The Evolution of Medicine
Toward 4 P Qualities

- P1 Preventive
- P2 Predictive
- P3 Personalized
- P4 Participative

Emergence or reemergence of new epidemics due to :

- ✓ Globalization of exchanges and travels
- ✓ Demography: concentration in large cities
- ✓ Nutrition (pesticides, water)
- ✓ Environmental factors
- ✓ Climate changes, electromagnetic radiations
- ✓ Contacts with wild and farm animals
- ✓ Decline of immune defenses

The most important burden
Chronic Diseases

- **Cancers**
- **Cardiovascular**
- **Neurodegenerative**
- **Arthritic**
- **Autoimmune**
- **Multifactorial,**

but in common:
oxidative stress
infectious agents (?)

Various environmental factors effects accumulate

Radiations (γ, X, UV, visible)

+

Air chemical pollution

+

Food

+

Intensive physical exercize

+

tobacco smoke

+

alcohol

+

ischemia

+

Viral infections

+

Bacterial infections

= DISEASE

Our microbial ecosystem :

Mucosa

Skin

Constant exposure to microbial agents and immune protection

Extreme genetic plasticity of microorganisms:

- ✓ virus : HIV, Influenza
- ✓ Bacteria
- ✓ Parasites

against reaction of the immune system

How bacteria have learned how to persist despite the immune system

- Biofilms
- Mobile antibiotic resistant genes
- Nanoforms
- Nanostructures

Persistent cold infections

- Inability of the immune system to eradicate them (tolerance, oxidative stress)
- Non-multiplicative forms of « classical » bacteria
- intracellular bacteria
- Sanctuaries (bone marrow, joints, intestine, brain, ...)
- Vectors (Parasites)
- Remote effects (toxin, nanostructures)

Antibiotics affect them only when they go out of sanctuaries

EXPLORING THE ROLE OF LATENT INFECTION IN CHRONIC DISEASES

A physical and molecular approach

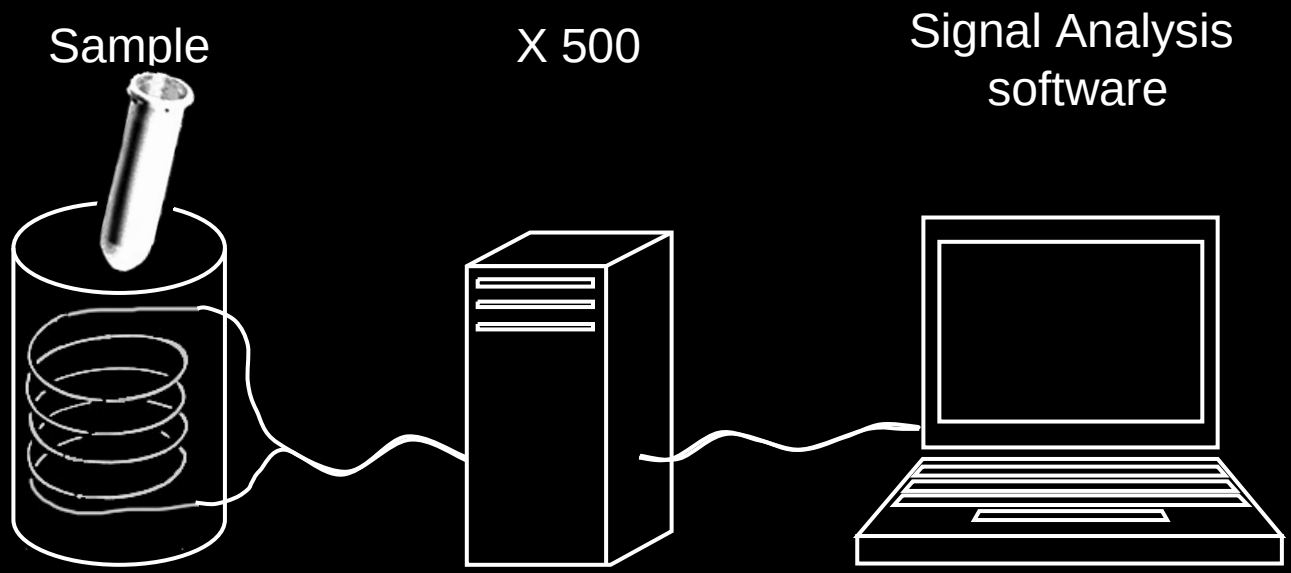
A new technology for detecting bacteria and viral DNA's

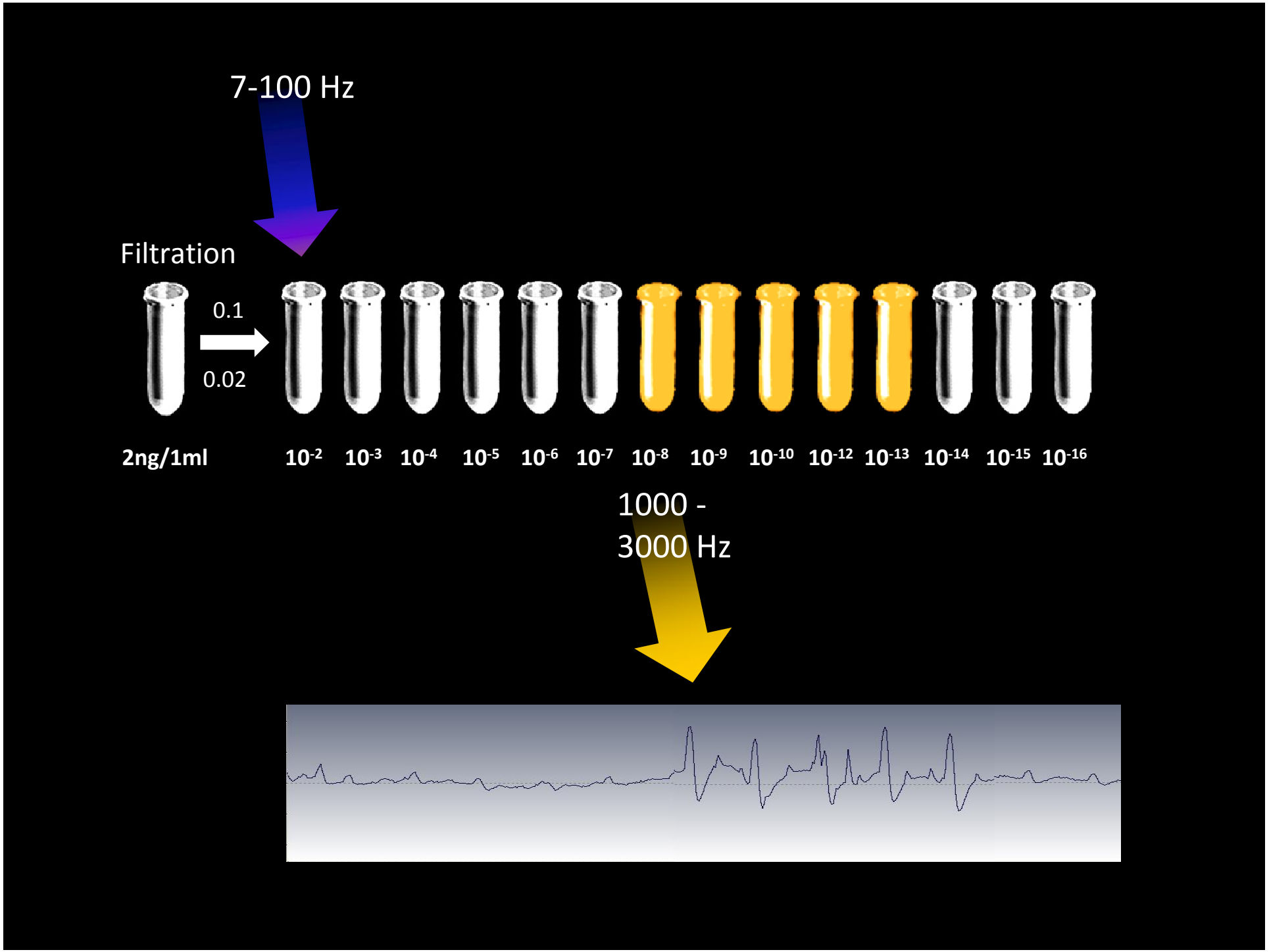
Based on the production of electromagnetic waves

A newly discovered property of DNA :

Resonance emission of low frequency electromagnetic waves by high water dilutions of DNA.

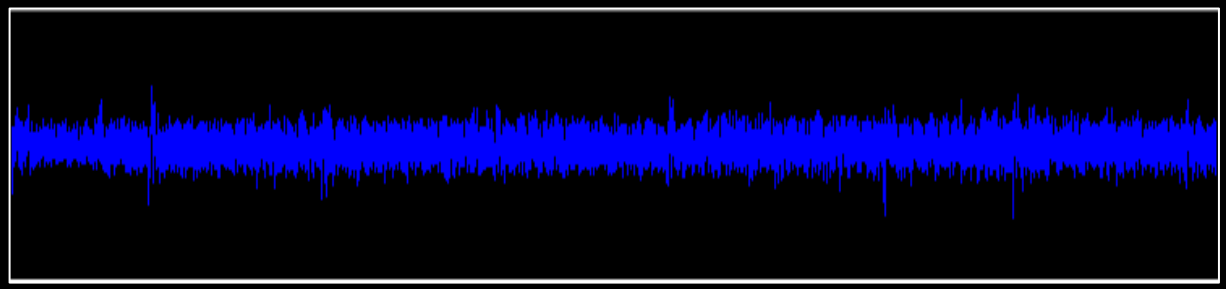
Capture of the signals



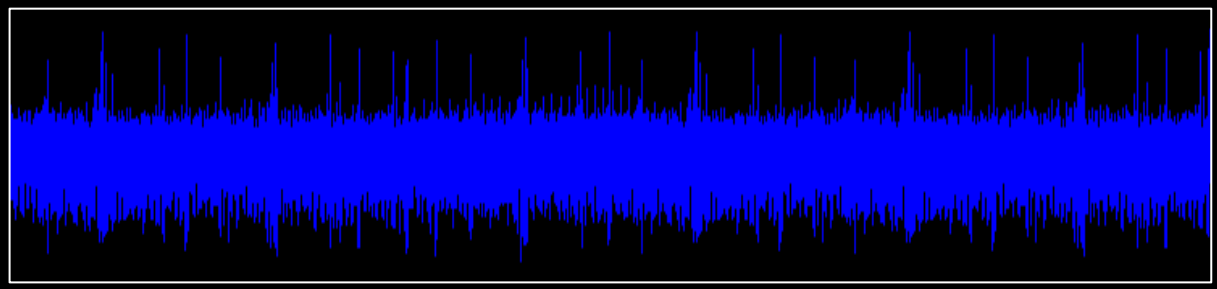

7-100 Hz
Filtration
0.1
0.02
2ng/1ml
10-2
10-3
10-4
10-5
10-6
10-7
10-8
10-9
10-10
10-12
10-13
10-14
10-15
10-16
1000 -
3000 Hz

Amplitude

Noise

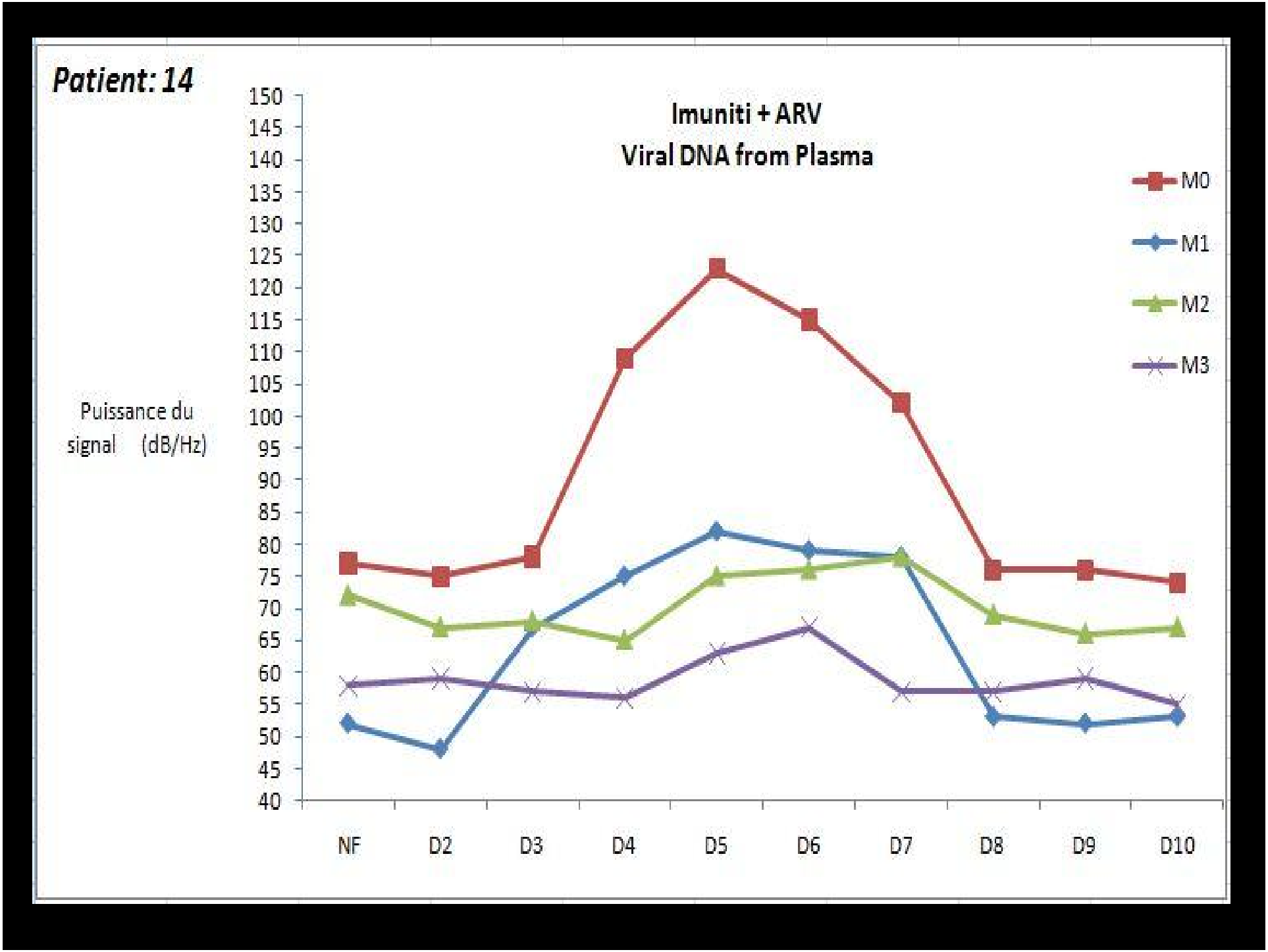


(+)



