Magnetic field does not have cryoprotective properties

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Introduction

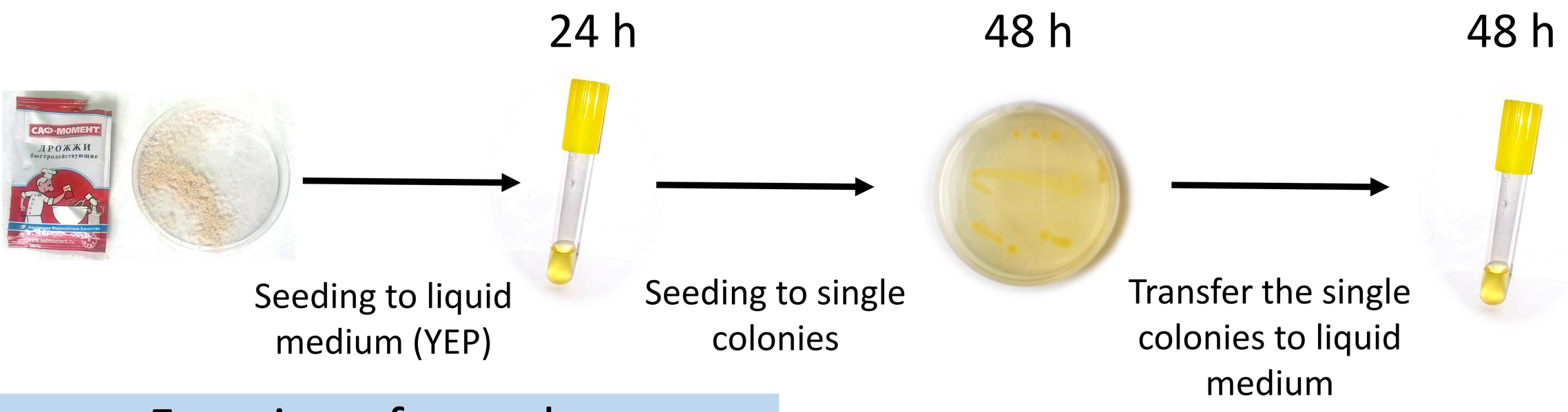
Cryopreservation is the most effective method to store living tissues. Hypothesis of cryoprotective properties of magnetic fields was formulated earlier [1,2], but was not supported by systematic studies.

The aim of this project was study of effect of alternating magnetic field on survival of yeast after freezing.

