

## Cure of the intestinal disorders

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### Abstract

The volunteer with chronic pancreatitis has been cured from the lipase absence in his duodenal content during the food intake. The human intestinal bifidobacterium has been genetically modified to express recombinant human pancreatic lipase absent. The described study again confirms the human intestine for the delivery of the recombinant proteins, including the delivery to the blood circulation. This is the naturally occurring gate for the recombinant proteins, opening new frontiers in the recombinant vaccines delivery for less than 200 hours and the recombinant proteins delivery instead of the scientifically compromised adenoviral delivery system used by the genetic engineering companies around the World. Key Words: pancreatic lipase insufficiency; new gates for recombinant proteins delivery.

### Highlights

The cure from pancreatic lipase absence during the food ingestion was offered.

New and well known gate for the recombinant proteins delivery is offered.

### Introduction

The Author started his medical education at Saratov State Medical University after he spoke with his cousin Galina about becoming the Ph.D-Scientist working with the Yersinia pestis, causative agent of plague, and Vibrio cholera, causative agent of cholera, at the closed for the employment of the general public Institution Microbe. Said scientist had salaries substantially exceeding that of the regular former Soviet society members, just like the Author. For instance, the Soviet Academician was getting 1,000 Russian rubles salary; the Microbe Senior Ph.D. Researcher was getting 1,400 rubles. The Author has learned from the people talking around him that what he wanted to be after such graduation was not possible, complicated by his origin as the regular private person. He must note that his cousin Galina was the daughter of the SPCU (Soviet Communist Party) Second Secretary of the Saratov Region SPCU Committee. That gave her the protected path to become the Ph.D-Scientist in the former Soviet Union organization Microbe dealing with plague-cholera causative agents in their futile attempts to create the biological weapons of mass destruction of their tremendous power and difficulty to cure. That system required mandatory checking of the background by the KGB and the origination from the SPCU-related people working at the high levels of the Communist party organizations in the former Soviet Union, which was quite opposite to what the Author had in his background. Learning about that, the Author

continued to want to become the professional scientist working with microorganisms, and he was not any longer inspired by the levels of the respective salaries such Ph.D.-Scientists had in the former Soviet Union. On the second year of the Author education (1982) at Saratov State Medical University the Author has met Professor Shenderov, a person who just returned from Zambia where he worked as the Professor at Lusaca University. Dr. Shenderov worked for the KGB and that was the reason he was in Zambia for his "work". Dr. Shenderov visited Saratov State Medical University in 1984 before coming to Moscow, where the Soviet KGB gave Dr. Shenderov the rank of the Professor at the Laboratory of the Industrial Hygiene at the USSR Research Institute for Antibiotics. So, Dr. Shenderov used data the Author has provided to him on the Author's studies of Non-Fermenting Glucose Gram Negative organisms mostly Pseudomonas isolated from the hospital patients in Saratov Region. Said data gave the opportunity to publish them in the Journal of Dr. Shenderov's future Moscow Institution, "Antibiotics" in 1984 (the 1st publication Dr. Tyurin had in the Former Soviet Union [1]). Dr. Shenderov invited Dr. Tyurin to become his Ph.D-Student upon the graduation of the Saratov State Medical University, which the Author did in 1986 [4]. Upon the graduation of his Ph.D.-Studentship the Author joined Dr. Shenderov at his another new work Gabrichevsky Research Institute for Epidemiology and Microbiology in 1990. In 1992 the Author has left Dr. Shenderov and his new work for the work the Author acquired at VNIIGENETIKA (the Adjinomoto-GNIIGENETIKA Research Institute), the Author's last place of work at the Russian Federation before moving permanently to the USA [4].

The Author has already described the known before place of entry to the human body bloodstream human intestine [1,2].

The Author had specialization during his Ph.D.-Studentship years-normal intestinal microflora of humans and animals. The Author has become the king of lactobacilli and substantially intensified his work with human intestinal bifidobacteria, the predominant organisms in the intestine of many humans [4], at GNIIGENETIKA in 1992-1998. It is very important to note that any information available about the affiliation of the former Soviet Citizens with the Soviet KGB was kept secretly. No public use of such information was allowed in the former Soviet Union, and in general any mentioning of the KGB affiliation of a particular individual was considered as the breaking the behavior rules of the polite citizens conduct in the former Soviet Union.