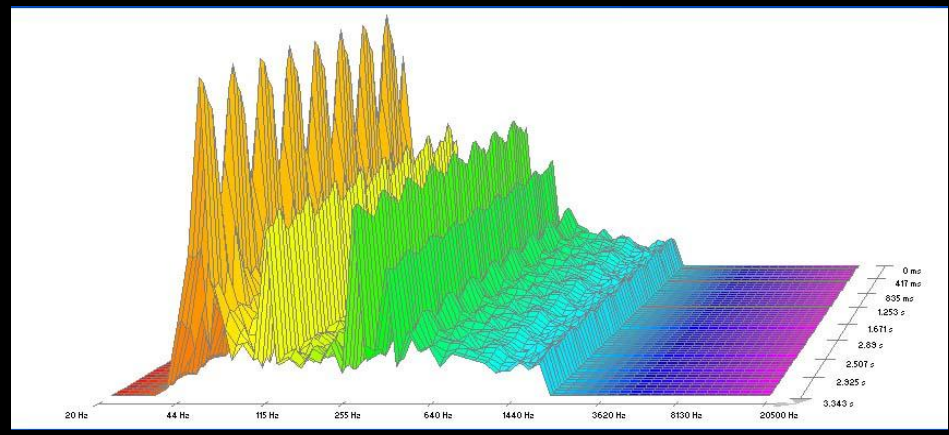
Time (sec)

$$\frac{\text{Average of power of positive dilutions}}{\text{Average of power of negative dilutions}} \times 100$$


Patient: 14
Imuniti + ARV
Viral DNA from Plasma
Puissance du signal (dB/Hz)
150
145
140
135
130
125
120
115
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
NF
D2
D3
D4
D5
D6
D7
D8
D9
D10
M0
M1
M2
M3

Spectral Frequency Analysis

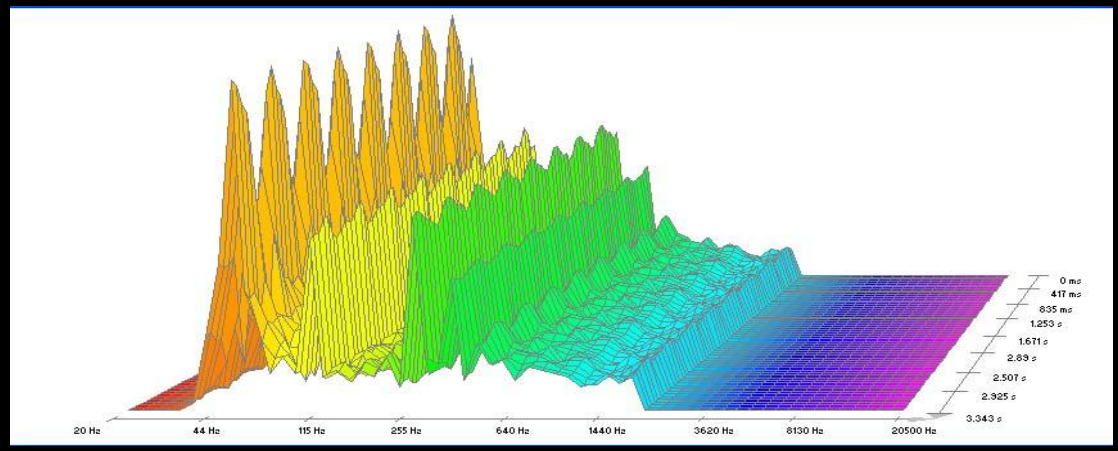
Fourier
Tranformation



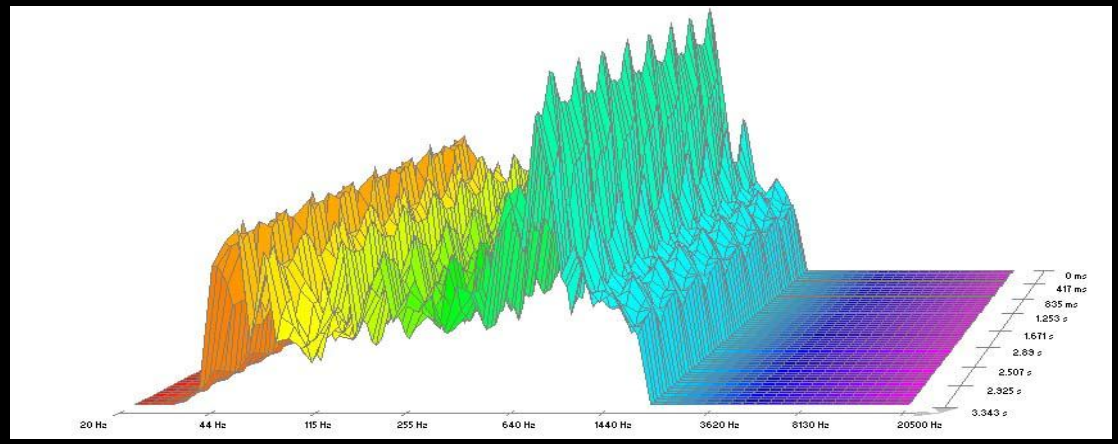
A positive signal is defined by:

- ✓amplitude increase
- ✓Shift to higher frequencies (500-2000 Hertz)

Noise



(+)



Time (sec)

Frequency (1-20000 Hertz)

Micro-organisms involved in EMS induction

1.DNA from main pathogenic bacteria

- Streptococcus
- Staphylococcus
- Pseudomonas
- Mycoplasma pirum
- Salmonella
- Clostridium
- Proteus mirabilis
- B. Subtilis
- Borrelia burgdorferi

- From viruses

- HIV1
- Influenza group A
- HBV
- HCV

- Genes involved

- M.pirum adhesin
- HIV genes

I – DNA’s emit EMS

II – EMS are produced by water nanostructures (naneons)

III – EMS are producing naneons

IV – Naneons and EMS carry specific DNA information

II.a – EMS are produced by water nanostructures (naneons)

Evidence :

from filtration

- ✓ Size : between 20 and 100 nM for bacterial sequences
- ✓ Smaller that 20µM for viral sequences

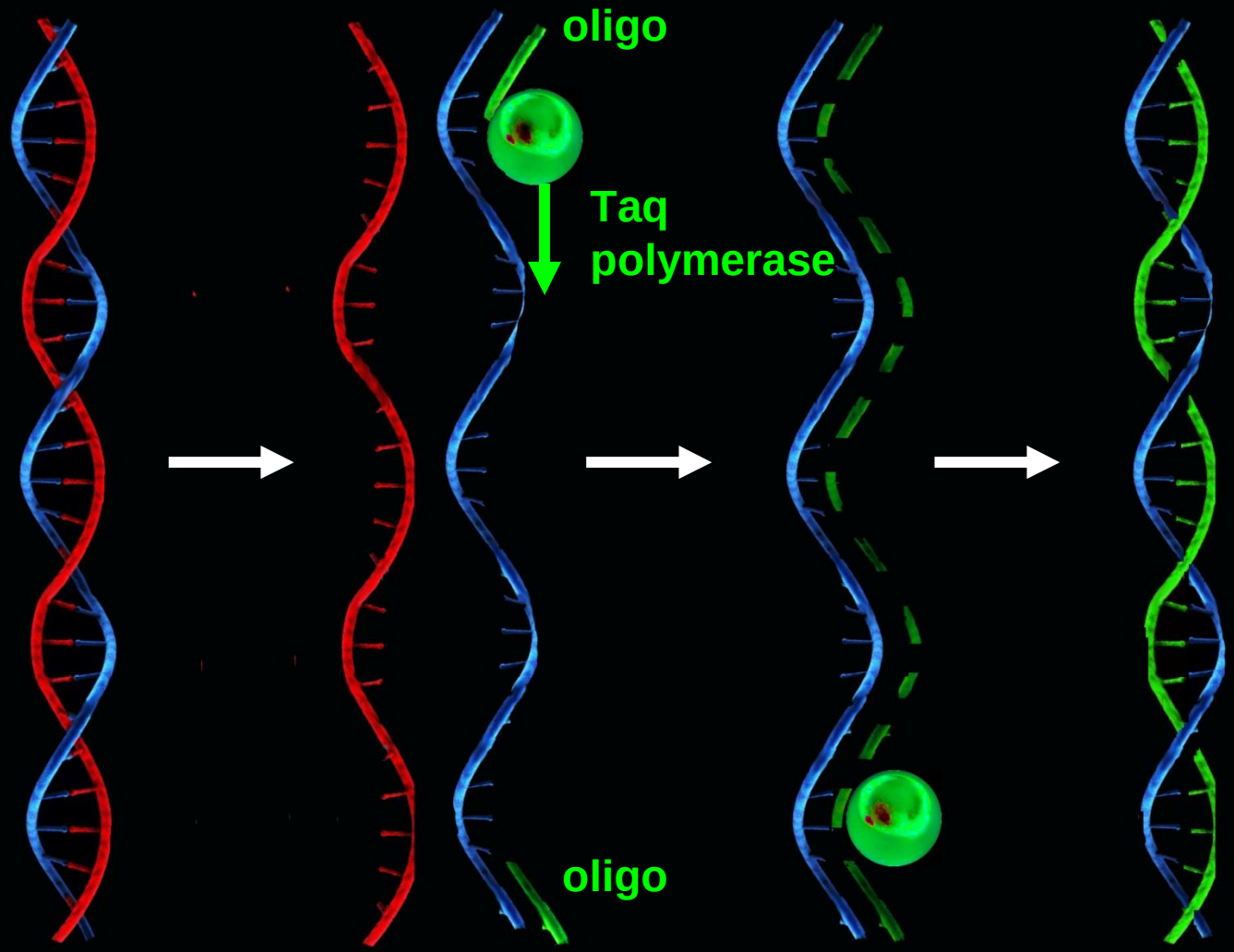
from biophysical studies

- ✓ indicating spectrometral changes in the dilutions producing EMS

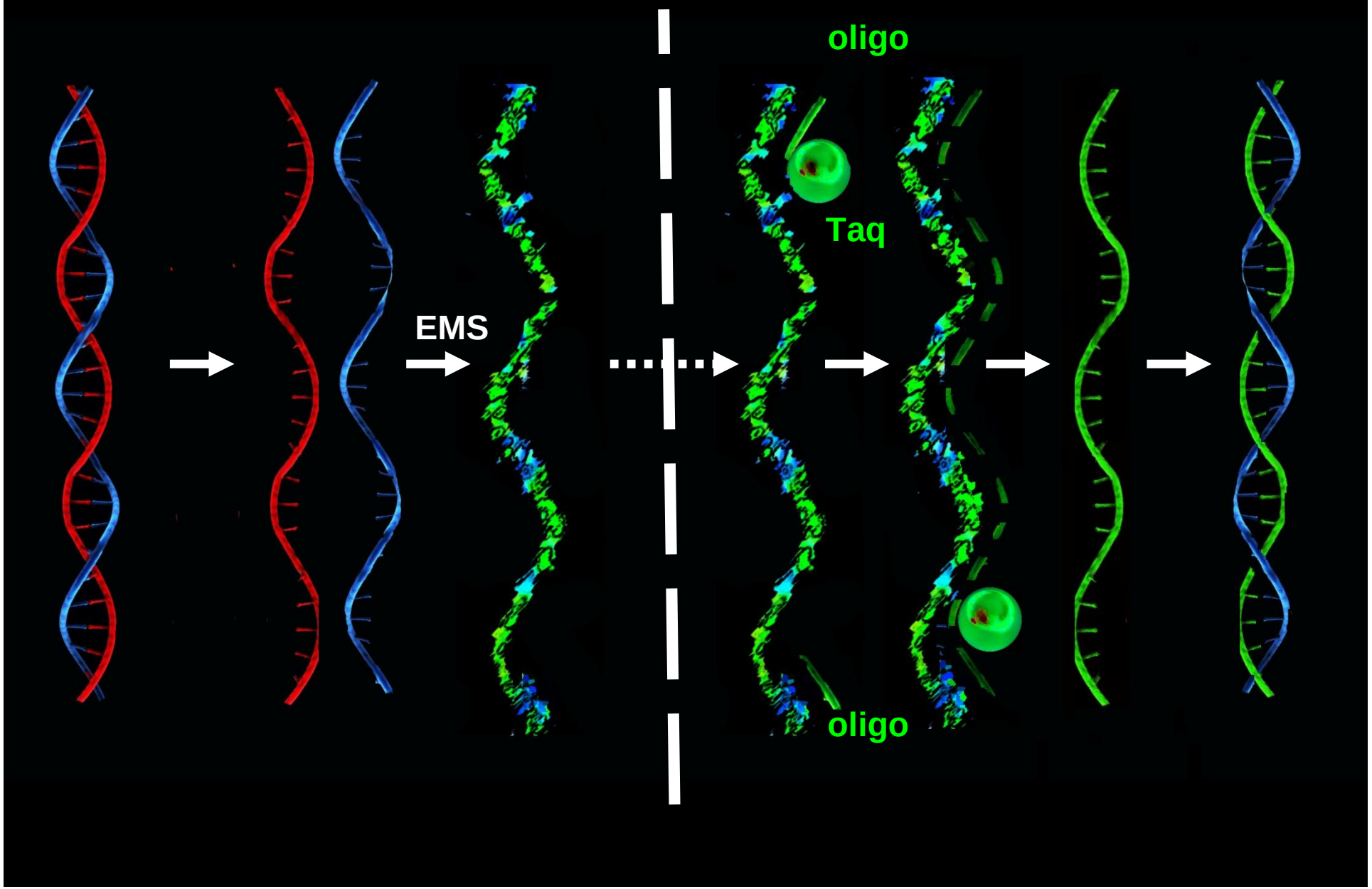
IV – Naneons and EMS carry specific DNA information

