Observations on the Biological Cold Fusion or the Biological Transmutation of Elements

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ABSTRACT

In previous paper [1)~7)], the author, with Prof. Dr. C. Louis KERVRAN, suggested the probable occurrence of the biological cold fusion or the biological transmutation of elements. In order to confirm the phenomena, under the more controlled condition, potassium, magnesium, iron and calcium were determined in cells of *Aspergillus niger* IFO 4066, *Penicillium chrysogenum* IFO 4689, *Rhizopus nigricans* IFO 5781, *Mucor rouxii* IFO 0396, *Saccharomyces cerevisiae* IFO 0308, *Torulopsis utilis* IFO 0396, *Saccharomyces ellipsoideus* IFO 0213 and *Hansenula anomala* IFO 0118 cultured in normal medium and media deficient in one of potassium, magnesium, iron or calcium. Values of potassium 1890~2650 μg, magnesium 380~510 μg, iron 95~120 μg, and calcium 60~95 μg were obtained per g dried cells cultured in each deficient medium, while potassium 8650~11050 μg, magnesium 1920~2160 μg, iron 510~680 μg, and calcium 380~450 μg were found per g dried cells obtained by cultivation in the normal medium.

The author would like to suggest the probable occurrence of the phenomena relevant to biological cold fusion.

1. Introduction

According to the late Prof. Dr. C. Louis Kervran, the probable mechanism of the non-radioactive biological transmutations of the elements non-radioactive (biological cold fusion) is summarized as follows:—

$Na_{23}+O_{16}=K_{39}$
$^{23}Na+^{1}H:=:^{24}Mg$
$Fe_{56}-H\rightarrow Mn_{55}$

$K_{39}+H_{1}\rightarrow Ca_{40}$
$Mg_{24}+O_{16}\rightarrow Ca_{40}$
$Si_{28}+C_{12}\rightarrow Ca_{40}$

In this paper, in order to confirm the phenomena—non-radioactive biological transmutations of elements or non-radioactive biological cold fusion—, my coworkers and I [Hisatoki KOMAKI] determined the amount of potassium, magnesium, iron and calcium in the cells of Aspergillus niger IFO 4066, Penicillium chrysogenum IFO 4689, Rhizopus nigricans IFO 5781, Mucor rouxii IFO 0396, Saccharomyces cerevisiae IFO 0308, Torulopsis utilis IFO 0396, Saccharomyces ellipsoideus IFO 0213 and Hansenula anomala IFO 0118, cultured in normal medium and media deficient in one of potassium, magnesium, iron or calcium, under more controlled condition than the previous papers.

II. Methods and Results

The composition of the normal medium, for mold, and the media for mold deficient in one of potassium, magnesium, iron or calcium.are shown in Table 1.

The composition of the normal medium, for yeast, and the media for yeast deficient in one of potassium, magnesium, iron or calcium, are shown in Table 2.

The microorganisms were cultured with each 200 ml of culture media; shaking culture at 30°C for 27 hours, using IWASHIYA's shaking incubator.

The experimental results are shown in Table 3 and Table 4.

Table 3 shows the comparison of the yield, as the weight of dried cells (mg) of mold and yeast obtained by normal media and potassium-deficient, magnesium-deficient, iron-deficient, and calcium-deficient culture; cultured with each 200 ml of culture media; shaking culture at 30°C for 27 hours.

Table 4 shows the comparison of the contents of potassium, magnesium, iron and calcium (μg) of the whole amount of, and 1g of, the dried cells of mold and yeast obtained by normal culture, and potassium-deficient, magnesium-deficient, iron-deficient and calcium deficient culture: Each 200 ml, 30°C, 72 hours.

Upper shows per-whole-amount of the obtained dried cells.

Lower shows per-1g of the obtained dried cells.

The data in ( ) in Table 4 shows the pure data, in which the influence of the biological concentration is excluded.

III. Discussion and Conclusion

These experimental results led us to conclude the probable accurence of non-radioactive biological transmutations of elements or the non-radioactive biological cold fusion.

