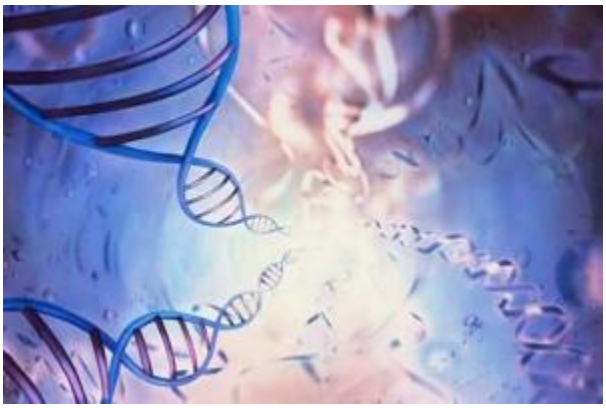
# Genetically Modifying Humans Via Antibiotics? Something You Need To Know

October 23, 2013 by Lisa Bloomquist. .



A new kind of antibiotic has been developed by researchers at Oregon State University. The new antibiotics are called PPMOs, which stand for peptide-conjugated phosphorodiamidate morpholino oligomers. They are "a synthetic analog of DNA or RNA that has the ability to silence the expression of specific genes." (1) The way that PPMO antibiotics will work is to, "specifically target the underlying genes of a bacterium." In plain English, PPMOs will genetically modify bacteria.

This may not sound like a horrible thing on initial glance. Bacteria are generally thought of as evil (soap commercials have conditioned us all), something to fight because some bacteria can make people sick and even kill them if their body is overwhelmed by "bad" bacteria. However, bacteria and the other single-celled organisms that make up the human microbiome are intimate parts of each human being. Per the Human Microbiome Project:

*The healthy adult body hosts ten times as many microbial cells as human cells, including bacteria, archaea, viruses, and eukaryotic microbes resident on nearly every body surface. The metagenome carried collectively by these microbial communities dwarfs the human genome in size, and their influences on normal development, diet and obesity, immunity, and disease are under active research.* (2)

The average 200 pound human body contains 6 pounds of microbiome organisms, including several billion bacteria (3). These bacteria act symbiotically with us, helping to digest food, extract vitamins and other nutrients from food, regulate the immune system and even contribute to each individual's personality. Per an article published in Molecular Psychology, "CNS neurotransmission can be profoundly disturbed by the absence of a normal gut microbiota." (4) Multiple neurochemicals are produced by gut bacteria, including 95% of the serotonin in each human body (5). Studies of mice have shown that behavioral changes can be triggered by changes in the gut bacteria and it has been observed that people with Crohn's Disease and other GI disorders often suffer from anxiety and depression. The health of each person's microbiome is intimately connected to both their physical and the mental health.

The bacteria that compose our microbiome work so synergistically with our human cells that the difference between "us" and "the bacteria" is difficult to decipher. Where do "we" begin and "they" end? If all of the bacteria in a person's microbiome were killed off, that person would die. Bacteria are an intimate and important part of "us." In genetically modifying "them," are we genetically modifying "us?" How could genetically modified bacteria affect the balance of the human microbiome? How could they affect the bodily systems that the microbiome controls? How could a GM bacteria adversely affect human health including personality and behavior?

One of many other things to consider is that mitochondria, the energy centers of our cells, are very similar in structure and design to bacteria. (6) Mitochondrial DNA is also much more vulnerable to environmental toxins than the rest of the human DNA. (7)

Could PPMOs (or other drugs that genetically modify bacteria) modify human mitochondria? If so, what are the consequences of having genetically modified mitochondria? One consequence is that humans truly would be genetically modified. Perhaps that should be taken into consideration before developing drugs that genetically modify bacteria.

There are thousands of medical and ethical questions that should be asked about the development of drugs that genetically modify bacteria. Sadly, I suspect that many people will look the other way, assuming that PPMOs are just another antibiotic that are as innocuous as penicillin, rather than asking the really difficult questions that should be asked before our mitochondrial DNA is permanently and irreversibly altered. I suspect that the questions about whether or not antibiotics that alter the human microbiome should be created or not will not be asked though, because human mitochondrial DNA has been being altered and damaged by a certain class of antibiotics, fluoroquinolones, for years without anyone saying a peep.

**Genetic Modification via Antibiotics is Already Occurring**

Fluoroquinolone antibiotics, more popularly known as Cipro (Ciprofloxacin), Levaquin (Levofloxacin), Avelox (Moxifloxacin), Floxin (Ofloxacin) and a few other less commonly used ones, are topoisomerase interrupters. They unravel bacterial DNA and lead to apoptosis, programmed cell death. This video explains how they work:

The chemical backbone of fluroquinolone antibiotics, nalidixic acid, was developed in 1962 by George Lesher. (8) They became popular starting in the 1980s when pharmaceutical companies pressured the FDA to accept them as a "first line of defense" antibiotic despite the fact that they had shown to be toxic to mammalian cells. They increased in popularity after the 2001 anthrax scare. They are used to treat urinary tract infections, sinus infections, bronchial infections, strep throat, etc. despite the fact that the side effects include psychosis (9) and destruction of every tendon in the body. A side-effect that is lightly referred to as "tendinitis" on the warning label. (A more complete list of effects of fluoroquinolones can be found on www.ciproispoison.com. The person who wrote that list of things that happened to him as a result of taking Cipro was a happy, healthy, employed 31 year old when he took Cipro. He is now disabled.)

