Exo-Biospheric-Organisms (EBO) | A microbiologist writes

See Q&A section:

> "Finally, note that this information comes from a document whose author was directly interacting with an EBO. It is not specified whether it was an ambassador, a crash survivor, a prisoner. The means of communication were not specified either."

> An absolutely fascinating, and technically detailed (and quite long!) contribution on Reddit posted yesterday.
>
> I'm only part way through this, but this does have the ring of authenticity to it.

Source: **https://www.reddit.com/r/aliens/comm...t=1&utm_term=9**

From the late 2000s to the mid-2010s, I worked as a molecular biologist for a national security contractor in a program to study Exo-Biospheric-Organisms (EBO). I will share with you a lot of information on this subject. Feel free to ask questions or ask for clarification

It seems like all my comments are being deleted. I will post answer at the end of the message.

From the late 2000s to the mid-2010s, I worked as a molecular biologist for a national security contractor in a program to study Exo-Biospheric-Organisms (EBO). The aim of the program was to elucidate the genome and proteome basis of these organisms. Although the study of OBCs has been going on for decades in other programs, the new high-throughput DNA sequencing technologies of the late 90s unblocked stagnant research in this area. Since then, several breakthroughs have led to significant advances in our understanding of the genome and proteome of these beings. What we've learned so far has enabled us to outline some disconcerting perspectives about our place in this universe. Briefly, we've discovered that the EBO genome is a chimera of genomes from our biosphere and from an unknown one. They are artificial, ephemeral and disposable organisms created for a purpose that still partially eludes us. I'll be substantiating my statements after a brief introduction.

The reason for disclosing these secrets is quite simple. I believe that every human being has the right to know the truth, and that to progress, humanity needs to divest itself of certain institutions and organizations that will probably not survive these revelations in the long term. I'm aware that I'll have very little impact in this regard, but I still believe that small leaks are necessary to break the dam of misinformation on this subject. When the governments will eventually reveal these secrets, there will undoubtedly be a societal upheaval, but in my opinion, the longer we wait, the worse it will be. I choose to divulge what I know anonymously out of selfishness for the well-being of myself and my family. I'm aware that this diminishes the reach and credibility of my message, but it's the furthest I am willing to go. I chose this forum because it offers a good compromise between anonymity and popularity. In order to protect my anonymity, I will be purposely vague or even contradictory about any information that could identify me (date, education, role etc.). I'll even introduce red herrings in this respect. I want to make it clear that any information related to the subject of the research will not be treated in this way.

Before going any further, please excuse me if you find it difficult to understand what I'm explaining. Some parts of my text are very technical. It's difficult to find the right balance between vulgarization and scientific explanation. I'll continue by talking about myself. What's the point of talking about me knowing that the information will necessarily be misleading? I simply want to introduce a perspective on the type of people who work there, normal scientists. I have a Ph.D. in molecular biology. I didn't actively seek to be part of this program, rather it was a stroke of luck that introduced me to one of the senior scientists. I met this person at a conference where I was presenting a poster on my Ph.D. research. When I think back, I don't believe he was impressed by what I was presenting, because it was quite frankly a project that wasn't going anywhere. I think it was rather the most important aspect of a professional life: the attitude and the ease with which you make connections. Shortly afterwards, I graduated and received a call from this person offering me a position. At the time, everything pointed to me working in a regular laboratory.

I did a series of three increasingly suspicious interviews, each in a different location, where my scientific

background and knowledge became less and less relevant. The first was with two of the senior scientists, the second and third with people I've never seen again and who were obviously not interested in science. Sometime after the interview, I was asked to go to a fourth location where what seemed like a corporate lawyer presented me with an NDA. He made sure not only to explain every detail, but also that I understood the consequence of not respecting it.

The first Employment weeks were by far the most memorable, although I spent most of that time in a depressing archive room. It consists almost exclusively of reading about the subject of study and to get us up to speed. There's no secret Wikipedia or even a reference book to guide us. There are only dry reports, memos, presentations, procedures and SOPs. These documents are almost exclusively about the biology of EBOs, but there are also a few that deal with other subjects such as their food, religion or culture. There were no documents on their technology.

