
A 3D molecular model of a bacterium, likely a Gram-negative bacterium, shown in a cutaway view. The surface is covered with numerous red, spherical proteins or receptors. The interior shows a complex structure with various components, including what appears to be a flagellar motor or similar structure. The background is dark, making the red and grey colors of the bacterium stand out.

FROM REVERSE VACCINOLOGY TO BACTERIAL ECOTOXICOLOGY: *AN IN SILICO AND IN VIVO* STUDY

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<https://minervamacias.neocities.org/>

A close-up photograph of a crocheted hat with a red and grey pattern. A yellow callout bubble is overlaid on the hat, containing the number 12732. A yellow box with the text 50% is connected to the bubble by a thin yellow line.

12732

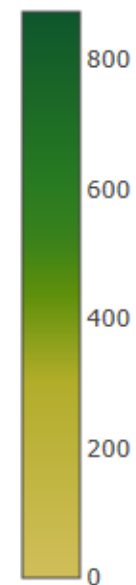
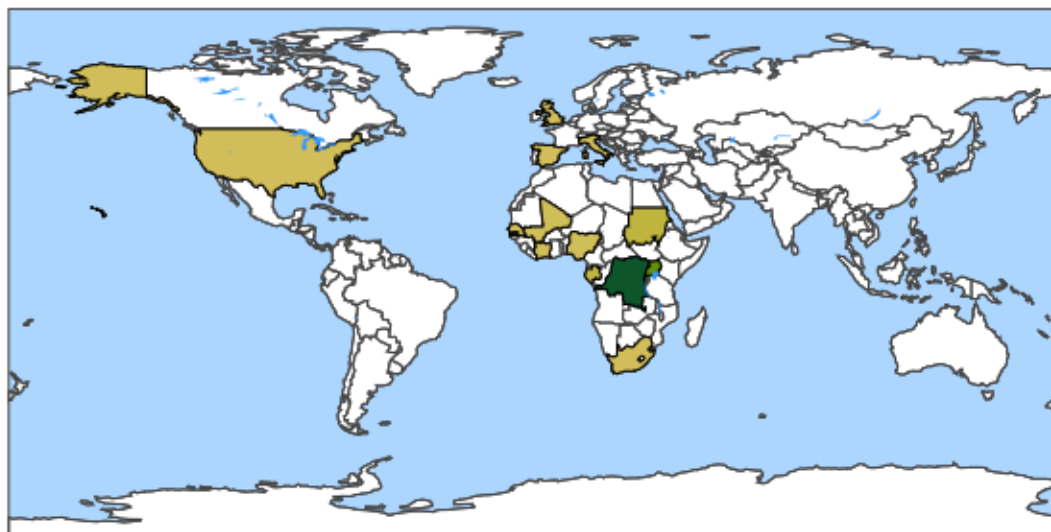
50%



Number of Ebola virus disease deaths (1976-2014)

Source: <http://www.who.int/mediacentre/factsheets/fs103/en/>

Author: Macías Martín, Minerva



EDIT CHART

[Interactive Image map](#)

