Ozone Therapy: Russian and European comparison method

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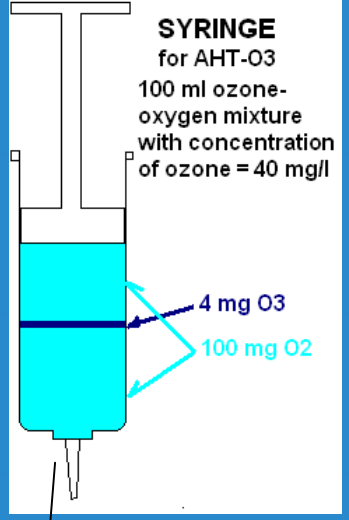
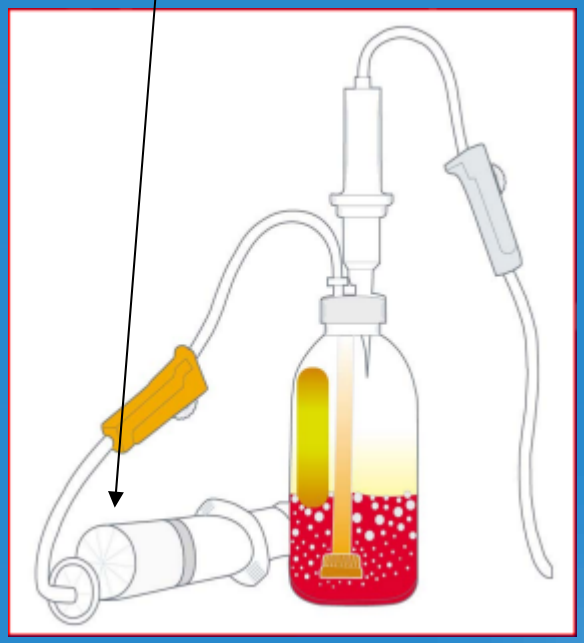
Asiatic – European Union of ozonetherapists
SPE “Econika”

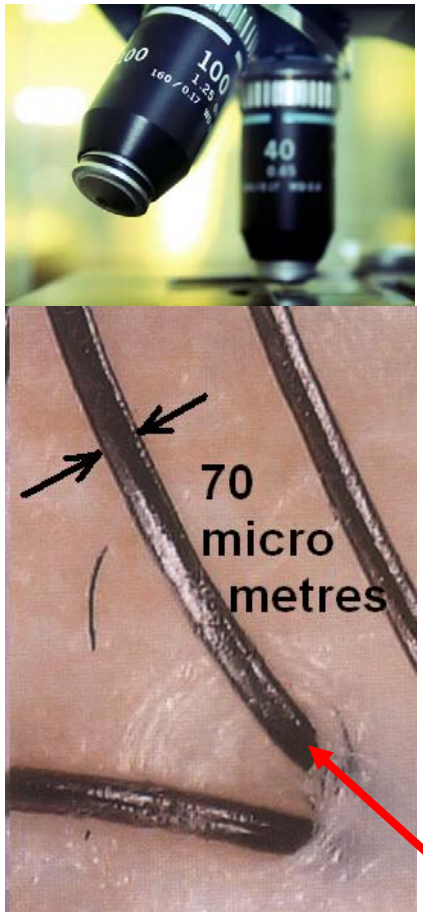


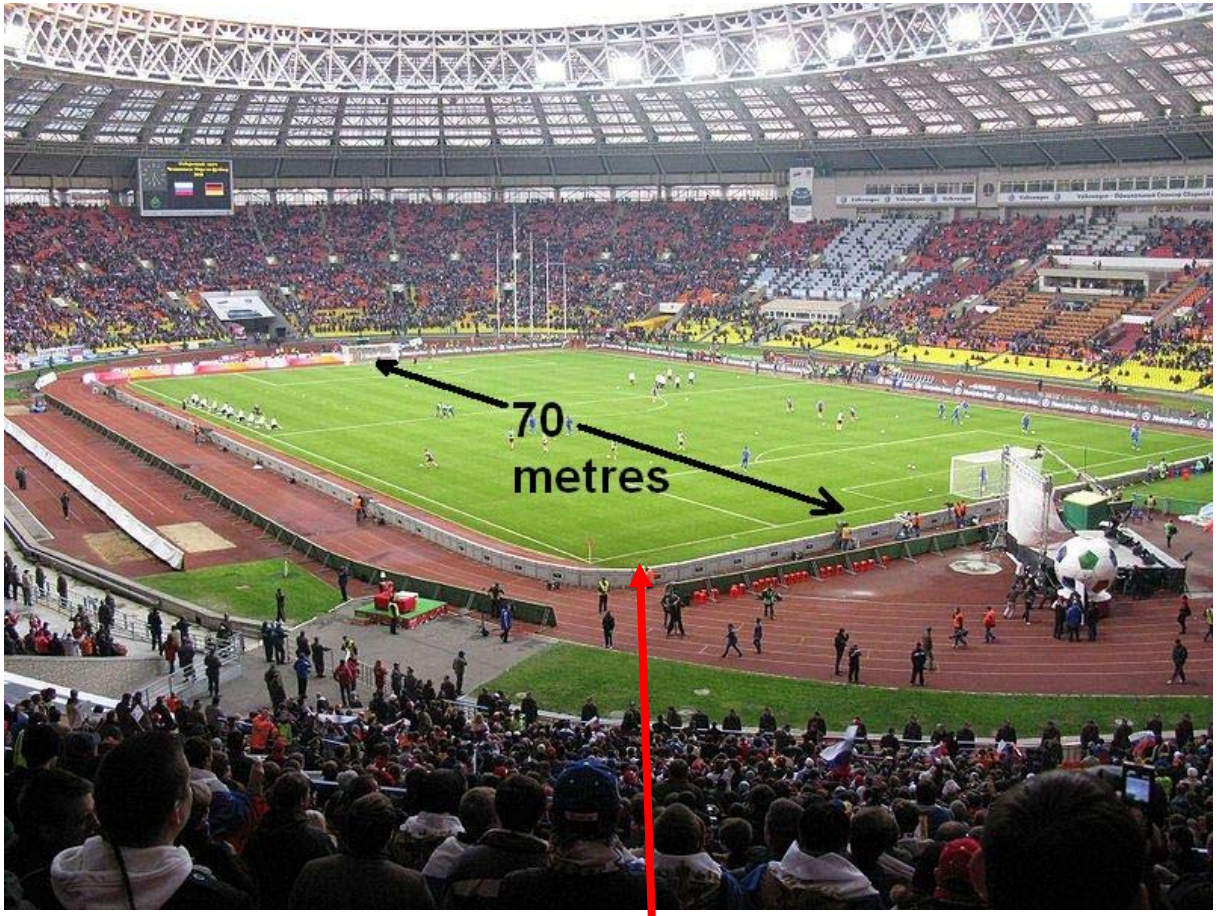
Western method AHT-O3



Russian method AHT-O3

[3]How to imagine concentration 1 mg/L or what such one million?





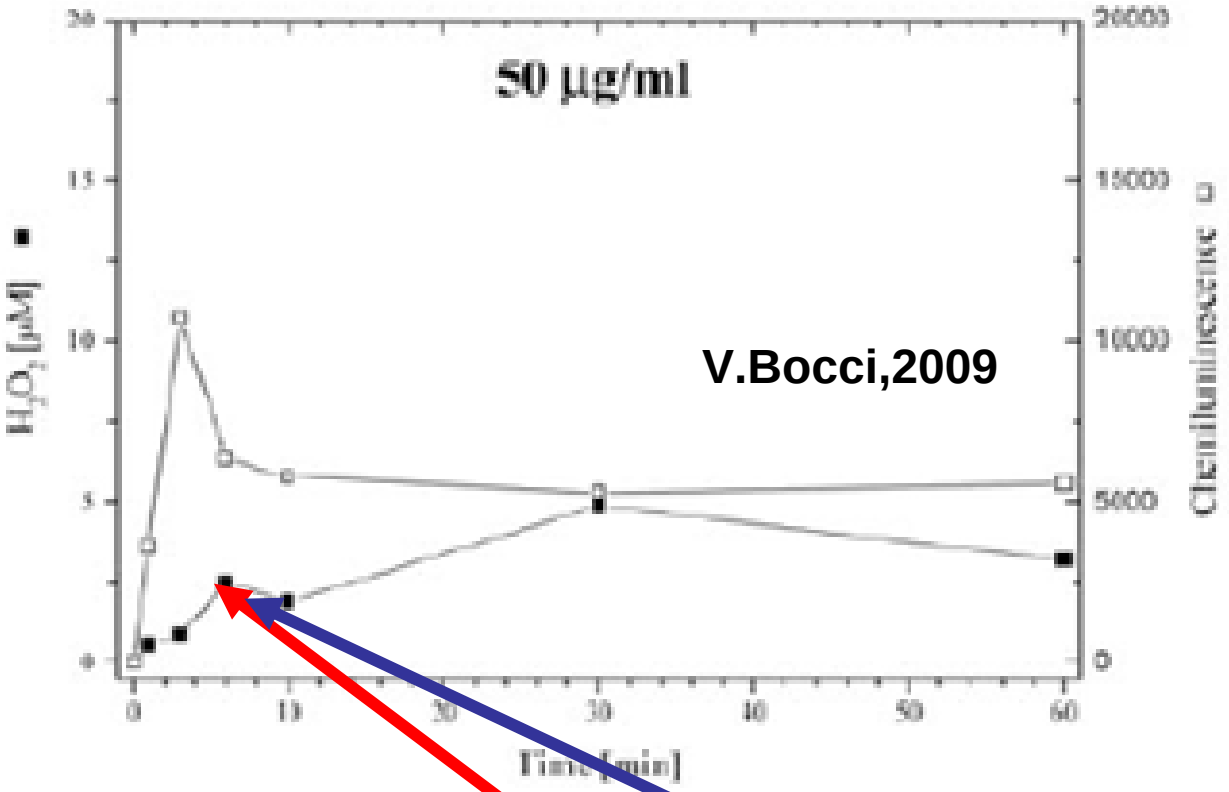
Ozonized saline solution is 1 mg Ozone dissolved in 1000 000 mg H2O

diameter of human hair = 70 mcm the size of stadium = 70 m

70 micrometres * 1000000 = 70 metres

1 mg/L solution ozone in water - It is 1 hair of ozone which lays on a water football ground !

Whether the problem of formation of peroxide of hydrogen is actual at ozonization saline solution?