Multiple studies have shown that quinolones/fluoroquinolones adduct to bacterial DNA. (10)(11) This means that they attach to and change DNA, that the DNA has altered molecules hooked onto it and that all duplicate versions of the cells have been altered. An example of another chemical that adducts to DNA is Agent Orange.

Some DNA tests performed on people who have experienced severe adverse reactions to fluoroquinolone antibiotics have shown that the quinolone/fluoroquinolone molecules have adducted to their human DNA, attaching to and changing their DNA into perpetuity. (As cells replicate, the altered DNA replicates too.) A DNA Adduct Mass Spectrogram Analysis showed that the quinolone/fluoroquinolone molecules had attached to every cell in the subjects' bodies, not just the bacteria that make up their microbiome; the drug adducted to their DNA, to THEM.

They, along with thousands of other people who have had an adverse reaction to a fluoroquinolone, have been genetically modified by an antibiotic.

A large portion of those who have been genetically modified by a fluoroquinolone antibiotic have been subjected to irreversible damage to their DNA for no sensible reason at all. Fluoroquinolone antibiotics are given out to treat benign infections like sinus and urinary tract infections, that can be treated with other, safer antibiotics. A 2011 study (12) found that 39% of patients given fluoroquinolone antibiotics were given them unnecessarily (and the necessity of them was determined without it being taken into consideration that DNA damage can be done by these drugs as this fact is not acknowledged, despite the peer reviewed studies noted above.)

26.9 million prescriptions for fluoroquinolone antibiotics were dispensed in America in 2011 alone (13). Similarly massive numbers of prescriptions of these drugs have been dispensed each year since Bayer patented Cipro in 1983. Humanity has not stopped existing since these DNA modifying drugs were introduced to the market, but before you find that to be reassuring, the following should be noted.

1. An article in the September, 2013 issue of Nature entitled "Topoisomerases facilitate transcription of long genes linked to autism" (14) noted that, "Our data suggest that chemicals or genetic mutations that impair topoisomerases, and possibly other components of the transcription elongation machinery that interface with topoisomerases, have the potential to profoundly affect the expression of long ASD candidate genes." Fluoroquinolone antibiotics impair topoisomerases. A post about this is on Collective Evolution – http://www.collective-evolution.com/2013/09/18/a-horrifying-cause-of-autism-dna-damage-from-synthetic-antibiotics
2. Anthraquinone was found in the subject who underwent The DNA testing. Anthraquinone causes an inflammatory process within the body and causes pain, burning, and hurting sensations, a condition that is often confused with fibromyalgia. (15)
3. Fluoroquinolone antibiotics have been shown to damage mitochondria (16)(17)(18) and "Damage to mitochondria is now understood to play a role in the pathogenesis of a wide range of seemingly unrelated disorders such as schizophrenia, bipolar disease, dementia, Alzheimer's disease, epilepsy, migraine headaches, strokes, neuropathic pain, Parkinson's disease, ataxia, transient ischemic attack, cardiomyopathy, coronary artery disease, chronic fatigue syndrome, fibromyalgia, retinitis pigmentosa, diabetes, hepatitis C, and primary biliary cirrhosis." (19)

So, if you're wondering what happens when humans are genetically modified, the experiment is being conducted as you read this post. Since fluoroquinolone antibiotics have been popularized, rates of autism, schizophrenia, bipolar disease, dementia, Alzheimer's disease, epilepsy, migraine headaches, strokes, neuropathic pain, Parkinson's disease, ataxia, transient ischemic attack, cardiomyopathy, coronary artery disease, chronic fatigue syndrome, fibromyalgia, retinitis pigmentosa, diabetes, hepatitis C, and primary biliary cirrhosis have risen substantially.

Perhaps the question of the intelligence of altering human DNA with antibiotics can be questioned before PPMOs are introduced to the market, as opposed to 30+ years afterward, as is the case with fluoroquinolone antibiotics. It would show wisdom and desire for sustainability as a species. Unfortunately, neither wisdom nor sustainability are valued at the moment and I suspect that the travesty of people being genetically altered by fluoroquinolones will continue and that the travesty of people being altered by PPMOs will begin.

**Post Script:**

1. If enough people gathered together, got their DNA tested, got those test results interpreted by a Toxicologist, and appropriate research was published on the results, this atrocity could stop. Please note that both Bayer (producer of Cipro and Avelox) and Johnson and Johnson (producer of Levaquin), and even the generic producers of these drugs, have very deep pockets.
2. The author's blog is www.floxiehope.com.

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