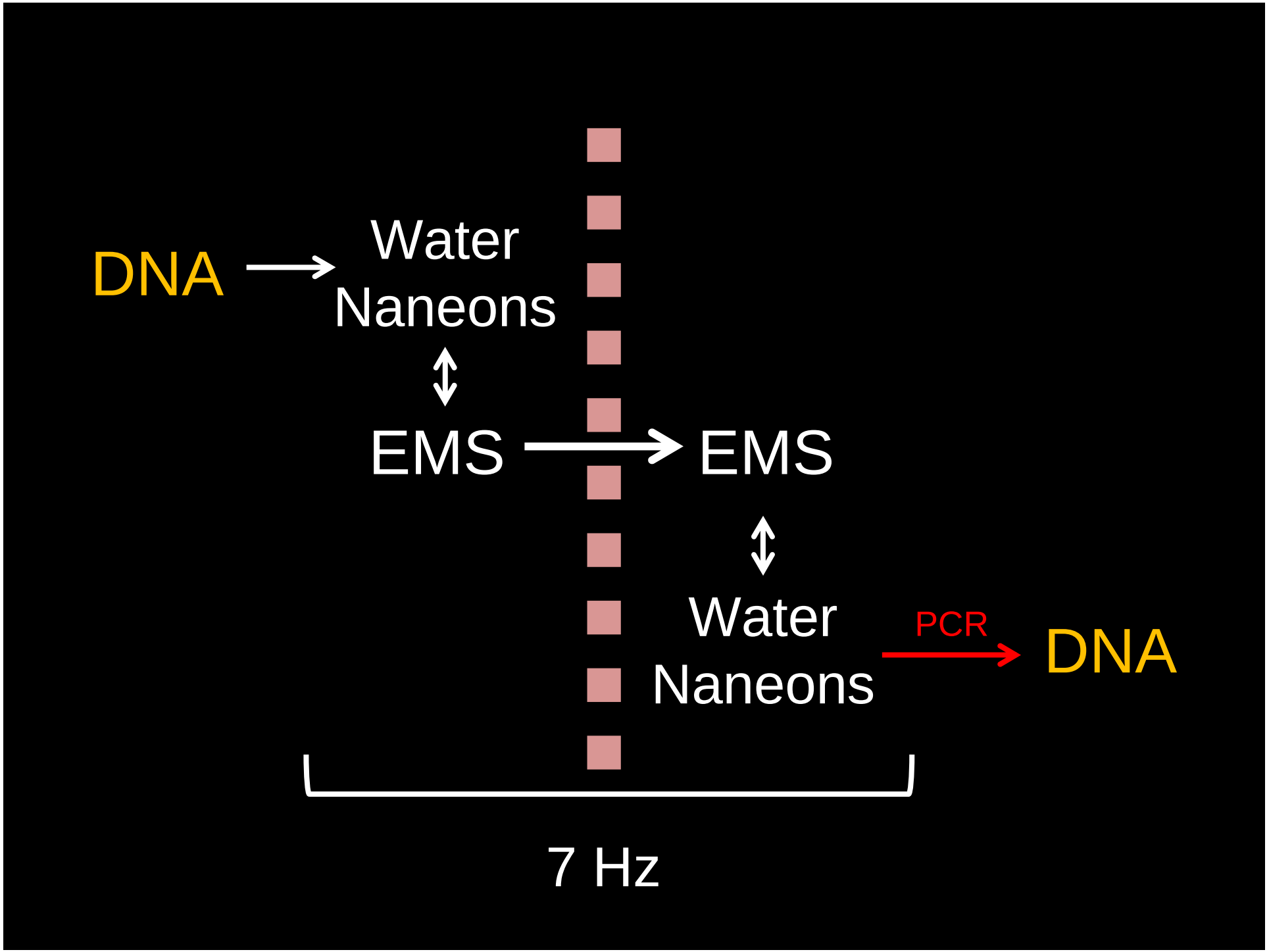
Natural and digital transmission

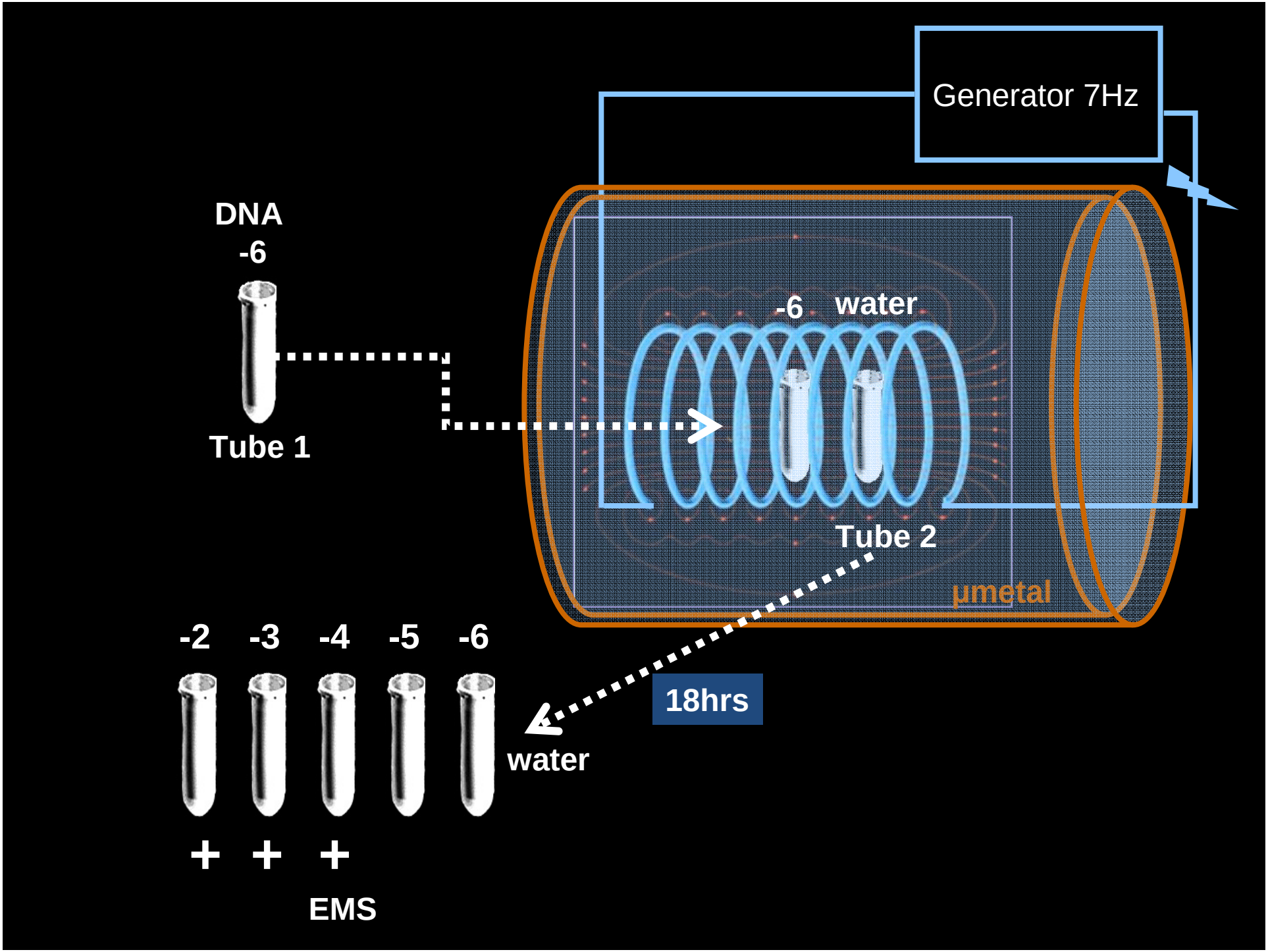
Classical model of PCR



PCR on water nanostructures

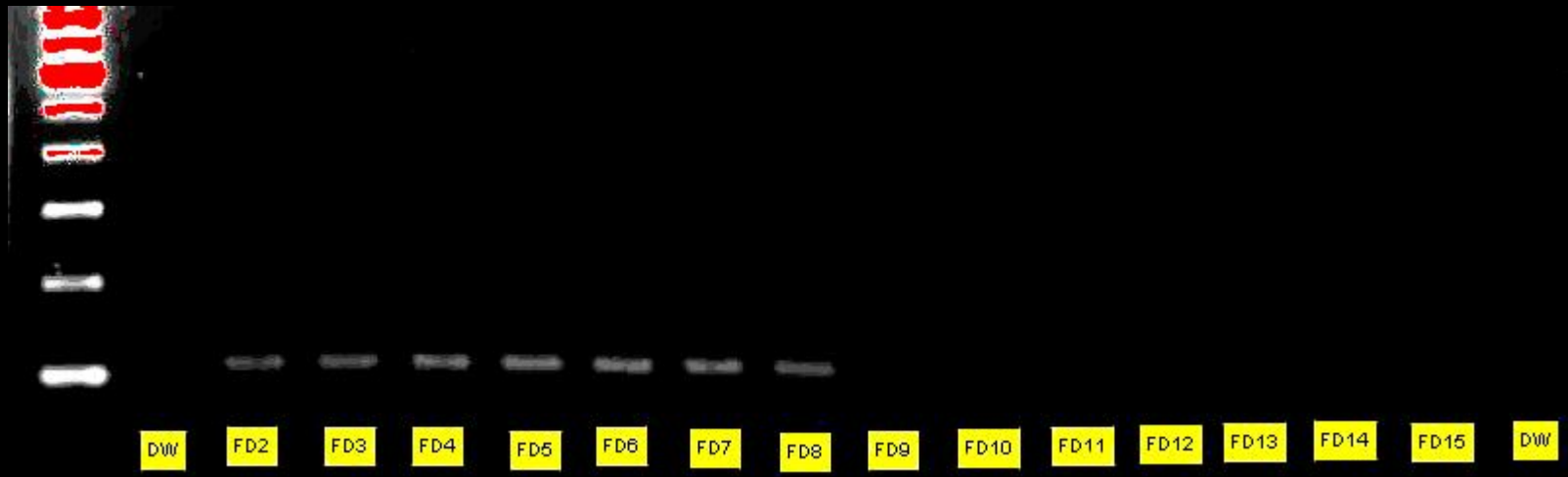



DNA
Water
Naneons
EMS
EMS
Water
Naneons
PCR
DNA
7 Hz


Generator 7Hz
DNA
-6
Tube 1
-6 water
Tube 2
µmetal
-2
-3
-4
-5
-6
18hrs
water
+
+
+
EMS

D-4 LTR HIV DNA (104bp) 7Hz, 18 Hrs and then PCR (35 cycles) from D-2 to D-15 after filtration 450 and 20 nM

Transmission in water of D-4 LTR HIV DNA (104bp) 7Hz, 18 Hrs and then PCR (35 cycles) from D-2 to D-15 after filtration 450 and 20 nM



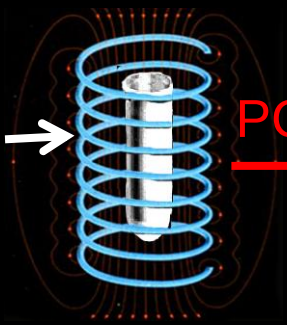
DW: Distilled Water / FD2: Dilution 10-2 after filtration 450and 20 nM