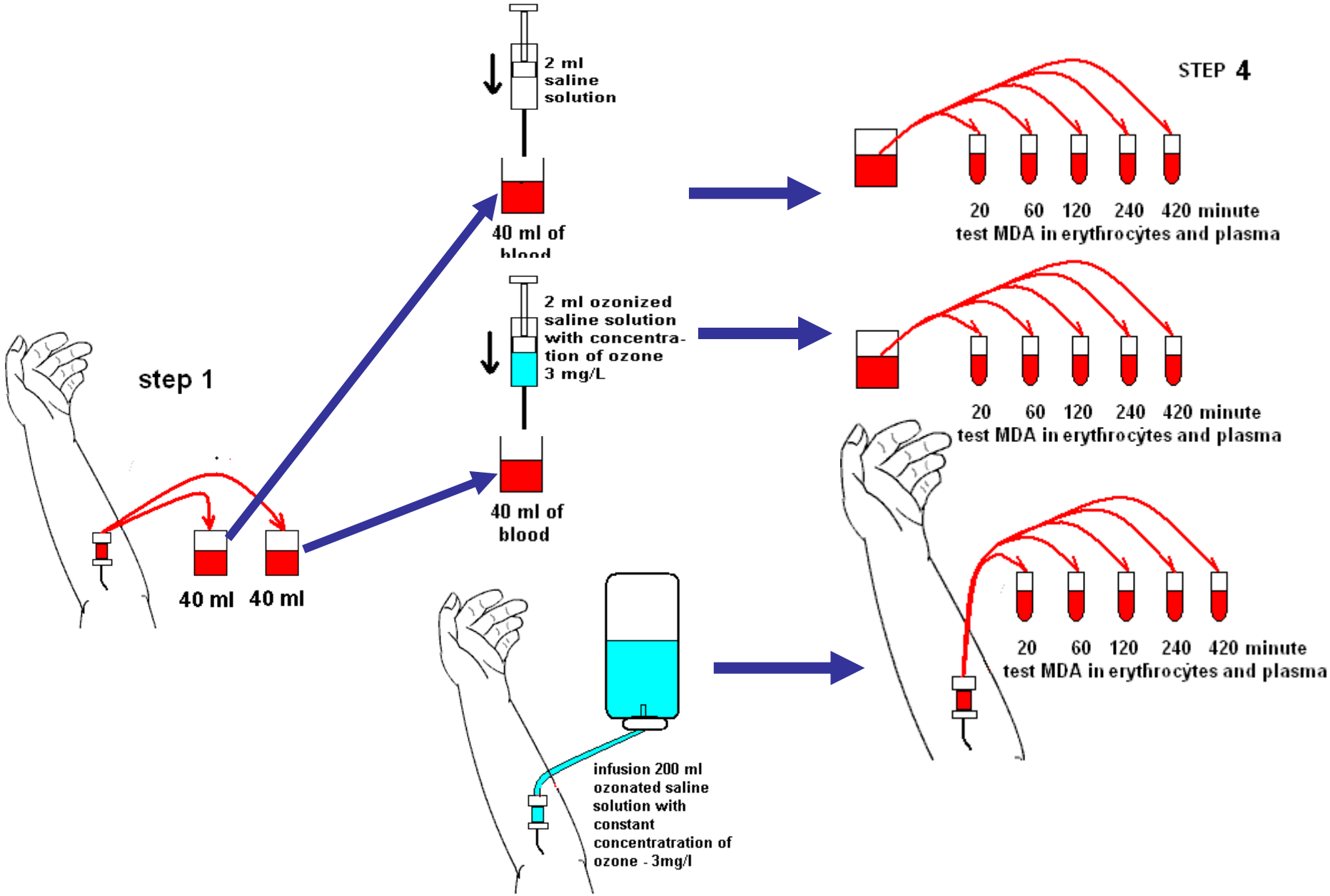


Concentration ozone = 4mg/L or 0.0004%

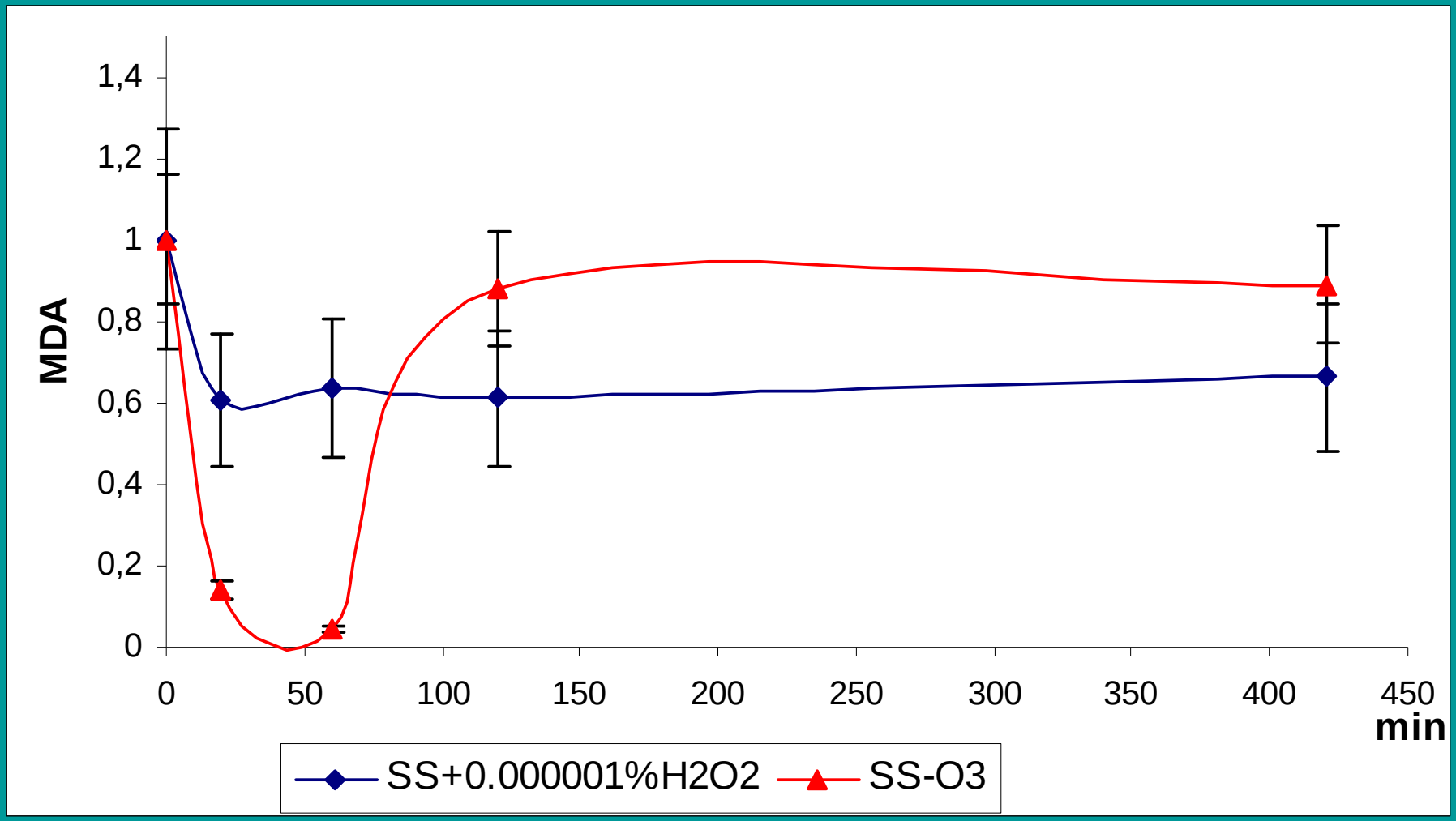
Concentration of H2O2 = 0.085 mg/L or <0.00001%.

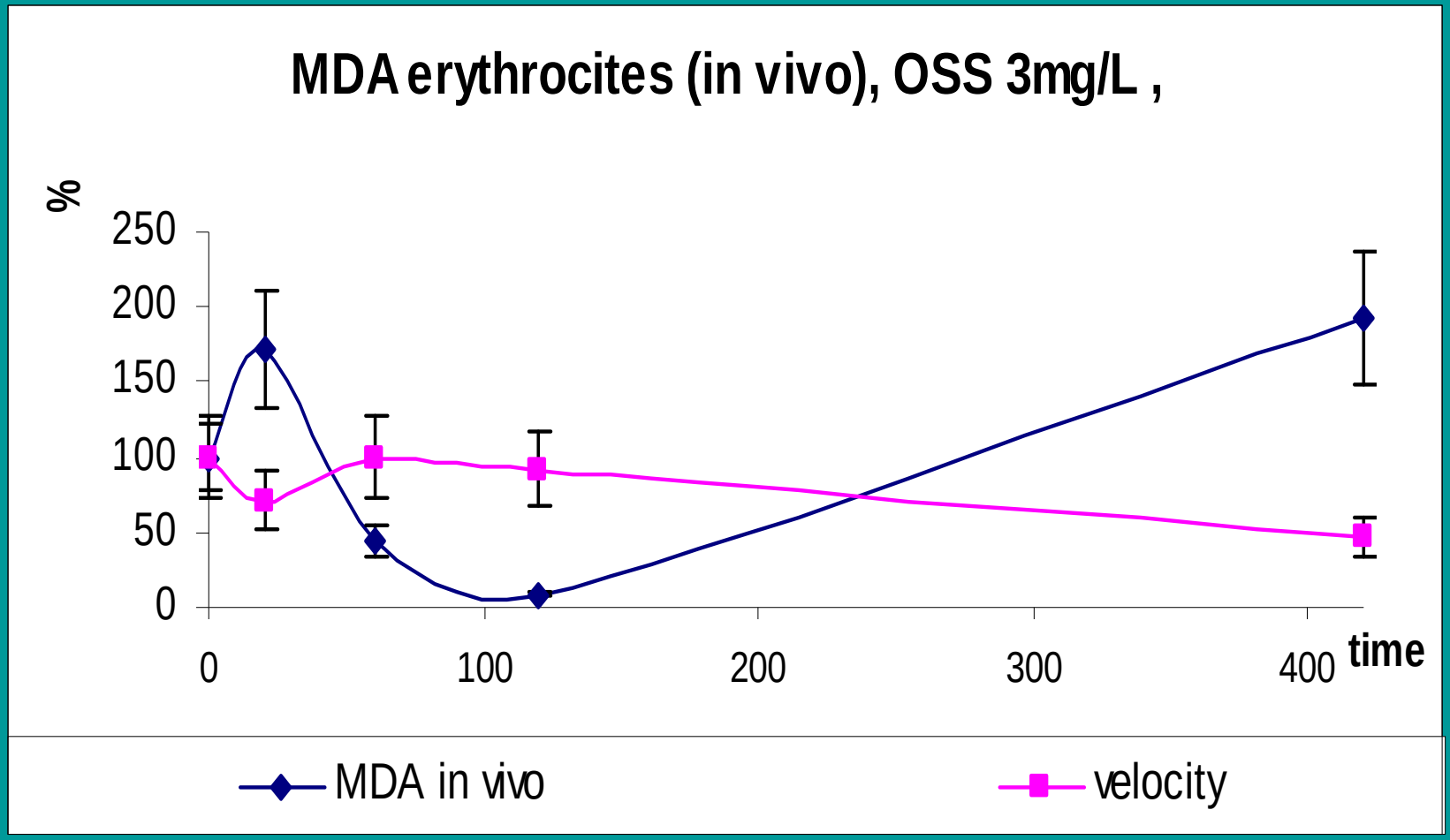
[H2O2]/[O3]=0.021 !

