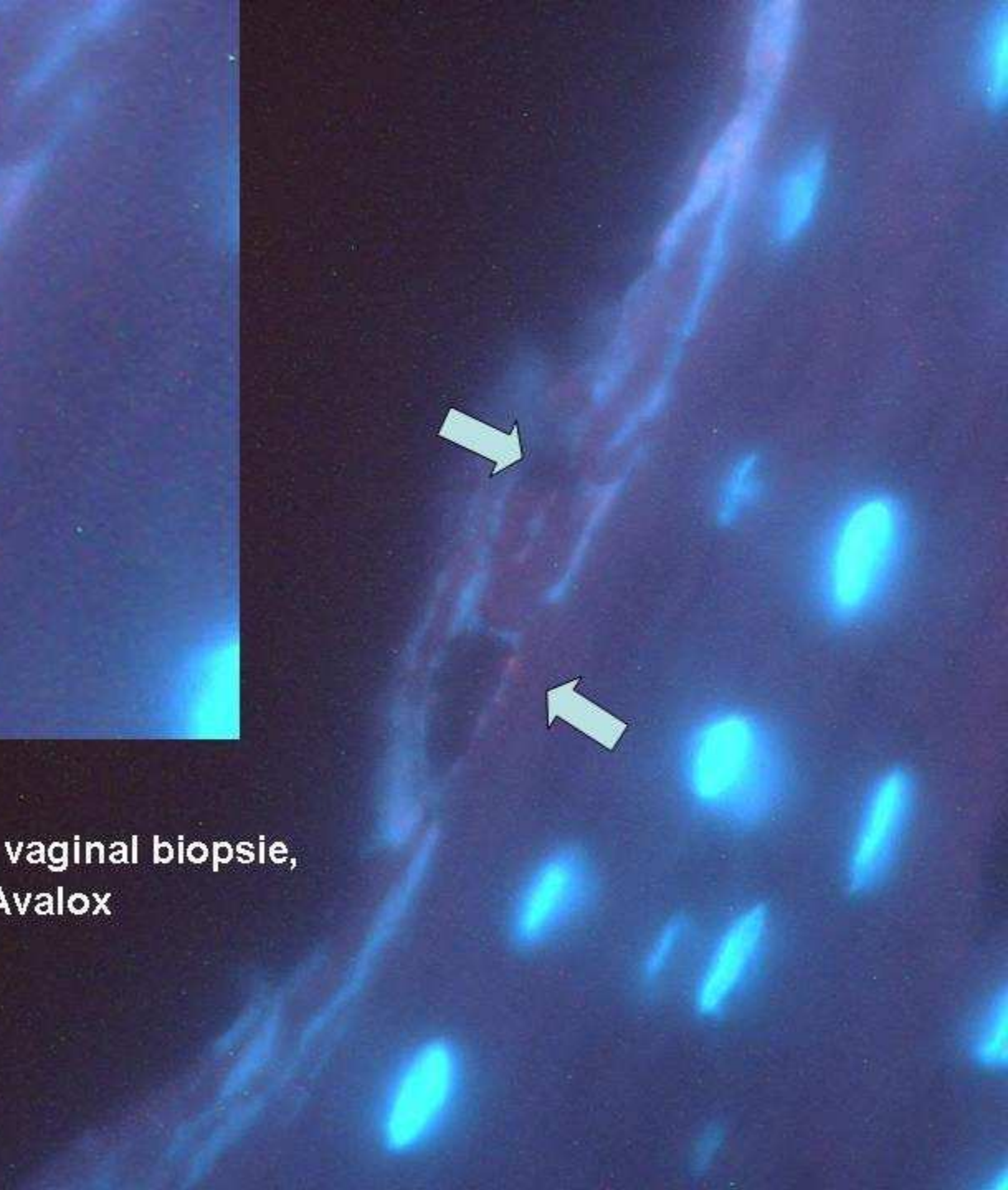
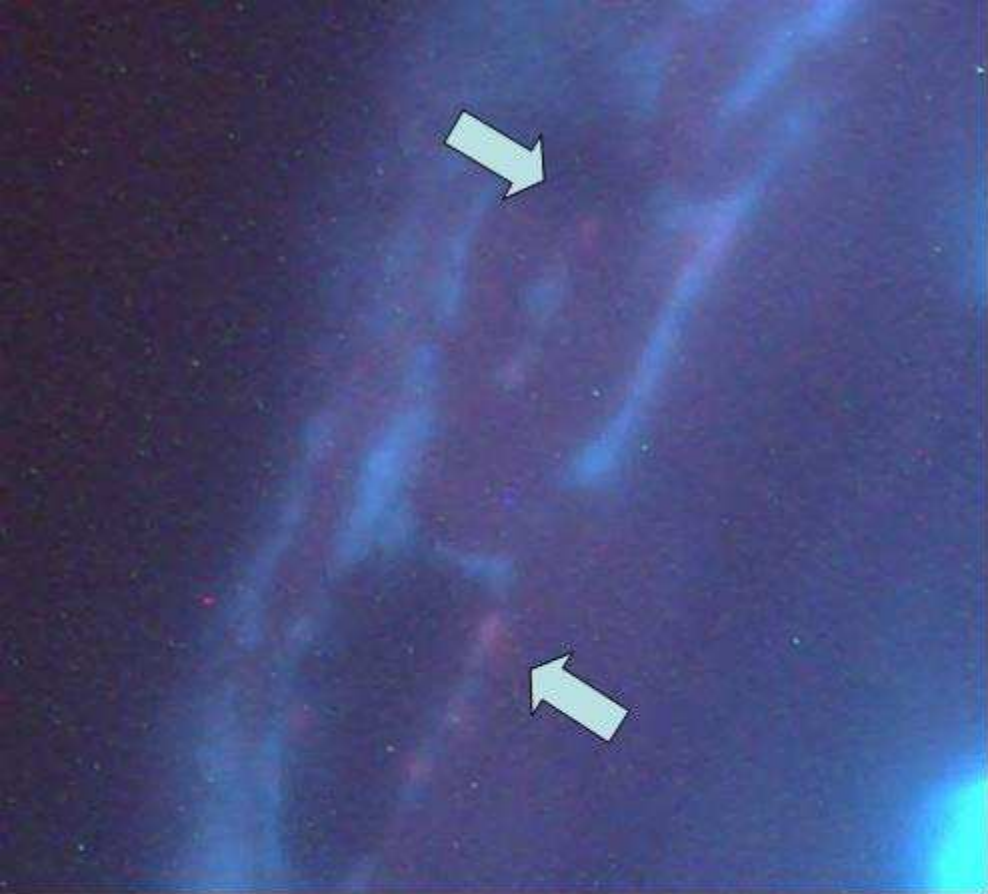
**Antiseptics (Octenisept)**





● pH ≥ 6, clue cells    ○ 5 ≥ pH < 6, disturbed flora    ○ pH < 5 no abnormality

1-90 Percent of DAPI stained bacteria, which positively hybridize with universal bacterial probe