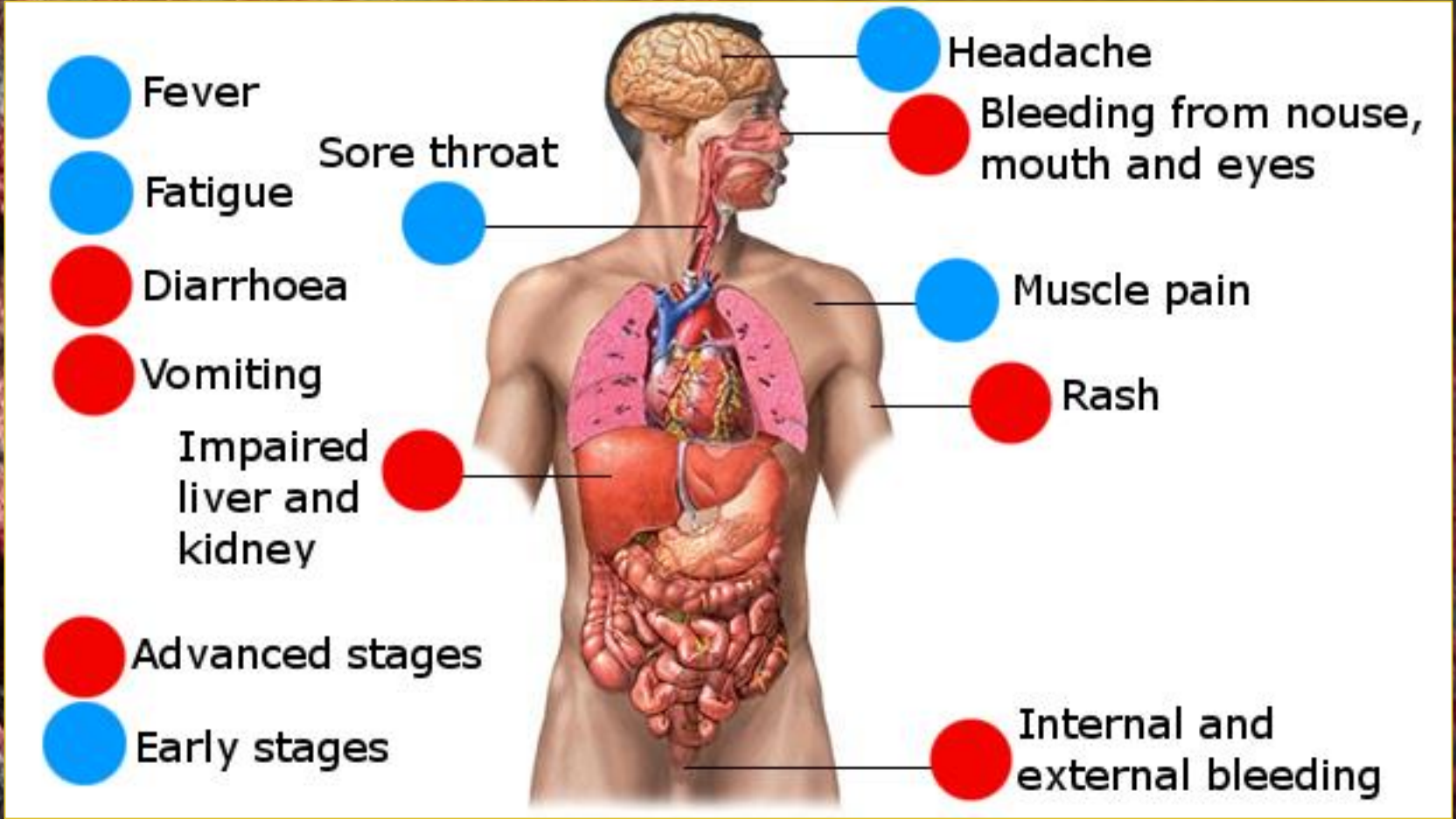


Lack of
food

Butchering

Disease





Physical and chemical barriers

Skin

Secretions

High pH concentrations

Enzymes

Innate responses

Alternative complements pathway

Phagocytosis

NK cells

Citokines

Acquired responses

Antibodies

Classical complement pathway

Citokines

Citotoxicity:
ADCC and CD
8+

**rVSV-
ZEBOV**

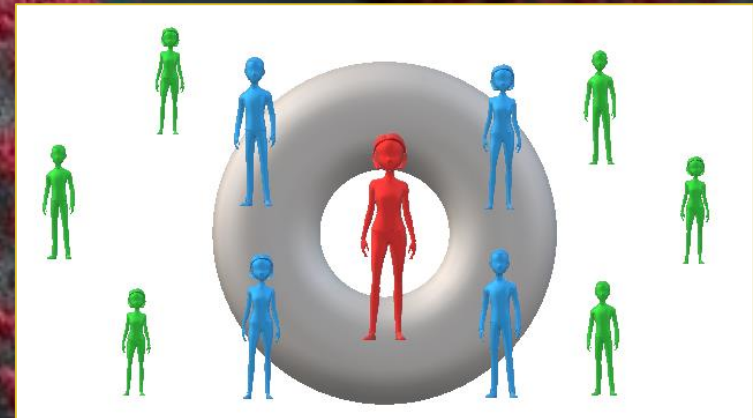
**Ring
vaccination**

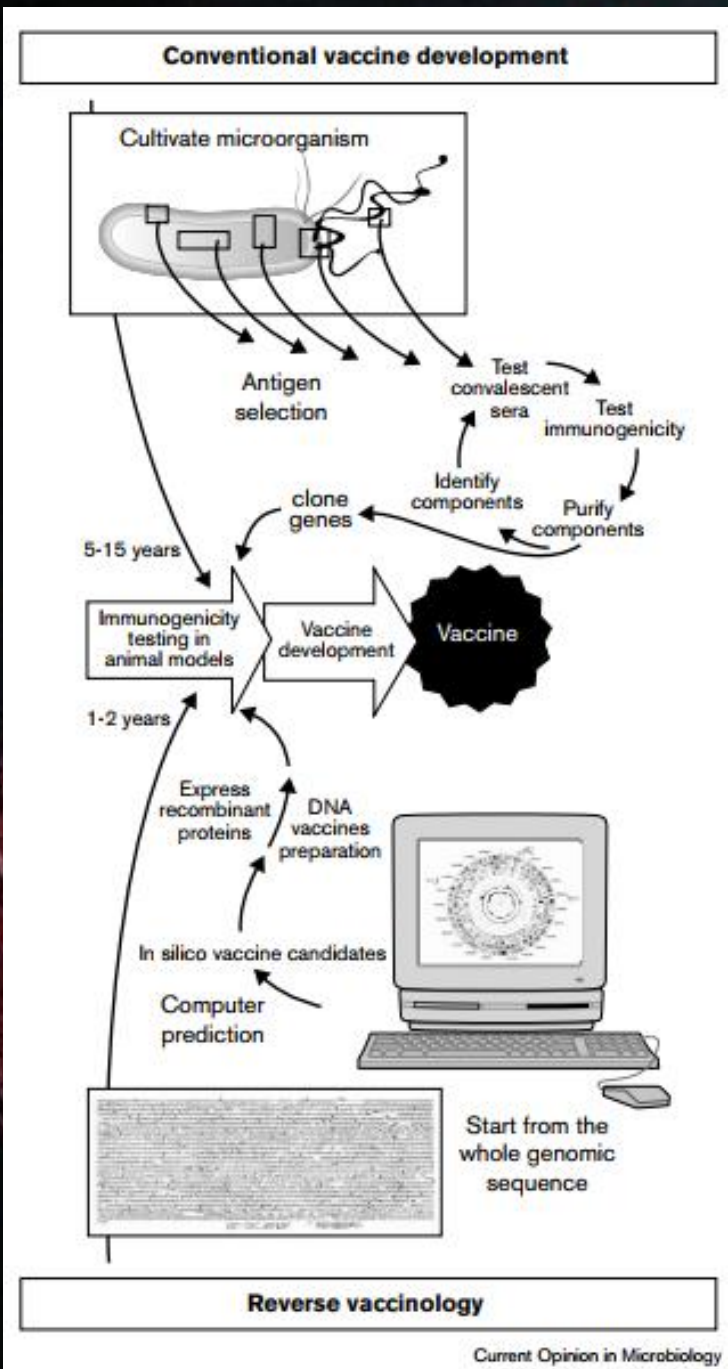
**100%
efficacy**

**Adverse
events**

**No control
group**

**No placebo
arm**





- Swiss Institute of Bioinformatics
- Vaxign (Vaxitop)
 - NERVE
 - RANKPEP
 - IEDB



≥3FKE|PDBID|CHAIN|SEQUENCE

RANK	POS.	N	SEQUENCE	C	MW (Da)	SCORE	% OPT.