Comparative studying of development peroxide processes in vitro and in vivo at action ozonized saline solution

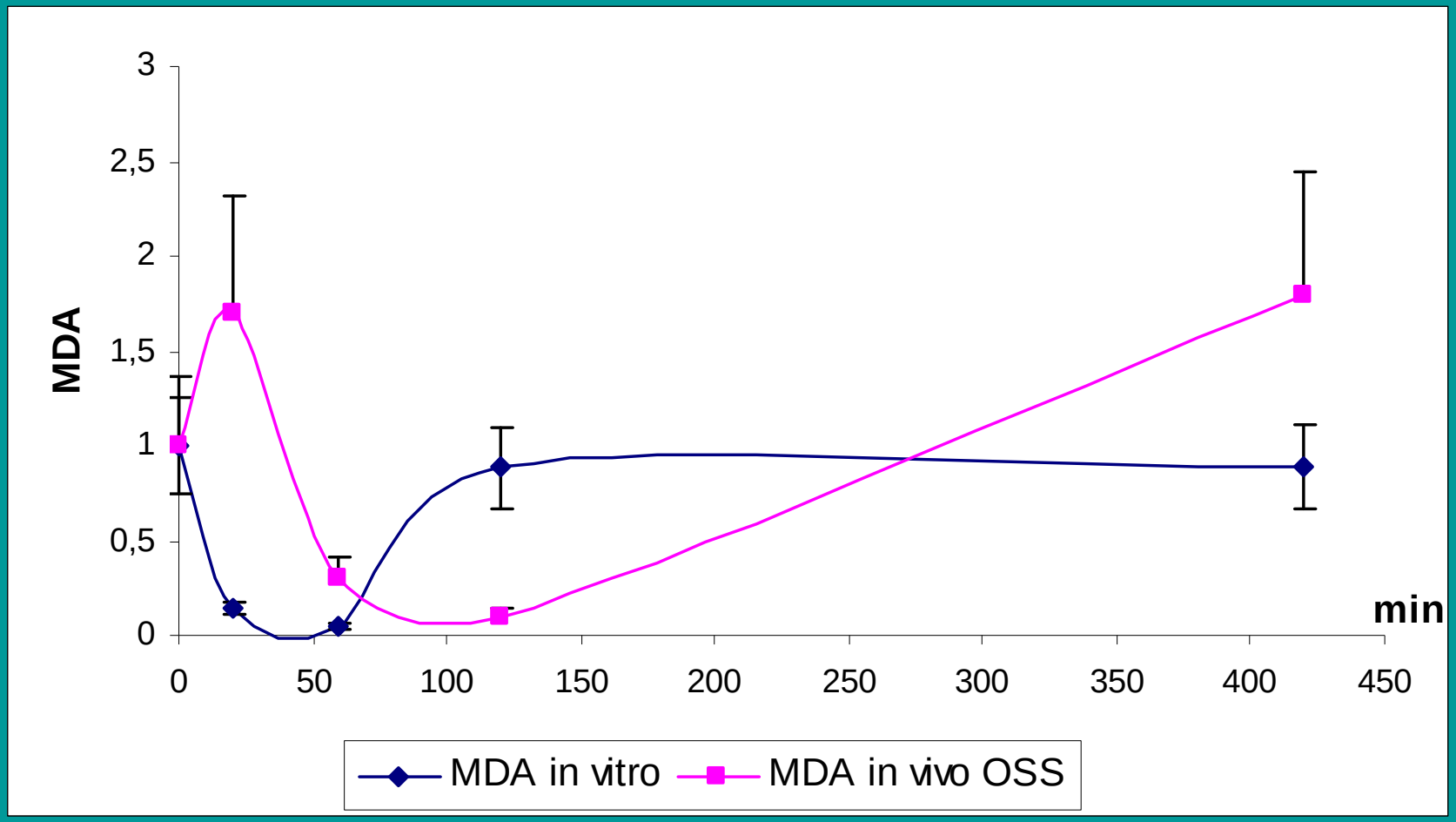


Modelling experience(OSS, MDA,erythrocites)

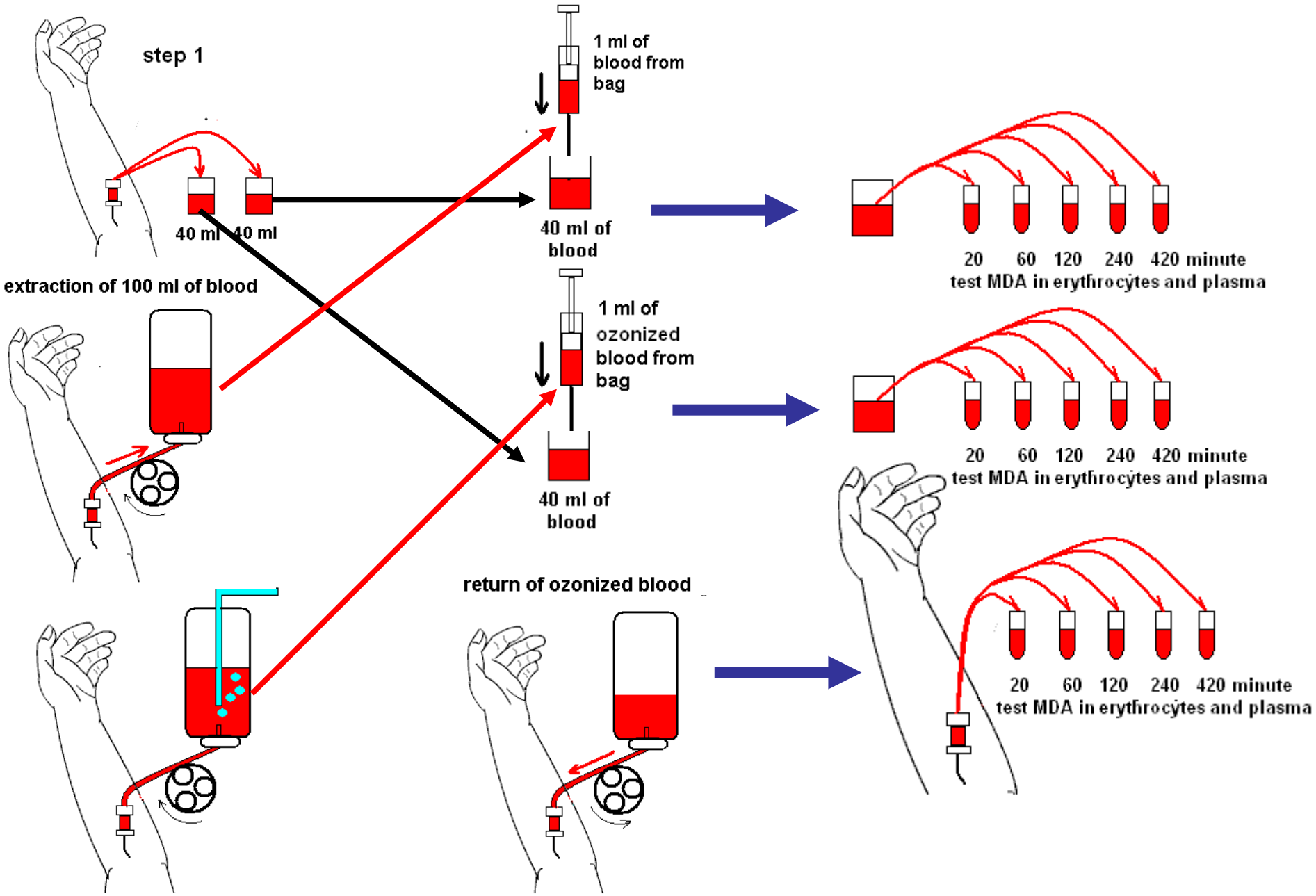



MDA erythrocites (in vivo), OSS 3mg/L ,
%
250
200
150
100
50
0
0
100
200
300
400
time
MDA in vivo
velocity

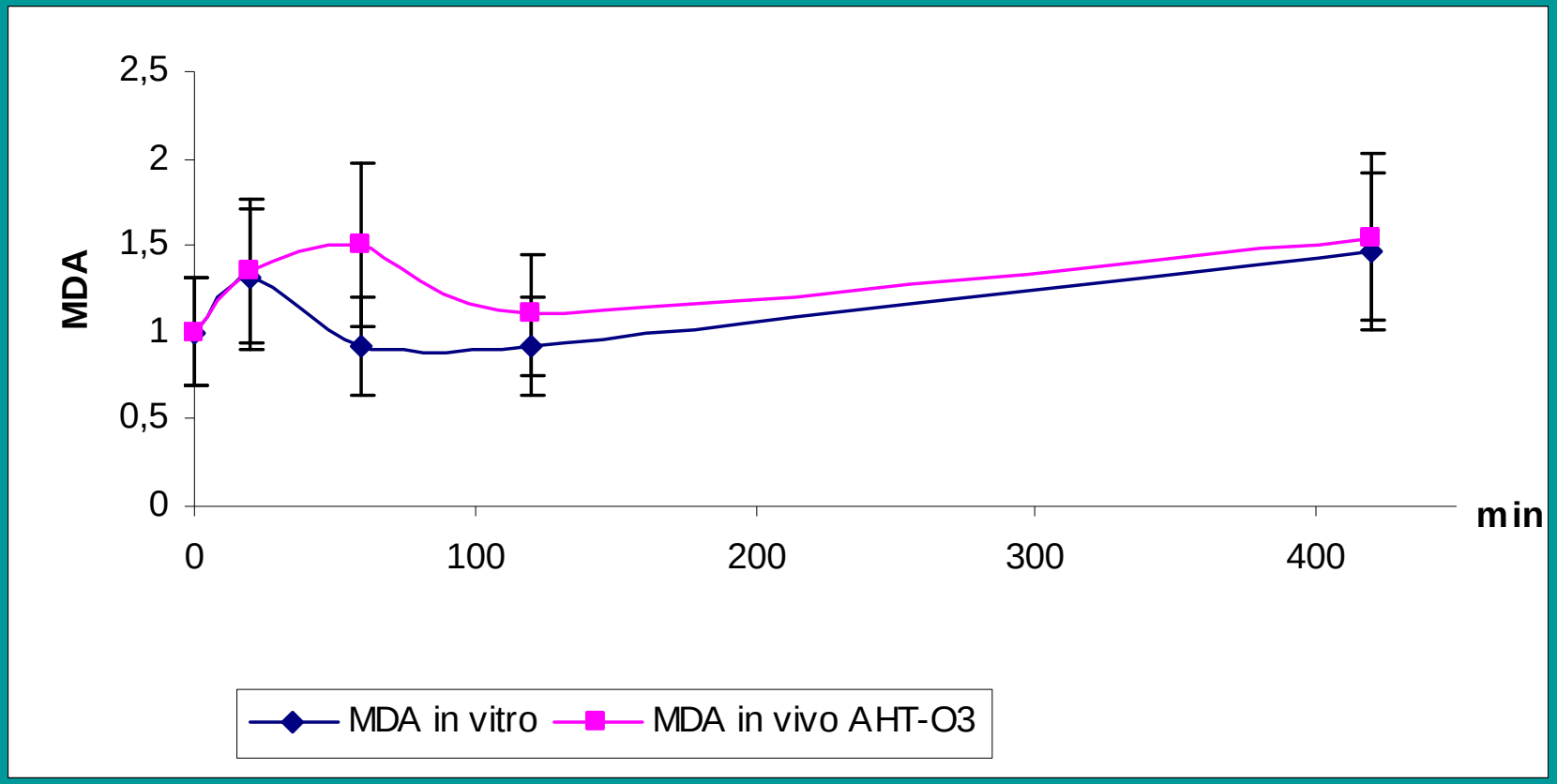
Comparison of effects OSS on peroxide processes in modelling system and an organism (OSS 3mg/L, doze of ozone = 0.6 mg(7-10 mcg/kg)



Comparative studying of development peroxide processes in vitro and in vivo at action ozone-oxygen mixture

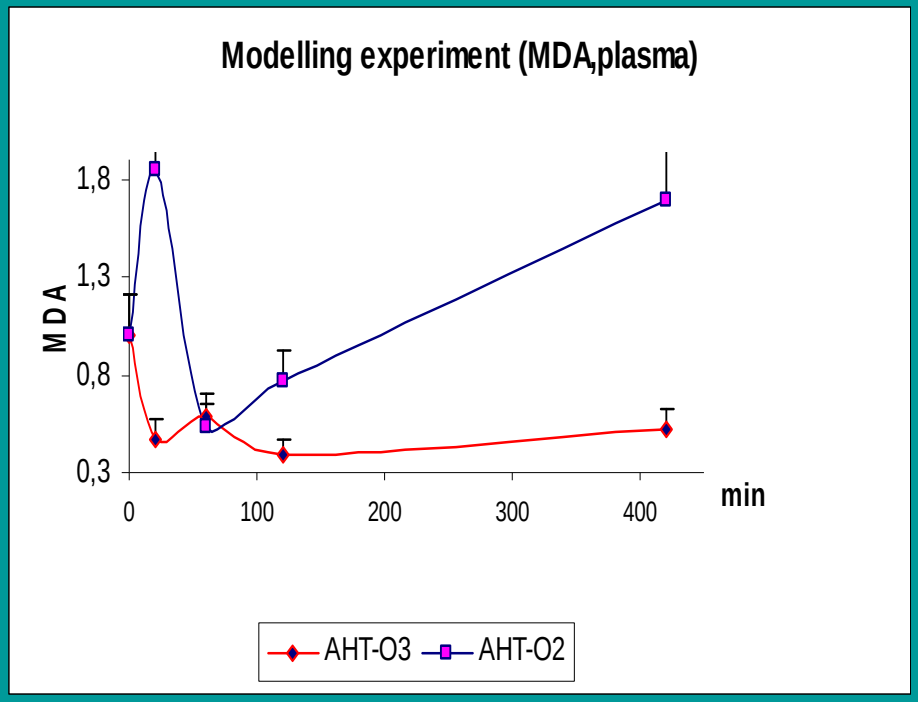


Dynamics MDA in vitro and in vivo (AHT-O3 4 mg/L, 47-57 mcg/kg, erythrocites)