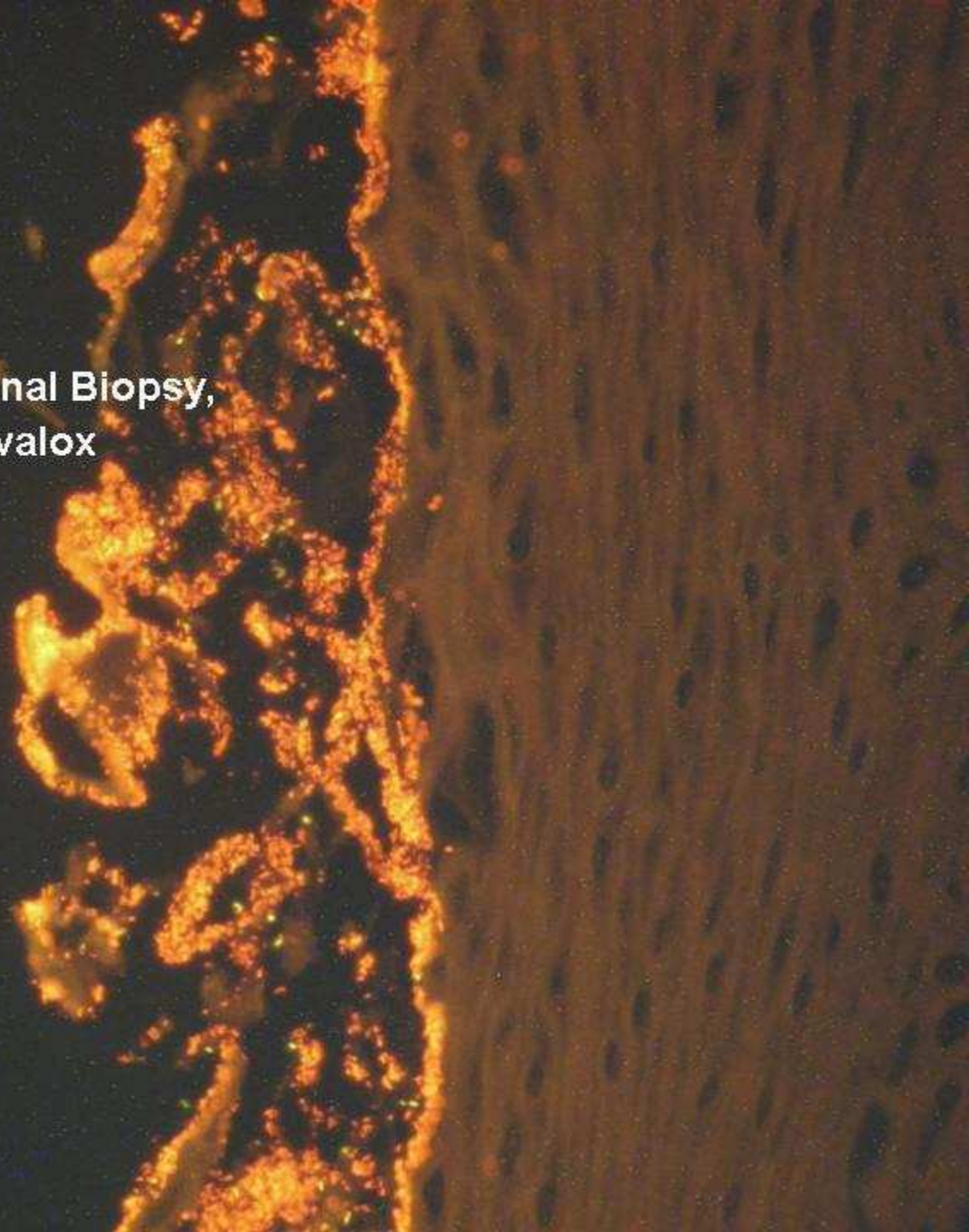
**B**

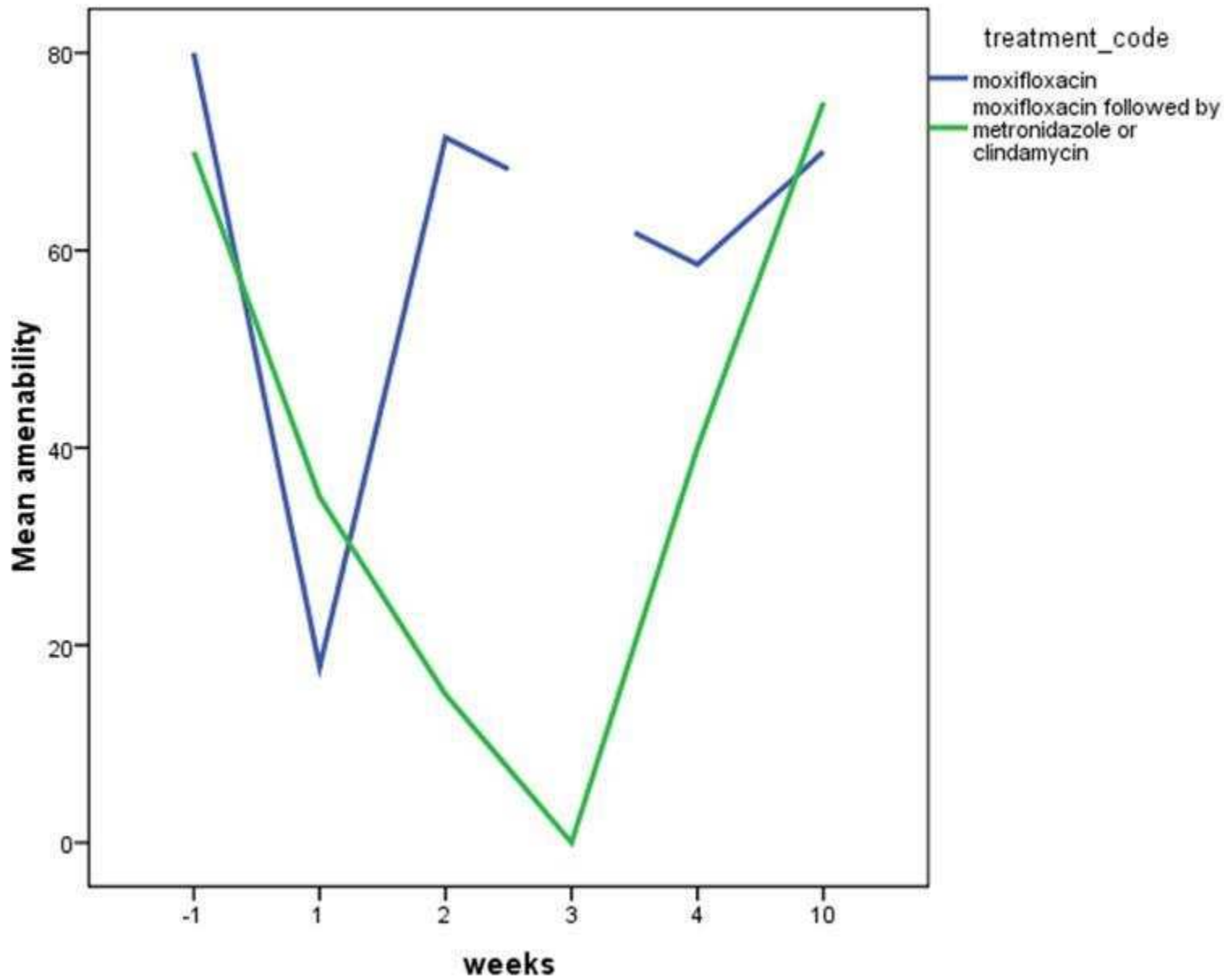
Patient NG, vaginal biopsy,  
5th day of Avalox



D

Patient NG, vaginal Biopsy,  
12. week after Avalox





## Impact of octenisept on StPM *Gardnerella* biofilms

	Response	Relapse within one to 6 month	No response	Cumulative non-response rate
Initial therapy for 7 days (N=24)	21	14	3	13%
2. therapy repeated for 28 days (N=17)	11	4	6*	25%
3. therapy repeat for 28 days followed by intermittent weekly applications for 2 month (N=4)	1	0	3*	38%



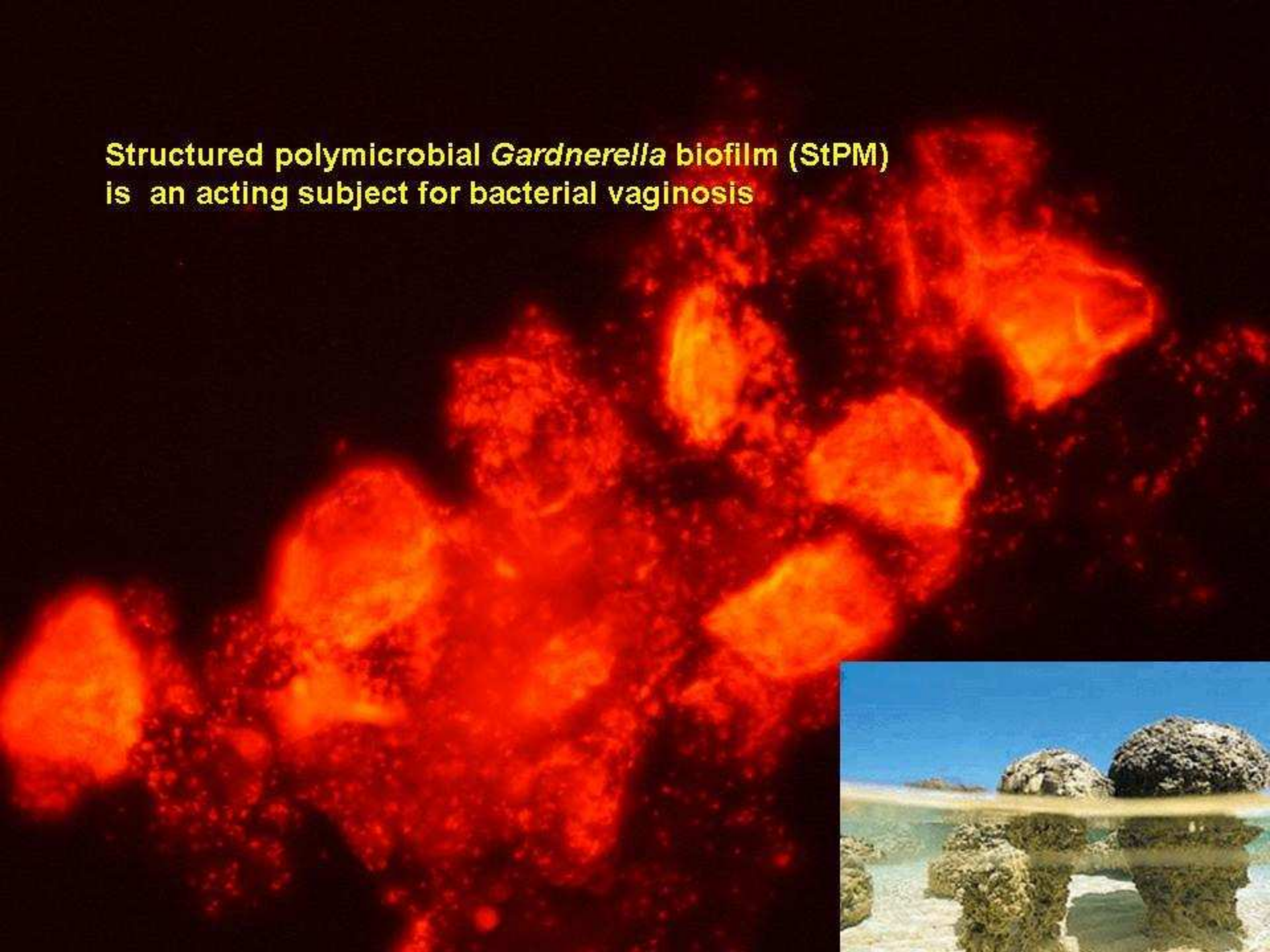
Occurrence of vaginal StPM *Gardnerella* biofilms in patients with missed abortion and non-pregnant women undergoing tubal surgery or uterine curettage

<b>Group:</b>	<b>Vaginal StPM Gardnerella biofilms</b>		<b>P compared to group A</b>
<b>A. Missed abortion (curettage)</b>	<b>9/20</b>	<b>(43%)</b>	
<b>B. Nonpregnant women with curettage of the uterus or tubal surgery</b>	<b>9/48</b>	<b>(19%)</b>	<b>P=0.05</b>