Water-mediated photonic transmission of DNA

DNA → Water Naneons

Water Naneons ↕ EMS → Computer Digitized

Receiver EMS Computer – Analog →



PCR → DNA

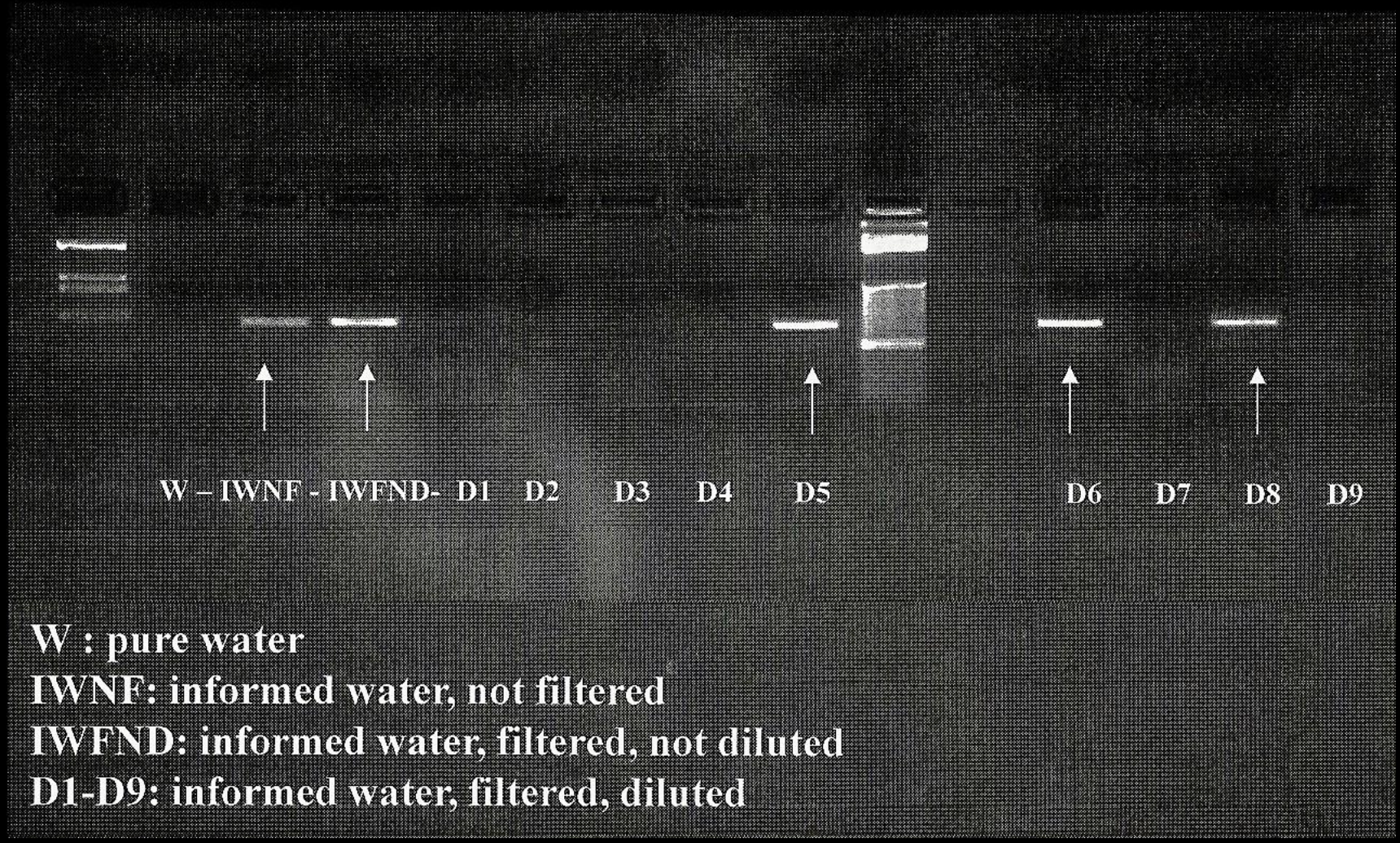
Water Naneons

Reproduction of DNA transduction in other laboratories

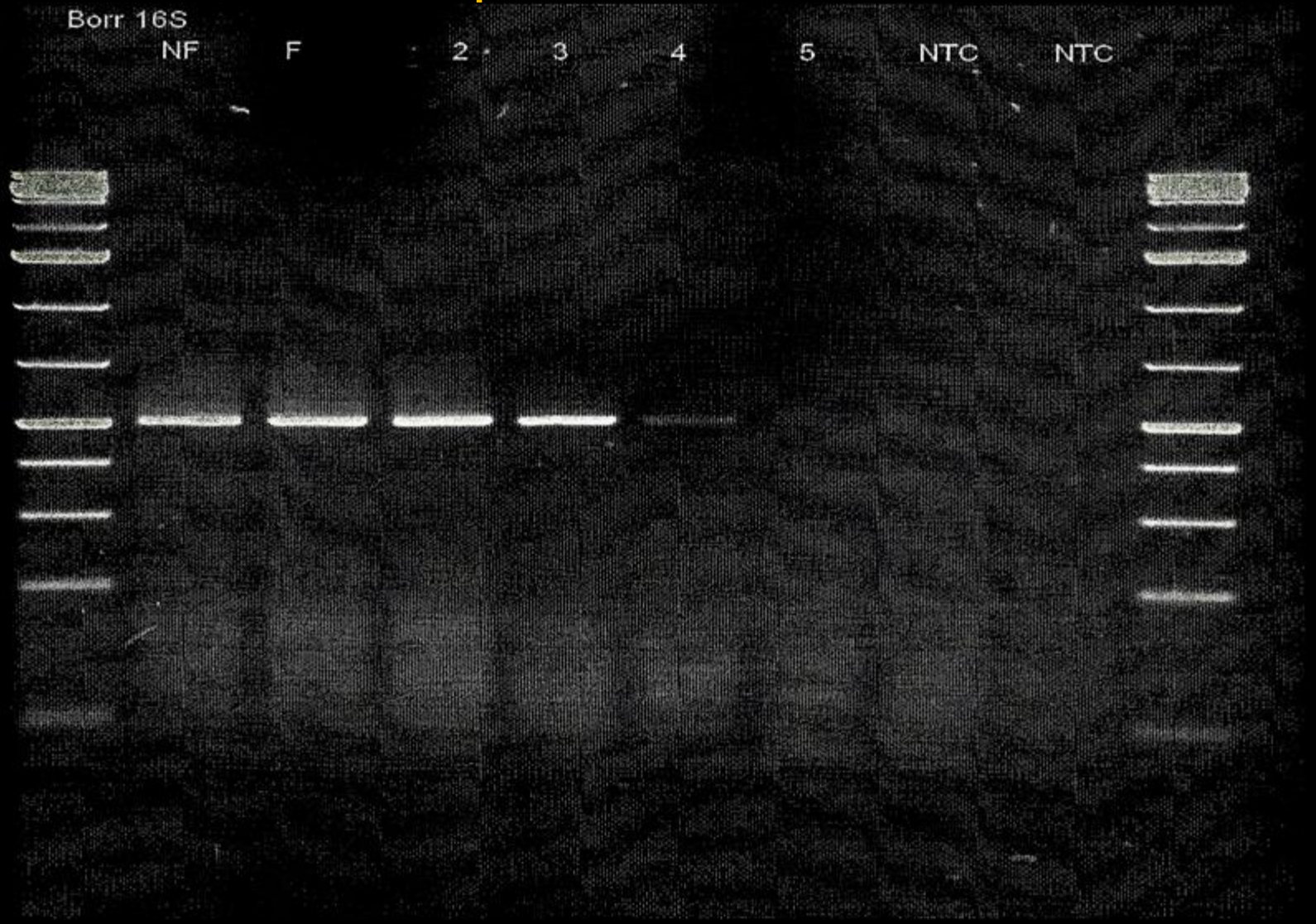
File EMS of 194 bp DNA from HIV1 LTR
Sent to Benevento University,
Molecular Biology Laboratory
DNA reproduced and sequenced
100 % identical to original

File EMS of 499 bp DNA from Borrelia burgdorferi
Sent to Laboratory of Chronix Biomedicals
University of Gottingen

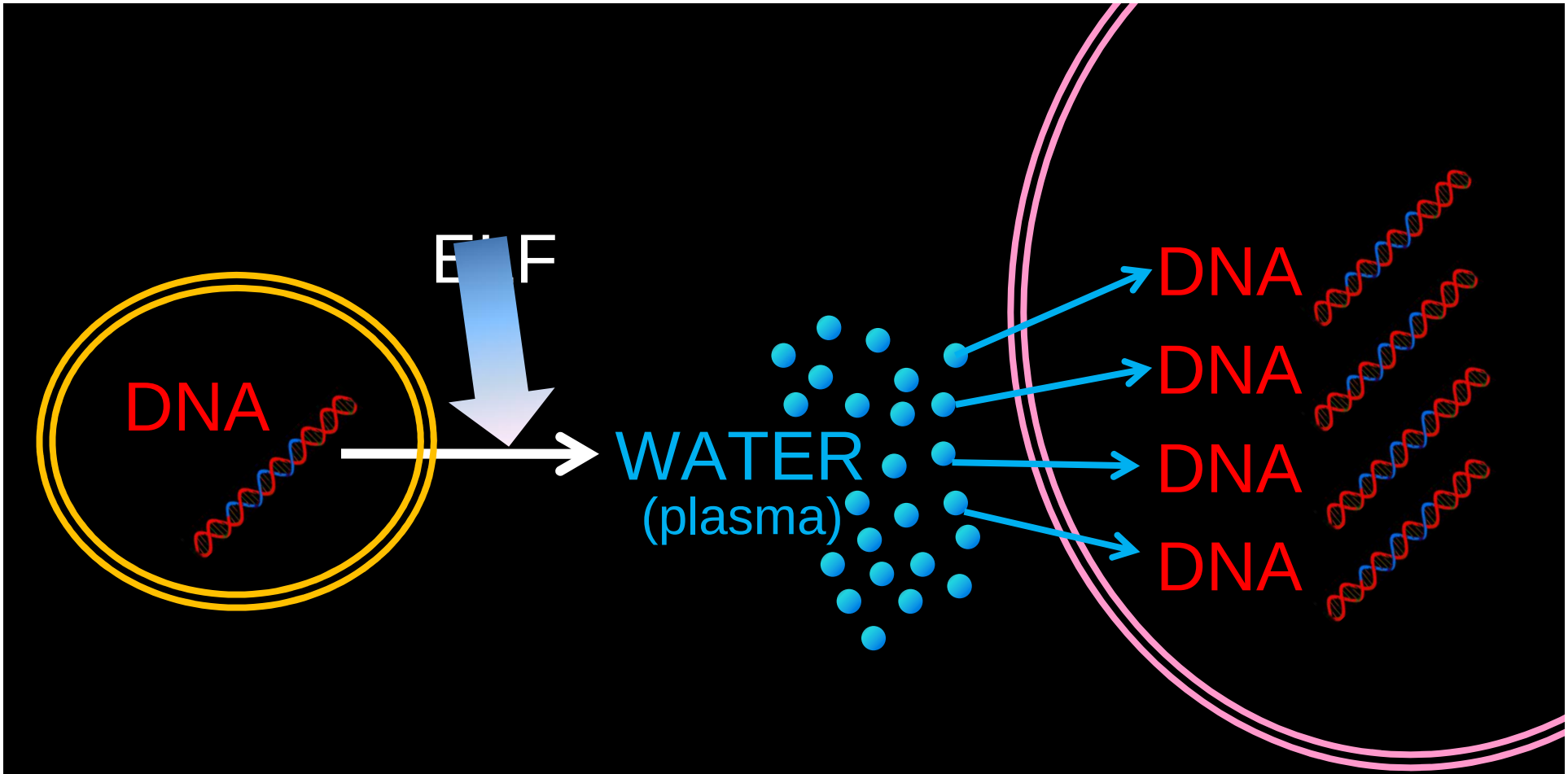
20.06.2012 LTR194



Water-mediated photonic transmission of DNA



Gel electrophoresis of the PCR DNA product (Borrelia Burgdorferi)
E.Schutz et al. Goettingen, 2011



How pathogenic information can persist, and escape immune defence and treatment.

Medical applications

Plasma of patients: on DNA (also any other fluid and tissues)

- Colibacillus
- Mycoplasma (Ureaplasma)
- Borrelia

But also diseases not known to be of infectious origin.

- Neurodegenerative: Alzheimer (18/18)
- Parkinson
- Multiple sclerosis
- Various neuropathies
- Chronic Lyme syndrome
- Autism (some)
- Rhumatoid arthritis (50/50)
- Cancers ?

The objective is clear : to identify the bacterium(a) involved:
may come from the gut

Persistent cold infections

- Inability of the immune system to eradicate them (tolerance, oxidative stress)
- Non-multiplicative forms of « classical » bacteria
- intracellular bacteria
- Sanctuaries (bone marrow, joints, intestine, brain, ….)
- Vectors (Parasites)
- Remote effects (toxin, nanostructures)

Antibiotics affect bacteria only when they go out of sanctuaries

Autism: The infectious track

Luc Montagnier and the Chronimed team

The Journal of Physiology

J Physiol 581.3 (2007) pp 893–898 893

The application of eye-tracking technology in the study of autism

Zillah Boraston[1] and Sarah-Jayne Blakemore[1,2]

[1]*Behavioural and Brain Sciences Unit, Institute of Child Health, University College London, London WC1N 1EH, UK*
[2]*Institute of Cognitive Neuroscience, University College London, 17 Queen Square, London WC1N 3AR, UK*

For many decades, eye-tracking has been used to investigate gaze behavior in the normal population. Recent studies have extended its use to individuals with disorders on the autism spectrum. Such studies typically focus on the processing of socially salient stimuli. In this review, we discuss the potential for this technique to reveal the strategies adopted by individuals with high-functioning autism when processing social information. Studies suggest that eye-tracking techniques have the potential to offer insight into the downstream difficulties in everyday social interaction which such individuals experience.