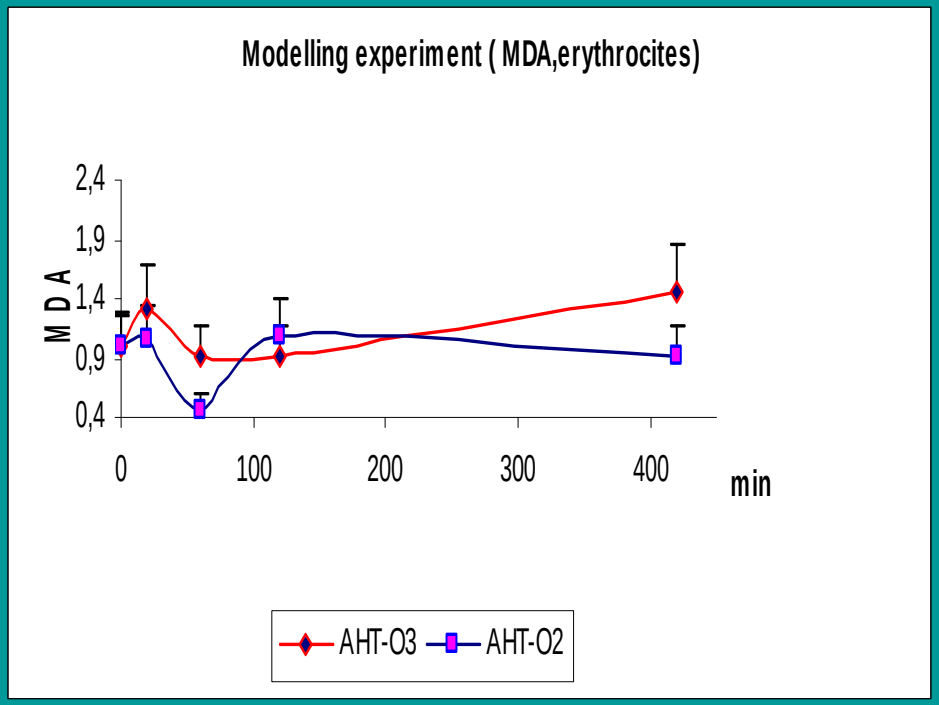


Modelling peroxide processes in blood on action of oxygen, an ozono-oxygen mix (AHT-O3)

PLASMA



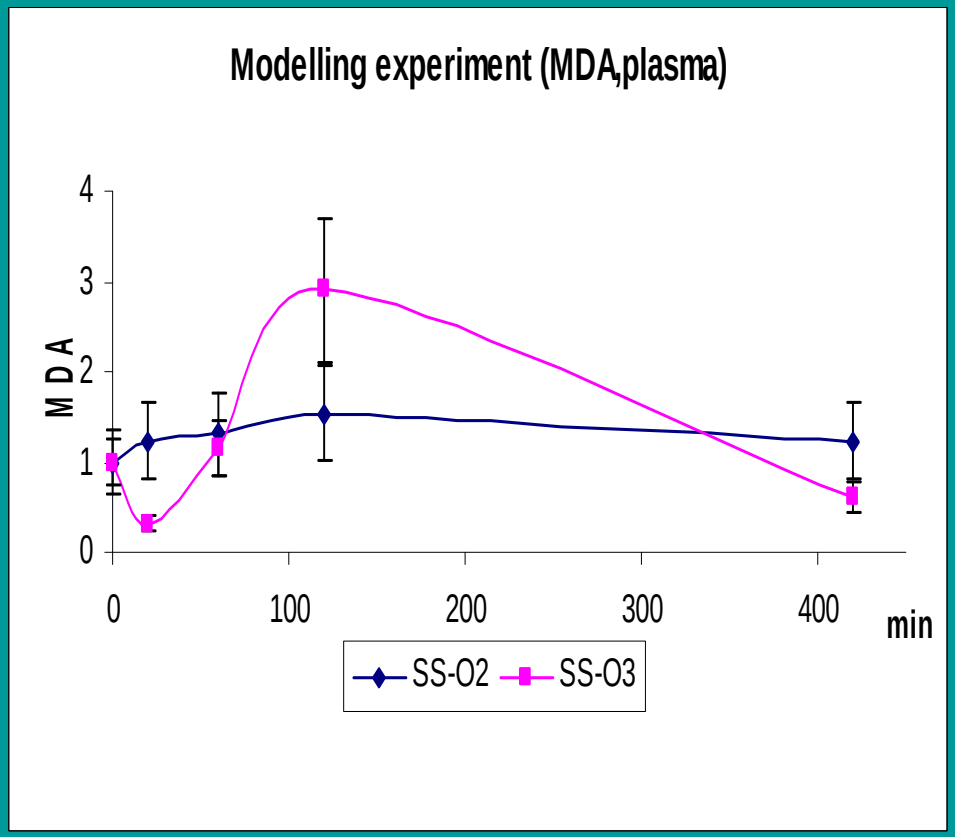
ERYTHROCITES



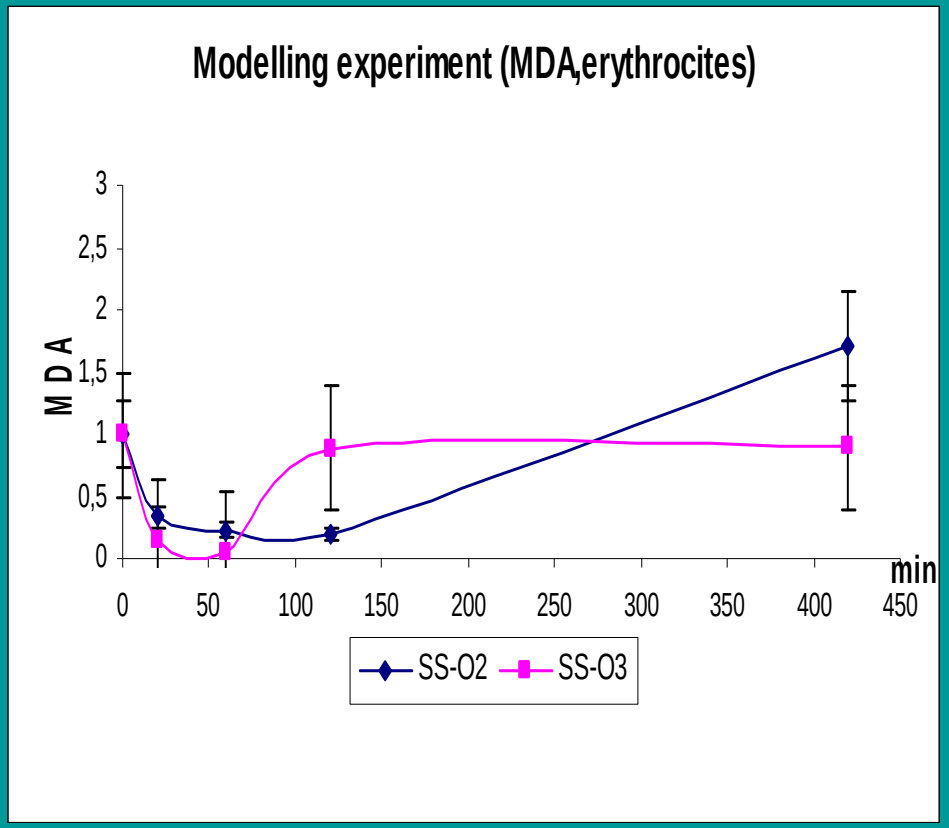
Ozone is antidotes to oxygen for plasma

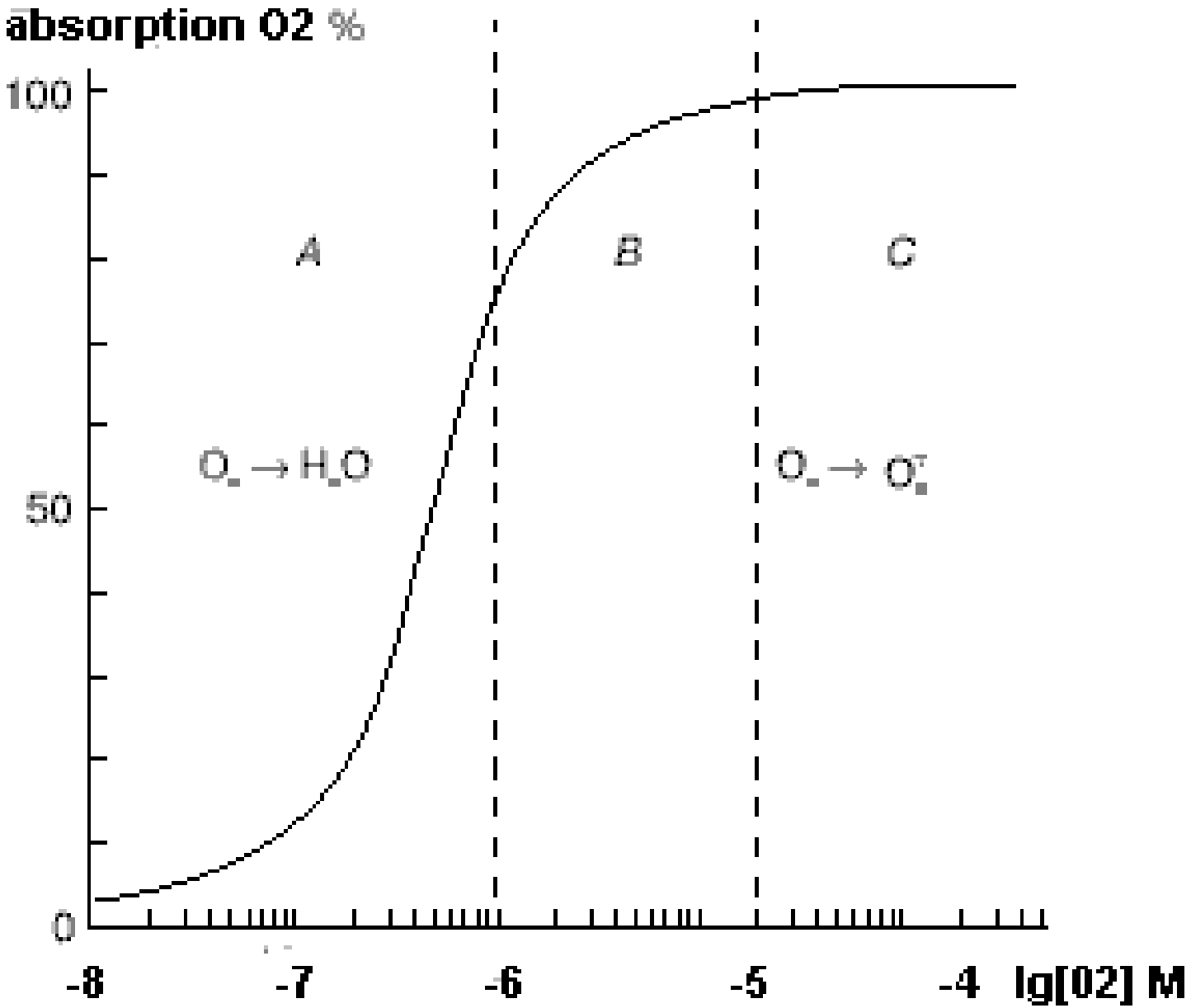
Modelling peroxide processes in blood on action of oxygen, an ozono-oxygen mix (OSS)