In this original research paper the Author describes his personal experience with the volunteer he has successfully cured by creating the recombinant strains of bifidobacteria isolated from the intestinal content of said volunteers as described in [1,2]. The recombinant human pancreatic Lipase was designed based on the Human Genome Studies available publically from the NIH. The recombinant human pancreatic Lipase sequence was deposited to the NCBI under the number 2526713.

Described in this original article volunteer was the established

software engineer who helped the Author's businesses a lot. He had chronic pancreatitis and was unable to live regular professional life without taking substituting normal Pancreas function enzymatic preparations. The Author has spoken with him and he admitted that having the genetically engineered strain in his intestine producing the recombinant Pancreatic lipase would help him to become the healthy person again like he was in his early 20s. The Author insisted that this person would become the volunteer and agreed to engineer the proper strain from the microbial composition of the volunteer's normal intestinal microflora, which the volunteer had to intake and obtain the cure of his intestinal problems.

## Materials and Methods

The Author have examined the microbial composition of the volunteer intestinal microflora, isolated Bifidiobacterium breve and used it for the genetic engineering like that has been done before, but now using the recombinant gene encoding the human intestinal Lipase, and asked the volunteer to ingest said recombinant strain of his intestinal bifidobacteria to cure his pancreatic disorder, as described in [3].

The DNA sequence of the human recombinant pancreatic lipase sequence is 6085 bp (nucleotides) long:

