Controlled transmutation of Na, P and Mn to Fe isotopes in D_2O and H_2O during growth of yeast Saccharomyces cerevisiae

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Over the last 10-15 years we have optimized the method for the realization of nuclear reactions for transmutation of stable and radioactive isotopes in growing *syntrophic microbiological associations* [1-4]. The most significant achievement was the creation and optimization of technique for transmutation of radioactive Cs^{137} nuclei into a stable Ba^{138}, which makes it possible to reduce the number of active nuclei by two times in two weeks (acceleration by 500-1000 times as compared with the natural spontaneous decay). On the other hand, we would like to reanimate (revive on the base of a new level of understanding both the processes and mechanisms) our previous investigation of efficient isotope transmutation in pure microbiological cultures (such as *Escherichia coli, yeast* and others) which we have conducted about 20 years ago [5-7]. According to our "old" date the total efficiency of transmutation for such cultures was 20…30 times less than in *syntrophic associations* [1-4]. Our new investigations will allow a more detailed study of both the process of isotope transmutation and understand of some abnormal processes in food and medical technologies.

Lately we have conducted several series of such experiments using food yeast. In these experiments we again observed a significant change in the concentration of different elements and isotopes. For example, in a medium based on light water H_2O and in the presence of salts of certain chemical elements (Na, N, C, Ca, P, Mn) we recorded a decrease in total mass of manganese ($\Delta M_{Mn} \approx$-1.47 μg) and a simultaneous increase in the mass of iron ($\Delta M_{Fe} \approx$1.31 μg) in small volume bottles (50 ml). These effects are connected with LENR reaction $Mn^{55}+p=Fe^{56}$.

In a similar light water medium (but without of Mn salt) we have observed significant change in the isotopic composition (isotopic ratio) of impurity iron - instead of the standard (natural) ratios of isotopes ($Fe^{54}/Fe^{56}/Fe^{57}$=5.85%/91.75%/2.11%), we have registered other ratios ($Fe^{54}/Fe^{56}/Fe^{57}\approx$10.0%/87.7%/2.1%). These changes are the direct results of creation of Fe^{54} isotope in $Na^{23}+P^{31}=Fe^{54}$ reaction that takes place at deficit of iron in nutrient media.

We also have received and investigated a lot of another transmutation reactions in these test experiments - e.g. creation of Fe^{57} in reaction $Mn^{55}+d=Fe^{57}$ of transmutation in heavy water media.

Full results will be presented after the completion of the research cycle which we conduct together with scientists from Sweden and Norway.

[1]. Vysotskii V.I., Kornilova A.A. Transmutation of stable isotopes and deactivation of radioactive waste in growing biological systems. *Annals of Nuclear energy*, 2013, v.62, p.626-633
[2]. Vysotskii V.I., Kornilova A.A. Nuclear transmutation of stable and radioactive isotopes in biological systems. Book, Pentagon Press, India, 2010.
[3]. Vysotskii V.I., Kornilova A.A. Nuclear fusion and transmutation of isotopes in biological systems *(in Japanese)*. Monograph, ("Sakumei-sha" Publishier), Japan, 2012.
[4]. Kornilova A.A., Vysotskii V.I. Method for purifying water of radionuclides. *Int.patent WO 2015156698 A1* (15 Oct. 2015)
[5]. Vysotskii V.I., Kornilova A.A., Samoylenko I.I., The discovery of the phenomenon of low-temperature nuclear transmutation of isotopes in biological culture and its study using the Mössbauer effect. *Bulletin of New Medical Technologies*, vol.3, No. 1, 1996, p. 28-32 (in Russian).
[6]. Vysotskii V.I., Kornilova A.A., Samoylenko I.I., Zykov G.A. Observation and mass-spectroscopy study of controlled transmutation of intermediate mass isotopes in growing biological cultures. *Infinite Energy*, v. 6, #36, March/April 2001, p. 64-68.
[7]. Vysotskii V.I., Kornilova A.A. Nuclear fusion and transmutation of isotopes in biological systems. Monograph, "Mir" Publishing House, Moscow, 2003.