1	10	DIS	AKDLRNIMY	DHL	1105.32	26.077	51.69 %
2	44	DSN	SLDI IHAEF	QAS	1026.17	10.56	20.93 %
3	78	IFQ	DAAPPVIHI	RSR	914.08	4.898	9.71 %
4	119	VFQ	LQDGKTLGL	KI	926.07	1.395	2.77 %
5	71	QIT	KRVPIFQDA	APP	1055.25	-0.621	-1.23 %
6	49	DII	HAEFQASLA	EGD	955.05	-1.445	-2.86 %
7	39	CKL	GKDSNSLDI	IHA	929.98	-1.507	-2.99 %
8	108	PSP	KIDRGWVCV	FQL	1034.27	-2.146	-4.25 %
9	59	LAE	GDSPQCALI	QIT	885.01	-2.644	-5.24 %
10	76	VPI	FQDAAPPVI	HIR	939.09	-2.914	-5.78 %
11	79	FQD	AAPPVIHIR	SRG	955.18	-3.047	-6.04 %
12	26	GFG	TAFHQLVQV	ICK	1024.18	-3.052	-6.05 %
13	58	SLA	EGDSPQCAL	IQI	900.97	-3.077	-6.10 %
14	89	IRS	RGDI PRACQ	KSL	997.15	-3.514	-6.97 %
15	19	IMY	DHLPGFGTA	FHQ	895.97	-3.633	-7.20 %