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AAAAAGGCTGCTGTGGACATCAGGCCTGTCCCAGAAAGACCTCCCTGAGGACAGGAGCC
ACGCTGCCCTTCCCCGACAGAGCCACGGGGCAAAGGCTGCCGGTGCTGGACGCGGAGT
TCAGGGCTGCACTGACTTAGGAAGGGAGCCCGCAGAGTGCAGCGGCCACCAGGGGACGCT
CCCAGCGTCCAGCACCCCGCCCCAGCCAGCCTGCTCTGTCCCCGCCGCCCGCCAGCCT
TGCCGGCCACGTACCGATGACGGTGAGGTGGGTGCTGGCAGTGATGCTCGTGACCACGTT
GGTGGCGACACATTCCCCTCCCGTGGTCCTTACTCAGGGCACGGAAGTGCAGGCTC
CCACTGGGCAGGGCACTGAAAAAGTTGCTGTAAAAATTAATACTACATGTTATGTTTCATC
GAGTCTACAAAGTACGTTCCCCCATGTTTTAACATTTCTGAAATAGGGATCTATTTTACA
ATCAGTGGCATCTTGCAGTTACTGTATCCAGGTGGCAGTCAGGACATAGGGTCACTGCC
ACTCATGTGTGATCTCACTTTCGAATGAGTCATGTGCACTGTTGACATACTGAGCCTAACTG
CCACTTTAAATGTCTTCAAAAAGATGACACGATAACTTGGTATTAAAACCGAAAGACATG
GGAACAGTAGCAGGAAAAAATTCAGATGAAACATTGGACCACCTAAAATAGACCAAAC
TGTGAAGATCTAAGTGAGTGATCTATAGGTACCTGACCTGGTACGGTACTTCATTCAAAC
ACTGCTTCCCTGACTCCTCCCCTATCCCCTGCTCCCAACAGACTAATTATTCCTTCTCTAA
GGGCCCTGCTGAATCATCCAGTGTAATTCACAAGAGCCACATGGGAACCATGTTAGG
AGTCAGGAGAAGGCAGAGAGACACATTCTTACCCTAAAGCAAGGCTGCATCAGAGA
AGATGCAGAAATCAAAAATTTTTGGGCCTGAATCCCACATTCTCAAGAACATGCTGCCTG
TTTTGTTAAAAGTCTTCTGGGGAGAAAAAATAGCACATTTCTTGTGTTTCTTCTTTCAT
TCTTTGAACAAATATTTATTACGAGCCTCTTATGCCAACCATTTGCTGAGCTTGGGGTA
TGACGGAATGAATCACAGTCCAGCCCTCTGCCCTCATGAAGCTTACACTAAGTAGAGGG
AGCCCTAGGGAGTTTCCAGGAAGGGCGCGCAGGAAATAAACAAAGGTCATATACACAA
AGGAAACCAAAAAATTAATAACTGGAAACATTGGGATTTCAATAGTTGATAGCCAGAGGAA
GAAGTTGGTAATGCTATTCTTTTCTTTCTTGCTGCCCTGCCCTTTCCCCAGGAAACAAA
GCCGGTTTTGTTTCTTGCTGCTTGTGAGGTCTCTGCTGCACCCCATGTGGGTGCACCGCTC
TGTGCTTTGTTGAAAGACTTAAGATACTCAGAAGGTAAGAAGCAGGATGCTTCTGGAGAG
GAATAAATCCCAGCTTCAAGTAGATAAACAAGGTTGTTTGAATTGGTCATTTAAGTGAGTTC
TTTCAAAAAGACCCTTCAAAGGCCCTTCTTATGACACAAGCCGCAAGCTACCTTTTCCGCG
GTTAGCCCTTGGCCCTGTGGGGGTGAGCTTGATCACCCAGACATCACTTGACAAGGAGC
ATGTTGCATTTCTCTTAAAACACAAAACAAAATTTGCTGGCTGGCTGCCAGTTTCTGTT
ACATAGACCCAGATTAATTTCTTGGACTGGTTTGTAGAGCCCTGGATGCTGGACTGA
AAAGTGATTTATGTTTCTTGGCAGGGAATTACCAAGTGAAAAGTGCATTGAAAATTA
AAAAAAACACTTAACTCCTAACTGTTGAAGGCAGAGATCTCCATTACAGAAGTAGCA
TAAAGCCTAGTTTCCAGTAGAAAAGTGCAACGAGGAAAAGTTGTGAAACTACAATGTGCT
GCAAAGCACCAGCAATGTGCTTATGAAAAGGATTTCTATTTCCACTAGGTGGCACTGTTG
GGTTAGAAATACCATGTGTTTGCCAGACGAGAGAGGAGAGTGAGAGGAGAGAGAGAAAG
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AAGAACGCGGCTGCGACTCCCTGAGAGCTTCATTGTTCCCTTCAGGCCACTTGGGAAGGTTC  
ACTCAGCAGGCGTCTCCCGCGGTGACTCATCATGGGGCAAGGACAGCAAGGGCTGAGCCG  
GGCTCACTACCCTGCACTGGGCAGGGGGCGGGTAGGAGGTAGAGGGGTGAATGCTCCATC  
AGAGCTGCATGGAAACCACAGGTGGCCTCTAAAAAACTGTGGTTCAATTCTCATAAAGTT  
CAAATAACAGAACAGCCGTGCCGGGCTATCACTGAAATGGTCAAACCTCCTGTCTTGTGA  
CCTTTCCTTCTTTCAGGGTTCCTCACTGAAGGACTTGGTCCAGCTGTCTGGCAGGGAGGA  
GAGACAGAAGCTCTGGCCCGCTGGATAAGCACTTGAACGGAAGGTATGGGCCGTTTCT  
GAGACACAGAGCTGCAGATACTGATATCCACACAGCAGGAGATACAGGTCATGTCCATGT  
CCTTAGTCCCTCTTAGCTCACATTGTTAAAAA.

Said DNA sequence was inserted by the means of the electrotransformation using the patented in the USSR the Author's electrotransformation [5,6]. The crucial difference of the results obtained using said the Author's patented electroporator is the absence of the restrictions on the size of the DNA introduced using said electrotransformation generator, for its stable expression [2,3,7-25]. To make sure the resulted recombinants were stably expressing said recombinant human pancreatic Lipase, their genome was substantially reduced as described [4,5,9-11,13,14,16,18-22], the intact genome of the bifidobacterial strain used to create the stable genetically engineered was substantially reduced by eliminating of the genome segments as described herein.