As mentioned above, the aim of the project is to gain a better understanding of the EBO genome and proteome. To achieve this, a team of around twenty scientists, four senior scientists and a director was involved. The scientists, like myself, had as their main responsibility to carry out the technical work. As each scientist had to my knowledge a Ph.D., we were all somewhat overqualified for what is ultimately a technician's job. The senior scientists, who make full use of their diplomas, had the task of designing the assays and had a supervisory responsibility. They were also in charge of training new employees, and sometimes even came in to do technical work. The director, of course, was the person in charge who dictated priorities to the senior scientists. He was rarely on site, and the few times he was, it was to attend meetings. Other than the scientific staff, there were security guards working for one subcontractor or another. There were no support staff such as janitors or maintenance workers. Scientists were responsible for this kind of work. In addition, logistical constraints ensure that every scientist is capable of carrying out any technical activity.

The laboratory itself is located in Fort Detrick, Maryland, in a building used for legitimate biomedical research. The clandestine operations are carried out in a restricted part of the basement, out of sight from regular workers. Contrary to what one might imagine, the biosafety level is not maximal for this type of research. Indeed, the lab containing EBO samples or derived cell cultures is BSL3, while the lab where assays are conducted are only BSL2. The BSL3 area of the facility includes a freezer room and a cell culture lab and is only accessible through an antechamber from the BSL2 section. EBO carcasses are preserved in horizontal freezers at a temperature of -80°C nominal. To maximize the preservation of these carcasses, they are preserved in vacuum bags and the air in the room is controlled to minimize humidity. There are only four bodies and none of them are complete. It's obvious that these creatures have died as a result of major trauma. I've never witnessed a motorcycle accident fatality, but it probably looks similar to this. It is acknowledged that there are more EBOs caracasses at other locations. The cell culture laboratory, as its name suggests, is where cell lines derived from EBOs are grown and related activities are performed. I'll talk in more detail about these specific cell lines later on. The BSL2 part is mainly used for assays, immunohistochemistry, genetic engineering, immunocytochemistry, storage etc. There's also a cell culture lab, but this is used for more traditional cell lines. Other than the labs, there are all the amenities you could find in an office. Note that the internet access is limited to senior staff and up. There is, however, an intranet for bioinformatics needs.

On the subject of the biology of these beings, I'll start by discussing genetics, then their gross anatomy and finally their biological systems. For the sake of clarity, the information that I provide here is an aggregation of what I have observed and what I have read. I will make many comparisons with human anatomy because it is the most logical reference.

Genetics:

First, I'd like to discuss their genetics. Their genetics are like ours, based on DNA. This fact was very puzzling for me when I first learned about it. We imagine that beings from an alternate biosphere would have genetics based on a completely foreign biochemical system and surprisingly, this is not the case. Several conclusions can be drawn from this surprising revelation. The one that immediately comes to mind is that our biosphere and theirs share a common ancestry. They're eukaryotes, which means their cells have nuclei containing genetic material. Which suggests that their biosphere would have been separated from ours sometime after the appearance of this type of organism. The term Exo-Biospheric-Organism is actually a misnomer, but as it's a historical term, it's still used. Their genetics are not only based on the same genetic system, but they’re also even compatible with our own cellular machinery. This means that you can take a human gene and insert it into an EBO cell, and that gene will be translated into protein, and this of course works in reverse with a human gene inserted into an EBO cell. There are important differences in

post-translational modifications that will make the final protein non-functional, but I'll discuss these later. Their genome consists of 16 circular chromosomes.

You're probably familiar with the concept of intergenic region or "junk DNA". These are basically DNA sequences that don't code for proteins. These are evolutionary residues, transposons, inactivated genes and so on. To give you an idea, in humans, intergenic regions represent approximately 99% of our genome. I'm aware that these sequences aren't completely useless, they can be used as histone anchors, as buffers to protect coding DNA from radiation or even as alternative open reading frames, but that's rather peripheral.