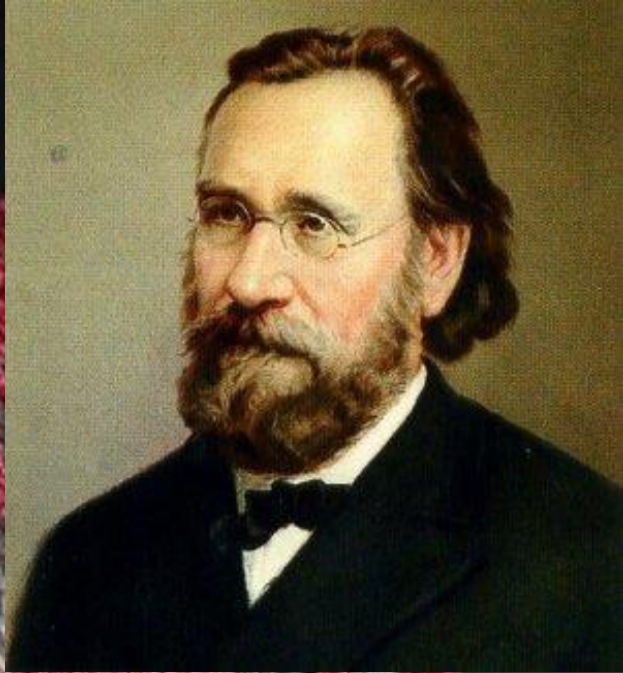


IPRACQKSL

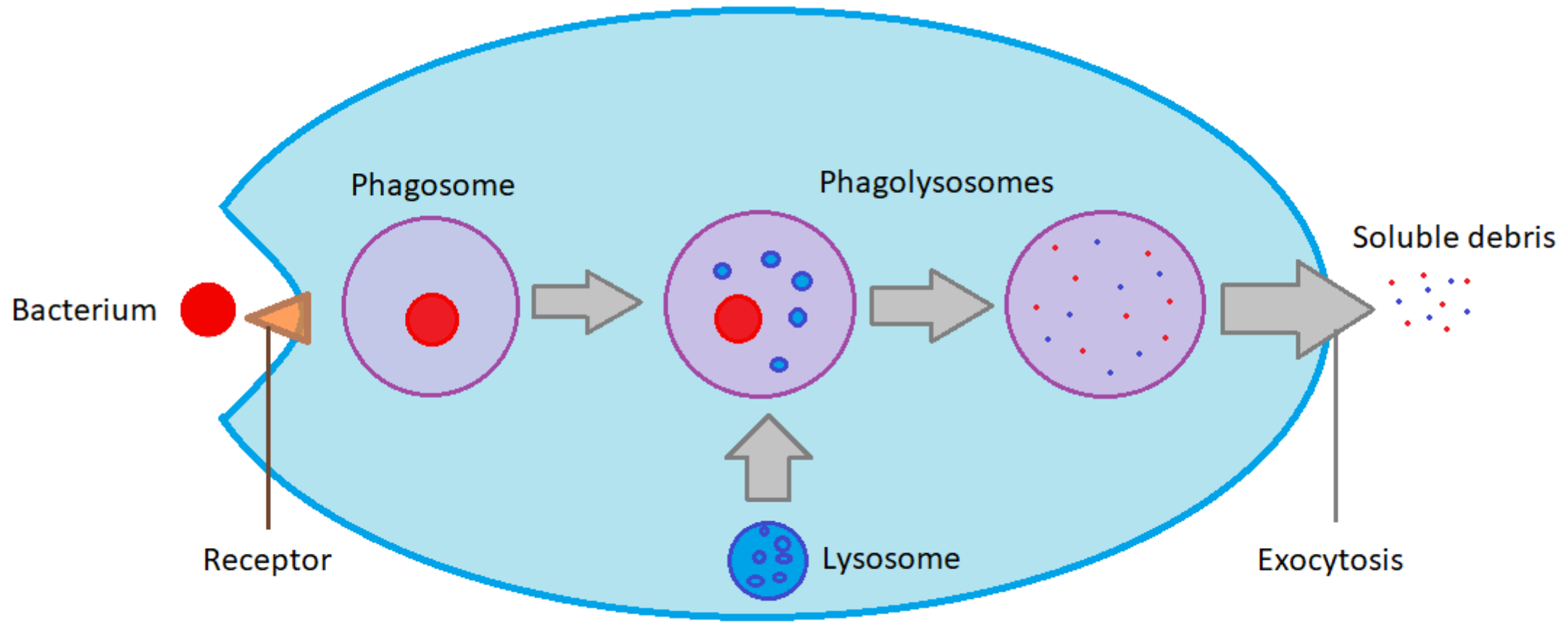
SPKIDRGWV

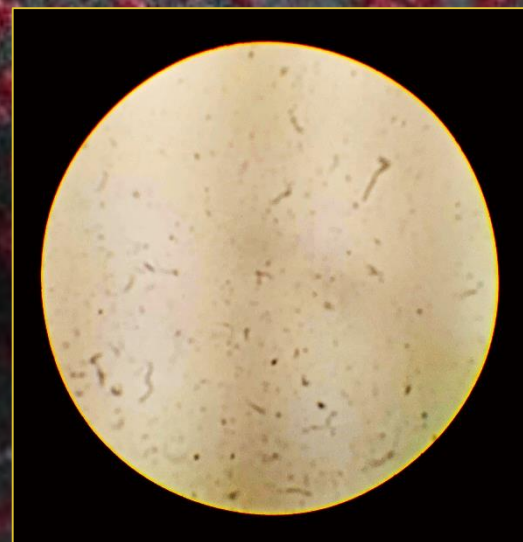
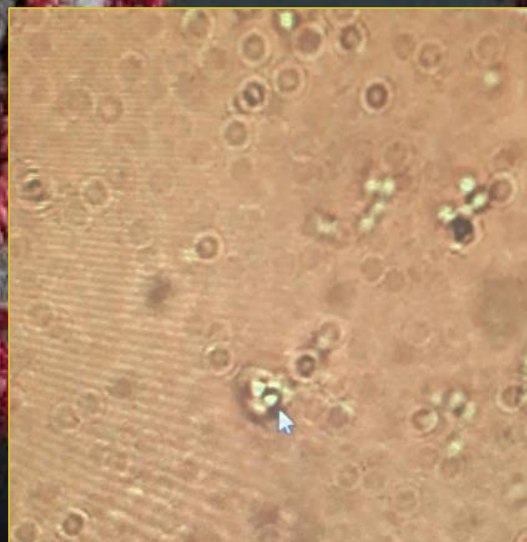
IMYDHLPGH