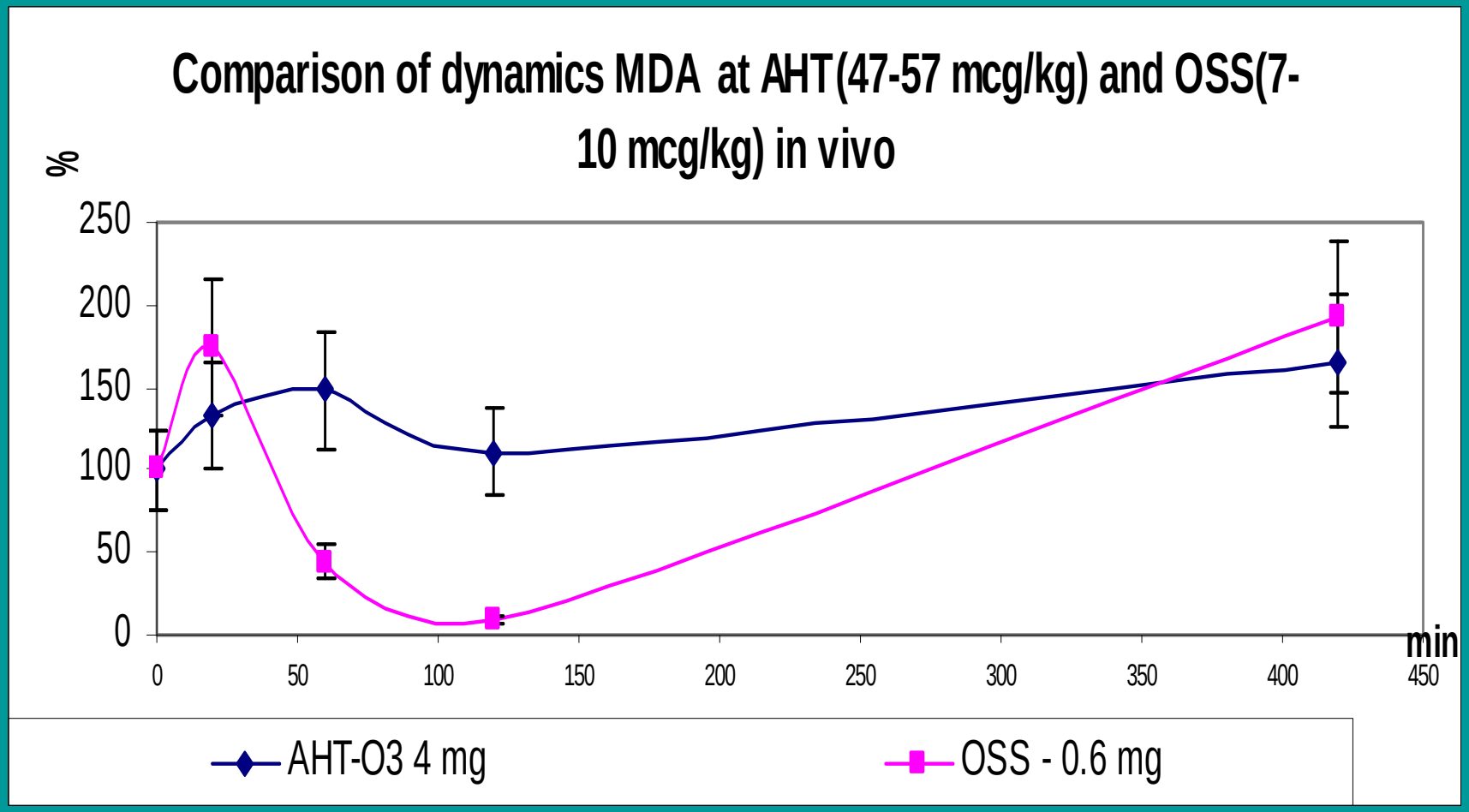
PLASMA



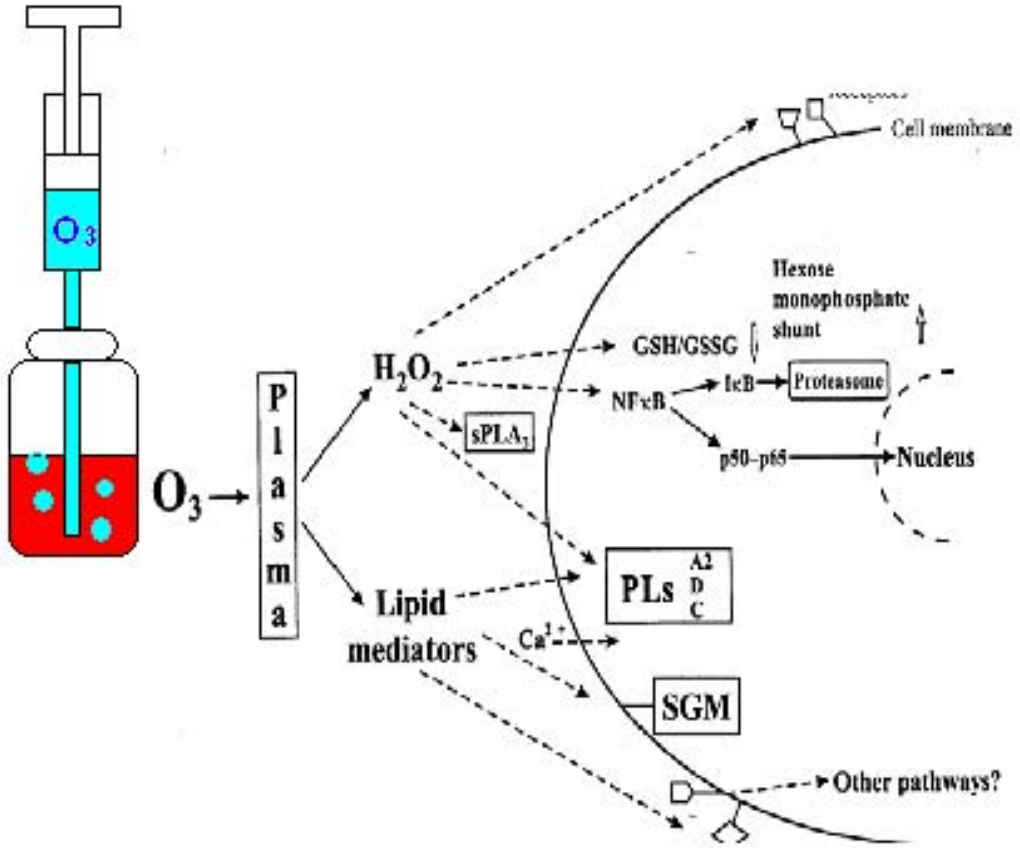
ERYTHROCITES



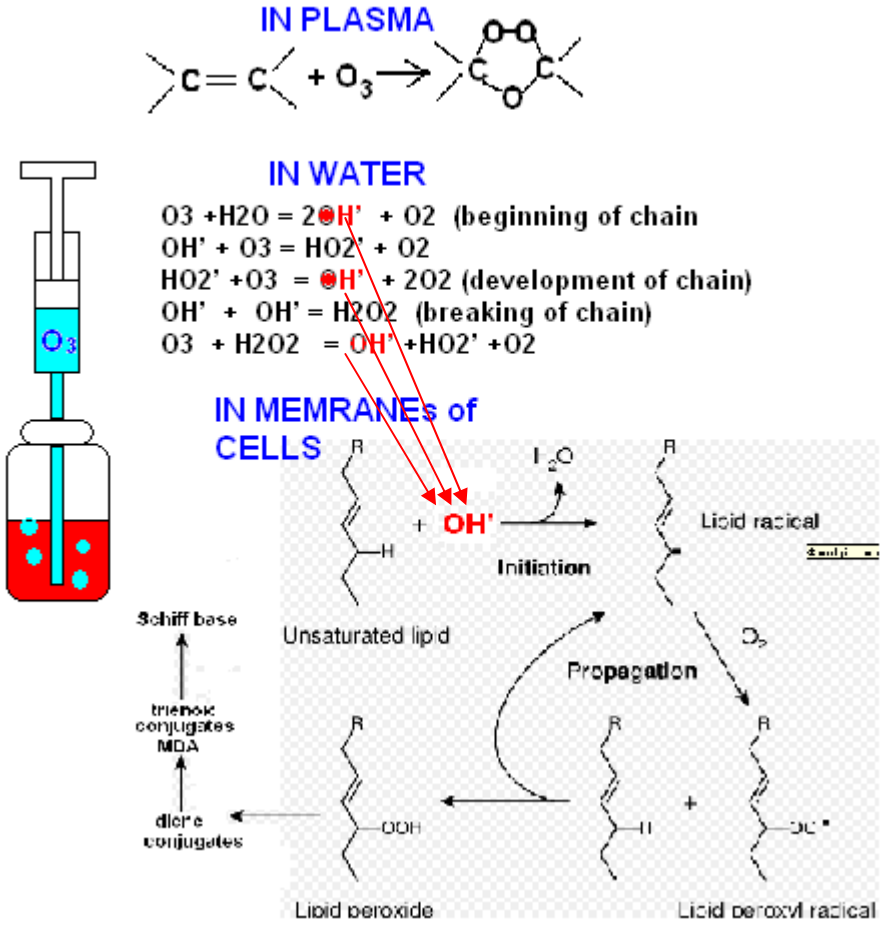

absorption O2 %
100
50
0
A
B
C
$O_2 \rightarrow H_2O$
$O_2 \rightarrow O_2^-$
-8
-7
-6
-5
-4
lg[02] M


Comparison of dynamics MDA at AHT(47-57 mcg/kg) and OSS(7-10 mcg/kg) in vivo
%
250
200
150
100
50
0
0
50
100
150
200
250
300
350
400
450
min
AHT-O3 4 mg
OSS - 0.6 mg

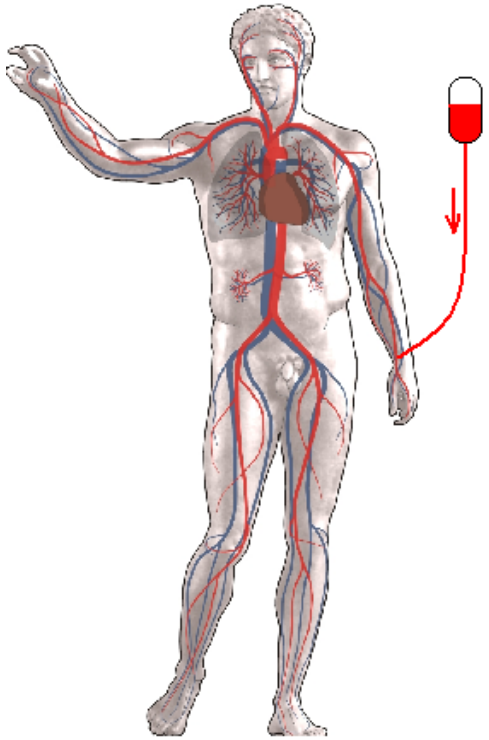
What happens in blood at ozonization? The first hypothesis.

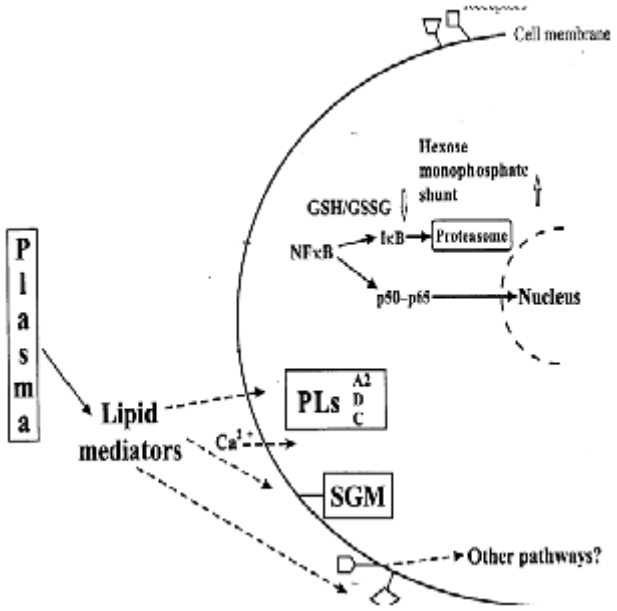


What happens in blood at ozonization? The second hypothesis



What happens at mixing of 4 litres of blood of the patient and 0.1 litre of the ozonized blood. The first hypothesis.