Study on 97 children

- 73 diagnosed autisms
- 10 autistic spectrum disorders
- 4 Dravet syndromes
- 2 Rett syndromes
- 3 Asperger syndromes
- 3 cases with Epilepsy and/or mental retardation
- 2 Tourette syndromes

88% of children between the age of 2 and 12
(youngest 15 months old, oldest 29 years old)

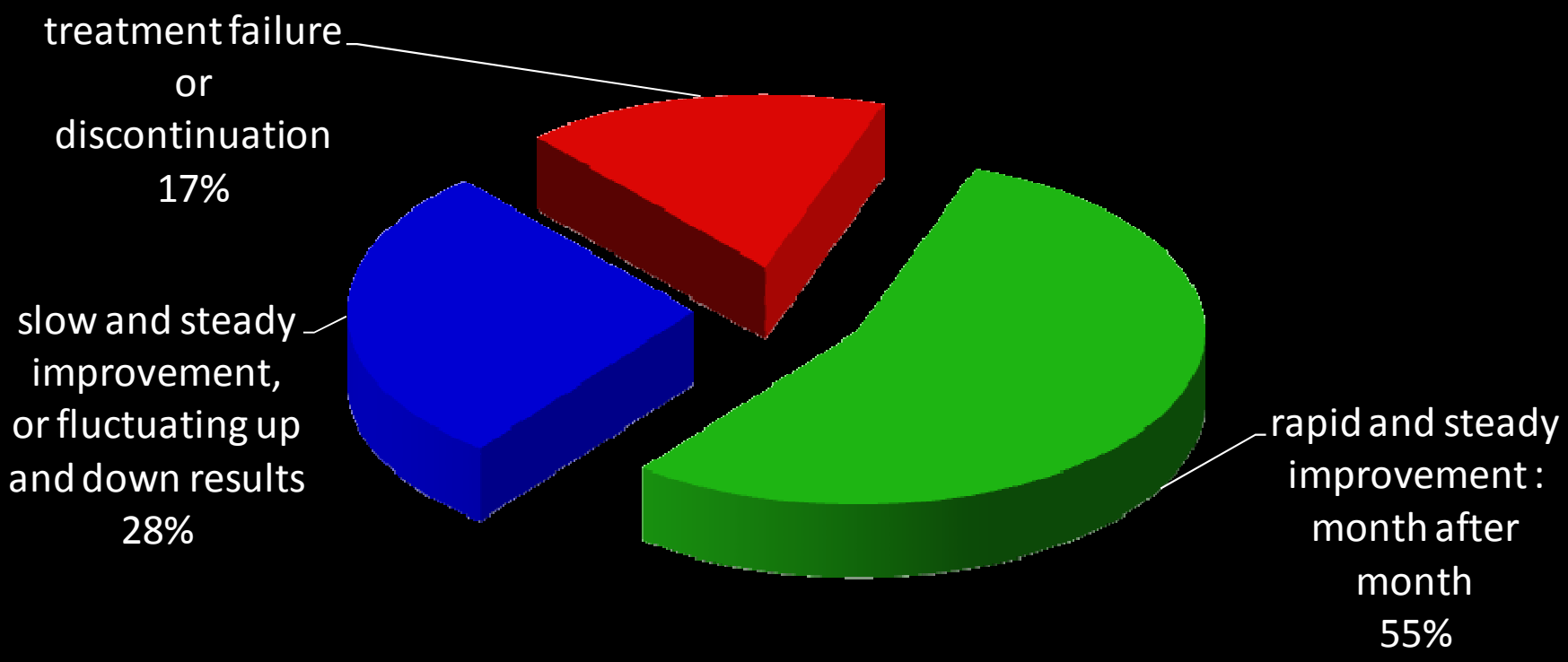
Treatment Protocol

- Antibiotherapy (macrolides) [Beware of the Herxheimer reaction]

  + Antifungal treatment (Triflucan)
  + Antiparasites (Fluvermal then Flagyl)
  + Correction of deficiencies

- Antioxidants and Immuno-stimulants
- Food supplements
- Casein-free and gluten-free diets

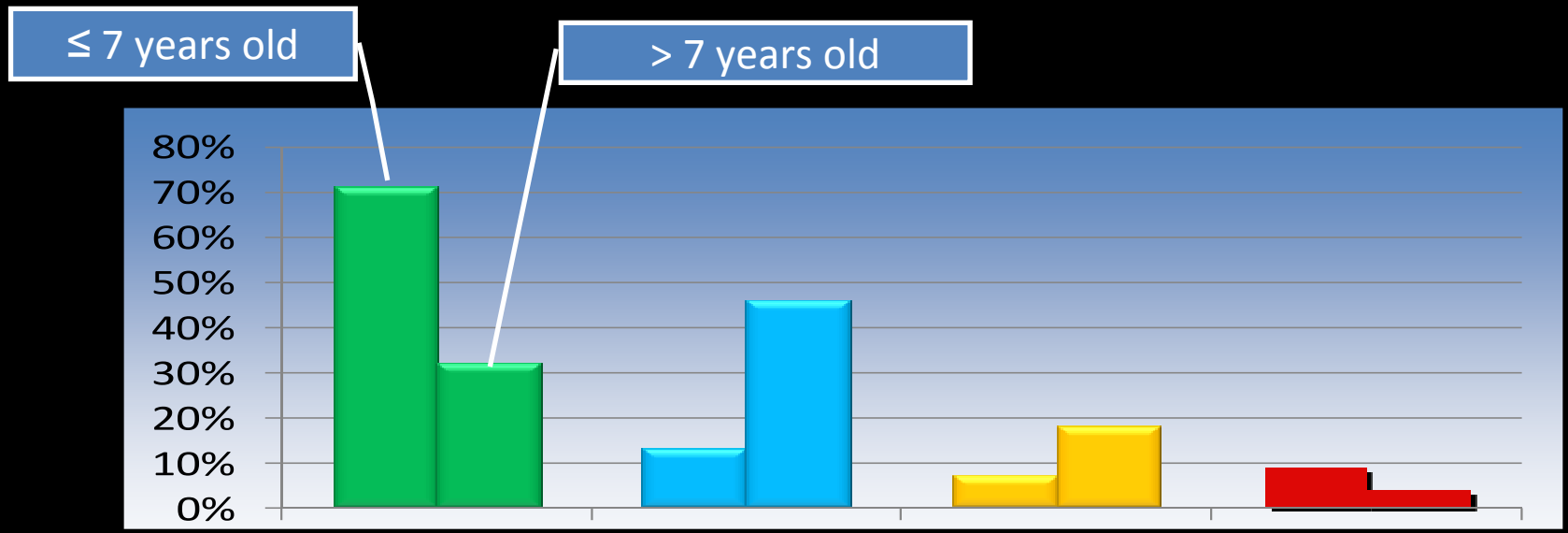
Results

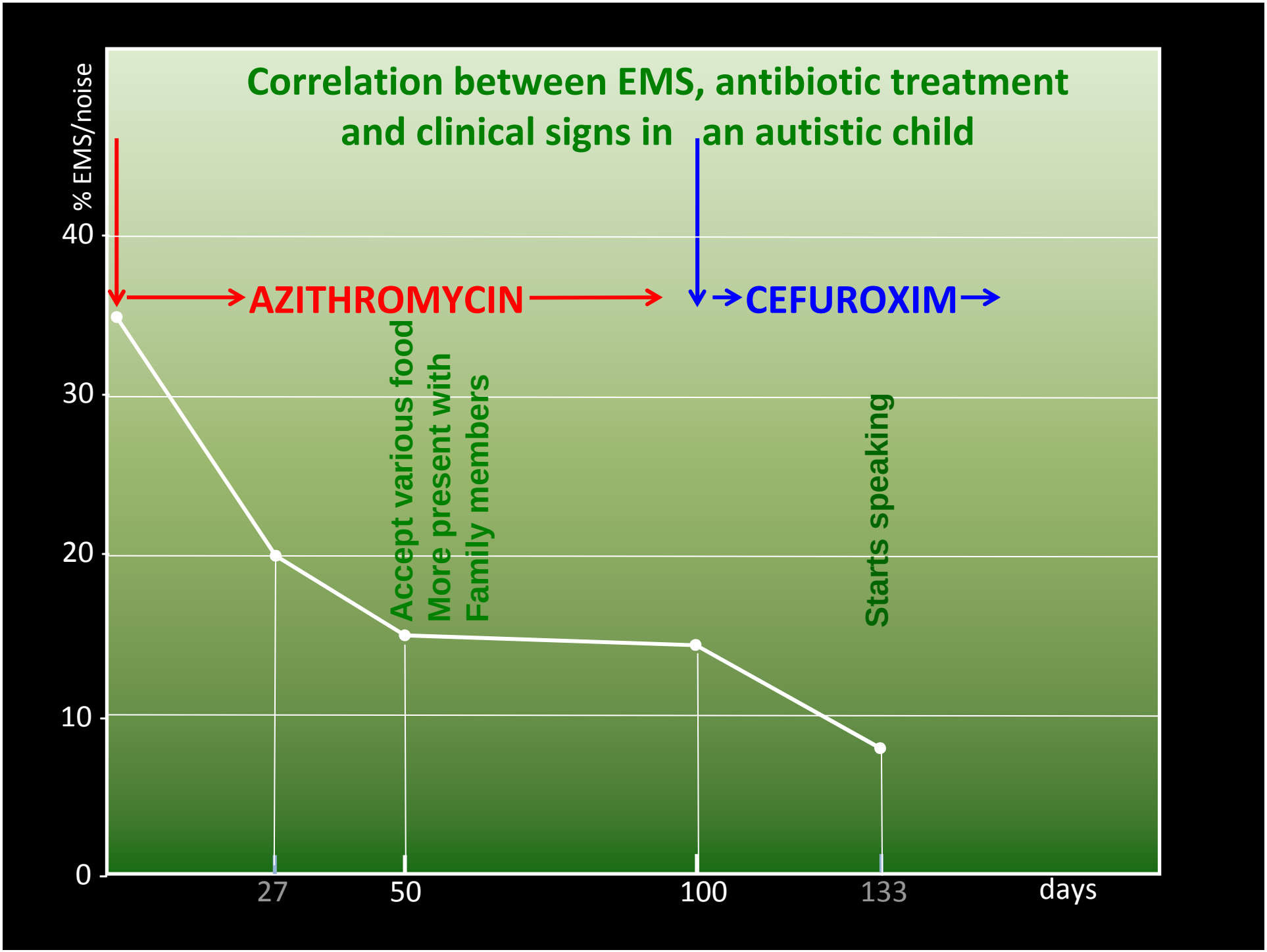


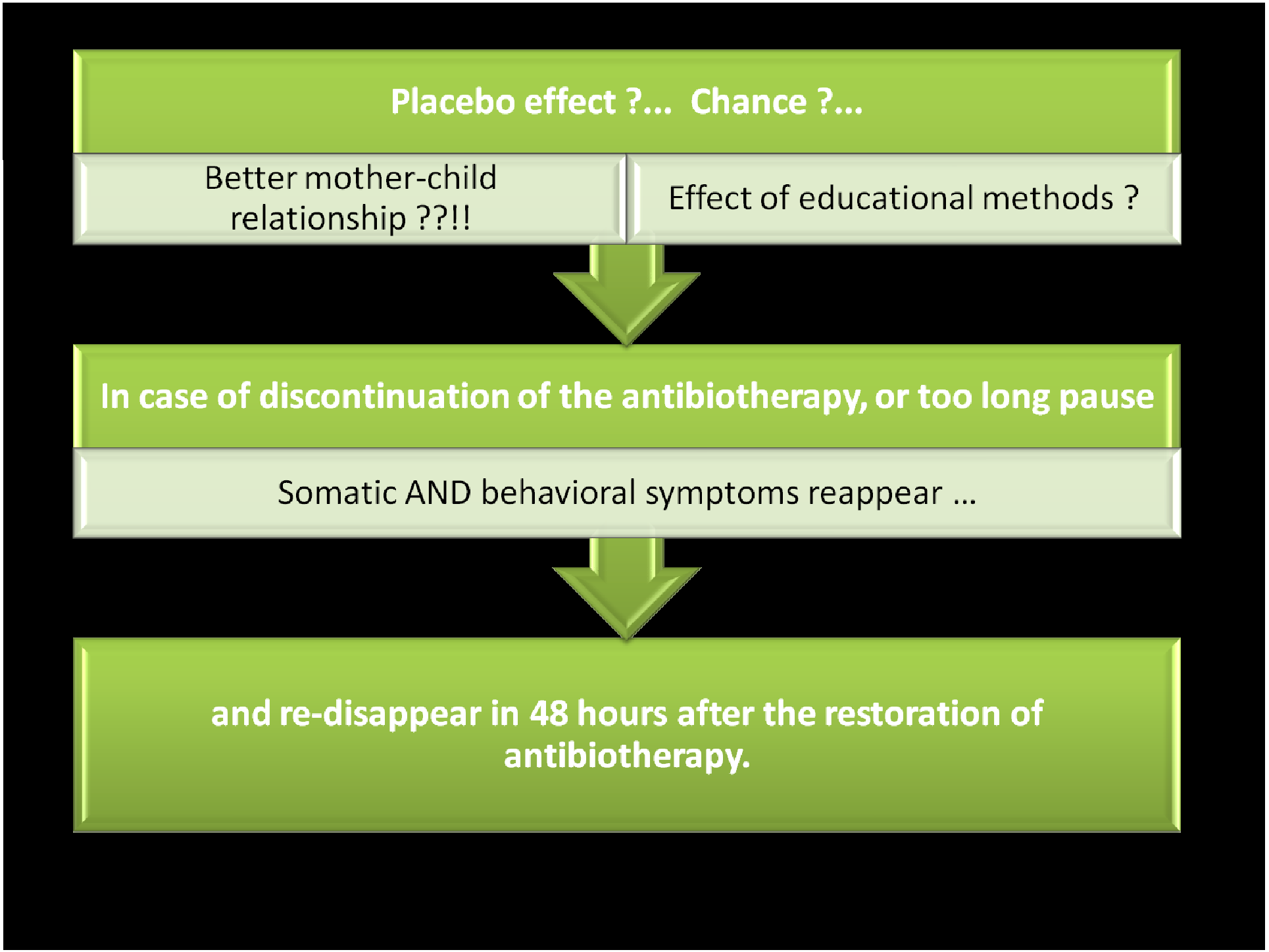
- Best if children younger (before 7 : 71% of rapid improvement)
- But even a slow improvement in an older child is still viewed very positively !