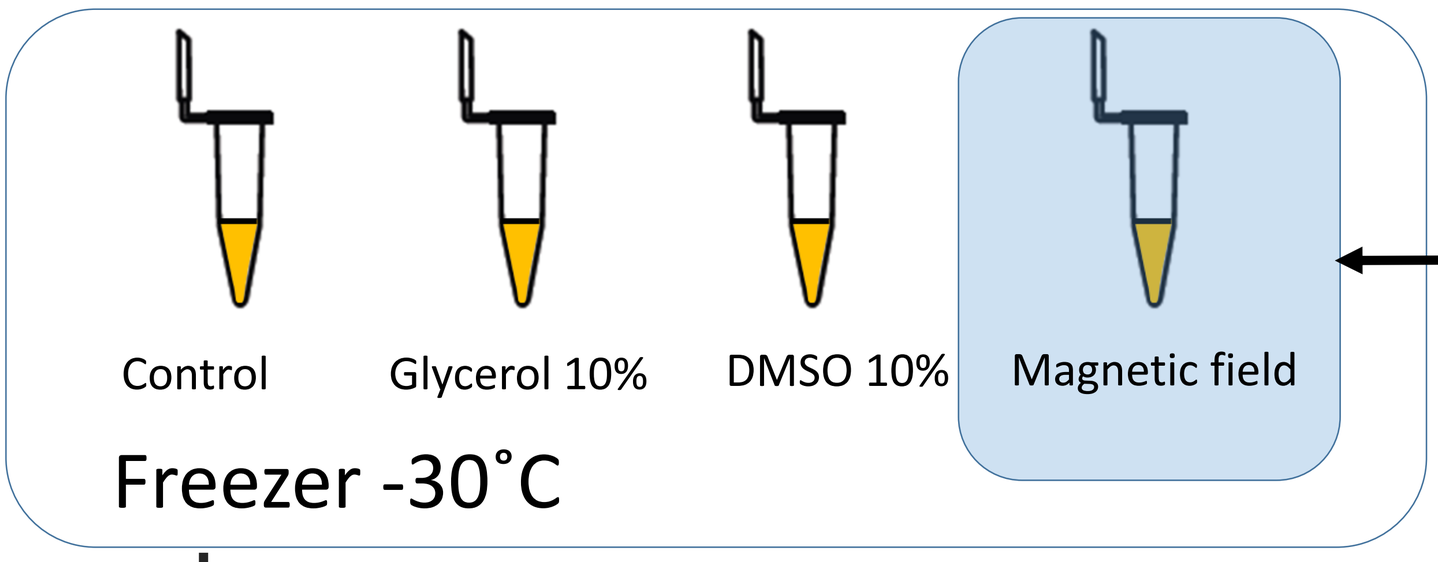
Conclusions

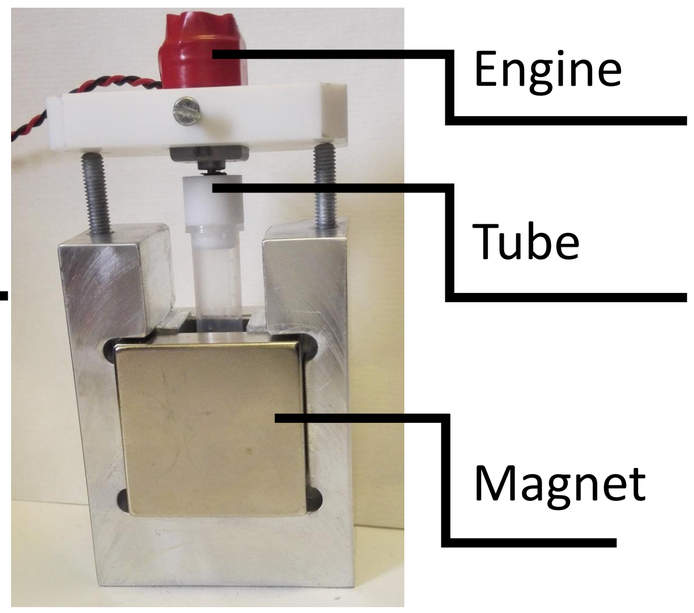
In our experimental conditions cryoprotective properties of magnetic fields were not found. Survival of yeast frozen in the magnetic field did not exceed survival of control sample after thawing.

Cell culture



Freezing of samples

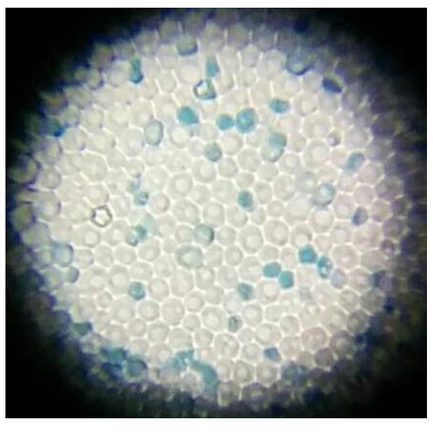




Thawing at room temperature

Analysis of survival

- Coloring samples with methylene blue
- Counting of live cells in samples using microscope



Percentage of live cells

Clone	Control	Magnet	Glycerol	DMSO
1	84%	86%	85%	100%
2	61%	58%	75%	99%
3	47%	51%	67%	100%
Mean	**64%**	**65%**	**76%**	**100%**

[1] M. Kaku, H. Kamada et al, Cryobiology 2010
[2] S. Abedini, M. Kaku et al, Cryobiology 2011