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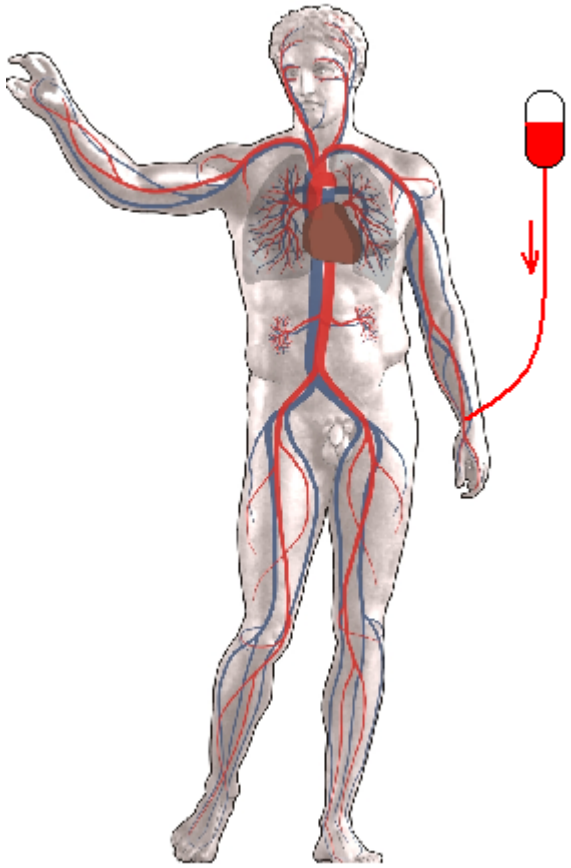
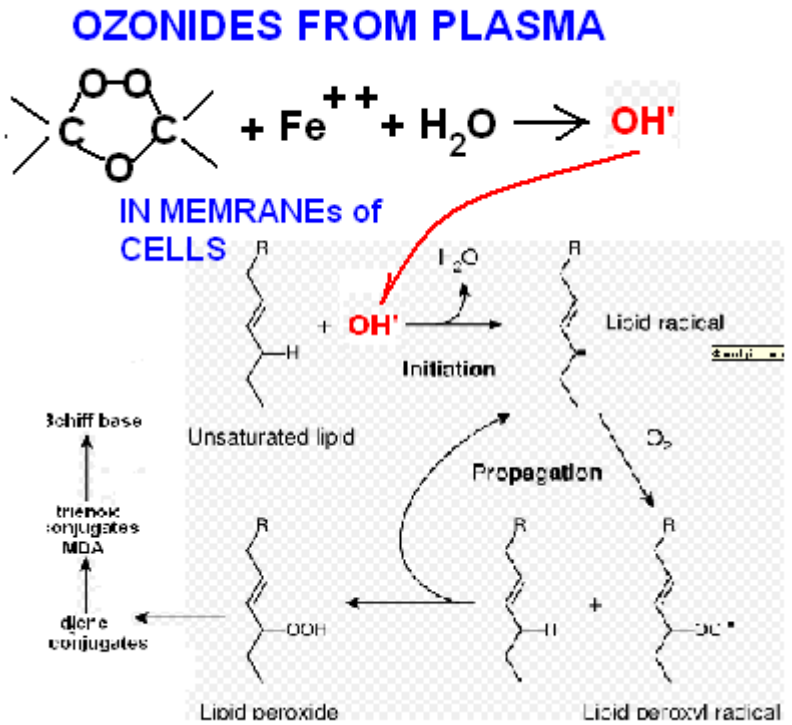
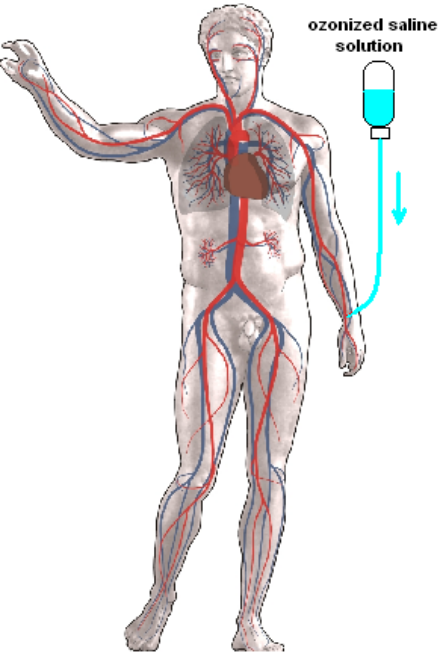
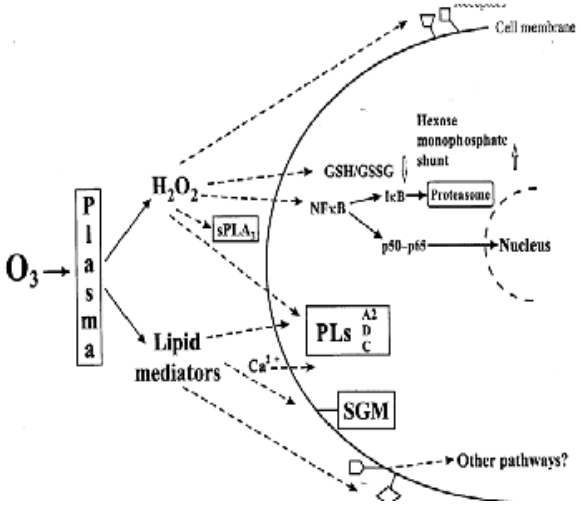


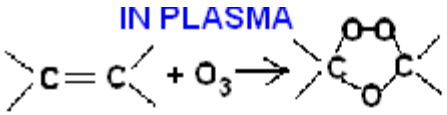


What happens at infusion saline solution?





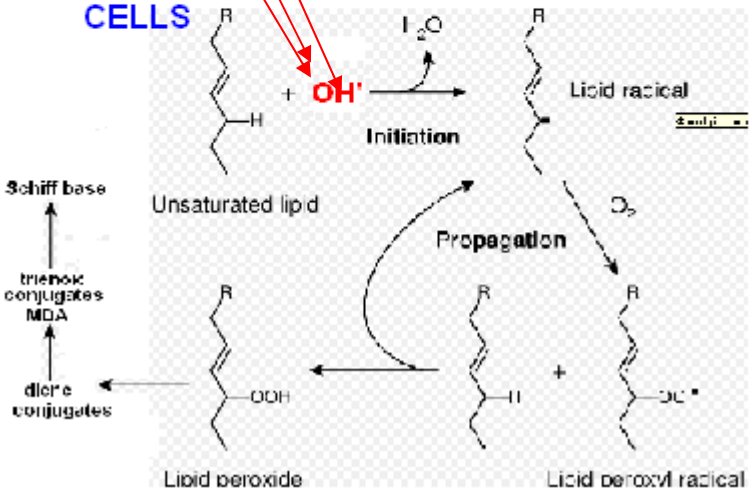
first hypothesis.



IN WATER

$O_3 + H_2O = 2\,^{\bullet}OH + O_2$ (beginning of chain)
$^{\bullet}OH + O_3 = HO_2^{\bullet} + O_2$
$HO_2^{\bullet} + O_3 = {}^{\bullet}OH + 2O_2$ (development of chain)
$^{\bullet}OH + {}^{\bullet}OH = H_2O_2$ (breaking of chain)
$O_3 + H_2O_2 = {}^{\bullet}OH + HO_2^{\bullet} + O_2$

IN MEMRANEs of CELLS



second hypothesis.

What amount of blood is processed by ozone at AHT-O3 and at IV infusion of a saline solution?

Speed of a blood-flow in cubital vein = (0.1-0.2)L/min.
Procedure time = 30 minutes.
Volume of the blood processed by ozone:
(0.1-0.2)L/min*30 min = 3-6 litres.

AHT-O3

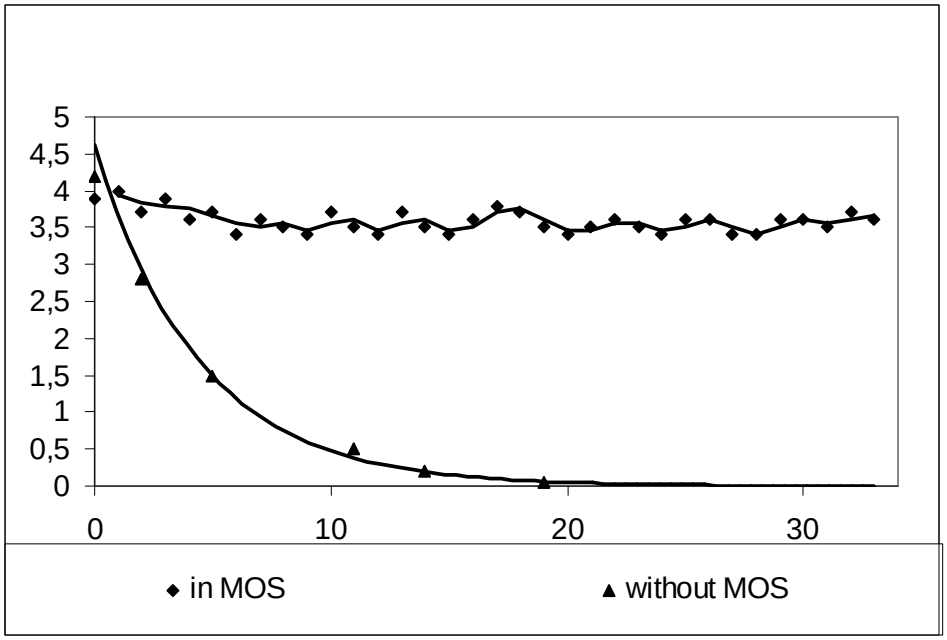
0.1 litre

IV infusion of OSS

Fundamental differences of procedures OSS and AHT-O3

- The ozone dissolved in a salt solution interaction directly with blood cells and plasma of the basic volume of blood of the patient, passing secondary messengers as in procedure AHT-O3.
- The blood volume which interact with ozone at procedure of infusion ozonized saline solution is commensurable with volume of circulating blood of the patient.