In the monograph, presented for 4th International Conference on Biophysics and Synchrotron Radiation (BSR 92, Tsukuba), my coworkers and I [Hisatoki KOMAKI][7] proposed the cooperative research with the research workers of the National Laboratory for High Energy Physics (Tsukuba) to analyze the whole structure of various cell proteins, especially that of the enzyme proteins, in living form, which must be catalyze the non-radioactive biological transmutations of elements (the non-radioactive cold fusion) in cells of Aspergillus niger IFO 4066, Penicillium chrysogenum IFO 4689, Rhizopus nigricans IFO 5781, Mucor rouxii IFO 0396, Saccharomyces cerevisiae IFO 0308, Torulopsis utilis IFO 0396, Saccharomyces ellipsoideus IFO 0213 and Hansenula anomala IFO 0118. The recent developments in studies of macromolecular structure of living cell protein (especially enzyme protein) by X-ray crystallography [8], the recent develop-

ments in soft X-ray radiobiology and synchrotron radiation [9], that in the natural imaging[10] of biological specimens with X-ray microscopes, and the neutrons in studies of biological systems and their complementarity with X-rays, that in the solution scattering[11], that in membranes, that in time-resolved macromolecular crystallography[12], that in small-angle X-ray scattering, and that in spectroscopy (XAFS, CD, fluorescence, etc.) must be the most effective methods to analyze the probable mechanism of the non-radioactive biological cold fusion.

Dr. Goldfein, of the U.S. Army Laboratory, kindly suggested that the biological transmutations of elements (biological cold fusion, we should say) must be catalyzed by Mg-ATP as biological particle accelerator. In this connection,. we have much concern with Prof. Dr. Katsuzo Wakabayashi (Osaka University) and Prof. Dr. Takeyuki Wakabayashi (Tokyo University)'s small-angle X-ray scattering analysis of conformational changes of the myosin head (SI) during hydrolysis of ATP (Mg-ATP)[13]

References

1) Hisatoki KOMAKI: Production de proteins par 29 souches de microorganismes et augmentation du potassium en milieu de culture sodique, sans potassium (Revue de Pathologie Comparee 67, 213-216, 1967)
2) Hisatoki KOMAKI: Formation de proteines et variations minerales par des microorganismes en milieu de culture, sort avec ou sans potassium, sort avec ou sans phosphore (Revue de Pathologie Comparee, 69, 83-88, 1969)
3) Hisatoki KOMAKI: C.L.Kervran: Experiences de Komaki, Premiere Serie de Recherches (PREUVES IN BIOLOGIE DE TRANSMUTATIONS A FAIBLE ENERGIE, MALOINE, S.A., PARIS, 1975, P. 116-120)
4) Hisatoki KOMAKI: C Louis Kervran: Deuxieme Serie D'Experiences de KOMAKI (ibid., P. 120-121)
5) Hisatoki KOMAKI: C. Louis Kervran: Troisieme Serie D'Experiences de H. KOMAKI (ibid., p. 122-130)
6) Hisatoki KOMAKI et al.: Proceedings of the 13th International Congress of Biochemistry, Amsterdam, 1986
7) Hisatoki KOMAKI et al: An Approach to the Probable Mechanism of the Non-radioactive Biological Cold Fusion or So-called Kervran Effect, Abstract of 4th International Conference on Biophysics and Synchrotron Radiation (BSR 92), p272, Tsukuba, August 30th ~ September 5th 1992.
8) J. Deisenhofer: Developments in Studies of Macromolecular Structure b y X-ray Crystallography, Abstract of BSR 92, Tsukuba, 1992.
9) D. T. Goodhead: Soft X-ray Radiobiography and Synchrotron Radiation, Ibid., 1992
10) G. Schmahl: Natural Imaging of Biological Speciments with X-ray microscopes, Ibid., 1992
11) H. B. Stuhrmann: Solution Scattering, Ibid., 1992
12) J. R. Helliwell: Time-resolved macromolecular crystallography, IBid., 1992
13) K. Wakabayashi et al.: Small -angle X-ray Scattering Analysis of Conformational Changes of the Myosin Head (S1) during Hydrolysis of ATP Ibid., F107, 1992

Table 1. Composition of the Normal, K-deficient, Mg-deficient, Ca-deficient and Fe-deficient Media for Mold

Components	Normal	K-deficient	Mg-deficient	Ca-deficient	Fe-deficient
Sucrose	3%	3%	3%	3%	3%
$NaNO_3$	0.3%	0.3%	0.3%	0.3%	0.3%
K_2HPO_4	0.1%	—	0.1%	0.108%	0.1%
KCl	0.05%	—	0.05%	0.05%	0.05%
$MgSO_4 \cdot 7H_2O$	0.05%	0.05%	—	0.05%	0.05%
$FeSO_4 \cdot 7H_2O$	0.001%	0.001%	0.001%	0.001%	—
$CaHPO_4$	0.008%	0.008%	0.008%	—	0.008%
Na_2HPO_4	—	0.1%	—	—	—
NaCl	—	0.05%	—	—	—
Na_2SO_4	—	—	0.05%	—	—
$MnSO_4 \cdot 7H_2O$	—	—	—	—	0.001%
Pure Water	to 100%	to100%	to 100%	to 100%	to 100%