What's particularly striking about the EBO genome is the uniformity of these intergenic regions. We see the same sequences repeated everywhere, and the distance in bp between the genes is virtually the same throughout their genome. The result is a minimalist, highly condensed genome. In fact, it's much smaller than ours. Moreover, the quantity of protein-coding genes is even significantly lower than ours, probably due to genetic refinement but also to biological processes that are absent in EBO. The uniformity of these sequences is a major indication of the artificiality of these beings. There is no complex organism on earth that has such elegance in its sequences. There is no evolutionary pressure that can lead to this kind of characteristic other than genetic engineering.

Speaking of genetic engineering, following sequencing of their genomes, we noticed a troubling and universal characteristic in the 5' of the regulatory sequence of each gene which we call the Tri-Palindromic Region. The TPR are 134bp sequences containing, as its name suggests, 3 palindromes. In genetics, a palindrome is a DNA sequence that when read in the same direction, gives the same sequence on both DNA strands. They serve both as a flag and as a binding site for proteins.

The three palindromes in the TPR are distinct from one another and have been poetically named "5'P TPR", "M TPR" and "3' TPR". The TPR is composed (in 5' - 3' order) of 5'P TPR, 12bp spacer, Chromosomal address, 12bp spacer, M TPR, 12bp spacer, Gene address, 12pb spacer and 3' TPR. The chromosomal address is composed of 4 bp and is identical in each TPR of the same chromosome, but distinct between each of the 16 chromosomes of the genome. The Gene address is a 64bp sequence that is unique for each gene in the whole genome. It's therefore understandable that the TPR serves as a unique address not only for numerically identifying a gene, but also for identifying its chromosomal location. For those with only a basic knowledge of genetics, this is completely unheard of. No living thing in our biosphere has this kind of precise address in its genome. Once again, the presence of TPR cannot be explained by evolutionary pressure but only by genetic engineering on a genomic scale.

TPR opens the door to several possibilities. One of them suggests that EBO geneticists can insert or remove a gene from a cell in a way that is far more targeted and efficient than our technology allows. No proteins have been identified in the EBO genome that interacts with TPR. Rather, we believe that these proteins are exclusively targeted by external genetic engineering tools, probably used at the zygotic stage of embryonic development. The nature of these tools is unclear, but we definitely don't have anything like them.

The probable absence of these proteins from the genome is a further indication of their artificiality. Given the high probability of artificiality of their genome and the apparent ease of modifying it with biomolecular tools, it's not out of the question that there could be polymorphism between individuals depending on their role and function. In other words, an individual could be genetically designed to have characteristics that give it an advantage in performing a given task, like soldier ants and worker ants in an anthill. Note that these previous statements are speculation. To my knowledge only one individual genome has been sequenced, I can't make a definitive statement on genetic variation between individuals.

I've talked a lot about intergenic regions, now I'll briefly discuss intragenic sequences. Briefly, because there's not a lot less to say despite its obvious importance. Much like ours, their genes have silencers, enhancers, promoters, 5'UTRs, exons, introns, 3' UTRs etc. There are many genes analogous to ours, which is not surprising given the compatibility of our cellular machinery. What's disturbing is that some genes correspond directly, nucleotide by nucleotide, with known human genes or even some animal genes. For these genes, there doesn't seem to be any artificial refinement but rather a crude copying and pasting. Why they do it is nebulous and still subject to conjecture. There are also many genes which are not found in our biosphere whose role has not been identified. Finding the purpose of these novel genes is one of the aims of the program. I'd like to note before going any further that this heterogeneity of genes of known and unknown origin is an undeniable proof of the artificiality of EBOs.

To conclude with genetics, the mitochondrial genome, at the time I was working there, had not yet been sequenced. It's safe to assume that this genome would also be streamlined and possibly has some version

of TPR.

