July 16, 1997

Townsend Letter for Doctors & Patients
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Dr. Collin,

Recently the *Townsend Letter for Doctors & Patients* (June 1997) published an article entitled "Why Blue Green Algae Makes Me Tired," by John McPartland, DO. The number of inaccuracies and slanderous opinions expressed in this article is overwhelming. Virtually every statement presented by the author is either factually inaccurate, out of context, incomplete or simply libelous.

One of these statements is McPartland's discussion about the neurotoxicity of *Aphanizomenon flos-aquae* from Klamath Lake. This concern is certainly appreciated and shared by Cell Tech as it is undisputed that some strains of this particular type of blue-green algae are capable of producing toxins. However, the Upper Klamath Lake strain of *Aph. flos*-aquae has never been conclusively reported to produce neurotoxins. McPartland cites both Phinney and Peek (1961) and Gentile (1971) as the basis of his conclusion. The algal sample taken by Phinney and Peek was extensively analyzed by Gorham (Gorham, 1964; Carmichael and Gorham, 1980) who concluded that: "The signs of poisoning produced by samples from this bloom, consisting of 50:50 *Aphanizomenon*, *Microcystis*, injected i.p. into mice were similar to those of microcystin. It was concluded that *Aphanizomenon* was either non-toxic or produced a toxin like microcystin." *Aph. flos-aquae* is not known to produce microcystins. Gentile's report (1971) was a preliminary summary of a toxicity test on Upper Klamath Lake *Aph. flos-aquae* published in a review article on blue-green and green algal toxins. As quoted by Gentile himself (personal communication to Dr. Wayne W. Carmichael, 1996), "This anecdotal toxicity test on Upper Klamath Lake *Aph. flos-aquae* should be rigorously restudied before it can be concluded that the alga produces a toxin." Periodic toxicity tests in the 1980's and regular testing since 1991 have failed to reveal any neurotoxins in Upper Klamath Lake *Aph. flos-aquae* (quality control on Super Blue Green® Algae performed by independent laboratories). McPartland was fully aware of the information mentioned above but

chose to disregard the years of laboratory results and the analysis of the scientific literature by experts in algal toxicology.

In brief, a test called enzyme-linked immunosorbent assay (ELISA) is used to detect microcystins, a specific type of hepatotoxin (An and Carmichael 1994). ELISAs are among the most sensitive detection techniques available. In addition, the levels of hepatotoxins are also accurately determined by a protein phosphatase inhibition assay (Takai and Mieskes 1991; An and Carmichael 1994) which measures the actual toxicity. Neurotoxins, which are commonly produced by some *Anabaenas*, some dinoflagellates and some strains of *Aph. flos-aquae* are detected by using an anticholinesterase enzyme assay (Matsunaga et al. 1989) and an FDA-approved assay for saxitoxins (AOAC, 1990) and/or high performance liquid chromatography (Oshima et al. 1989). All of these testing procedures are performed on every batch of freeze-dried Super Blue Green® Algae by external laboratories to ensure an unbiased and independent evaluation. Absolutely no batch of algae is processed without having undergone analysis and met the standards. Neurotoxins have never been detected after 6 years of rigorous testing of every batch of algae harvested by Cell Tech.

Again, it is indisputable that some strains of *Aph. flos-aquae* were shown to produce neurotoxins in Europe as well as in lakes in New Hampshire and Canada, but the extrapolation that all strains are toxic shows a lack of scientific background or a lack of integrity. Actually, after testing many blooms of *Aph. flos-aquae* in North America for neurotoxicity, Carmichael and Gorham (1980) concluded that, "All blooms and isolates from blooms of *Aphanizomenon flos-aquae* that we have collected from lakes of Ontario, Saskatchewan and Alberta, Canada have been nontoxic." Gorham (1964) further concluded that, "A decision as to whether fast-death-producing strains of *Aphanizomenon* exist must be left in abeyance, but the suspicion we now have is that the final answer may be negative."

With this in mind, the author's opinion that the reason why people eating *Aph. flos-aquae* feel energized is due to anatoxin's similarities to cocaine is totally groundless. First and foremost, anatoxin is not produced by nor present in the algae harvested from Klamath Lake. With little objective and honest research, McPartland could have found many plausible scientific explanations for the energy felt by people eating *Aph. flos-aquae*. He preferred to slander Cell Tech and deceive the readers by suggesting that Super Blue Green® Algae contained an analog to an illegal drug.