The Author has eliminated the naturally occurring genes of the isolated *B. breve* strain from the unnecessary for the strain maintenance genes at their positions 4346...4816 bp, 10023...10574 bp, 16239...17477 bp, 19324...20316 bp, 20927...21592 bp, 22486...23799 bp, 237007...238836 bp, 24676...26007 bp, 31295...33502 bp, 34410...36290 bp, 37707...39254 bp, 538583...541012 bp, 643441...645516 bp, 817368...820625 bp, 1476554...1481404 bp and 2258202...2261981 bp [2,18,19,26-28]. The inserted recombinant DNA was instead of said eliminated genes. Stable maintenance of the human recombinant Lipase in the strain *B. breve* 365Lip, designed in this original research described herein was checked and we have proved that stable maintenance of the recombinant DNA in the modified genome of *B. breve* 365Lip by the PCR for the human recombinant pancreatic Lipase. Gels of the PCR have proven that the gene indeed exists in the genomic DNA of *B. breve* 365 Lip. The primers for the PCR were designed using the publically available software [29]: left primer AGGTGGCACTGTTGGGTTAG and the right primer AGGATCAGCAGAAGCCAAAA, with the PCR product size 241 bp.

## Results

The volunteer has passed the health check performed by the Author, after the Author has suggested the volunteer to eat the Special Kansas City Pork Chops [30], the Author fried for him with added fat and added eggs and potatoes to said meal. After that meal the volunteer had to sit at the Author's office for six hours without any intent to visit the bathroom and describe to the Author if he had experienced any problems with his digestion.

The volunteer indeed did not complain about any digestion problems to the Author after said meal test, set stable at the Author's office for 6 hours, and left without any intent to visit the bathroom with the diarrhea. We describe herein the method of complete curing of clinical symptoms of Pancreas making the enzymatic juice for successful digestion of the volunteer. In the USA about 50 of 100,000 people suffer from the chronic pancreatitis [32], and

8.7% of that amount of people do have the genetic predisposition to that chronic pancreatitis. There are 300 million people- the USA inhabitants. That means that about 150000 people in the USA have to live with the chronic pancreatitis. Besides the chronic pancreatitis, pancreatic insufficiency is typical for cystic fibrosis of Pancreas, pancreatic cancer, etc. In the USA in 2021 about 60, 403 people will suffer from the pancreatic cancer [32]. The pancreatic cancer happens in about 11% of the US population annually [33]. Pancreatic cancer accounts for about 3% of all cases of cancer in the US and 7% of all deaths from cancer [32, 34]. These numbers obviously tell that the described herein procedure has tremendous impact of the longevity of people with the insufficiency of the function of their Pancreases providing adequate amount and composition of the digestive juice in the human intestine. The monetary value of our described herein experience in normalizing the life of our volunteer is difficult to calculate now without the knowledge on the health insurance rates and the cost of the medical treatment if hospitalized. The economical efficiency is obvious since suffering people will not be looking for the medical treatment since they will not have their regular indigestion symptoms. The fragility of the bifidobacteria is known, and herein we noted the need to normalized the diets and not to use alcohol in toxic amounts, killing bifidobacteria and the intestinal health.

The described volunteer has become dependent on the access to our corporate facility in cases when his intestinal bifidobacteria would suffer from insufficient nutrition and toxic effects of the alcohol abuse. The respective verbal notification of the volunteer was conducted by the Author before he was let go to his work duties.

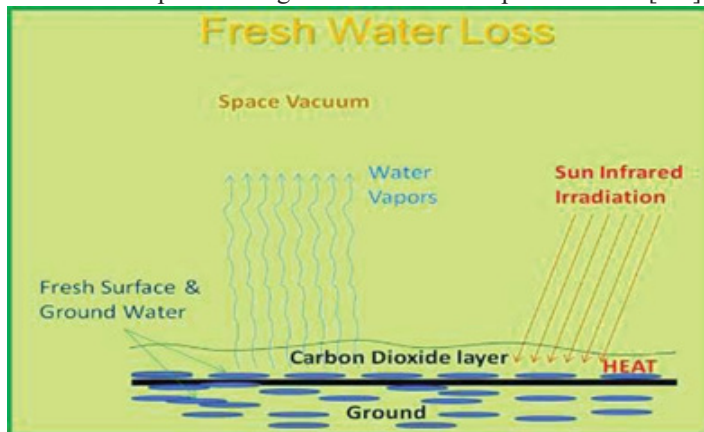
## Discussion

As we have specified in our previous reports of the successful use on the normal intestinal microflora to cure Diabetes II and erythropoietin acquired insufficiency in our other volunteers [2,3], the human intestine is the efficient gate for the entry to the particular person blood stream of the therapeutic proteins. There are many applications for that, including the deficiency of all modern US gene therapy businesses to deliver therapeutic proteins to the body of the patient. The other application of this described herein way to introduce the recombinant proteins in the bloodstream is the vaccination of the crew of the extra terrestrial future flights attempting to locate in the Universe the plant similar to earth by the temperature and the atmosphere composition, the solution for the overcrowding of Earth with its population. As you know, the way to kill the specific population is to eliminate all the predators affecting its amount. In this regard, we may suppose we have published before our experience of the in situ availability of the human recombinant insulin expressed by genetically