Metrological correct method of infusion ozonized saline solutin



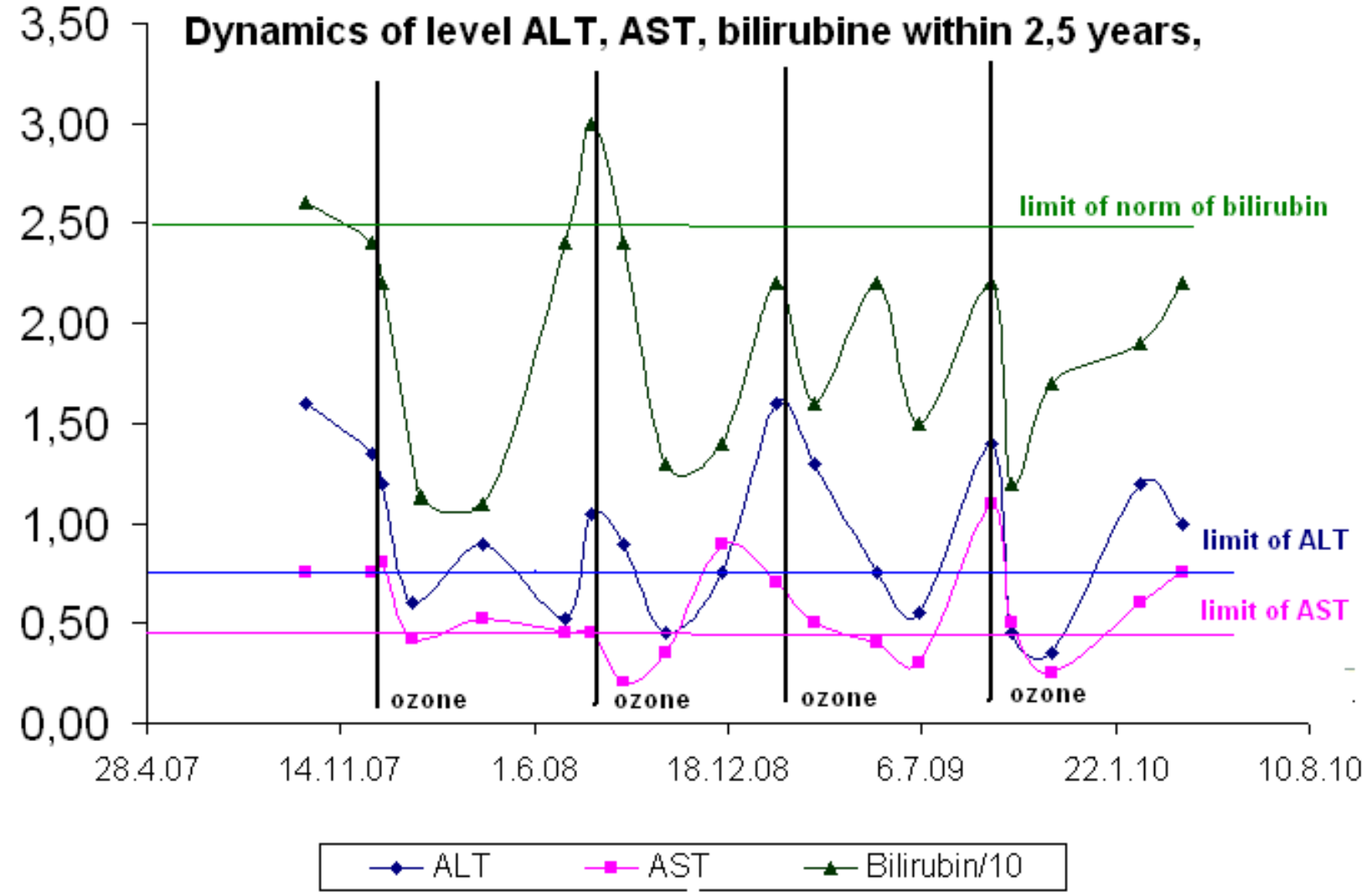
Stabilisation of concentration of ozone in saline solution Bozon-N's MOS-module.

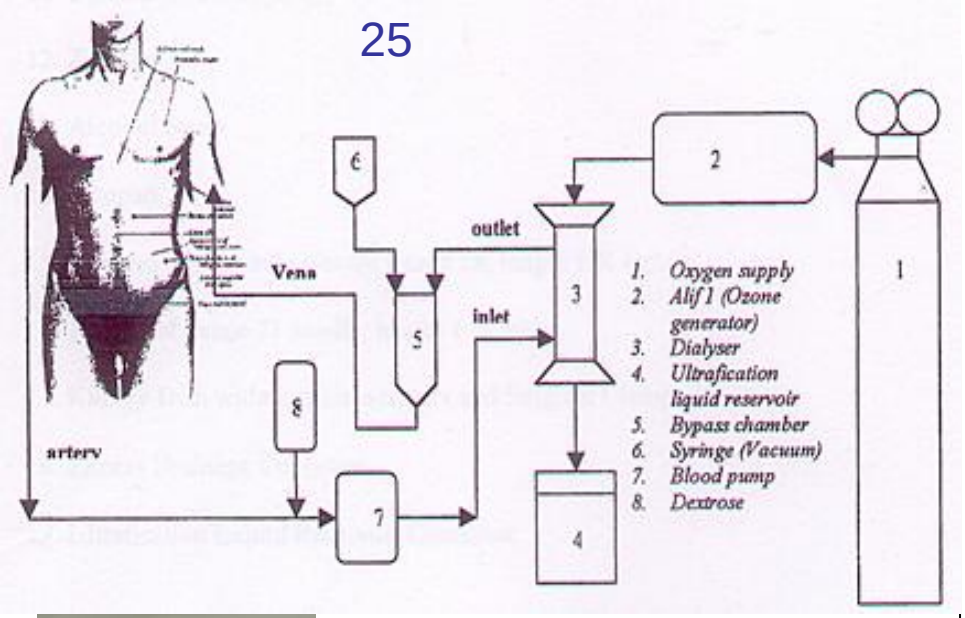
Range set and maintained concentration in the ozonized saline solution – 0.2 - 5 mg/l.

Extracorporeal blood oxygenation and ozonization

- Lipid-enveloped viruses are especially sensitive to ozone challenge, implicating that lipid alteration is a salient mechanism for their viral death. Viruses containing lipid envelopes include the *Hepadnaviridae* (Hepatitis B), the Flaviviridae (hepatitis C, West Nile virus, yellow fever); the *Herpesviridae*, a large family grouping the Simplex, Varicella-Zoster, Cytomegalovirus, and Epstein-Barr viruses; the *Orthomyxoviridae* (influenza); the *Paramyxoviridae* (mumps, measles); the *Coronaviridae* (SARS); the *Rhabdoviridae* (rabies); the *Togaviridae* (Rubella, encephalitis); the *Bunyaviridae* (Hantavirus); the *Poxviridae* (smallpox); the *Retroviridae* (HIV), and the *Filoviridae* (Ebola, Marburg), among others. Indeed, once the virion's lipid envelope becomes fragmented, its DNA or RNA core cannot progress in its life cycle.

Hepatitis C (1b). Dynamics of indexes in a current of 2.5 years. A course - six AhT-O3b 4 mg (50 mkg/kg)



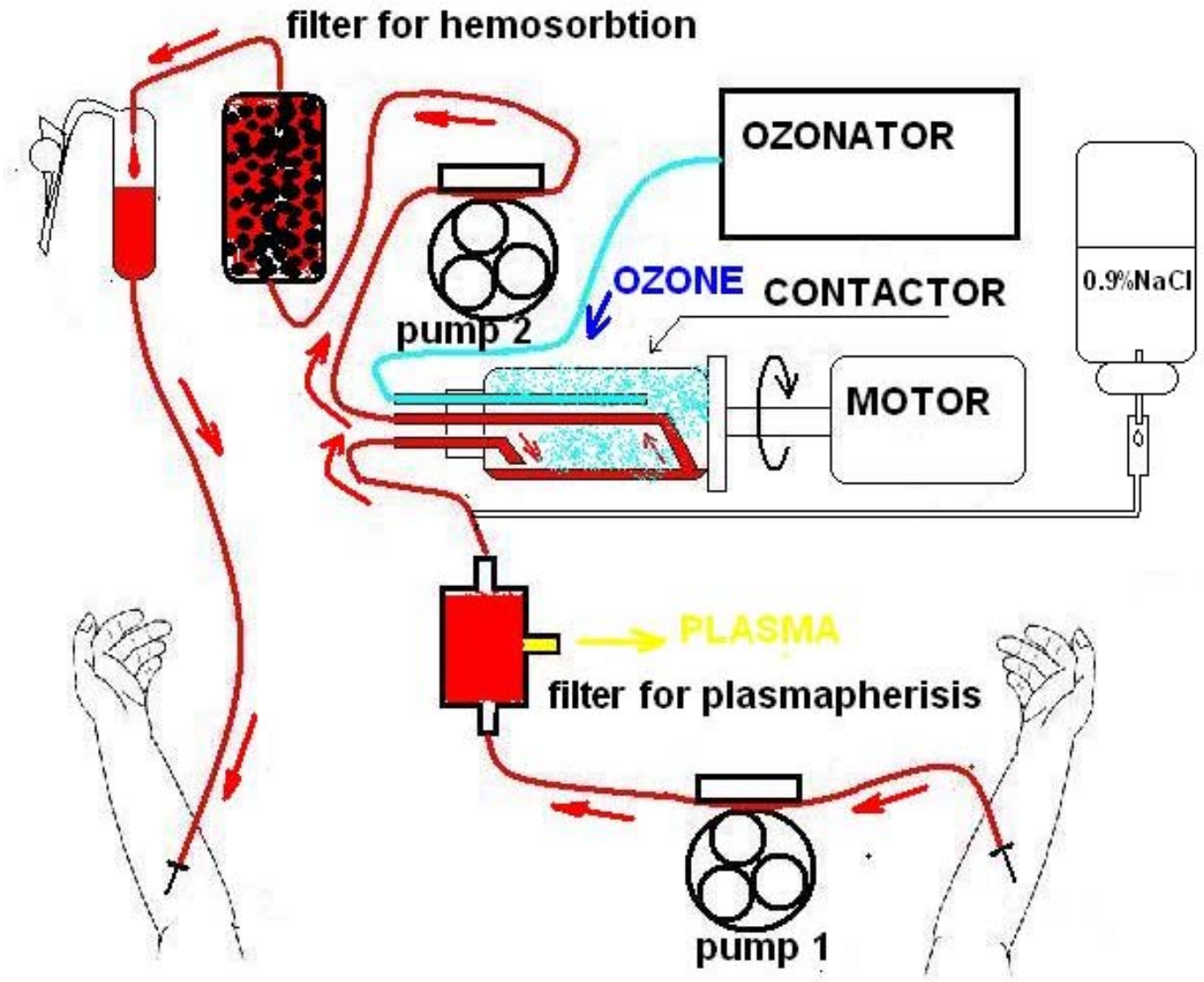


Polypropylenic gas exchange device it is very expensive (about 600 euros)