<b>C. Randomly selected women hospitalized for different nongynaecologic diseases <sup>*ref</sup></b>	<b>13/100</b>	<b>(13%)</b>	<b>P=0.002</b>
<b>D. Randomly selected pregnant women <sup>*ref</sup></b>	<b>12/72</b>	<b>(17%)</b>	<b>P=0.012</b>
<b>E. Samples from randomly selected outpatients from the general practice <sup>*</sup></b>	<b>58/262</b>	<b>(22%)</b>	<b>P =0.04</b>

Occurrence of bacteria in uterus/tubes in women with and without vaginal StPM-*Gardnerella* biofilm

	Samples of uterus/tubes positive for bacteria
Vaginal StPM <i>Gardnerella</i> biofilm négative (N=50)	13/50 (26%)
Vaginal StPM-Gard positive (N=18)	12/18 (67%) $P < 0.005$
including StPM Gard pos. non pregnant	4/9 (44%)
Including StPM Gard pos. pregnant	8/9 (89%)

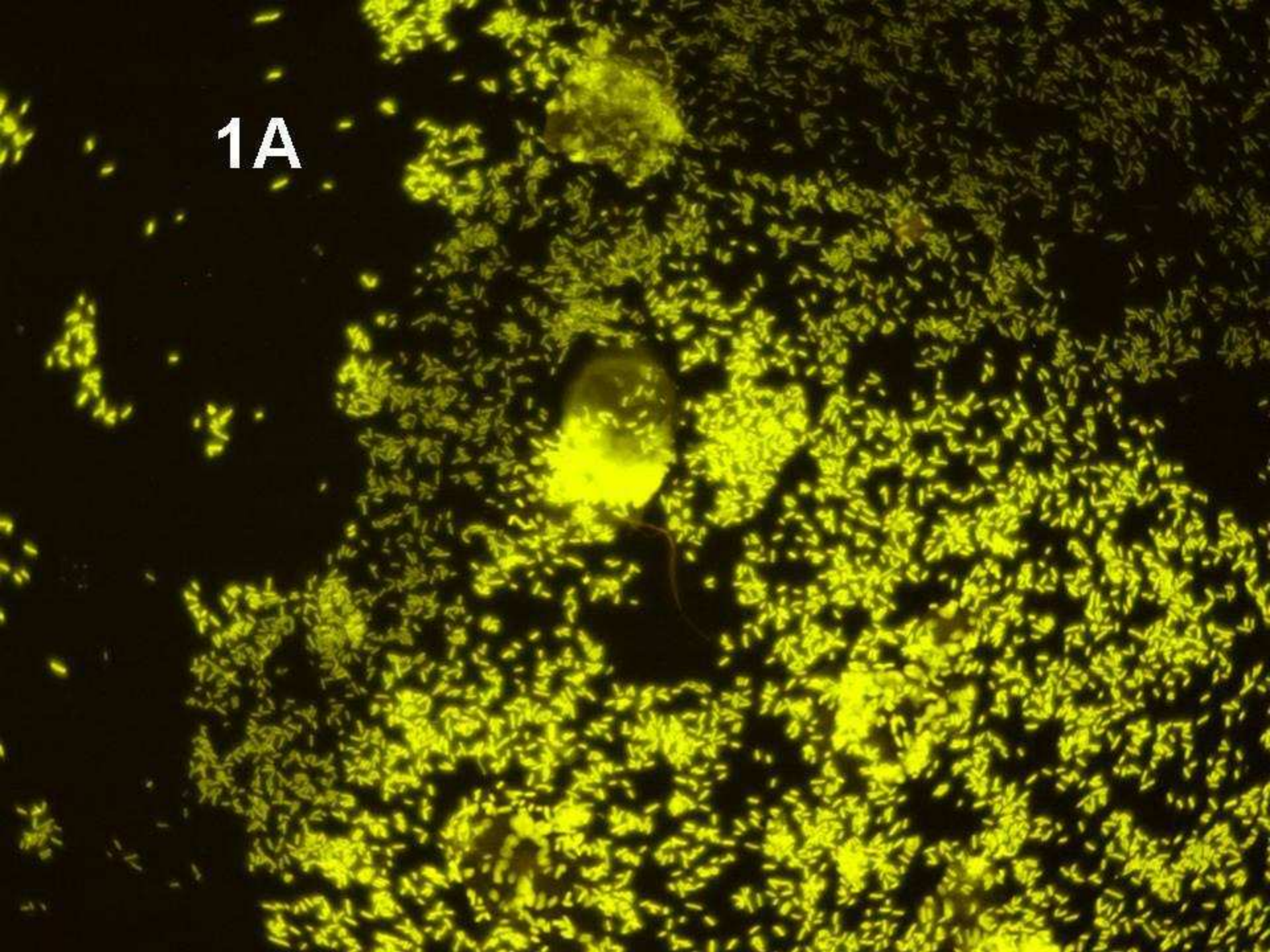
Structured polymicrobial *Gardnerella* biofilm (StPM)  
is an acting subject for bacterial vaginosis