engineered by us recombinant strain of Bifidobacterium breve bb387Insulin [2,3]. In this report we have described the effects on the blood glucose metabolism maintenance and the coping with the existing chronic anemia of the volunteer. As that was shown at [2,] and as that was discussed herein per the prospects of our planet in the future, we have noted the coming in the future years from now the shortage of the fresh water coming in the next 20 years or about that (we are not mediums to make said predictions). Indeed, accumulated in the air CO<sub>2</sub> is one of the heaviest gasses in the air blend, reaching its density 1.997 g/cubic meter [2,4]. The CO<sub>2</sub> in the air gas mixture under no wind conditions spreads on the ground surface and selectively absorbs all the infrared energy of the Sun, thus heating the ground significantly, up to the water boiling point in Texas and some other Southern states of the US. That causes the extra evaporation of the fresh water from soil to the air as shown in Figure 1.

As you know, Global Warming presents itself in various forms, specifically with increased frequency of tornadoes, rains, etc. But the Earth gravity has been stable for the last few million years from now. Therefore, under the constant gravity force applied, more fresh water vapors are in the air. The Space, surround-ing Earth, as any Space anywhere, has deep vacuum. That vacuum sucks fresh water vapors from Earth air right from the Earth's atmosphere, and such fresh water vapors travel in the Space in the unknown direction away from our planet. In 2010 NASA has bombarded the Moon and found plenty of ice on its dark and very cold surface. They were guessing, where said ice came from? Located 220000 miles apart from the Earth Moon worked as the cold trap for the fresh water vapors coming from Earth in the Space vacuum [2-4].



**Figure 1:** Fresh water vapors loss to the outer Space vacuum.

What will happen next and, the most important, when? It is impossible to anticipate, that the fresh water loss to the outer Space may be stopped at any time even if the Earth population is suddenly decreased in its amount. The extra air CO<sub>2</sub> comes from the intensified petroleum use, and from the use of products of the petroleum distillation at said refineries (gasoline, diesel fuel, etc.) for combustion, producing CO<sub>2</sub>. People breath and produce CO<sub>2</sub> as well. It is anticipated 15 billion people on Earth by 2050 [29]. That increases more the air CO<sub>2</sub> content, leading to the accelerated fresh water loss as discussed. We have no any idea, what will happen soon, if no new planets, similar to Earth, will be discovered and the overcrowded Earth population will not start to move there. We do anticipate, that by that time a glass of water will be available

for significant money, and there would not be no washing of our bodies and clothes, no the crops and the livestock production. No the livestock and the crops production are anticipated with the reasonable justification above. The solution to save our planet's fresh water would be to restructure the current economy for inclusion as wide as possible of the Author's private technologies of the manufacture of the commodity chemicals and fuels, made now solely from air CO<sub>2</sub>, N<sub>2</sub> and the hydrogen [2-8,10,12-20,22,27], projected to be produced by the electrolysis of the petroleum production waters and other heavily contaminated waters, while the byproduct oxygen adds to the air, and the proposed hydrogen would be produced at \$0.20 per 1 kg or 500 moles [4], and the electric energy for said distillation of the sea water is obtained for free at located at the Equator surrounding latitudes. The prospects of the future use of this recombinant technology and its potential applications are discussed herein as related to the coming soon long range outer space flights of the manned crews, hoping to find the appropriate place for humans to reside in the Universe due to the enormously increasing Earth population, doubling every 35 years, and going to reach 14 billion people by 2050 [2-4]. Private investors started investing much into the coming soon prospective long range outer space missions of the manned crews [2-4]. The US model of the economic development has been proven to be immaculate and directed only to moving forward. We are here, in the US, we are ready to do anything possible to make the life of said manned crews as simple as possible. We offer 1) the crew vaccination in situ via the described herein way of Diabetes II treatment in the adults and 2) foods for the manned crews, which they can prepare themselves during said long range space flights. Both our offers are intended to decrease the lift-off weight of the spacecrafts. The meals, that we offer to use, are in the next our possible manuscript in this magnificent peer-reviewed Journal. The procedure of making the recombinant strain(s) from the intestinal content is carefully described herein, as that pertains to the expression in vivo of the recombinant protein, the recombinant human insulin [2,3] and the recombinant human erythropoietin [3].