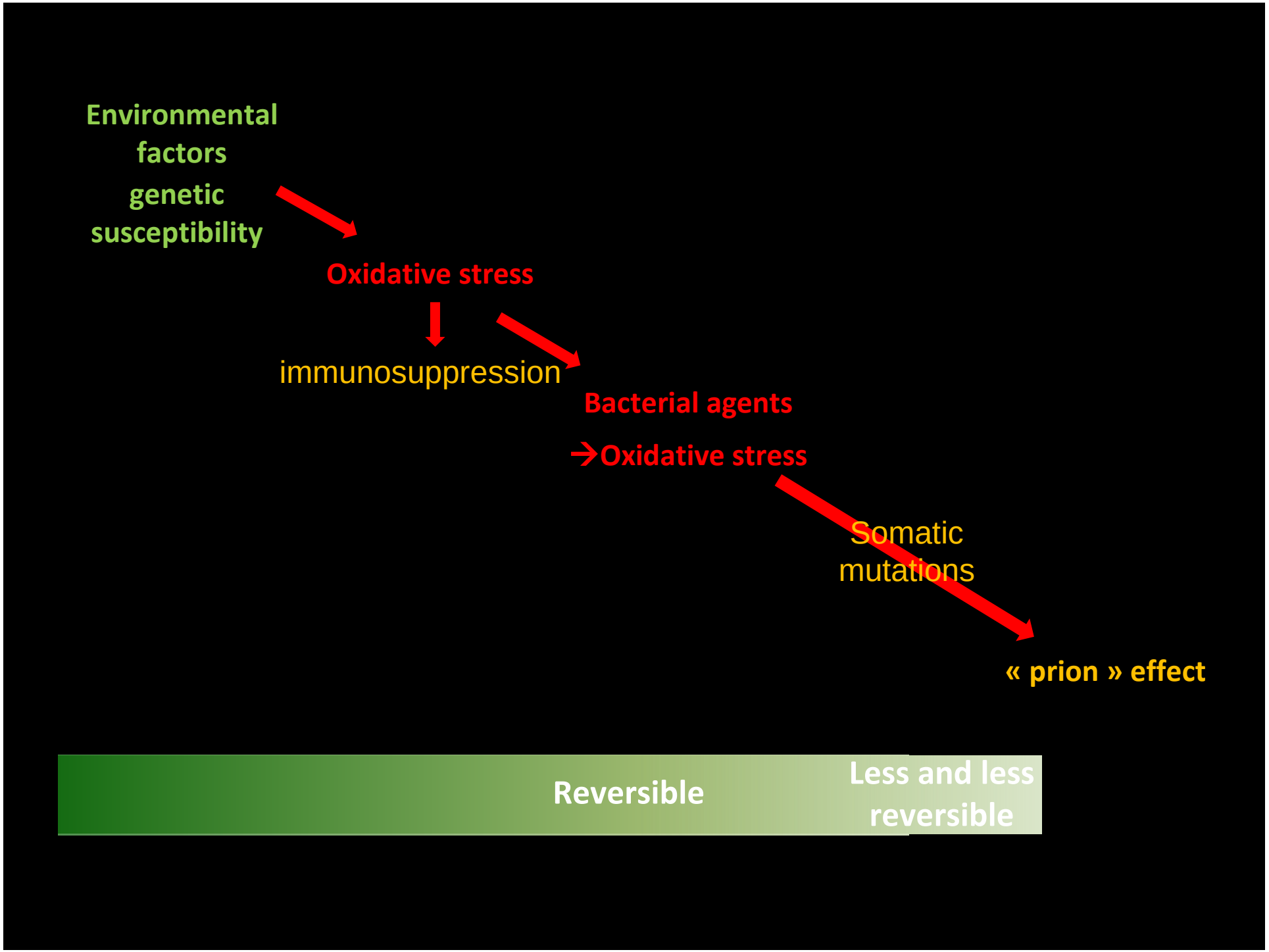
Results versus age

	Very good results	Slower improvement	insufficient improvements	Treatment Interrupted
45 autistic children ≤ 7 years old	32 (**71%**)	6 (13%)	3 (7%)	4 (9%)
28 autistic children > 7 years old	9 (32%)	13 (46%)	5 (**18%**)	1 (4%)




Correlation between EMS, antibiotic treatment and clinical signs in an autistic child
% EMS/noise
40
30
20
10
0
AZITHROMYCIN
CEFUROXIM
Accept various food
More present with
Family members
Starts speaking
27
50
100
133
days


Placebo effect ?... Chance ?...
Better mother-child relationship ??!!
Effect of educational methods ?
In case of discontinuation of the antibiotherapy, or too long pause
Somatic AND behavioral symptoms reappear ...
and re-disappear in 48 hours after the restoration of antibiotherapy.


Environmental factors
genetic susceptibility
Oxidative stress
immunosuppression
Bacterial agents
→Oxidative stress
Somatic mutations
« prion » effect
Reversible
Less and less reversible

Correlation EMS/disease

One example

Patient female, suffering from chronic Lyme disease for 10 years.

First search for EMS in her plasma was negative.

However on July 2007, she had an outbreak of arthritic crisis on both knees.

At the same time, EMS were detected in her plasma DNA.

Multiple Sclerosis

(Multifactorial origin, autoimmunity)

BUT

In Many but not all cases :

presence of EMS in the plasma DNA of bacterial origin.

Example: female patient

1st Symptoms in February, 2011

Measure of EMS 3 months later:++

Antibiotic treatment (doxycycline)

Symptoms cleard, EMS decreased

Already after 1st month

The special case of HIV

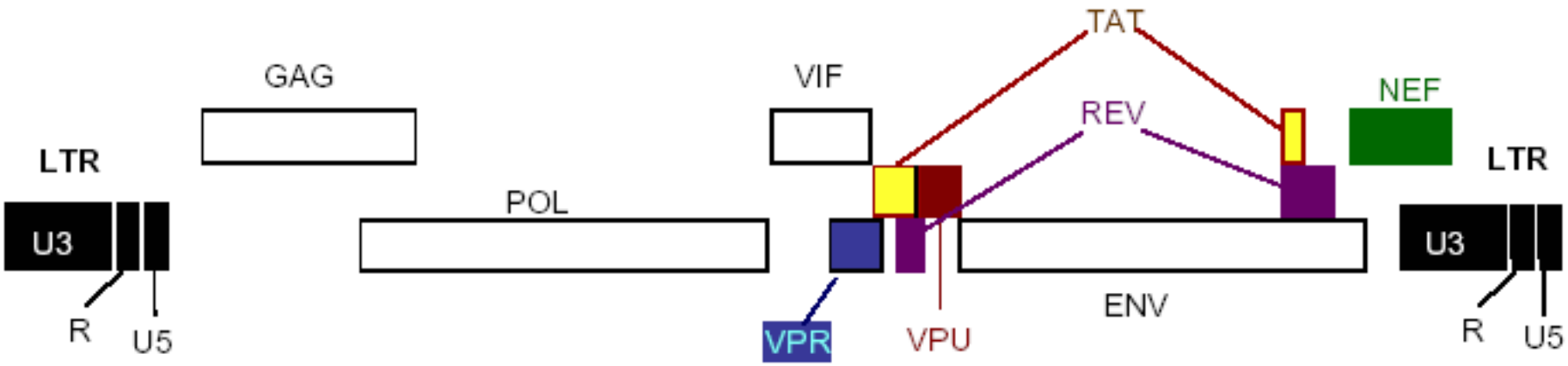
HIV RNA → no EMS

HIV DNA → EMS

Integrated
Non integrated

Appears after tritherapy

HIV-1



Regulatory proteins:

TAT: Trans-activator of HIV promoter

REV: Nuclear export of late, unspliced RNA to the cytoplasm

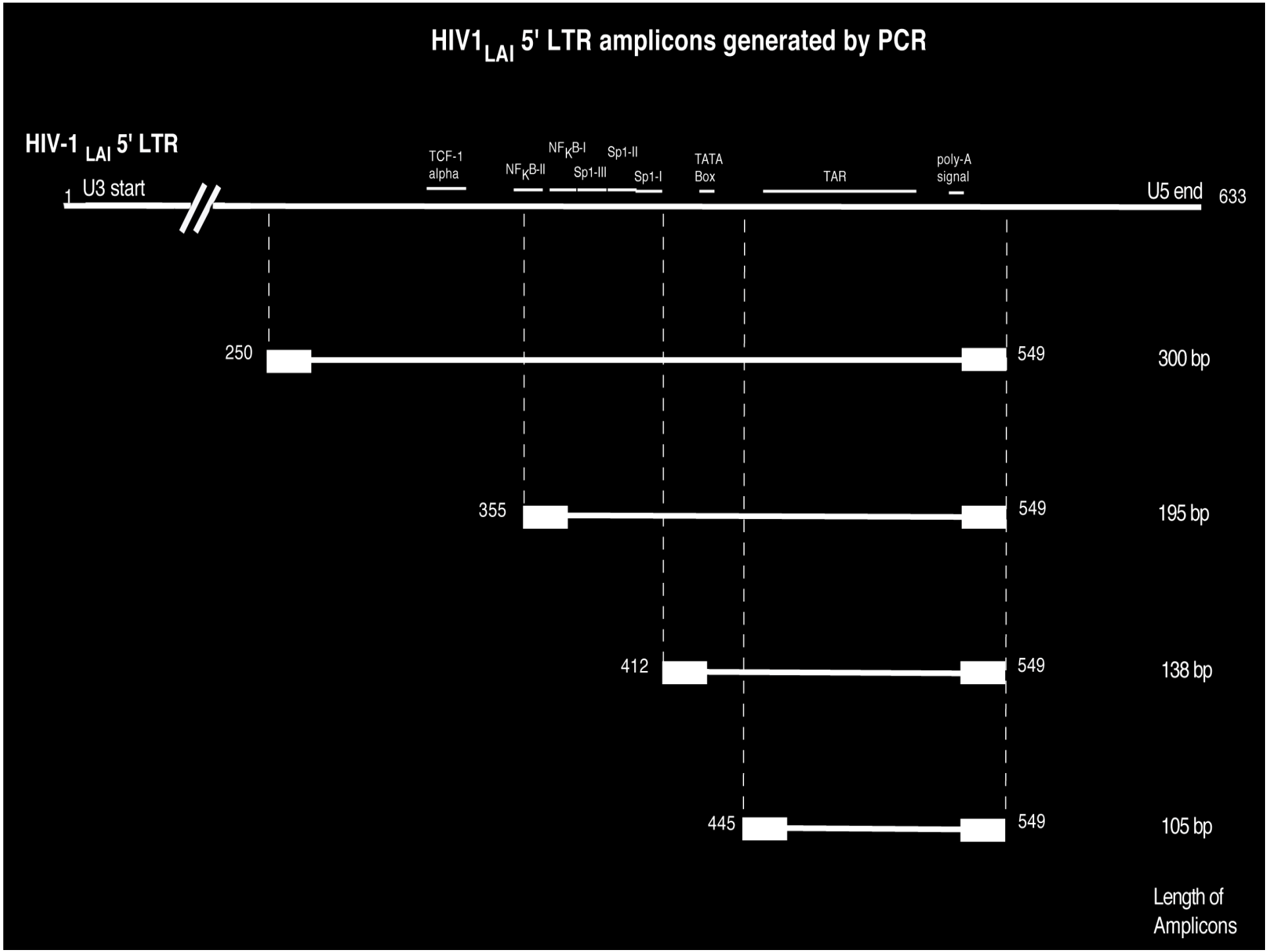
Accessory proteins:

VPR: induces G2 cell cycle arrest and nuclear import of the preintegration complex