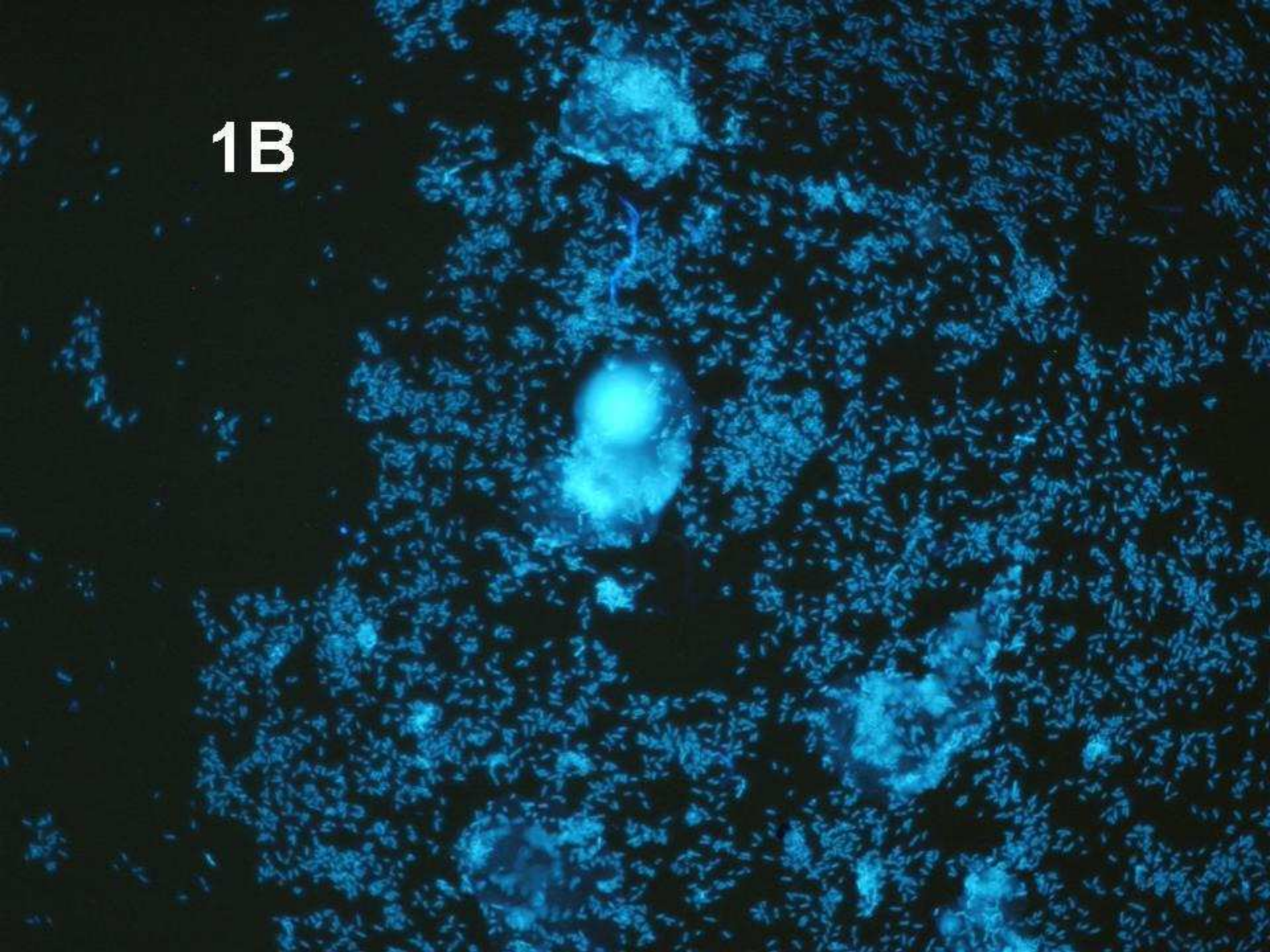
# Cystitis



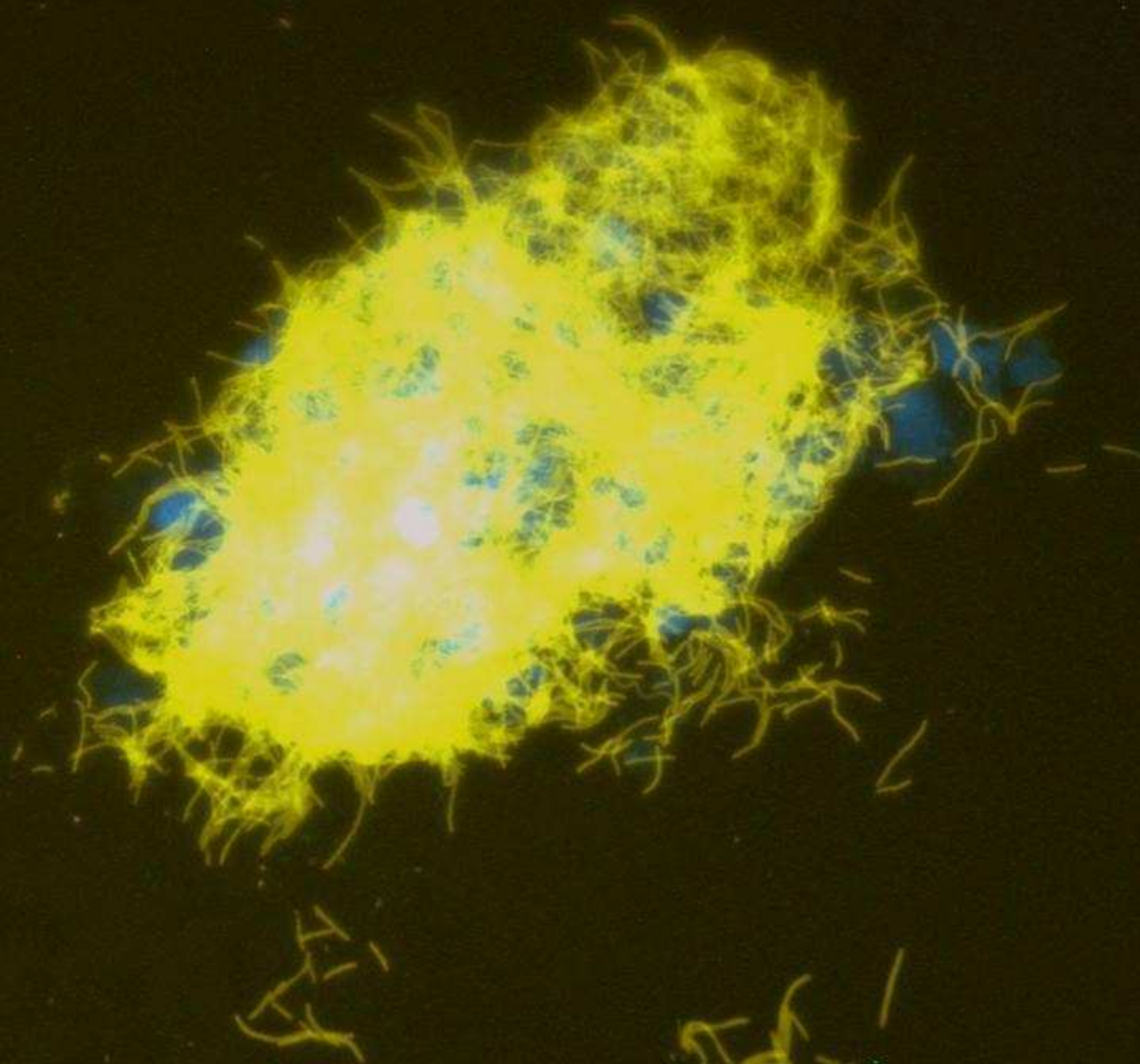
1A



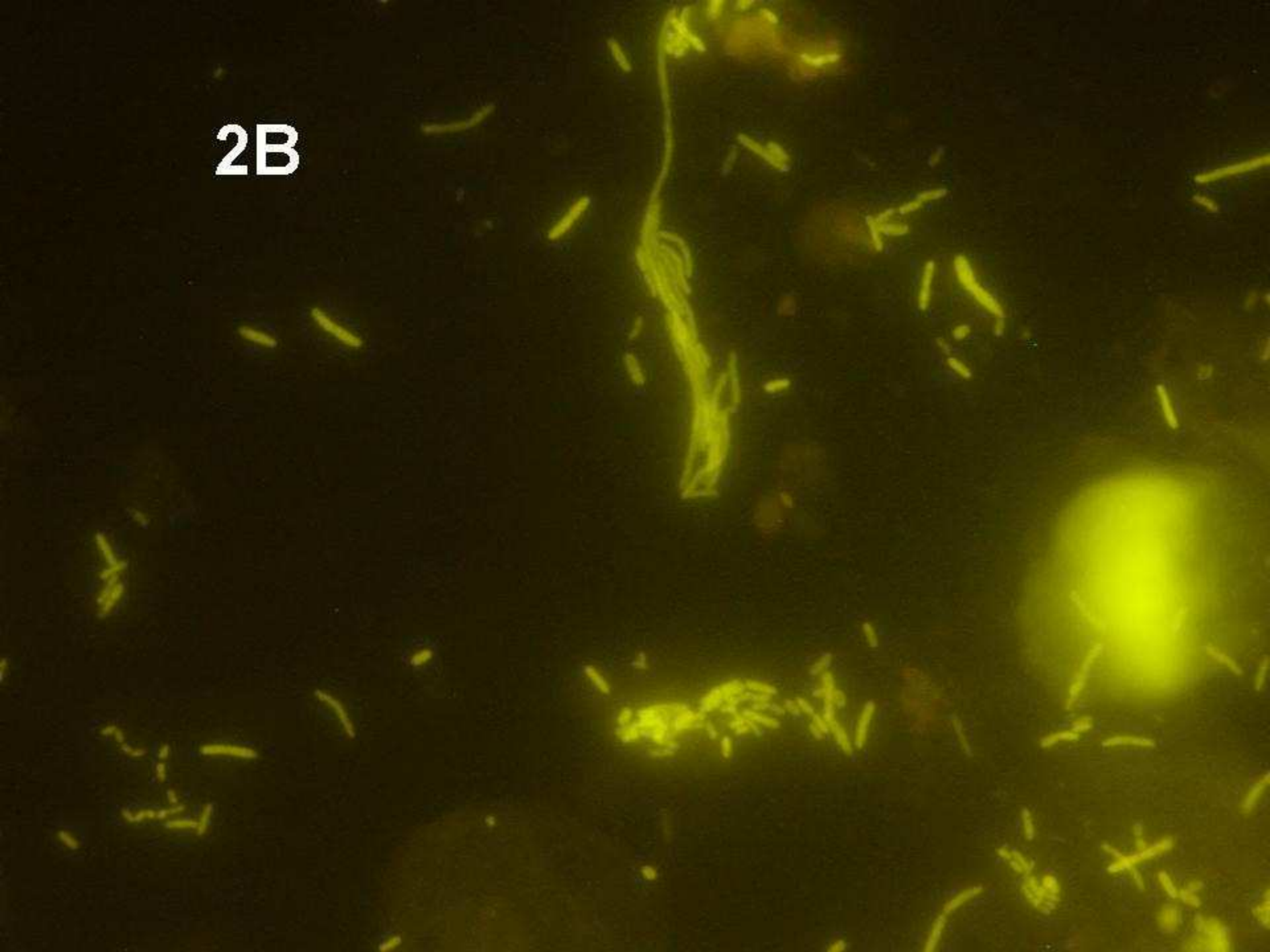
1B



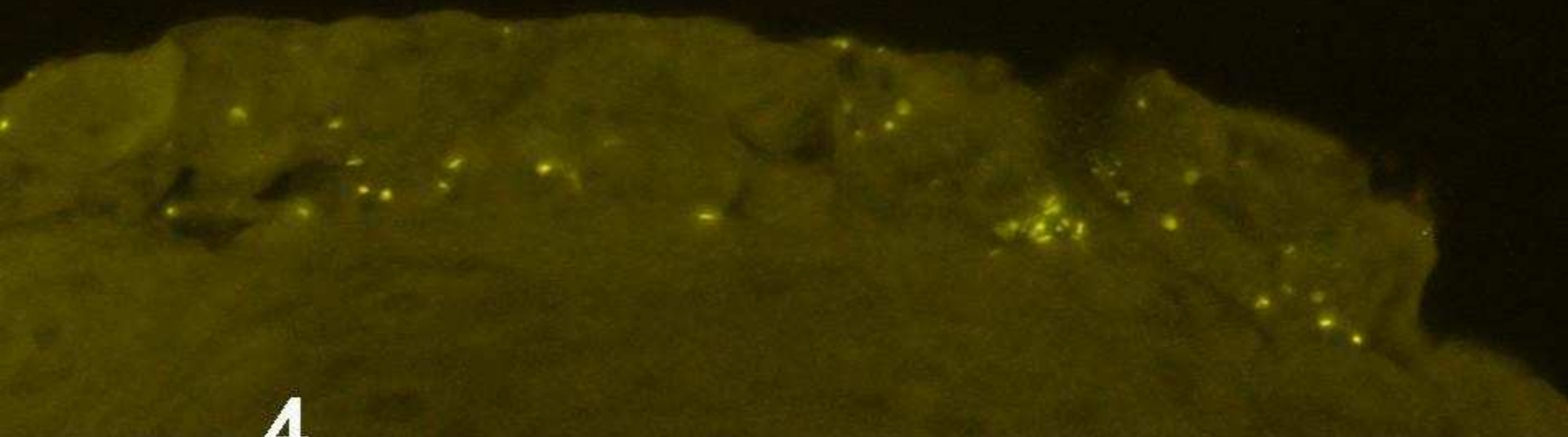
2A



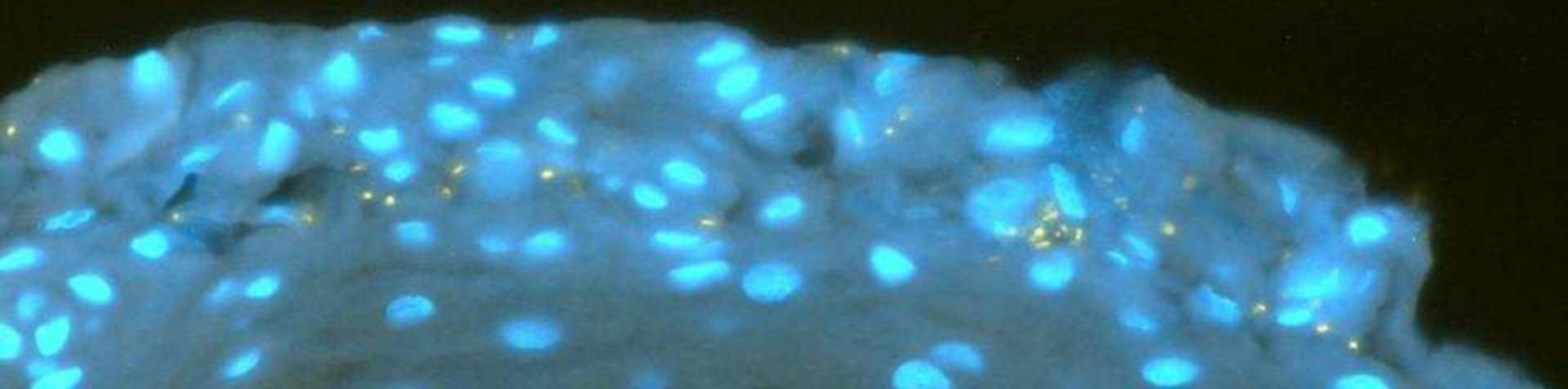
2B



The image shows a close-up of a textured, yellowish-green surface, likely a biological specimen such as a piece of coral or a sponge. The surface has a porous, granular appearance with many small, irregular openings. The lighting is somewhat uneven, with brighter areas on the left and darker areas on the right. A white number '3' is overlaid on a black rectangular background on the left side of the image. The overall composition is a composite of several overlapping rectangular panels, suggesting it might be a scan of a larger image or a collage.