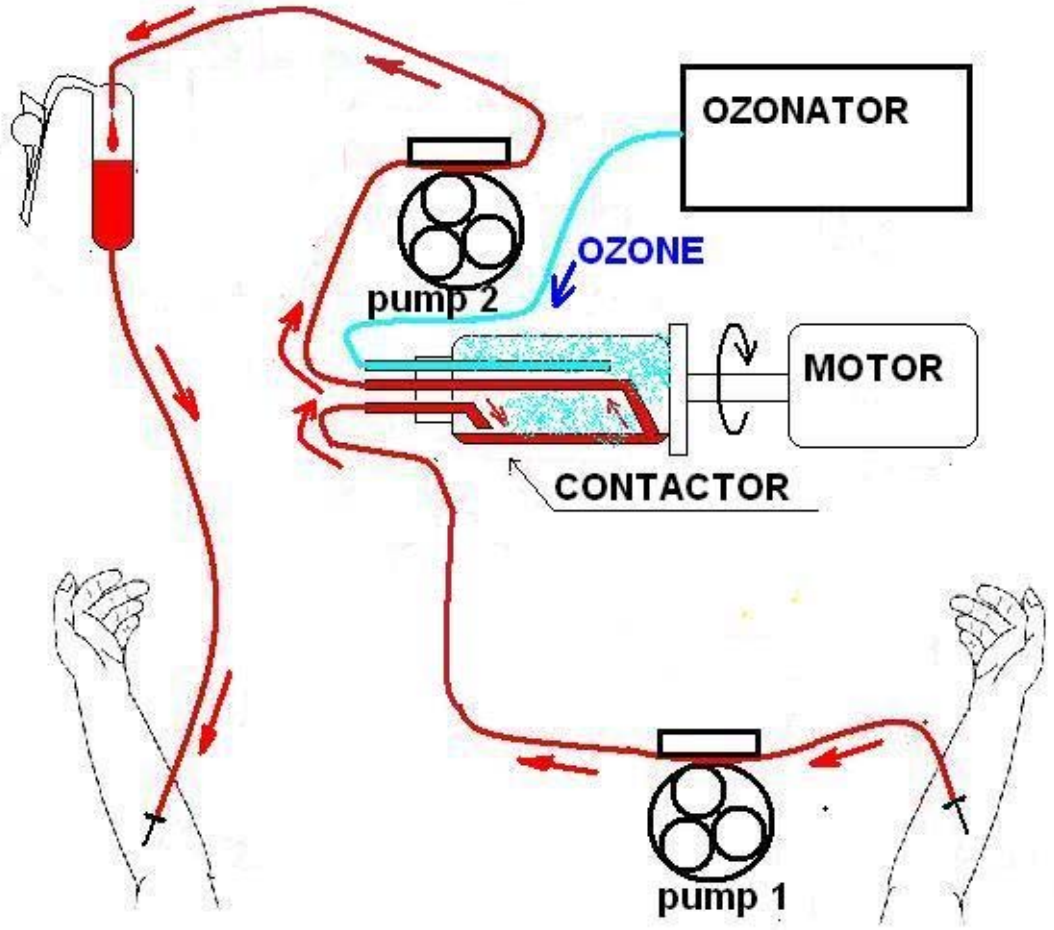
Malaysian method of EBOO

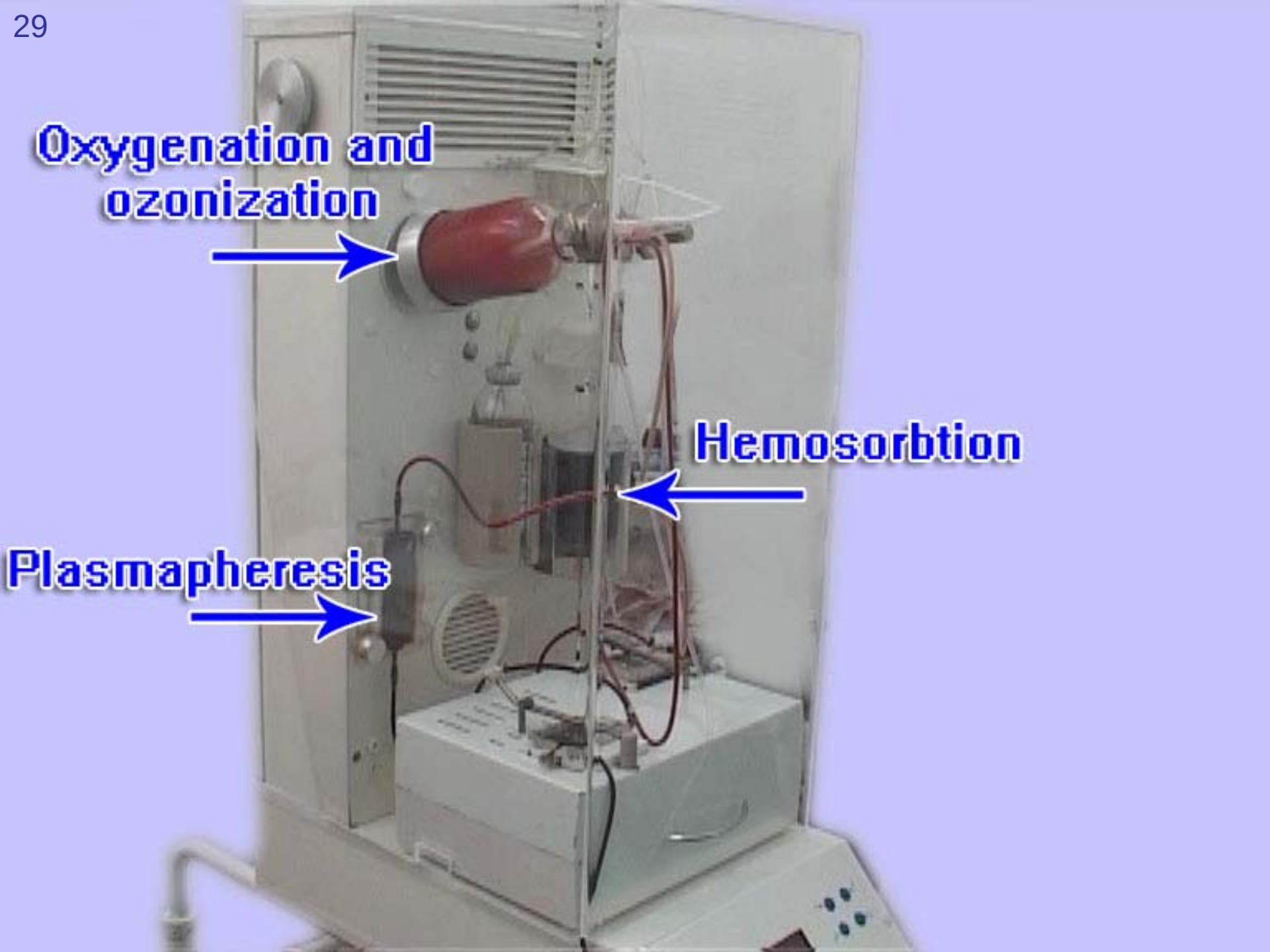
Carbosorbent filtr for hemosorbtion (Ukraine)

Scheme of “BOZON-EBSPOO” device

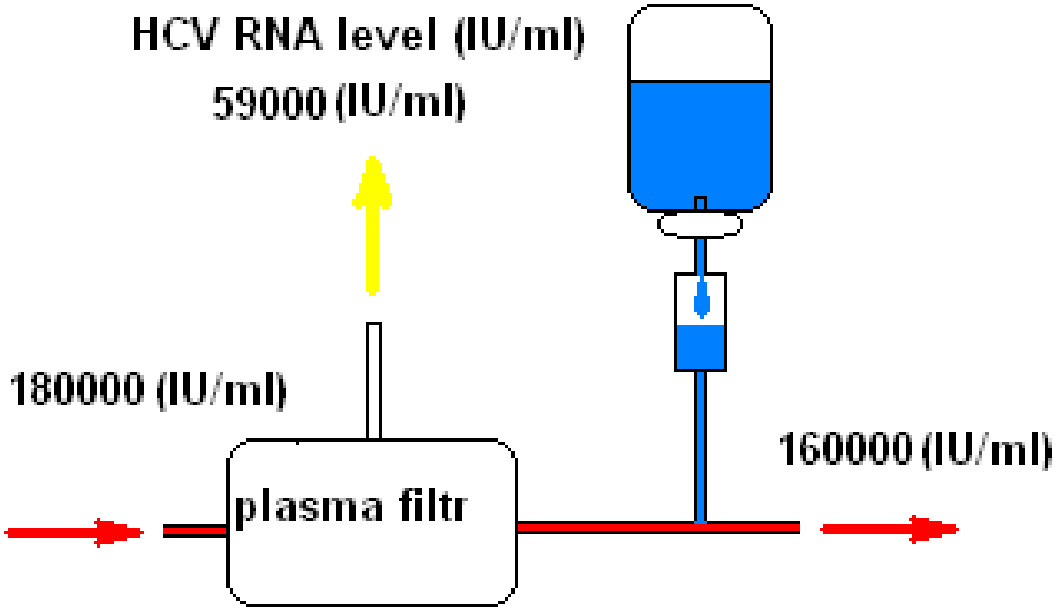


Scheme of "BOZON-EBSPOO" device in super-AHT-03 regime



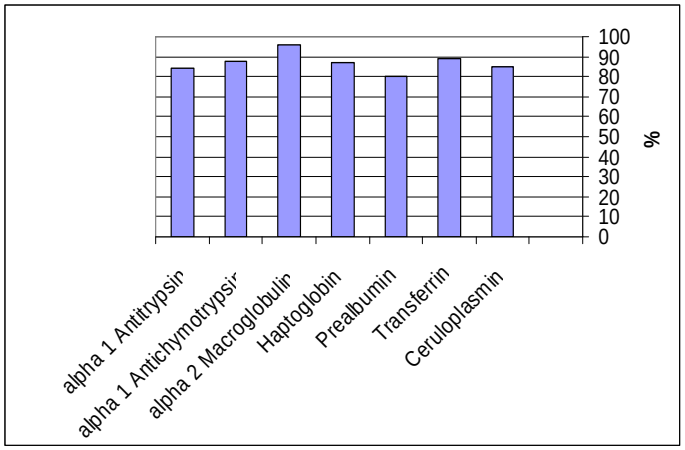

Oxygenation and ozonization
Hemosorbtion
Plasmapheresis

Application membrane plasma filter reduces virus loading in blood of patient sick of chronic Hepatitis C (1b) on ~10 %



$$\frac{\text{outlet HCV RNA level}}{\text{inlet HCV RNA level}} = 0.9$$

Change of histologic parametres of blood and level HCV RNA-level the patient sick of chronic Hepatitis C, at realisation EBSOO



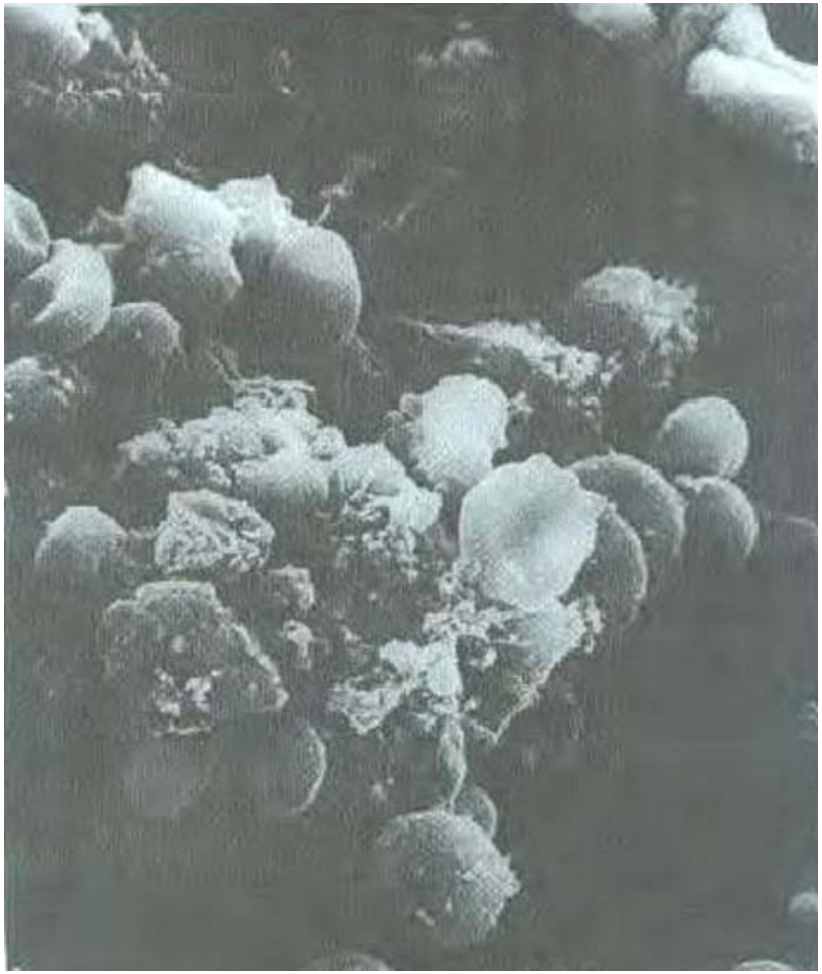
O2/O3

ozonization
oxygenation

carbo hemosorbtion

HCV RNA level	180000 (IU/ml) 100%	51000 (IU/ml) 28%	23000 (IU/ml) 13%
erythrocytes	100%	96%	94%
plateletes	100%	90%	85%
leucocytes	100%	93%	80%
lymphocytes	100%	86%	82%

Electronic photomicrography of surfaces of a sorbent after perfusion of blood



Primary binding of pathologically changed blood cells (spheroechinocytes and spherocytes) is visible (I.I.Belyanin,E.I.Schmelev.2007)

Thank for attention!