McPartland wrote, "I received a nasty phone call from Cell Tech in Oregon..." The only individuals within Cell Tech who would personally contact McPartland by telephone did not, in fact, do so. We have never accused the author of having been "paid off" nor has Cell Tech "slammed" Spirulina. These are shameless lies. Cell Tech produces an entirely safe, extremely high quality product which has brought numerous benefits to thousands of people and we market our products as such, without slander or defamation.

Without any knowledge of Cell Tech's philanthropic activities, McPartland writes, "The concept of doing something for nothing is foreign to them." Cell Tech is deeply involved with humanitarian projects to which we donate a significant amount of product, time and commitment. We are assisting with projects located in Nicaragua, Argentina, Dominican Republic, Guatemala, Cambodia, Tibet as well as projects within the United States including Los Angeles, the Navahos in Arizona, The American Indian Family Healing Center in Oakland, California, and Klamath Falls, Oregon. Yet, very few of these projects have been used for marketing purposes. McPartland's comment ridiculing Cell Tech's humanitarianism is a clear demonstration of his unsubstantiated bias.

McPartland implied that the fish kills (1894, 1971, 1986, 1995, 1996) occurred because of pollution or toxicity. A very simple investigation with the local agencies in the Klamath Basin would have revealed to the author that these fish kills occurred simply because of poor water quality, indirectly caused by the biodynamics of algae blooms, not toxicity or pollution. He further mentions that, "... SBGA, like many species of blue-green algae, is encased by mucilaginous sheath, which provides a strong anchor for adhering bacterial contaminants. One such bacterium associated with blue-green algae is *Legionella pneumophila*, the cause of legionnaire disease. Another bug, *Vibrio cholerae*, can actually live inside blue-green algae." Here McPartland's intention to discredit Cell Tech and to mislead the reader is indisputable. Does McPartland know of any case of cholera or legionnaire disease linked to the consumption of Super Blue Green® Algae?

Any food can be a medium for bacterial growth and Cell Tech's Quality Control procedure fully ensures that Super Blue Green® Algae meets all the standards established by the Department of Agriculture. McPartland writes, "Cell Tech substitutes expensive pasteurization with «heat-sanitize» process." Pasteurization *is* a heat-sanitation process. Cell Tech's pasteurization process differs from classic pasteurization in that it preserves the enzymatic activity and the nutritional value of the algae. Everyone who visited Cell Tech's harvesting and production facilities, including state inspectors, have been unanimously impressed by the quality of the process and the investment made by Cell Tech to ensure quality and safety of its products.

One thing that McPartland did not dare report is the well known stimulating effect of blue-green algae on the immune system (Lahitova et al., 1994). A study performed by a reputed university provided strong evidence, obtained by traditional immunological assay, that *Aph. flos-aquae* significantly increases, among other things, the phagocytic[1] and microbicidal[2] activity of macrophages, and the recruitment of natural killer (NK) cells (Manoukian et al., 1997). In addition, *Aph.*

[1] Related to the ingestion of bacteria by a leucocyte.
[2] Related to the ability to destroy microbes.

flos-aquae contains nearly 2% chlorophyll which was shown to accelerate healing of wounds and burns (Gruskin, 1940; Sano and Smith, 1942; Goldberg, 1943; Gahan et al., 1943) and to act as a precursor for the synthesis of other compounds such as hemoglobin (Hughes et al., 1936) and vitamin K (Hansen, 1980; Borowitzka, 1988). Furthermore, recent studies have demonstrated the ability of chlorophyllin to provide protection against certain forms of liver toxicity (Breinholt et al., 1995a,b). Finally, *Aph. flos-aquae* is an exceptional source of essential fatty acids (more than 40% of lipid content) whose deficiency is increasingly linked to decreased cardiovascular health (Simopoulos, 1989, 1991; Spielmann et al., 1989; Kromhout, 1989; Renaud et al., 1989; Wood et al., 1987), reduced immunity (DeWille et al., 1979), certain forms of cancer (Anti et al., 1992; Wargovich, 1992), arthritis (Kremer et al., 1989), mental problems (Hibbeln and Salem, 1995; Stevens et al., 1995), and skin problems (Wright and Burton, 1982).

In summary, it is quite deplorable to see the ease with which someone can publish such inaccurate information and slanderous opinions. Super Blue Green® Algae is extensively tested and all independent laboratory results demonstrate its safety for human consumption. It is certainly unfortunate that McPartland feels he has been bombarded by individuals attempting to share their information and the benefits they experienced by eating blue-green algae. However, it is both disturbing and scandalous that he is utilizing his doctoral degree to make slanderous claims about something unrelated to his field of expertise, and it is even more disturbing that he has been allowed to utilize the *Townsend Letter* as a bulletin board for his personal vendetta.

Sincerely,

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Director of Research and Development

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