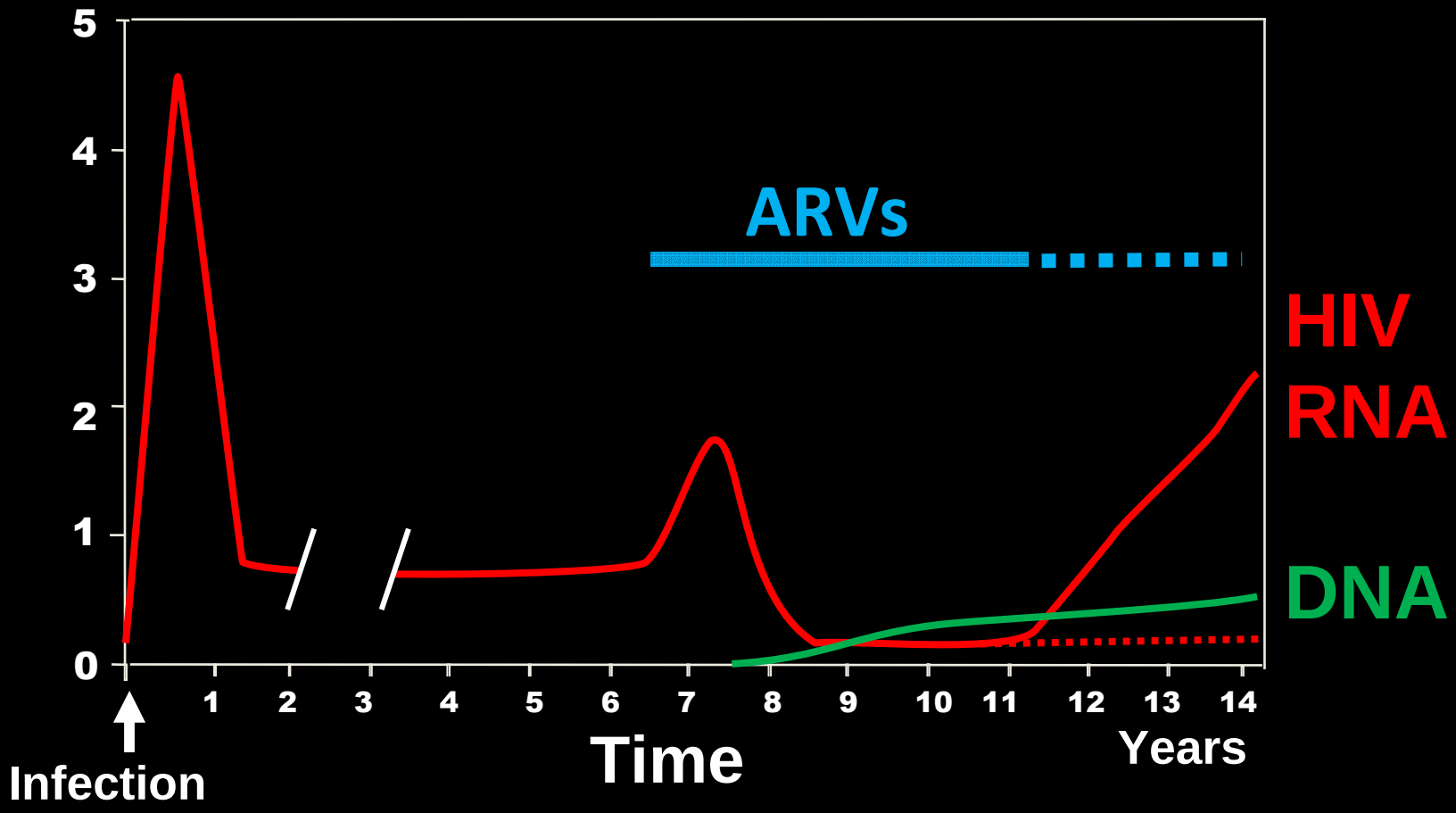
NEF: Down-regulation of cell surface CD4 and MHC1. Enhances virion infectivity

VIF: virion infectivity factor

VPU: enhancement of virion release and CD4 degradation by targeting to the proteasome


HIV1 LAI 5' LTR amplicons generated by PCR
HIV-1 LAI 5' LTR
1 U3 start
TCF-1 alpha
NFKB-II
NFKB-I
Sp1-III
Sp1-II
Sp1-I
TATA Box
TAR
poly-A signal
U5 end
633
250
549
300 bp
355
549
195 bp
412
549
138 bp
445
549
105 bp
Length of Amplicons

HIV treatment today



A.R.T.

- Reverse transcriptase nucleosidic inhibitors

Ex: AZT, 3TC, etc

- Reverse transcriptase non nucleosidic inhibitors

Ex: nevirapine, efavirenz

- Protease inhibitors

Ex: nelfinavir, ritonavir

The only solution is a short term treatment (6-9 months) which will achieve a cure:

Functional eradication of HIV infection.

Objective

Self-control of HIV infection by the patient's own immune system:

- No disease will occur
- The patient will have lower ability to transmit the virus

How ?

- To restore the immunity againts HIV (antioxidants, therapeutic vaccine)

- To identify and target the viral reservoir.

Preliminary Clinical Trial

Patients at time zero were all on ARVs for at least one year and were divided in three arms:

Arm 1: ARVs stopped for one month then put back on ARVs

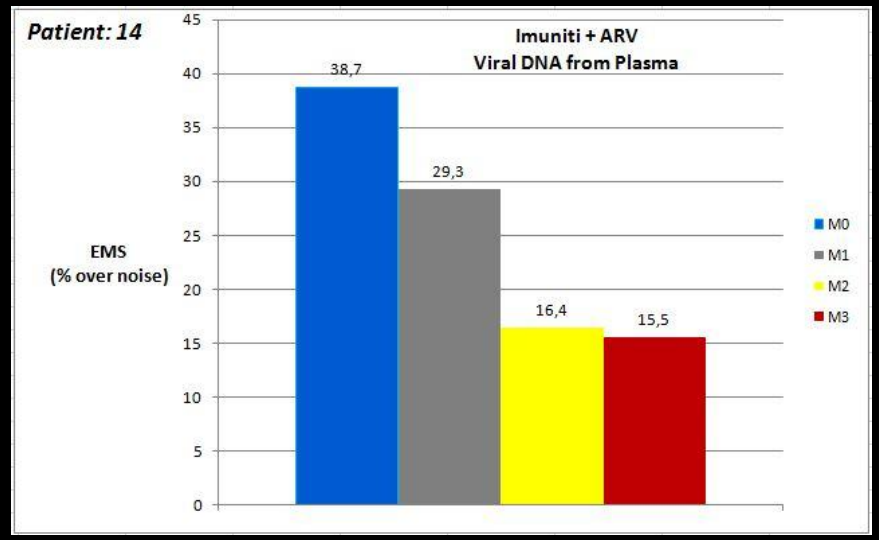
Arm 2: ARVs + Imuniti

Arm3: ARVsonly (continued)

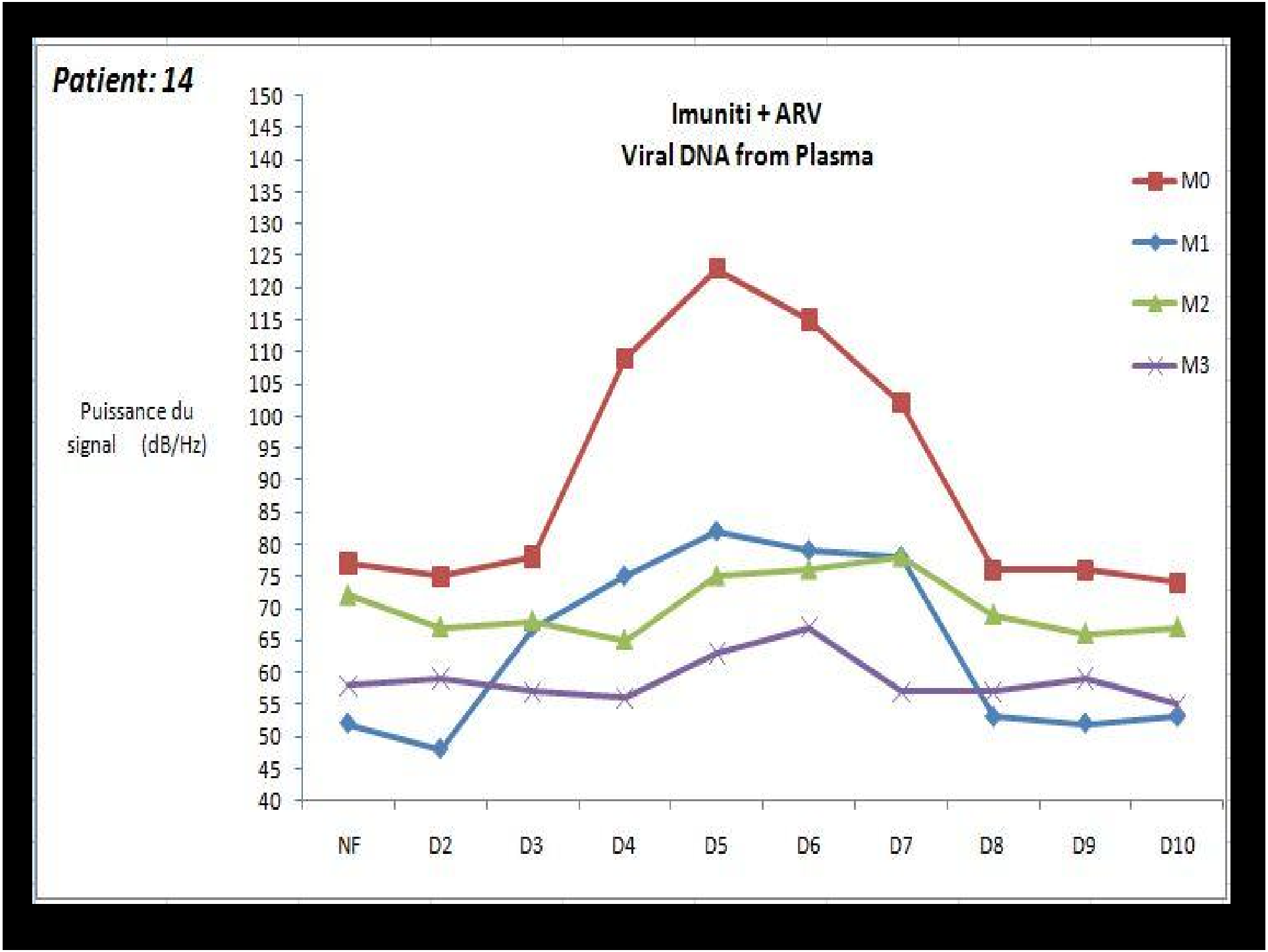
and followed every month for three months

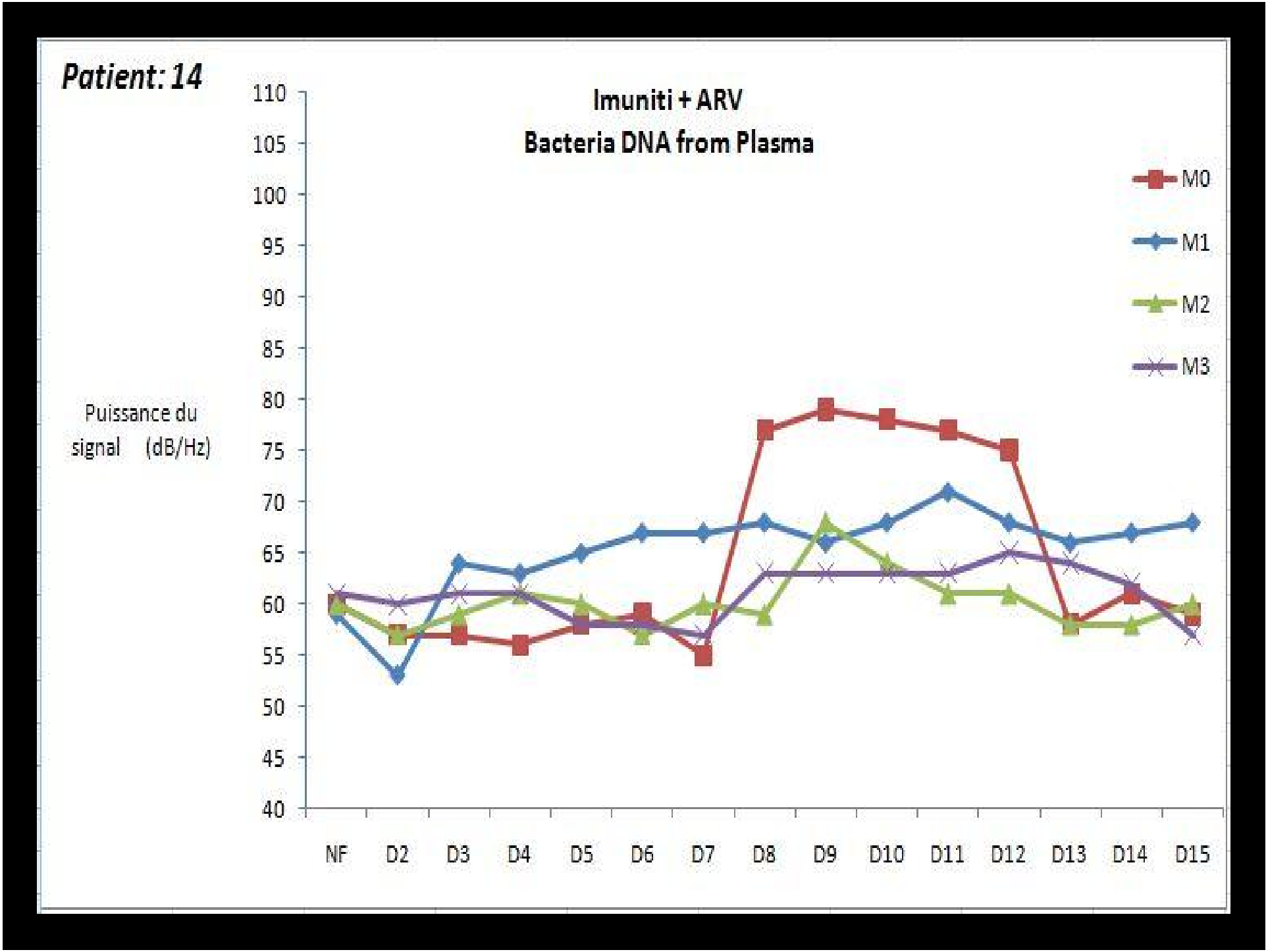
This HIV DNA may reflect a shift to a DNA-DNA replication mechanism, and represent at least part of the HIV reservoir remaining under ART.