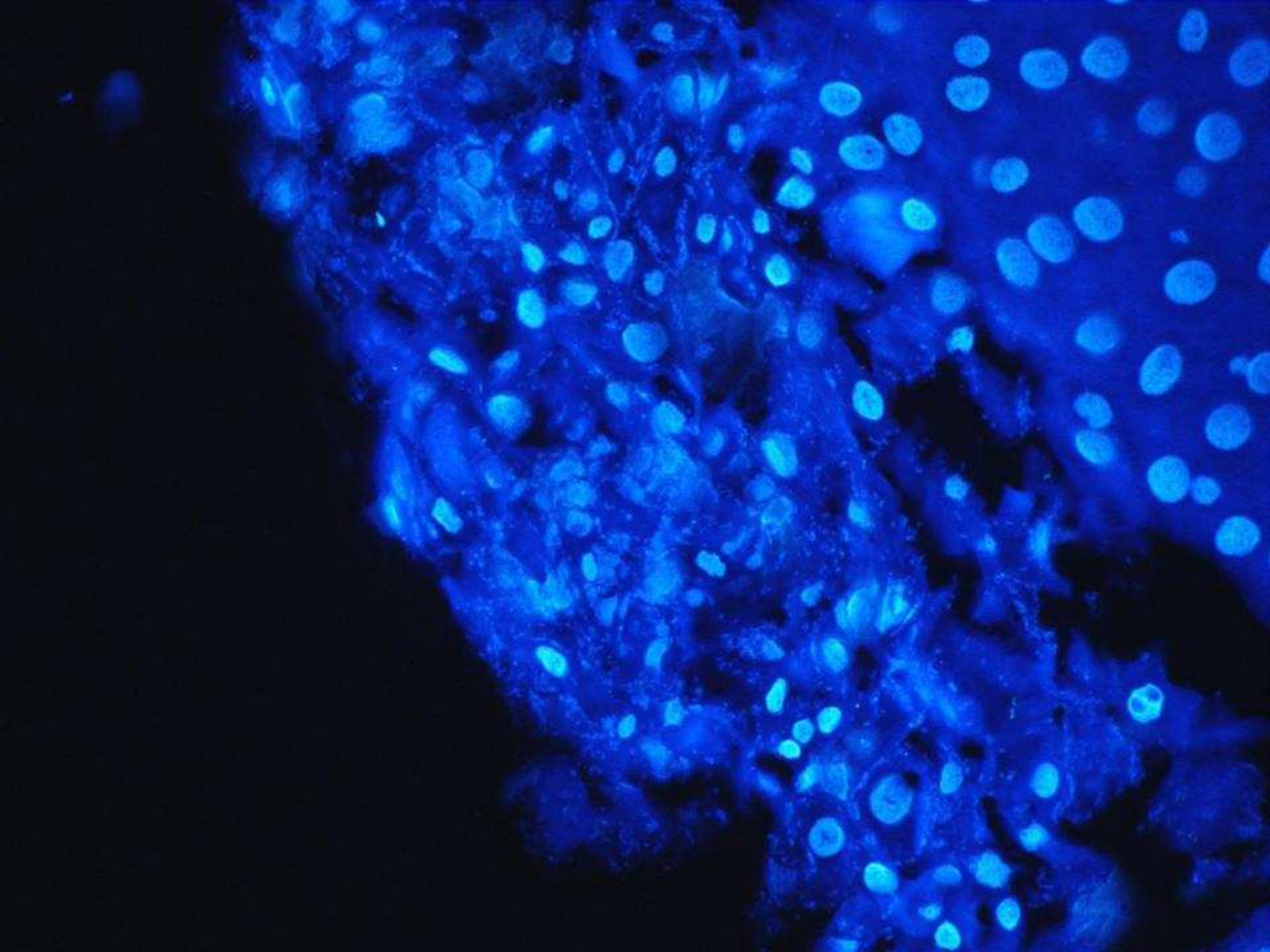
4

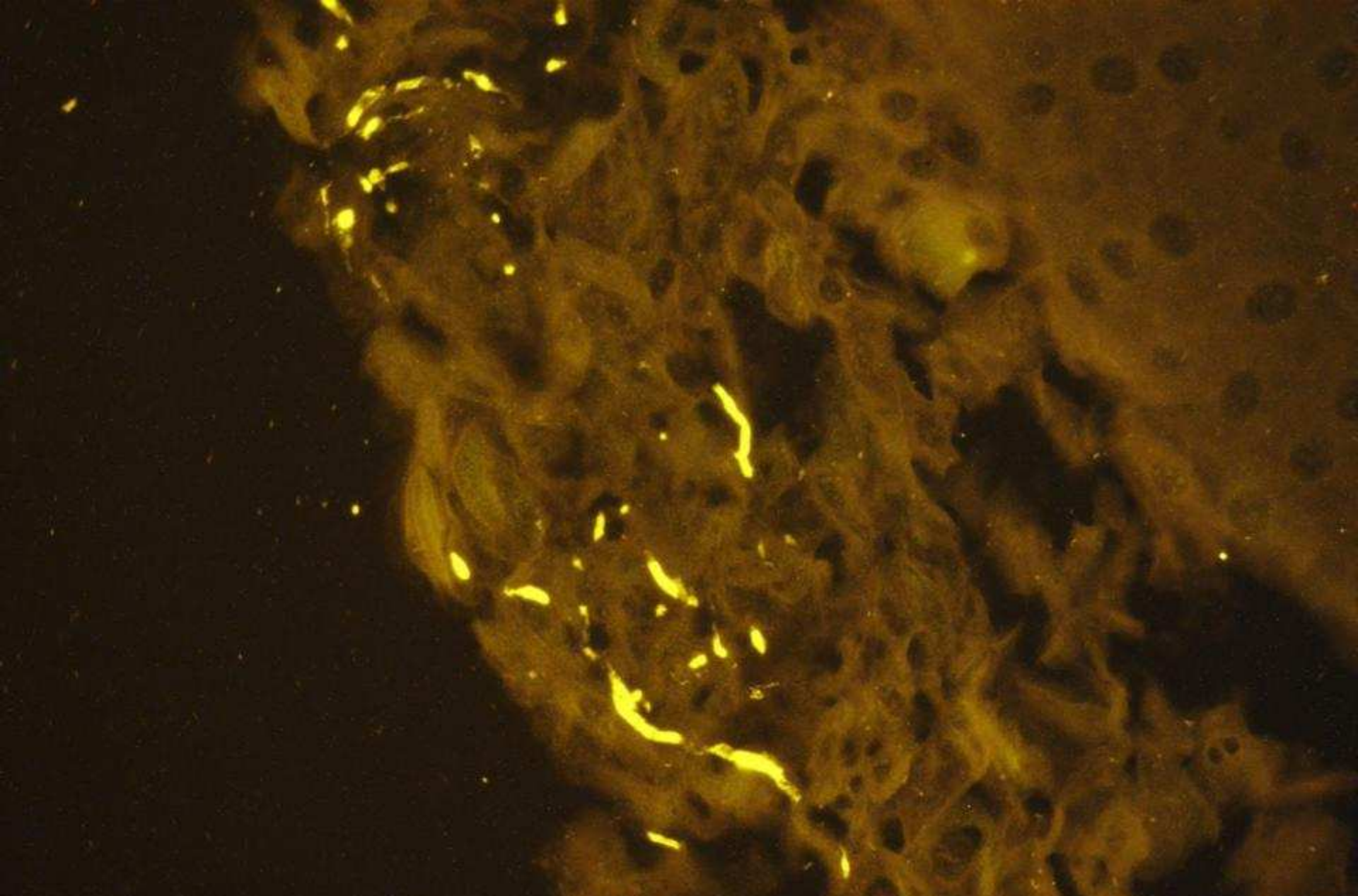




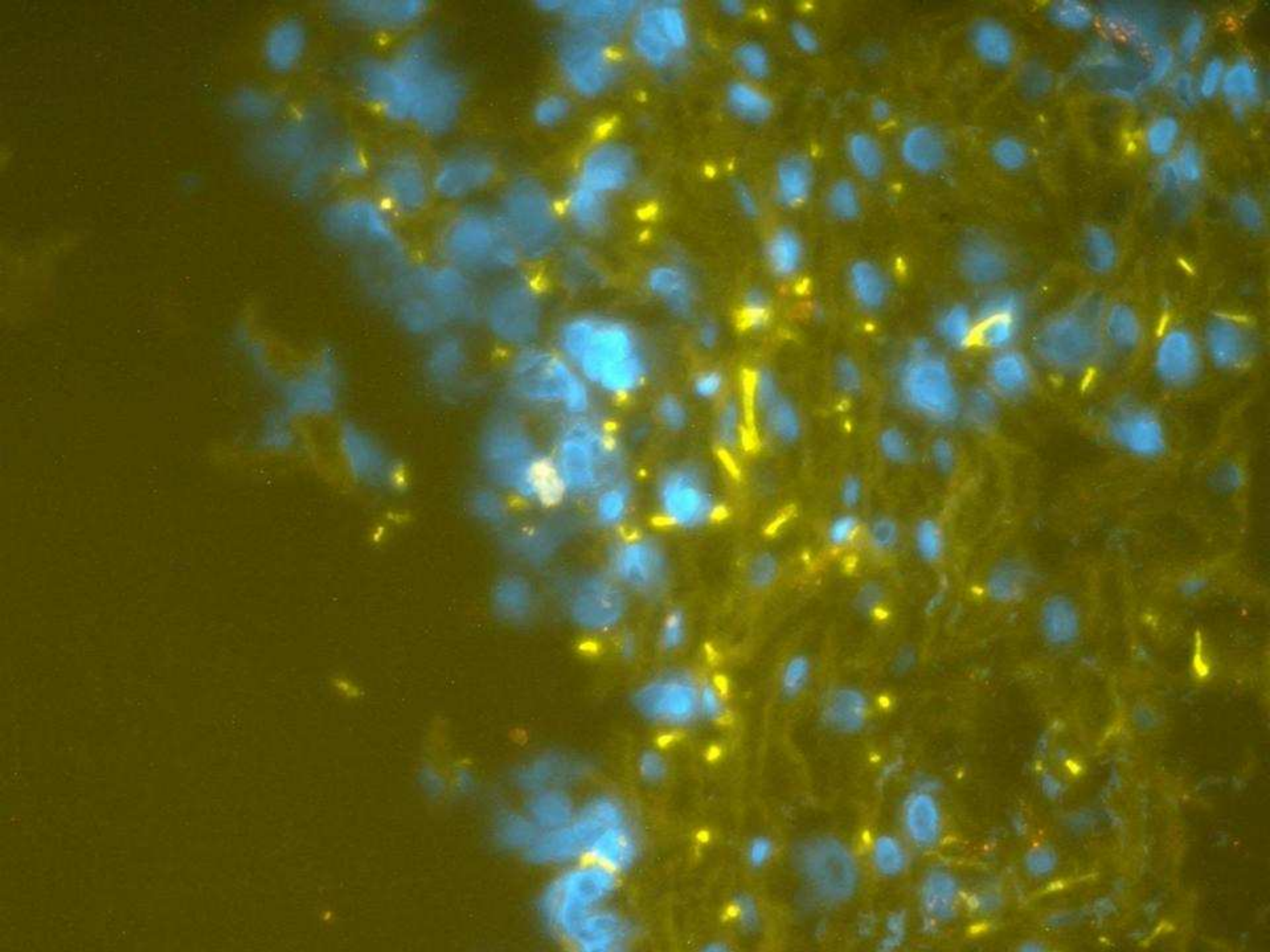


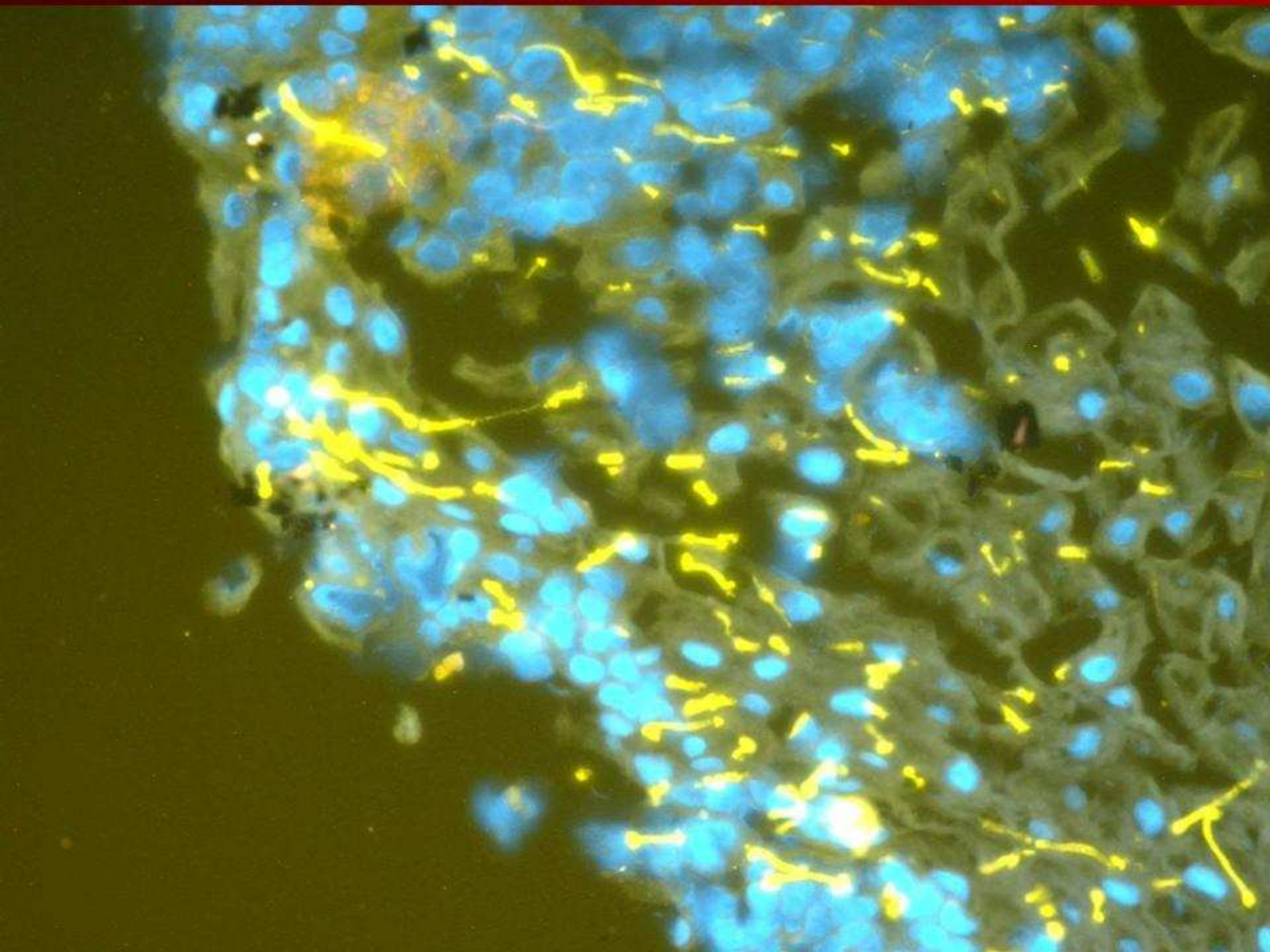






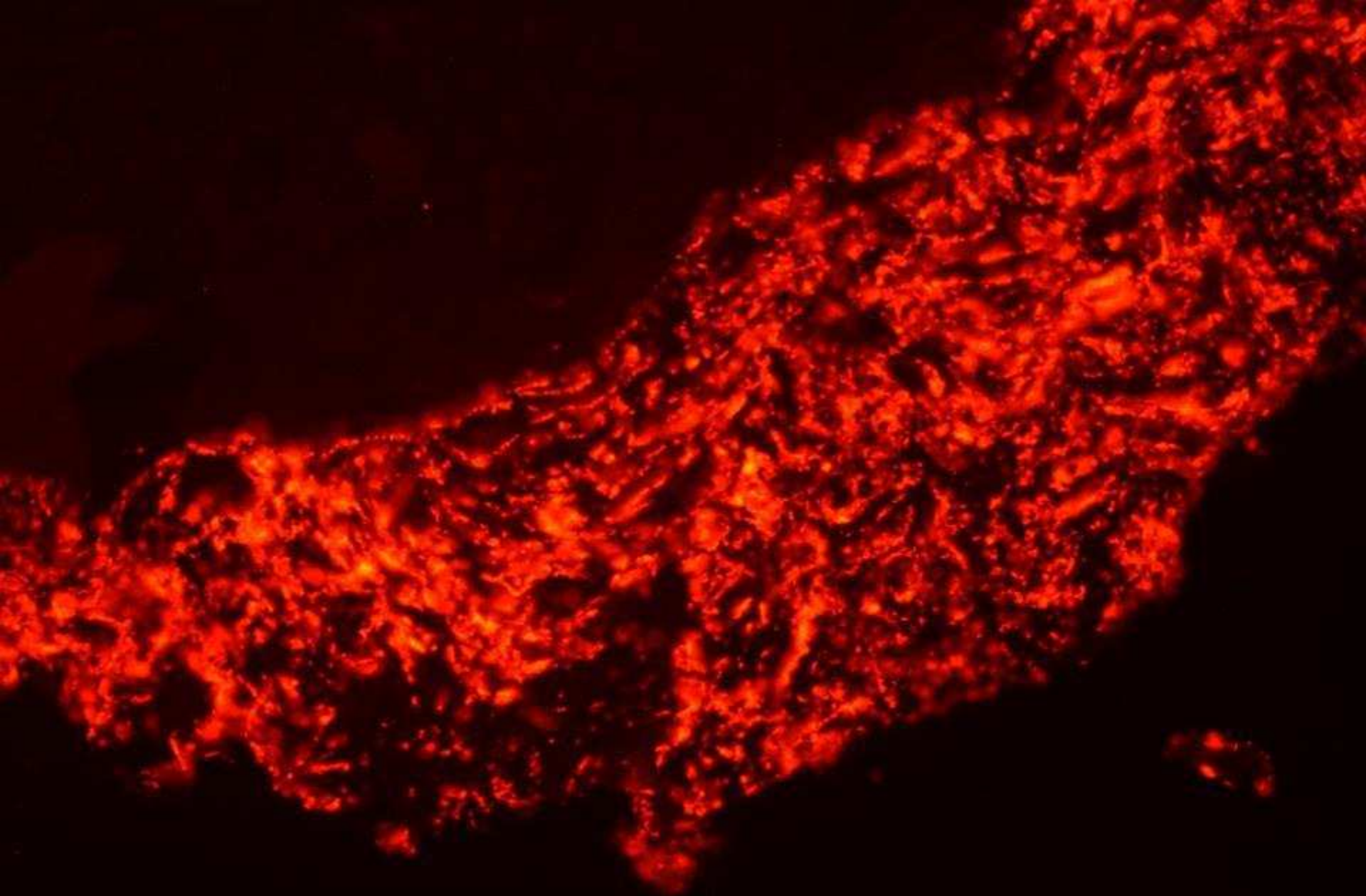