Imagine, that the long term outer space mission has reached something which they consider to further explore as the potential danger for the proposed relocation of the crowded Earth population to the found in the outer space planet. Imagine, that the samplers have taken the biological samples to be detail examined for the potential microbial dangers for the crew of said long range spacecraft. Certain objects may be determined as causing damage to the crew, which has never been in contact with said potentially dangerous organisms in the outer Space location discovered. Now, we offered herein the technology to produce the recombinant therapeutic proteins right in the intestine of the particular individual chosen. In general, the expression of any new recombinant antibody, new vaccine and any other forms of the therapeutic recombinant proteins will work. The technology used, metabolic engineering, as described by Dr. Tyurin, does not have any size of the cloned DNA limitations (in the reasonable context, of course). It is extremely important, that the intestine, where the recombinant proteins are produced, is in the tight connection with the whole human organism and, therefore, will ensure the random blood distribution of said recombinant protein(s). Therefore, the intestine will work as the internal gate for the therapeutic proteins. As such, said manned crew members may get the essential

vaccines in their own bodies in just less than 200 hours. This approach may have crucial importance for the manned crews life during said long term outer space missions proposed. This is the first ever report on the use of the recombinant strain, producing recombinant proteins and returned back to the host intestine, capable of adhesion back to the host's intestinal epithelium. The technology of said recombinant strain production is associated with the genome tailoring technology discovered and described in detail by Dr. Tyurin [6,7,12,14], for which there are no limits on the size of the inserted into the genome of the recombinant strain the recombinant DNA. Therefore, we offer for the first time ever 1) the existing and well known gate for the delivery into the human blood stream of the recombinant proteins and 2) no any limitations on the size of said recombination proteins, making this technology the technology of choice to construct the intestinal human bacteria, expressing vaccine proteins back in the human body. This makes the value of our proposed herein technology much more, than it is only for the treatment of the Diabetes II (\$327 billion for the US only in 2017).

### Acknowledgement

#### The Author had no special funding.

The Author's corporate web site [4] was brutally destroyed by the attorney from Hirsch and Westheimer law firm, who in the civil courthouse (Harris County, the State of TEXAS) openly stated at the materials submitted to the Court of law their paperwork, that she kept connected to Dr. Tyurin's corporate computer, she knew all his passwords, etc. She apparently went to the yahoo small business web site and opened access to Dr. Tyurin's corporate website [4], where she apparently has changed his credit card number and/or its expiration date. After that the web site has died, while Dr. Tyurin became homeless and could not see that timely. The homeless Author was gun robbed in Houston, TX, losing all his corporate cash \$10,000, credit cards and the corporate computer to the armed thief shortly after Dr. Tyurin's visit to the major petroleum and gasoline/diesel fuel producing company in Houston, TX, to which the Author offered his proprietary technology of gasoline manufacturing from air CO<sub>2</sub>, not from petroleum, with the manufacturing cost of \$0.35 per gasoline gallon [9-16]. The major petroleum gasoline/diesel fuel producing companies spend \$1.70 to make 1 gallon of the gasoline from petroleum (refineries are expensive in building and maintenance). With big NO in response, shortly after that visit to the major gasoline producing company, the Author had a very strange corporate car crash on the US59 with his perfect driving record and with the subsequent mandatory neurosurgery to fix the bleeding head blood vessels the attempted murder of the Author in Houston, TX. With the subsequent neurosurgery after said car crash, the Author was unable to find the lawyer to recover the moneys in Houston, TEXAS. The attempts to get the follow up from the Houston Police and the Houston FBI were fruitless, as that appears to the Author, they are all corrupted by the petroleum businesses in TEXAS. The Author has stopped all his business operations after that day until now to stay safe/alive.