Transcription and translation and protein expression.

I briefly introduced the differences in post-translational modifications between human and EBO. This is hardly a surprise, as we often see the same thing between different terrestrial species. Obtaining a viable protein from a DNA sequence is a complex process involving hundreds of protein intermediates, each with a precise and essential role. A minor variation in this assembly line can lead to functional irregularities in the final product. So, it's no surprise that there are setbacks along the way when the first EBO gene transfection attempts failed to produce the desired functional protein in human cell lines. Fortunately for us, the work of what I imagine to be another team at another site has led to the development of an EBO cell line named EPI-G11 derived from epithelial tissues.

With this tool in our hands, we were able to transfect and overexpress proteins of interest in order to eventually purify and study them. For your information, we use a biological ballistics delivery system (AKA gene gun) for our transfection needs because other methods are not very effective with cells of this line. For example, the viral vectors tested cannot be internalized by EPI-G11 and lipofection is too lethal. EPI-G11, like most eukaryotic cell lines, enters a phase of exponential growth when exposed to Fetal Bovine Serum. It's only half surprising that a cell line from such an exotic source should be sensitive to the growth factors present in FBS. In my opinion, this can be explained by the addition of animal genes to the genome, such as growth receptors.

Gross anatomy:

They are morphologically very similar to the grey aliens that are part of modern folklore. Their height is about 150cm, they have two arms, two legs and a head. Still, there are some notable differences.

Skin: The grey skin that is often described in folklore is in fact a biosynthetic film which, likely, serves to protect the EBO from a hostile environment. It doesn't provide effective protection against temperature changes, but it does offer adequate protection against the passage of liquids. It's possible that this film confers other advantages but my knowledge on the subject is limited. Under the grey film, the epidermis is rather white, and the texture is very regular and without any hair. We do not see any defect other than the folds near the joints. It's described as greasy in one report, but that's not something I've observed. The same report states that a strong, lingering smell of burnt hair and ammonia is present when the film is removed. There are a lot of pores on the skin, crossing from the epidermis to a gland in the hypodermis. These glands and pores are the terminal part of the excretory-sudoriferous system, which could explain the previously mentioned smell.

Head: The head contains two large, oversized eyes, two nostrils without protuberance, a narrow mouth without lips and two ear canals without auricles. There is a mandible, but the musculature is vestigial. There are no teeth or tongue in the oral cavity. The nasal cavity where the nostrils meet is compact and does not rise cranially but extends axially. There appears to be no equivalent to the olfactory bulb in the nasal cavity. The mouth leads directly to the esophagus and the nasal cavity to the trachea. The trachea and esophagus do not communicate.

Eye: Like the skin, the eyes are covered with a semi-transparent biosynthetic film that offers the same environmental protection, while providing protection against certain wavelengths and light intensity. When the film is removed, a more traditional eye is revealed. It's about three times larger than a human eye and there are no eyelids. The size of their eyes suggests they have excellent night vision. It seems paradoxical to cover them with a semi-opaque film. Perhaps they only need to wear it in a bright environment. Their sclera is the same color as their skin, the iris is pale grey, and the pupil is black and oversized. The lens is rounder than a human, and the musculature used to adjust focus is more developed. On the retina, there are at least 6 types of cone cells. The responsiveness of each of these 6 types of cone is specific to a wavelength band, with a minimum of overlap between each other. The result is a broader visible spectrum.

Ear: As mentioned, the outer ear has no auricle and the ear canal is unremarkable. The inner ear has all the characteristics of a typical vestibular and cochlear system, although the curvature of the cochlea is more pronounced than a human. This probably results in greater hearing acuity for low frequencies.