Fungal infection of the vaginal epithelium



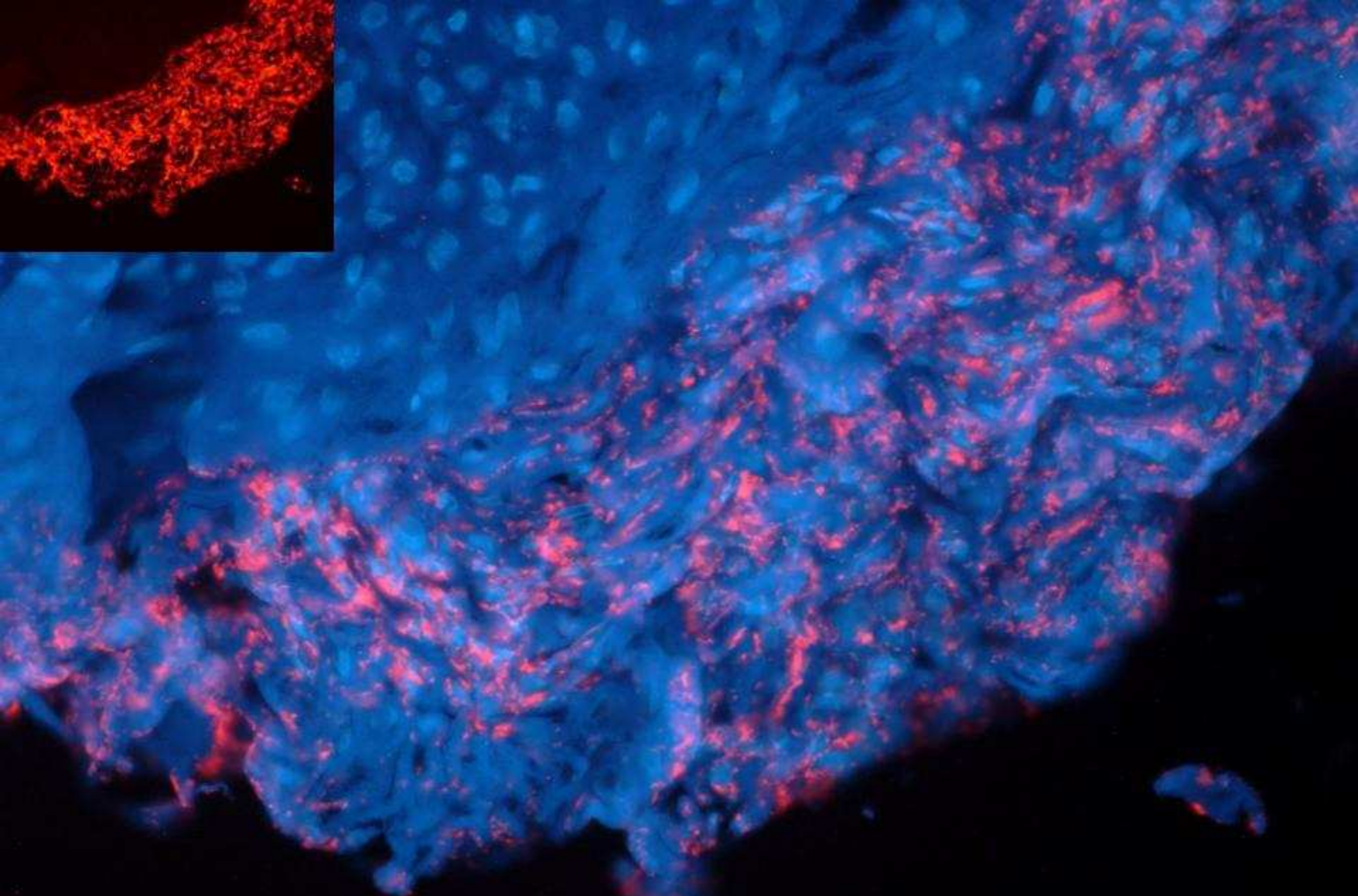




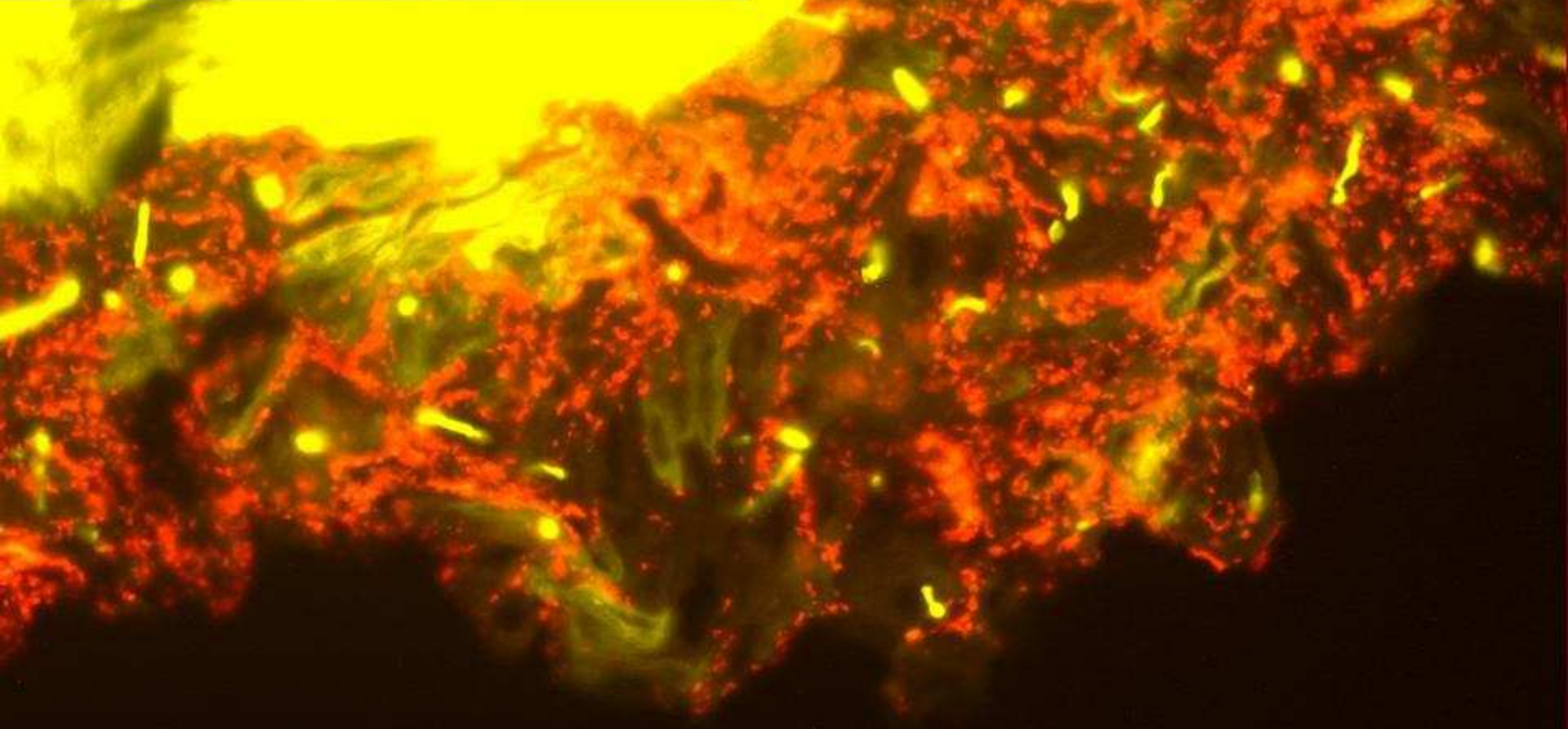
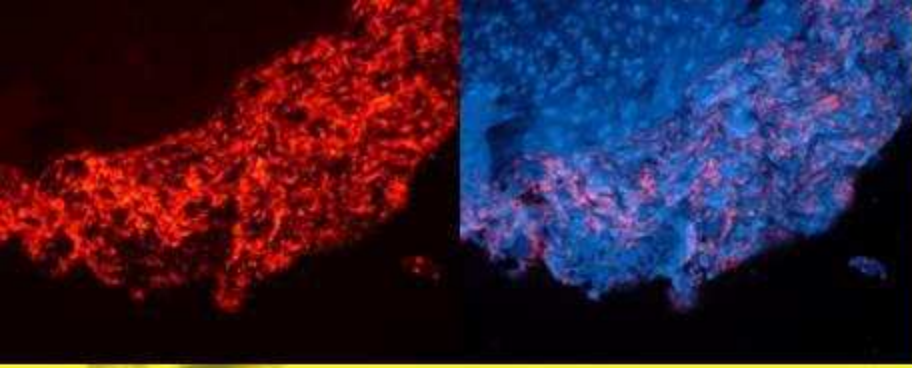
Vaginale Candidiases, Candida C3 gelb, + Dapi