ARM	ID	M0	M1	M2	M3
	01	35,6	34,8	28,4	31,8
	02	41,1	40	41,1	33,3
Imuniti only	03	42,1	38,9	31,9	35,1
	04	28,9	28,6	32	30,3
	05	36,7	47,6	40,2	48,3
	06	**35,7**	**20,8**	**24,4**	**23,7**
	07	40,2	35,1	35,8	32,7
	08	**38,3**	**37,1**	**20,2**	**17,7**
Imuniti + ARV	09	**37,7**	**35,9**	**28,7**	**23,4**
	10	39,5	36,8	35,8	36,3
	14	**38,7**	**29,3**	**16,4**	**15,5**
	15	**31,5**	**28,8**	**28,5**	**24,1**
	11	39	41,7	39,1	40,6
	12	36,7	34,2	40,7	ND
ARV only	13	32,5	42,9	37	36,1
	16	30,5	40	41,2	38,9
	17	38,6	41,5	31,1	38,8



$$\frac{\text{Average of power of positive dilutions}}{\text{Average of power of negative dilutions}} \times 100$$


Patient: 14
Imuniti + ARV
Viral DNA from Plasma
Puissance du signal (dB/Hz)
150
145
140
135
130
125
120
115
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
NF
D2
D3
D4
D5
D6
D7
D8
D9
D10
M0
M1
M2
M3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110
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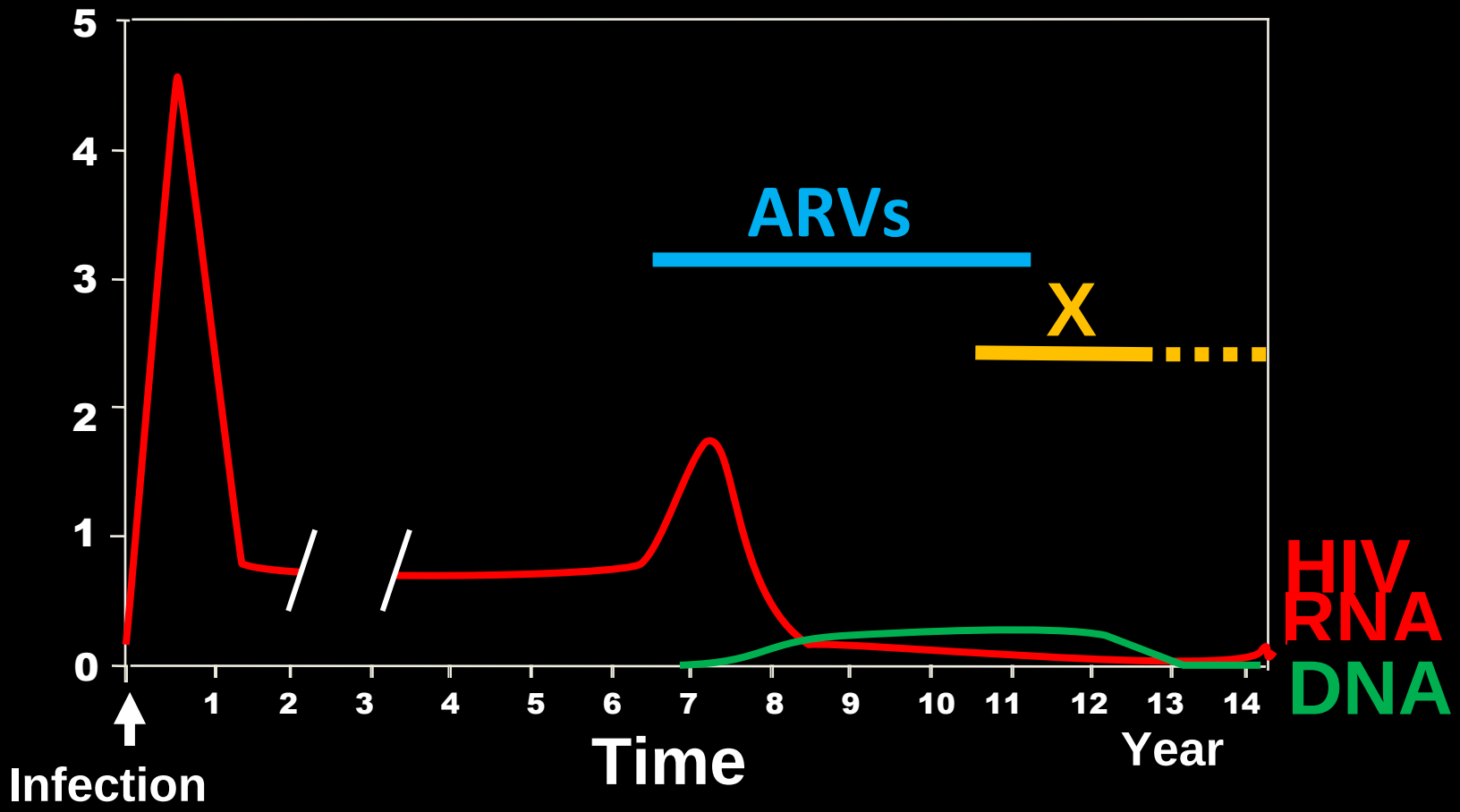
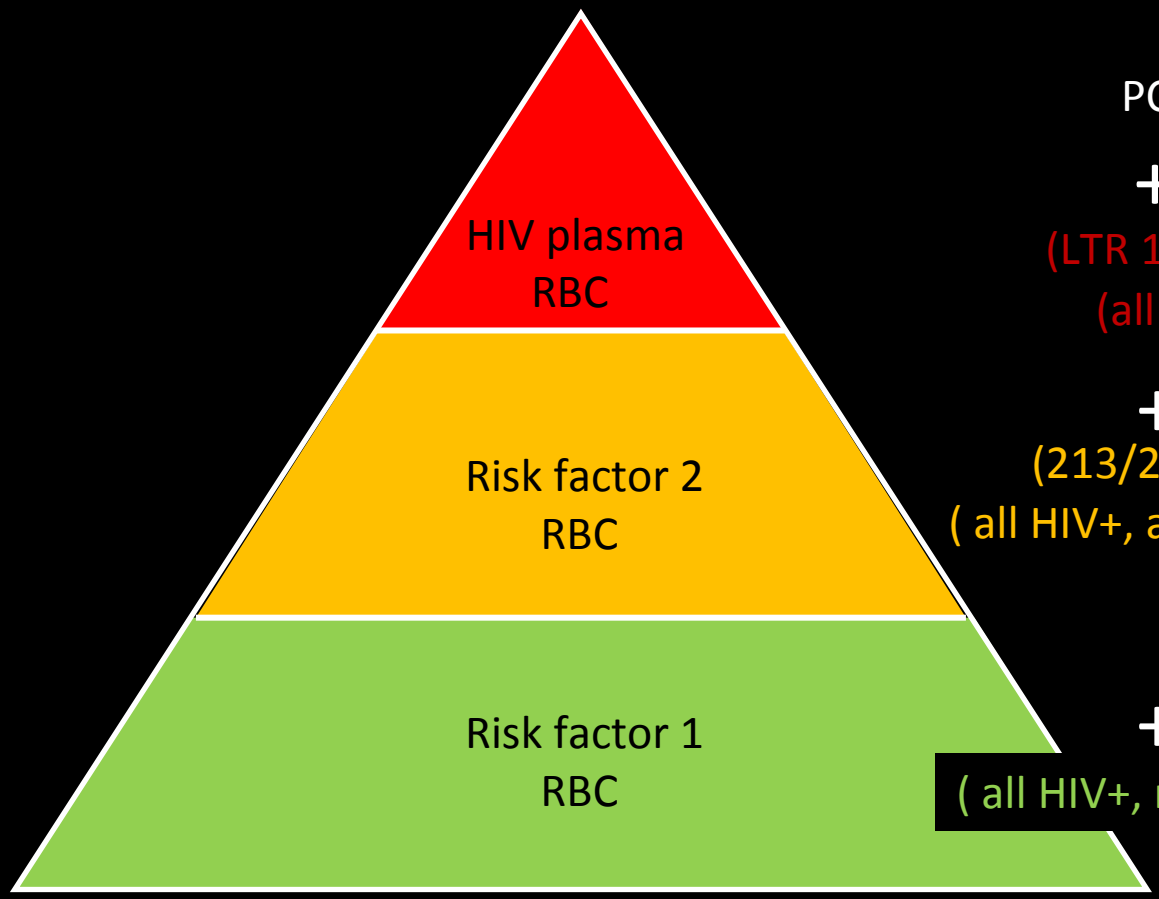
50
45
40
NF
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
M0
M1
M2
M3

HIV treatment tomorrow ?

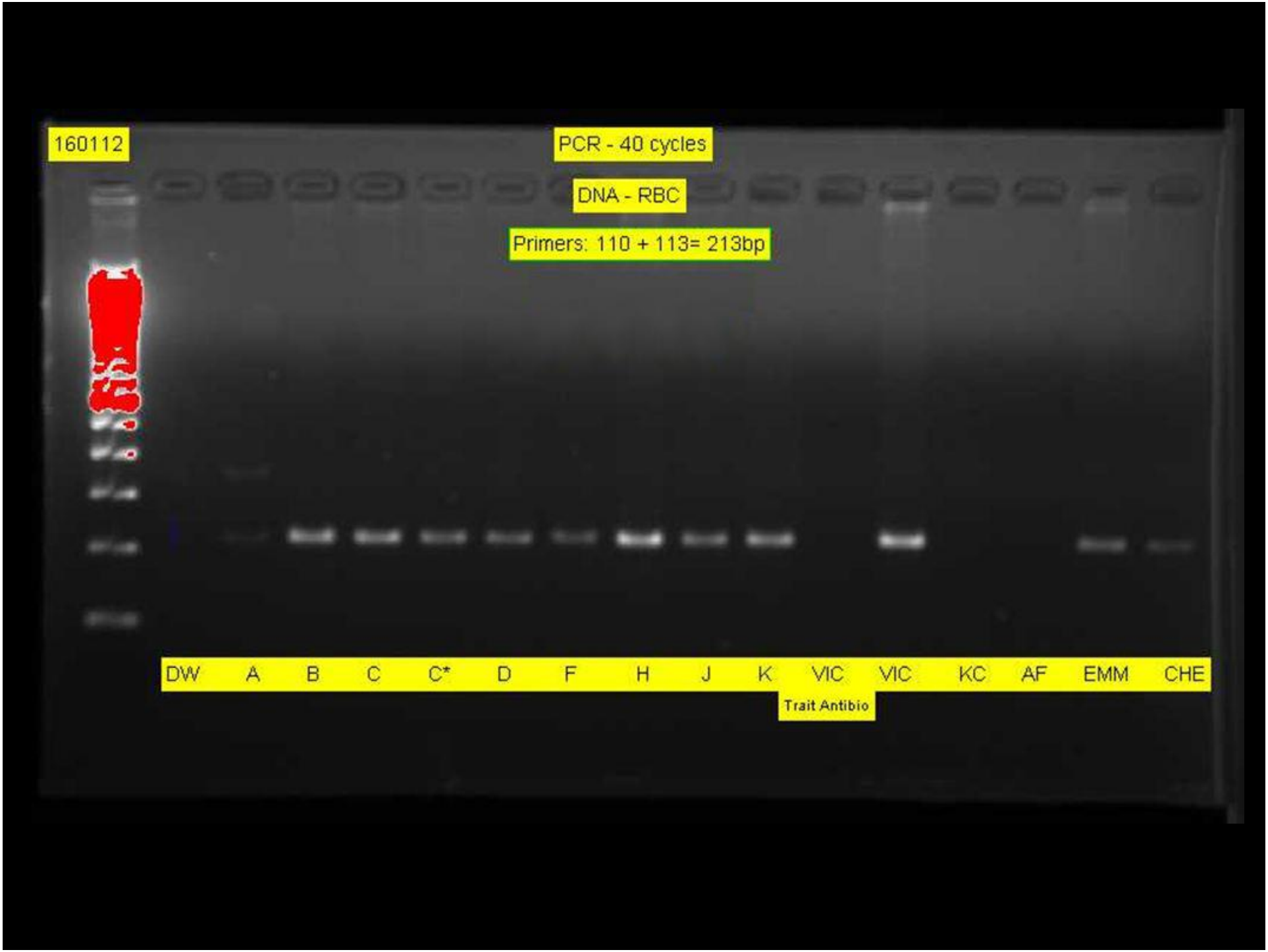




DNA

	PCR	EMS
HIV plasma RBC	+ (LTR 195 bp) (all HIV)	+ (20 nM)
Risk factor 2 RBC	+ (213/237 bp) (all HIV+, a few HIV-)	+ (100 nM) (HIV+)
Risk factor 1 RBC	+ (all HIV+, many HIV-)	- (HIV- & HIV+) (100 nM)

RISK FACTORS OF HIV INFECTION


160112
PCR - 40 cycles
DNA - RBC
Primers: 110 + 113= 213bp
DW
A
B
C
C*
D
F
H
J
K
VIC
VIC
KC
AF
EMM
CHE
Trait Antibio

The latter result is a very encouraging step towards eradication of viral infection by suppressing the viral reservoir.

Application to Diagnostic And Monitoring of Therapies

- Blood safety
- Prevention of nosocomial diseases
- Detection of microbial agents in chronic diseases
  - Neurodegenerative diseases and psychiatric
  - Arthritis
  - Cardiovascular
  - Cancer
- Biomarker of HIV reservoir which remains after tritherapy

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