Brain: The brain is tetraspheric, i.e. composed of four major sections. The sections are separated by transverse and longitudinal fissures and are connected to the central lobe, which acts as brainstem and cerebellum. The volume of the brain is around 20% superior to that of a man of the same height. It has a

much more pronounced level of gyrication than an average human. Moreover, the ratio of glial cells to neurons is also slightly higher than in humans. It is important to mention the presence of nodules on the central lobe. Histological analysis of these structures reveals a kind of intricate biological circuitry. It is speculated that these nodules are essential to interact with their technology. Consequently, determining the proteome of these structures is an absolute priority for the program.

Neck: The neck is proportionally longer than that of a human, and at the same time relatively thin. As mentioned, the esophagus and trachea are separate. There are no vocal cords in this region.

Thorax: The musculature of the thorax is underdeveloped. Muscles equivalent to the pectoralis major can be seen. We can also see the trapezius and deltoid muscles. The sternocleidomastoids are well defined. The ribs and sternum are clearly visible. There are no nipples.

Abdomen: The abdomen is wider than the thorax and bulges slightly forward. There is no navel.

Pelvis: The pelvic bones are apparent. There are no genitals or anus.

Hands and feets: Their hands have four digits, including an opposable thumb on the medial side. They have no nails, and the texture of their fingerprints is composed of concentric circles. Fingers are proportionally much longer than in humans. Unlike humans, finger musculature is entirely intrinsic to the hand. In other words, the muscles used to move the fingers are not in the forearms but entirely located in the hands. At first glance, the feet consist of just two digits, but a necropsy soon determined that each toe was made of two fused digits. The medial toe is marginally longer than the distal toe. The feet are relatively longer and narrower than in a human. Their musculature, however, is vestigial.

The EBOs endoskeleton is very similar to ours, at least in terms of composition. There's collagen, hydroxyapatite but also copper oxide crystals where marrow would normally be found. The role of these crystals has not been established, but it is not a crystalopathic condition. The blood cells of the myeloid lineage (or the equivalent for these creatures) therefore mature in a different location than in humans i.e. in the thymus like organ. A transverse section of the bone reveals osteon and osteocytes. There appear to be few osteoblasts and no osteoclasts. This indicates that the bones are no longer growing and cannot absorb the minerals present or adapt mechanically to changes in posture.

Biological system:

Respiratory system: Their cellular respiration is equivalent to ours, i.e. they need to oxidize organic components to produce energy. Their lungs have no reciprocating action, but rather have a unidirectional flow of air, similar to those seen in birds, which is more efficient than ours. It is speculated that this is in response to the brain's elevated metabolic needs. Vocalization is produced by vibration of the wall membrane at the junction between the two air sacs.

The Circulatory system of EBOs is rather analogous to ours. The heart is located in the mediastanum, but in a more medial position, directly beneath the sternum. The heart has two ventricles and two atria. There is an aorta, a pulmonary vein, a pulmonary artery and a vena cava. Blood flowing to the pulmonary capillaries via the pulmonary artery is pumped against the flow of air, maximizing gas exchange efficiency. The blood gas barrier is relatively narrow in these capillaries, at least compared to a human. Then oxygen-rich blood is returned to the heart and then expelled into the aorta and the rest of the body. Before returning to the heart, the blood will pass through the hepatorenal organ which, among other things, filters and controls osmotic pressure of the blood.

The blood itself is also analogous to that of a human. However, the proportion of plasma is much higher, albumin is in similar proportion ,hormone levels are much lower, metal ion levels are much higher (particularly copper) and glucose levels are significantly higher. The color of the blood is brownish, given the higher proportion of plasma and concentration of metal ions. On the cellular side, there are erythrocytes which, in addition to hemoglobin for binding oxygen, display several complexes capable of binding copper ions. It's not clear what role these copper ions play but we believe it neutralizes blood ammonia, among other things. Several cell types with leukocyte characteristics have been observed, but no comprehensive knowledge of them exists. Platelets are present, but in smaller proportions than in humans.