Vaginale Candidiases, Gardnerella



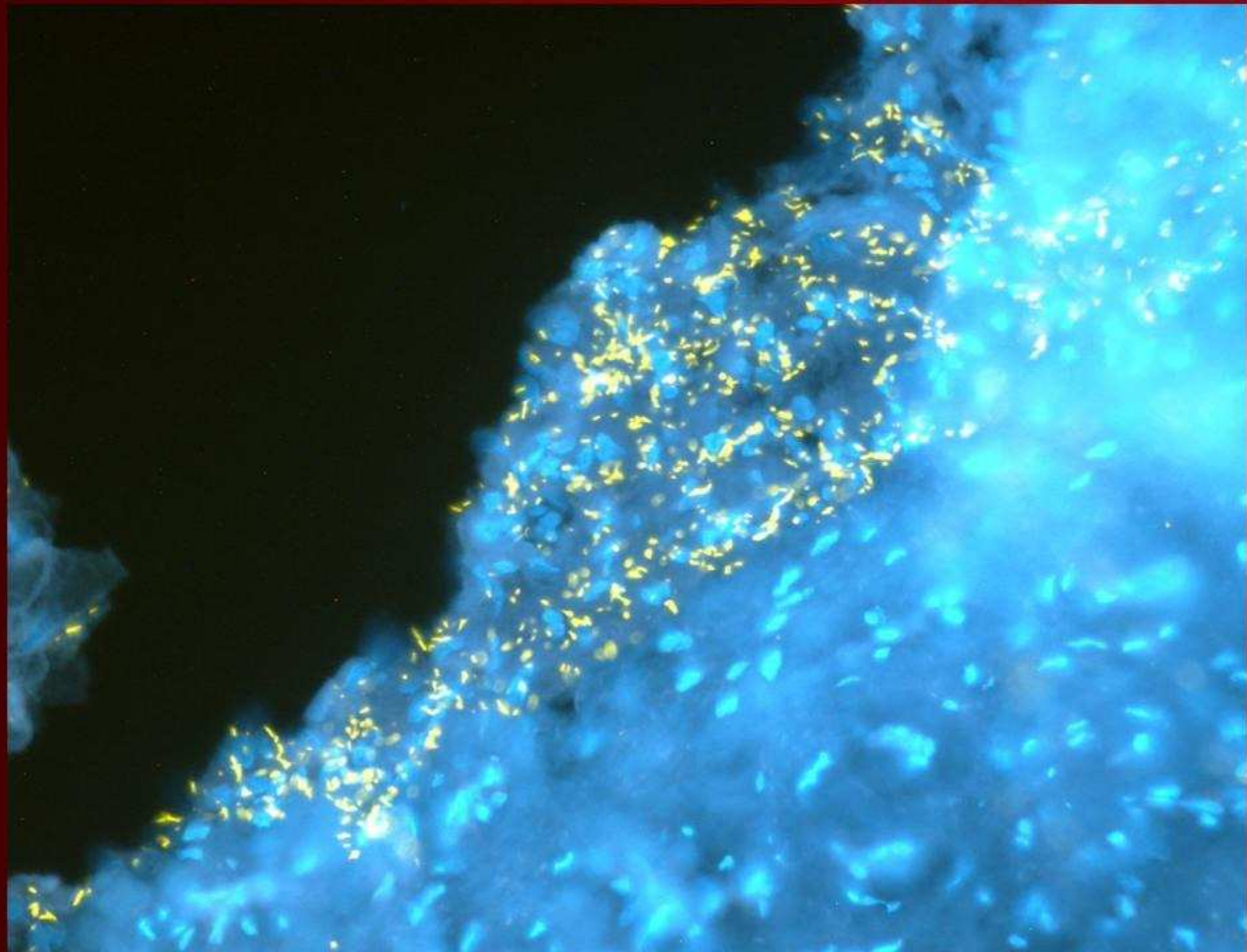
Vaginale Candidiases, Gardnerella



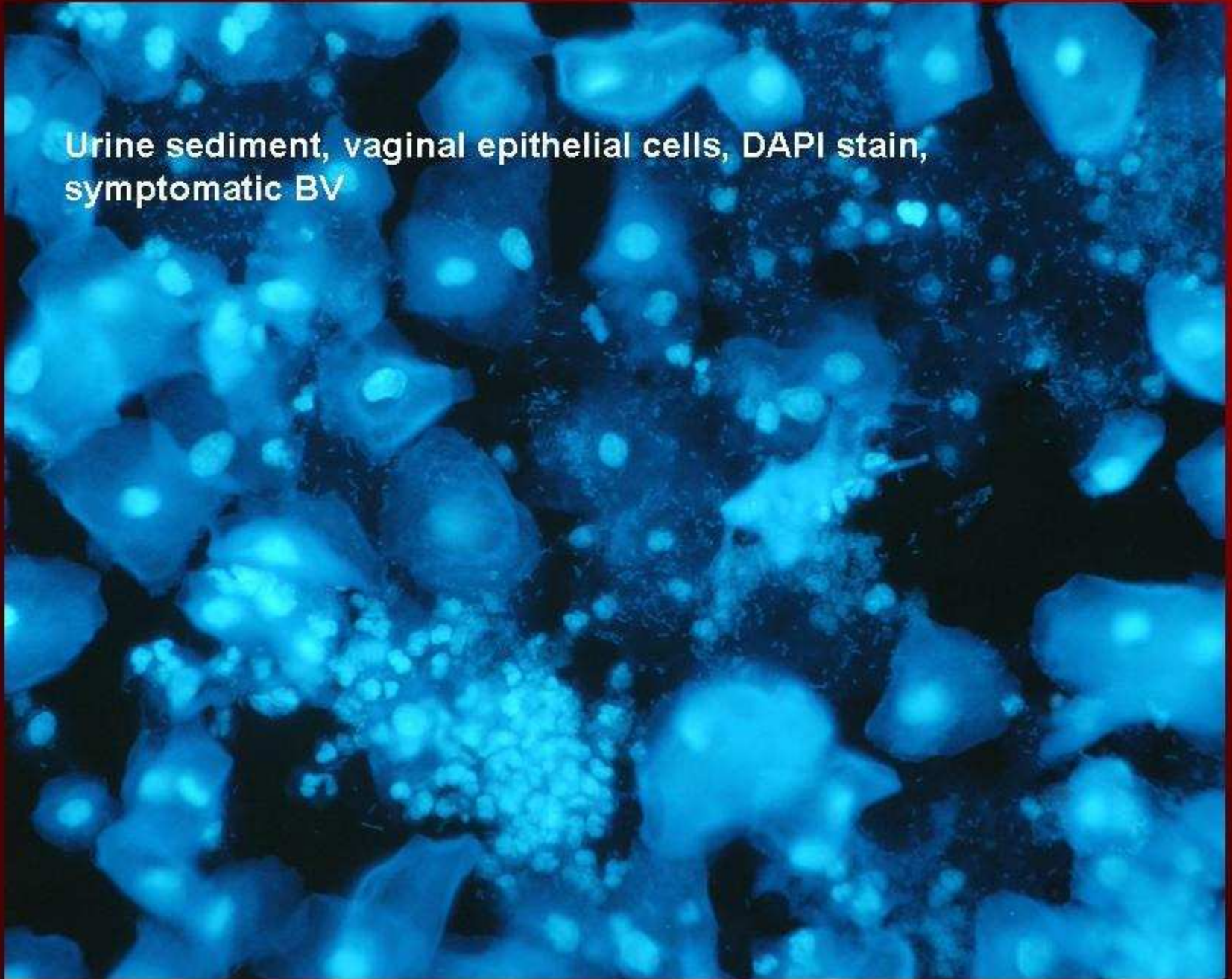
Vaginale Candidiases, Gardnerella



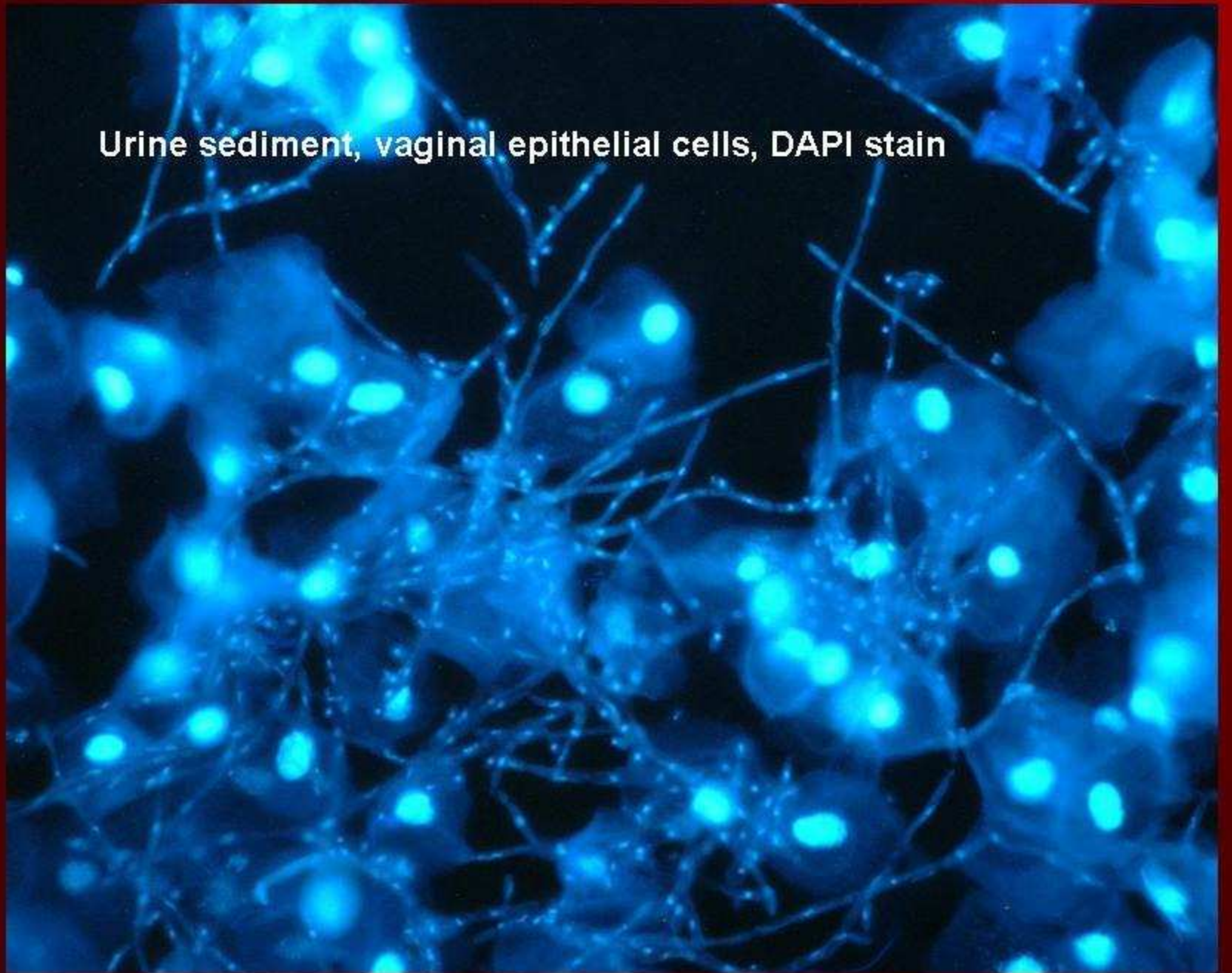




Urine sediment, vaginal epithelial cells, DAPI stain,  
symptomatic BV

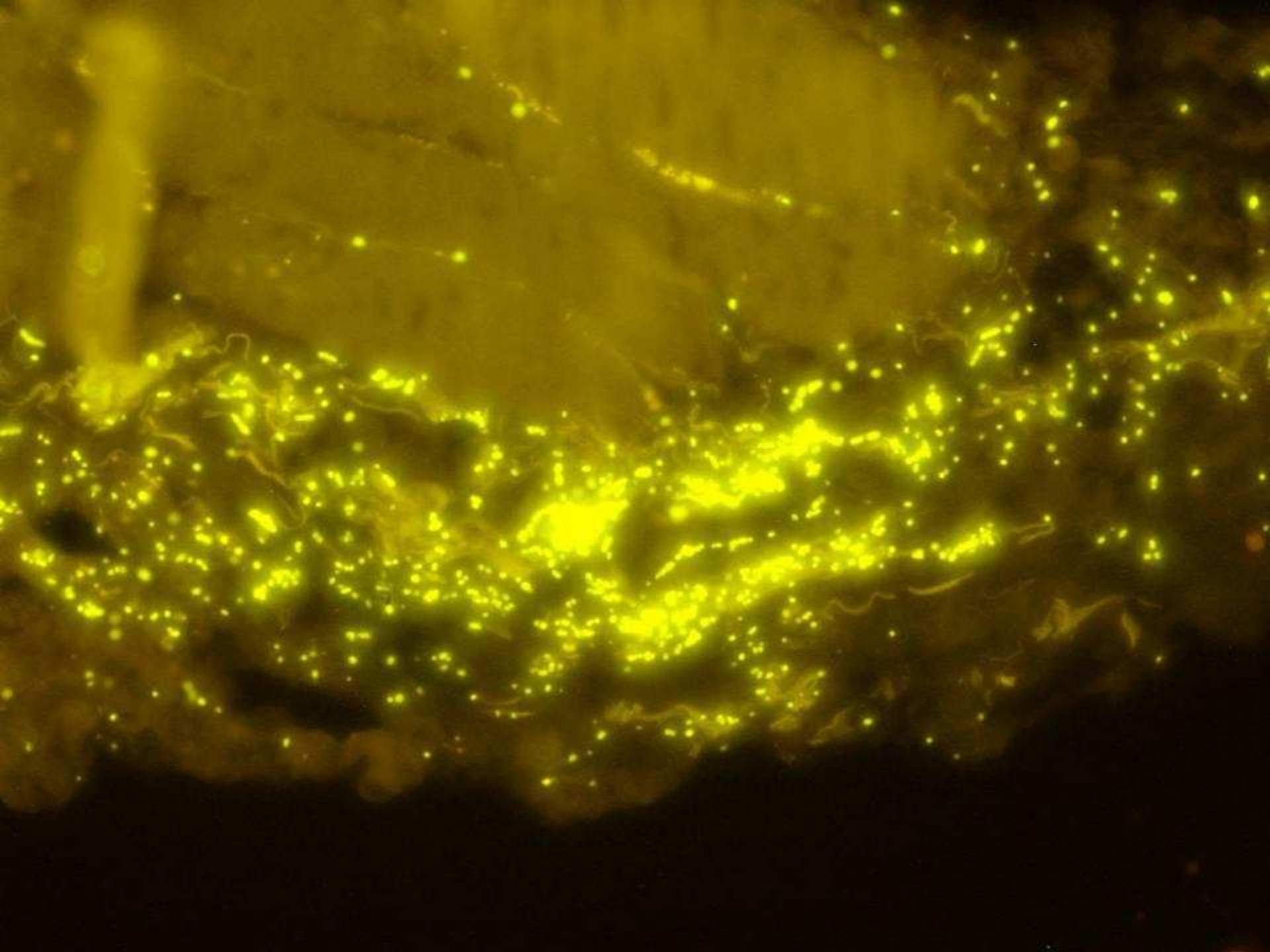