### Declarations

FUNDING was done by the private investors, who declined to provide their names and their business affiliations. The investors noted the author should decline any source of funding. Conflict of interests. The author declares his personal conflict of interests

with the law firm in Houston, TX Hirsch and Westheimer, with the major petroleum and gasoline/diesel fuel companies in Houston (TX), with the Houston Police (City of Houston) and with the Houston FBI. Ethical Approval. This article does not contain any section, requiring Ethical Approval. Consent to participate: this article is the opening gate for the wide use of the recombinant proteins in situ. Our volunteer has made his written contest to participate in this study.

### References

1. Shenderov BA, Serkova GP, Tyurin MV (1984) Susceptibility of clinical non-fermenting Gram-Negative bacteria to antibacterial drugs//Antibiotiki 29(3):191-195.
2. Tyurin MV (2021) Expression in situ of the Recombinant Human Erythropoetin and Recombinant Insulin. J Diabetes Metab 12:900.
3. Tyurin MV (2021) Successful Treatment of Diabetes II in adult patient and New Prospects of Recombinant Vaccine and Recombinant Proteins Engineering in situ. J Diabetes Metab 12:871-875.
4. <http://syngasbiofuelsenergy.com>.
5. Tyurin MV. Thesis: "Antibiotic Resistance and Antagonistic Activity of Lactobacilli" 1990, The USSR Research Institute for Antibiotics, Moscow, the USSR.
6. Tyurin MV (1992) Russian Patent 2-005776. Generator for electrotransformation and electrofusion/electrodistruction of various cells: microbial, animal, plant.
7. Tyurin MV (1992) Russian Patent RU 2-005776-2. Plate-parallel polished electrodes and the process of their manufacture from the titanium-based metal alloy VK-2.
8. Tyurin MV (2021) Gasoline Replacement Fuel Diacetyl Alcohol. International Journal of Automotive Technology. Submitted.
9. Tyurin MV (2021) Air CO<sub>2</sub> for the Manufacture of the Commodity Fuels. Atmospheric Pollution Research, Submitted October 2021.
10. Tyurin MV (2021) Diacetone Alcohol as the Diesel Fuel Replacement. Fuel. Journal of Archives of Metabolic Syndrome. Submitted. 2021.
11. Tyurin MV (2021) Natural Competence for Foreign Plasmid DNA Uptake.2021. J. Cell Biol Submitted. 2021
12. Tyurin MV, Padda RS (2019) Nitrogen gas reducing commercial acetogen biocatalyst suitable for direct and selective reduction of CO<sub>2</sub> inorganic carbon to organic carbon and atmospheric nitrogen to fuel isobutanol during continuous fermentation of CO<sub>2</sub>+ H<sub>2</sub>+ N<sub>2</sub> gas blend. International Research Journal of Applied Sciences, Engineering and Technology 3(4)1-10.
13. Tyurin MV (2016) (invited) Direct and selective syngas biocatalysis for manufacture of fuels and commodity chemicals. In: Syngas: Production, Emerging Technologies and Ecological Impacts. R. Myers, Ed. Nova Publishers, NY.
14. Gak E, Tyurin M, Kiriukhin M (2014) Genome tailoring powered production of isobutanol in continuous CO<sub>2</sub>/H<sub>2</sub> blend fermentation using engineered acetogen biocatalyst. J Ind Microbiol Biotechnol 41(5):763-781.
15. Kiriukhin M, Tyurin M. (2013) Mevalonate production by engineered acetogen biocatalyst during continuous fermentation of syngas or CO<sub>2</sub>/H<sub>2</sub> blend. Bioprocess Biosyst Eng 37(2):245-260.
16. Tyurin M (2013) (Invited) Reversal of global warming