Excreto-sudoriferous system: This system is completely different from what I've seen. As mentioned earlier, there is no large orifice, like an anus or urethra, to get rid of biological waste. Instead, there are countless small pores on the surface of the skin. There's a large medial organ called the hepatorenal organ, which acts

as both kidney and liver and is central to maintaining homeostasis. This organ is highly vascularized and the blood must pass through it before returning to the heart. Its role is, among other things, to purify the blood of metabolic waste. Waste is excreted into the equivalent of a ureter, which branches out into four. Each branch flows towards one of the four limbs and in turn these branches divide until they end up as thousands of excretory pores. The motility of this excretory system is mediated by a weak peristalsis at the proximal level and on the four main branches. Peristalsis ceases around the first distal junction. As there is no urea cycle, the ammonia concentration at the exit of the hepatorenal organ is very high. This ammonia is carried to the pores and gives the distinct odor I mentioned earlier. The rationale behind this unusual excretory system is directly related to this excreted ammonia, which enables thermoregulation by evaporating on the skin's surface. The greater the physical effort, the greater the metabolism. This in turn leads to a rise in temperature, and a corresponding increase in metabolic waste via amino acid catabolism. This leads to an increase in filtration and ammonia excretion, which ultimately lowers body temperature.

Digestive system: The digestive system is extremely underdeveloped. There's no there is no stomach in the familiar sense. However, there is a pseudo-stomach located at the transition between the thoracic and abdominal cavities. This organ is not involved in digestion, but only serves as a reservoir. A sphincter controls the flow of food into the intestine. The intestine is limited to the equivalent of our small intestine, i.e. it only serves to absorb liquids and nutrients and acts as the main digestion site. It has villi and microvilli like ours. The intestine ends in the hepato-renal organ, where non-digested matter is transported to the ureter and excretory system. Residues are dissolved in the ammonia of metabolic waste for excretion. There's an organ near the pseudostomachal sphincter that secretes digestive enzymes directly into the intestine. This organ is inspirationally called the digestive organ. It secretes mainly proteolytic enzymes and glycoside hydrolases.

Given the absence of teeth, the narrowness and rigidity of the esophagus, the absence of a true stomach and the absence of defecation, it is strongly believed that EBOs can only consume food in liquid form. It is assumed that, given the high metabolic needs of their brains, this food would have a high carbohydrate concentration. In order to meet other metabolic needs, there must also be a high protein content in the food consumed. These two statements are supported by the type of enzyme secreted by the digestive organ. It is therefore speculated that the food consumed is a sort of broth rich in sugar and protein, which probably also has a high copper content. Given the strict limitations on the type of food that they can consume, it's unlikely that this type of creature could survive in our biosphere without technological support.

Endocrine system: Knowledge of the endocrine system is minimal. We know that cells are receptive to bovine growth hormones, so it's assumed that certain functions are regulated by such a system. Endocrine mechanisms are very complex, and it goes without saying that they are best studied on living subjects.

Immune system: The immune system is another unknown. There seems to be an innate immune system but there doesn't seem to be any adaptive immunity, at least not similar to what is known. There's a thymus-like organ near the heart that's proportionally larger than in humans. This organ seems to be where all blood cells mature. Some cells have leukocyte characteristics such as granularity. The immune cells that germinate here have a high copper concentration. The surface receptors of innate immune cells have not yet been characterized, so we might as well say that all the work remains to be done.

Nervous system: The nervous system is also relatively similar. The spinal cord begins at the base of the central lobe of the brain and propagates down the vertebral column. In the vertebrae there are ganglia made of afferent and efferent neurons. In short, other than the CNS, there is nothing out of the ordinary.

Musculoskeletal system: The musculoskeletal system is very ordinary, albeit underdeveloped. Most of the human skeletal muscles have an equivalent. Only the hands, feet and forearms are different. It should be noted that the proportion of type 1 and type 2 muscle fibers is different from that in a human. Indeed, type 1 outnumbers type 2 by about a factor of 10.

Artificial system: We speculate that artificial molecular machines may be present in the body, and that copper, if present, would be essential to their function or assembly. Importantly, no AMMs have been observed.

Last edited by Tintin; 6th July 2023 at 12:28.