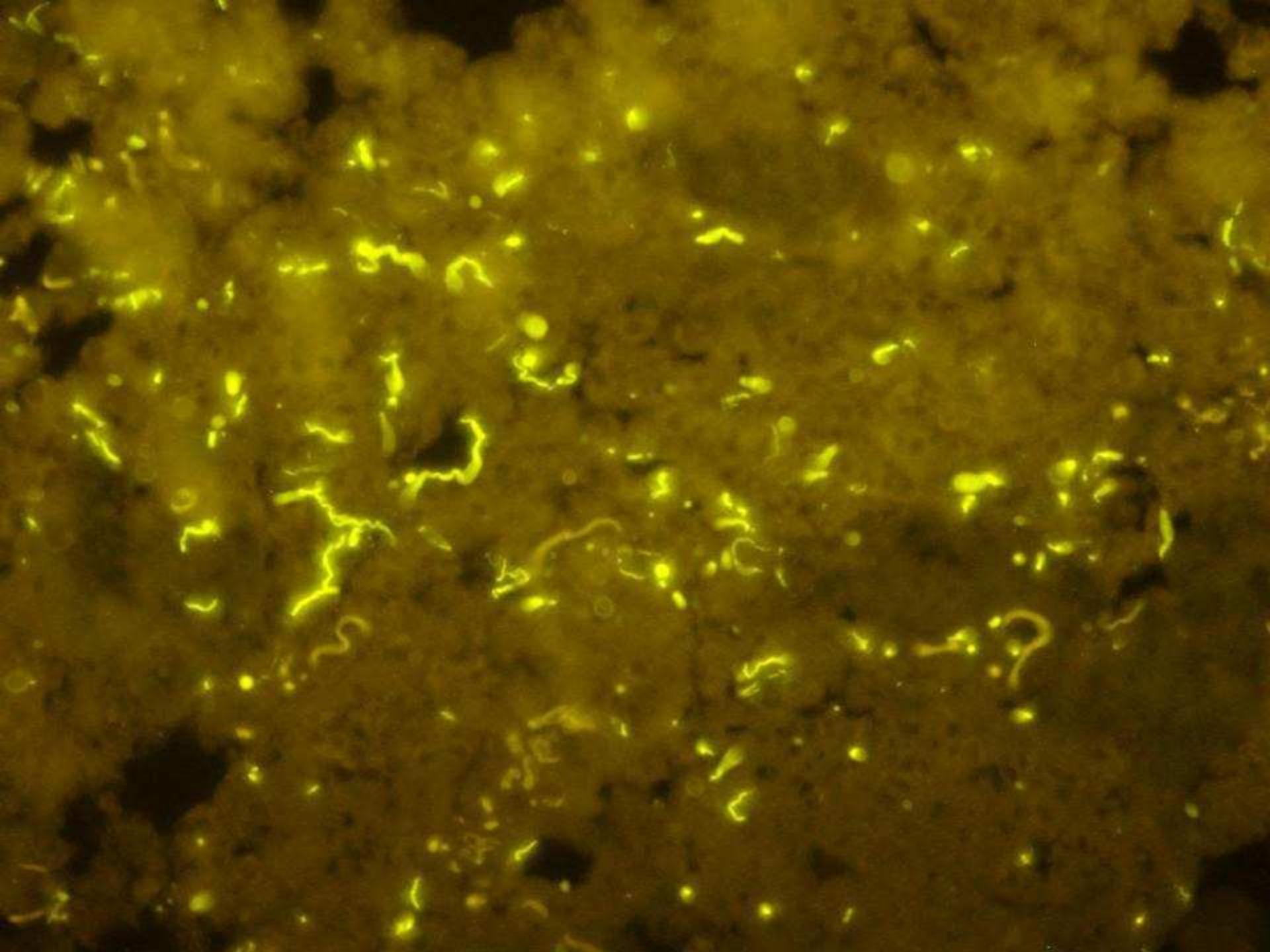
Urine sediment, vaginal epithelial cells, DAPI stain



**Haut**





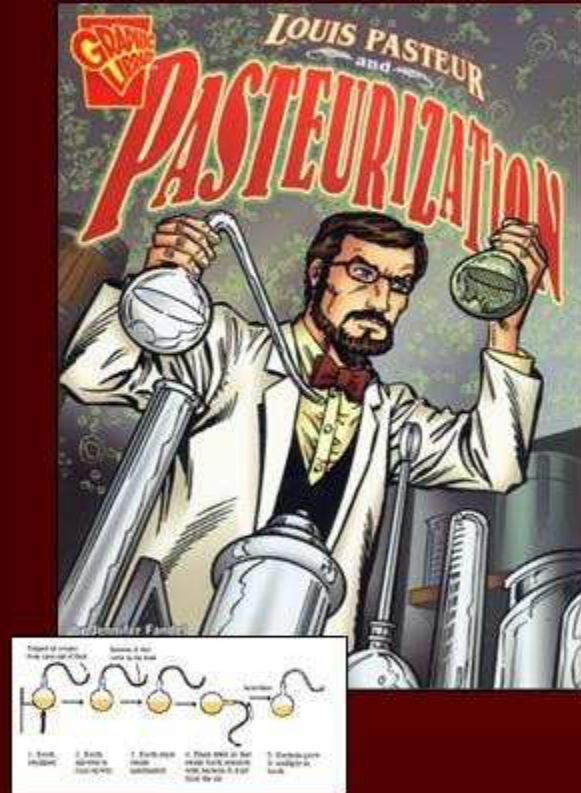




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# Anno 1864



определение возбудителя

# искусственный биореактор



Maximale Konzentration  $10^{10}$