- using \$3 trillion market force: chemicals and fuels produced directly and selectively in continuous fermentations of gas blends comprising CO and CO<sub>2</sub>. In: Environmental Aspects of Global warming. Nova Science Publications Press. New Developments in Global Warming Research. Eds: Carter B. Keyes and Olivia C. Lucero.
17. Kiriukhin M, Tyurin M, Gak E (2014) UV-induced mutagenesis in acetogens: resistance to methanol, ethanol, acetone, or n-butanol in recombinants with reduced genomes during continuous CO<sub>2</sub>/H<sub>2</sub> gas blend fermentation. *World J Microbiol Biotechnol* 30(5):1559-1574.
  18. Tyurin M, Kiriukhin M (2013) 2,3-Butanediol production by engineered acetogen biocatalyst during continuous fermentation of syngas or CO<sub>2</sub>/H<sub>2</sub> blend. *Appl Biochem Biotechnol* 170(6): 1503-1524.
  19. Tyurin M, Kiriukhin M (2013) Selective methanol or formate production during continuous CO<sub>2</sub> fermentation by the acetogen biocatalysts engineered via integration of synthetic pathways using Tn7-tool. *World J Microbiol Biotechnol* 29(9):1611-1623.
  20. Tyurin M (2013) Gene replacement and elimination using λRed- and FLP-based tool to re-direct carbon flux in acetogen biocatalyst during continuous CO<sub>2</sub>/H<sub>2</sub> blend fermentation. *J Indust Microbiol Biotechnol* 40(7):749-758.
  21. Berzin V, Kiriukhin M, Tyurin M. (2012) Selective production of acetone during continuous synthesis gas fermentation by engineered biocatalyst *Clostridium* sp. MAceT113. *Letters of Appl Microbiol* 55(2):149-154.
  22. Tyurin M, Kiriukhin M. (2013). Expression of amplified synthetic ethanol pathway integrated using Tn7-tool and powered at the expense of eliminated pta, ack, spo0A and spo0J during continuous syngas or CO<sub>2</sub> /H<sub>2</sub> blend fermentation. *J Appl Microbiol* 114(4):1033-1045.
  23. Tyurin M, Kiriukhin M, Berzin V (2012) Electrofusion of untreated cells of the newly isolated acetogen *Clostridium* sp. MT351 with integrated in the chromosome erm(B) or cat leading to the combined presence of these antibiotic resistance genes in the chromosome of the electrofusion products. *J Biotech Res* 4:1-12.
  24. Berzin V, Kiriukhin M, Tyurin M (2013) Cre-lox66/lox71-based elimination of phosphotransacetylase or acetaldehyde dehydrogenase shifted carbon flux in acetogen rendering selective overproduction of ethanol or acetate. *Appl Biochem Biotechnol* 195(3):181-188.
  25. Berzin V, Kiriukhin M, Tyurin M (2013) Selective n-butanol production by *Clostridium* sp. MTButOH1365 during continuous synthesis gas fermentation due to expression of synthetic thiolase, 3-hydroxy butyryl-CoA dehydrogenase, crotonase, butyryl-CoA dehydrogenase, butyraldehyde dehydrogenase and NAD-dependent butanol dehydrogenase. *Appl Biochem Biotechnol* 169(3): 950-959.
  26. Cionci BN, Baffoni L, Gaggia F, Di Gioia D (2018) Therapeutic Microbiology: The Role of *Bifidobacterium breve* as Food Supplement for the Prevention/ Treatment of Paediatric Diseases. *Nutrients* 10:1723.
  27. Tyurin MV, Padda RS (2019) Nitrogen gas reducing commercial acetogen biocatalyst suitable for direct and selective reduction of CO<sub>2</sub> inorganic carbon to organic carbon and atmospheric nitrogen to fuel isobutanol during continuous fermentation of CO<sub>2</sub> + H<sub>2</sub> + N<sub>2</sub> gas blend. *IRJASET* 3:1-10.
  28. *Bifidobacterium breve*. Normal gastrointestinal bacterium. 1855. Begey's Manual of Determinative Bacteriology, Ninth Edition.
  29. Primer3\_results.cgi release 0.4.0.
  30. [https://www.mercato.com/shop/baporkstore?utm\\_source=bing&utm\\_medium=cpc&utm\\_content=BA%20Pork%20Store&utm\\_term=engine:google|campaignid:414699127](https://www.mercato.com/shop/baporkstore?utm_source=bing&utm_medium=cpc&utm_content=BA%20Pork%20Store&utm_term=engine:google|campaignid:414699127).
  31. <https://www.niddk.nih.gov/health-information/digestive-diseases/pancreatitis/definition-facts>.
  32. <https://search.yahoo.com/>
  33. <https://pancreasfoundation.org/patient-information/ailments-pancreas/exocrine-pancreatic-insufficiency-epi/>.
  34. <https://seer.cancer.gov/statfacts/html/pancreas.html>.

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