VP35



1882

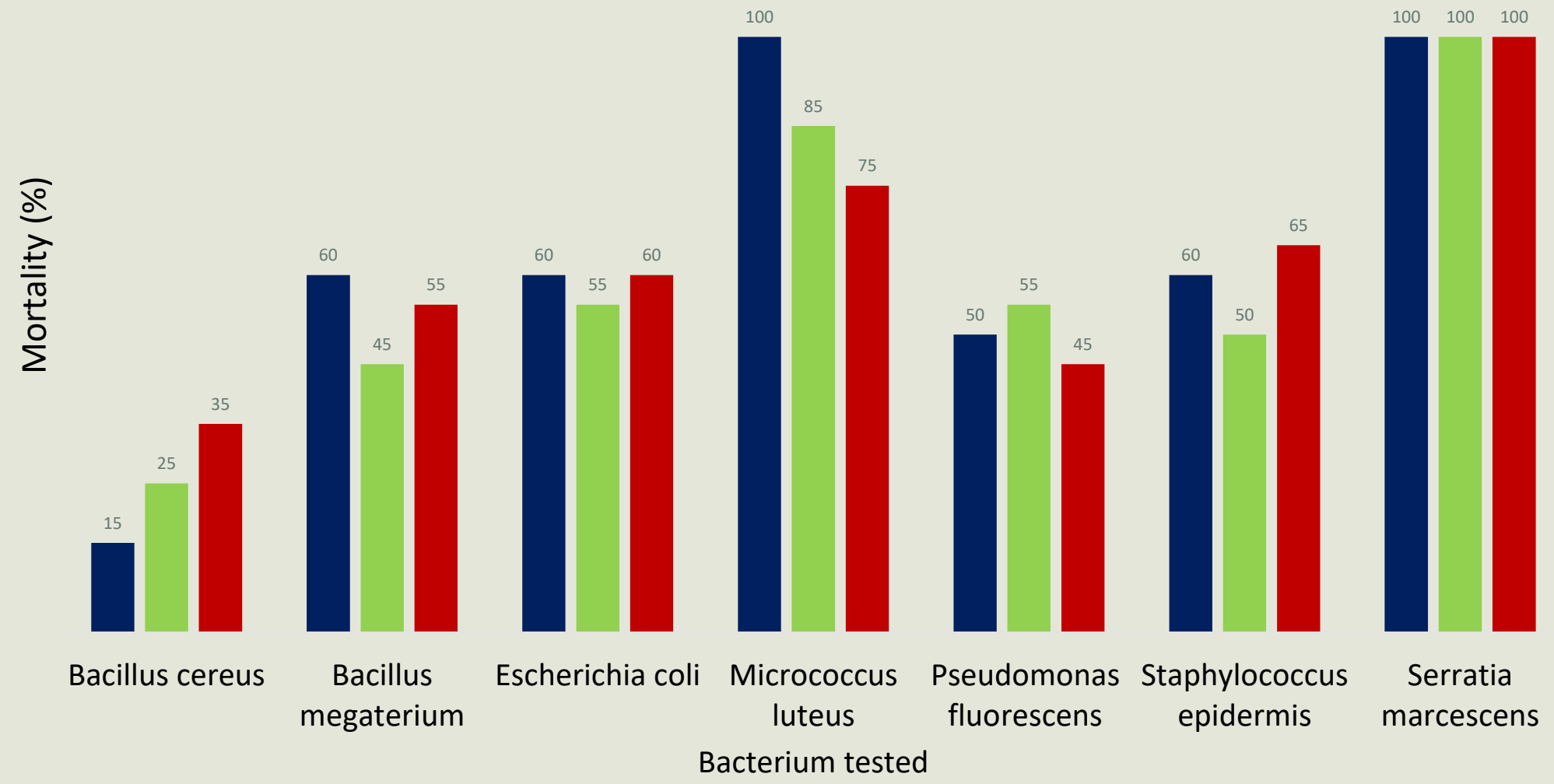


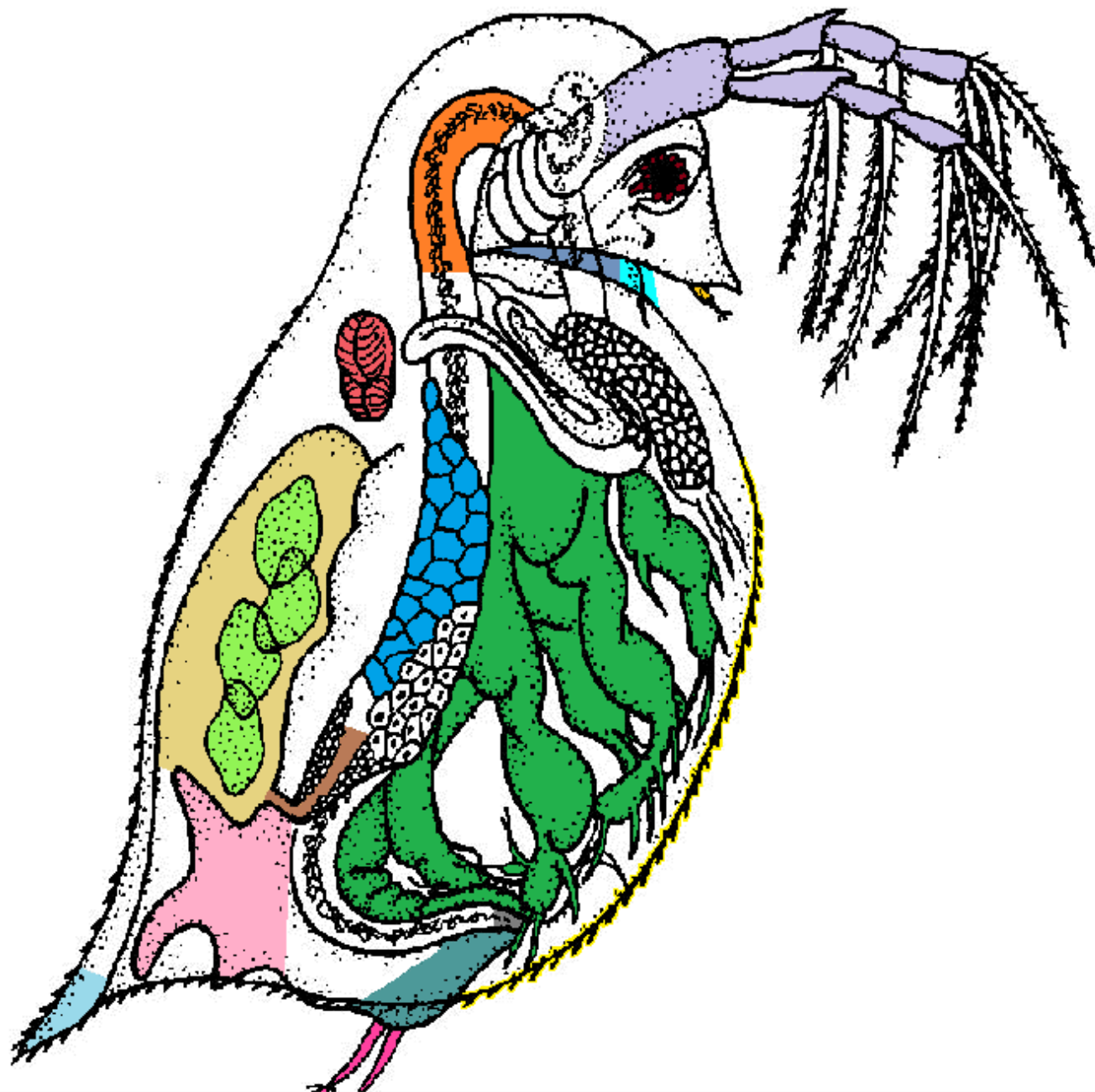


Bacterium	Nº of Daphnia at the starting point	Living Daphnia after 24 hours. (1st experiment)	Living Daphnia after 24 hours. (2nd experiment)	Living Daphnia after 24 hours. (3rd experiment)	Average percentage of mortality (%)
Bacillus cereus	20	17	15	13	25%
Bacillus megaterium	20	8	11	9	53%
Escherichia coli	20	8	9	8	58%
Micrococcus luteus	20	0	3	5	87%
Pseudomonas fluorescens	20	10	9	11	50%
Staphylococcus epidermidis	20	8	10	7	58%
Serratia marcescens	20	0	0	0	100%