All components used are pure chemicals

Table 2. Composition of the Normal, K-deficient, Mg-deficient, Ca-deficient and Fe-deficient media for Yeast

Components	Normal	K-deficient	Mg-deficient	Ca-deficient	Fe-deficient
Sucrose	10%	10%	10%	10%	10%
Ammonium Tartarate	1%	1%	1%	1%	1%
$MgSO_4 \cdot 7H_2O$	0.25%	0.25%	—	0.25%	0.25%
$FeSO_4 \cdot 7H_2O$	0.001%	0.001%	0.001%	0.001%	—
$CaHPO_4 \cdot 2H_2O$	0.008%	0.008%	0.008%	—	0.008%
K_2PO_4	0.5%	—	0.5%	0.5%	0.5%
Na_2PO_4	—	0.5%	—	—	—
Na_2SO_4	—	—	0.25%	—	—
K_2HPO_4	—	—	—	0.08%	—
$MnSO_4 \cdot 7H_2O$	—	—	—	—	0.001%
Pure Water	To 100%	To100%	To 100%	To 100%	To 100%

Table 3. Comparison of the yield, as the weight of dried cells (mg) of mold and yeast obtained by normal media and K-deficient, Mg-deficient, Fe-deficient, and Ca-deficient culture. (Cultured with each 200 *ml* of culture media ; shaking culture at 30°C for 27 hours.)

Species	Culture media				
	Normal	K-deficient	Mg-deficient	Fe-deficient	Ca-deficient
Aspergillus niger (IFO No. 4066)	574	54	72	56	125
Penicillum chrysogenum (IFO No. 4689)	907	83	99	90	196
Rhizopus nigricans (IFO No. 5781)	496	42	56	45	121
Mucor rouxii (IFO No. 5773)	388	35	40	38	98
Saccharomyces cerevisiae (IFO No. 0308)	1480	141	146	138	281
Torulopsis utilis (IFO No. 0396)	2710	253	263	220	365
Saccharomyces ellipsoideus (IFO No. 0213)	1540	155	163	159	294
Hansenula anomala (IFO No. 0118)	1060	98	105	103	215

Table 4. Comparison of the contents of K, Mg, Fe, Ca (μg) of the whole amount of, and 1g of, the dried cells of mold and yeast obtained by normal culture, and K-deficient, Mg-deficient, Fe-deficient and Ca-deficient culture (Each 200*ml* ; 30°C ; 72 hours).
(Upper : Per whole amount of the obtained dried cells ; Lower : Per 1g of the obtained dried cells)

Species	Normal culture				K-deficient	Mg-deficient	Fe-deficient	Ca-deficient
	K	Mg	Fe	Ca	K	Mg	Fe	Ca
Aspergillus niger (IFO No. 4066)	5280 9198	1110 1934	390 678	260 452	130 (90) 2407(1667)	34 472	7 125	12 96
Penicillium chrysogenum (IFO No. 4689)	10100 11136	1910 2106	570 628	390 429	150 (110) 1807(1325)	50 505	9 100	14 71
Rhizopus nigricans (IFO No. 5781)	4240 8548	960 1935	250 504	190 383	110 (70) 2619(1667)	21 375	5 111	10 83
Mucor rouxii (IFO No. 5773)	3640 10155	780 2010	210 389	160 412	89 (29) 1971 (829)	18 450	4 105	6 61
Saccharomyces cerevisiae (IFO No. 0308)	14300 11014	2820 1905	1180 737	720 486	310 (270) 2199(1916)	68 466	15 109	29 176
Torulopsis utilis (IFO No. 0396)	27900 8819	1750 645	2050 756	1380 493	490 (450) 1937(1779)	130 494	22 100	29 148
Saccharomyces ellipsoideus (IFO No. 0213)	18400 11948	2990 1942	1220 792	790 513	340 (300) 2194(1935)	62 380	16 104	28 231
Hansenula anomala (IFO No. 0118)	12500 11792	2060 1943	840 792	520 491	170 (130) 1735(1327)	42 117	12 400	15 153