Bacterial toxicity in *Daphnia* test

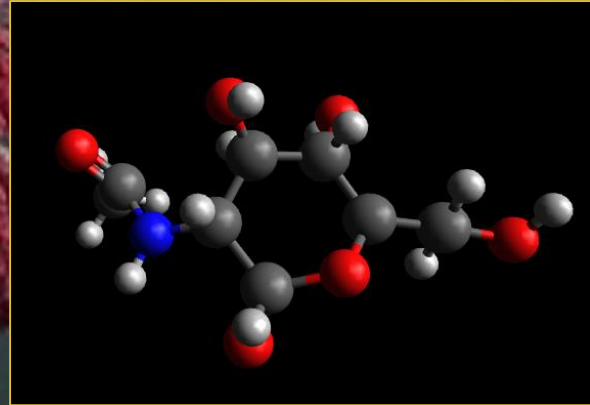
■ 1st experiment ■ 2nd experiment ■ 3rd experiment





[Interactive Daphnia map](#)

**CHITINASE
B**



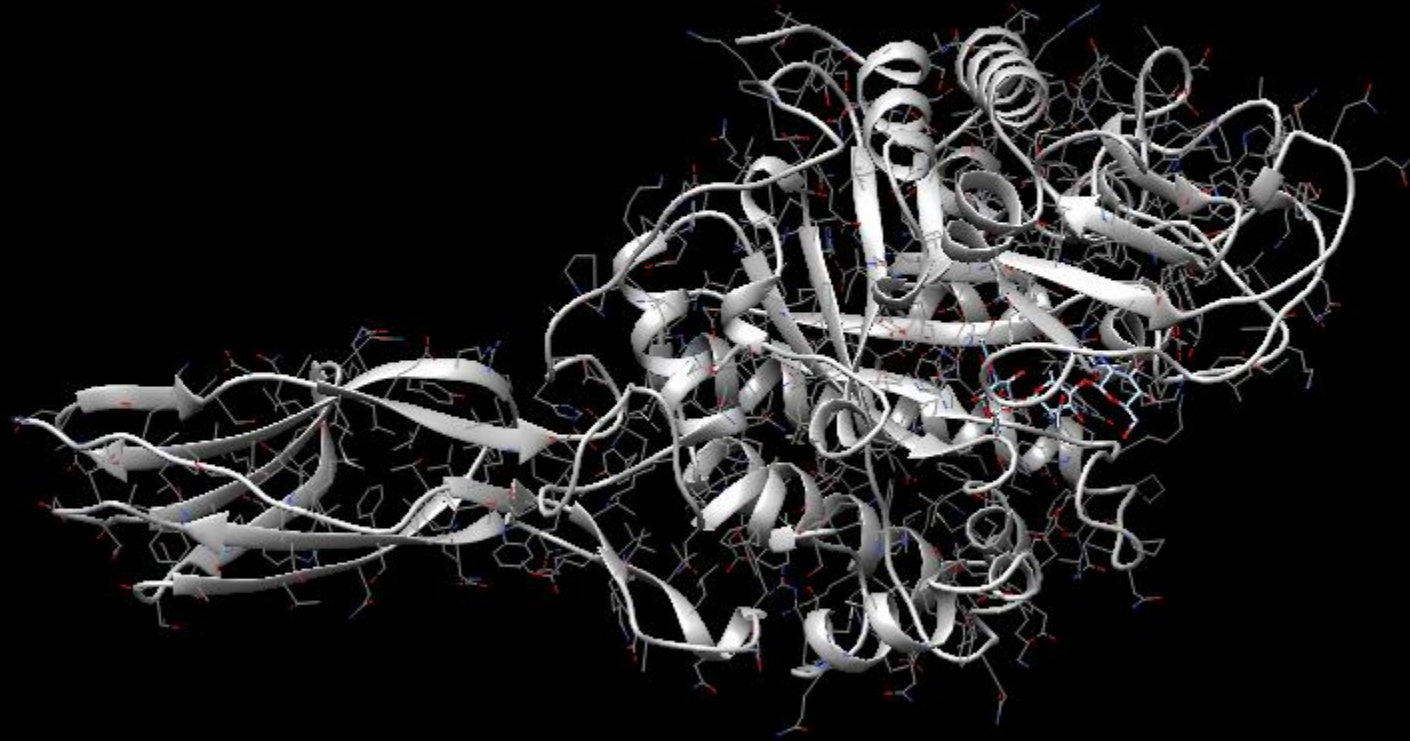
**CHITINASE
A**

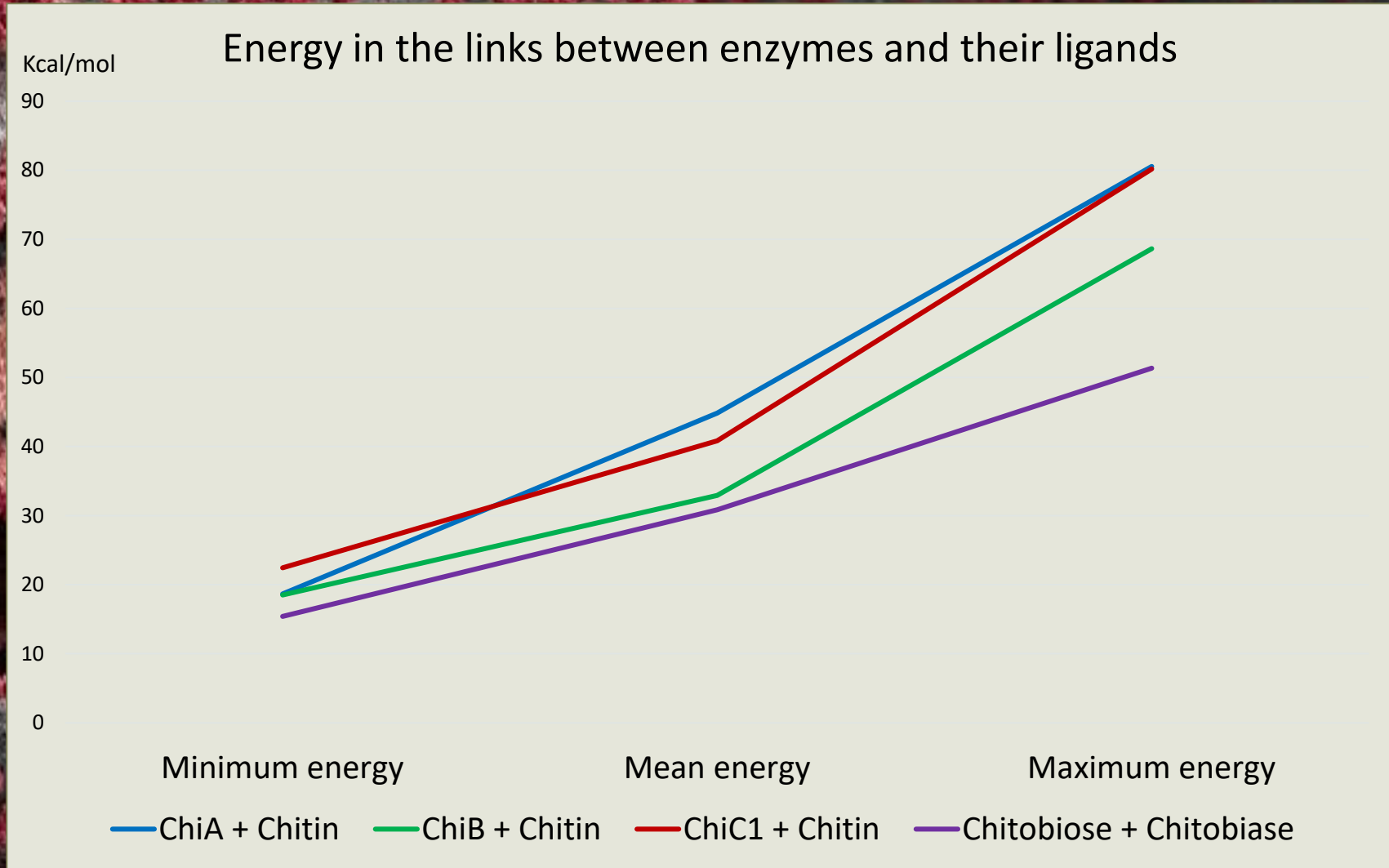
**CHITINASE
C1**

CHITOBIASE



SWISS DOCK







<i>Daphnia's</i> health condition	Mean of the heart beats counted on 4 different specimens				Mean	Standard deviation
Healthy <i>Daphnia</i>	200	202	198	195	199	2.58
<i>Daphnia</i> infected with <i>Serratia marcescens</i>	177	186	174	183	180	5.48

P value: 0.002367



Minerva Macías' website!

Here you will find interesting links of my research project called: **FROM EBOLA VIRUS DISEASE TO BACTERIAL TOXICITY**

Image maps:

- [Interactive Africa map](#)
- [Interactive Daphnia map](#)
- [Interactive EBOV map](#)
- [Interactive Outbreaks map](#)

Scientific article and poster:

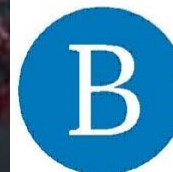
- [Scientific Article](#)
- [Scientific Poster](#)

The research project:

- [From Ebola virus disease to bacterial toxicity](#)
- [Project's presentation](#)

cesire*

ACKNOWLEDGMENTS



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de Barcelona