**Origin of Cancer and Its Cure by Sulan Health Water**

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 The oncogene theory postulated an origin of cancer caused by somatic mutations of human genome, and the cures of cancer by removing or killing cancer cells. Major observations during the last few decades include 1) discovery of cancerous stem cells, 2) cancer is a metabolic disease, 3) cancer-mortality rate is correlated to nitrite in source of drinking water, 4) tumors include significant percentage of anaerobic cells, 5) some anaerobic bacteria has the anaerobic metabolism of anaerobic ammonium oxidation (anammox), 6) cancer cells are characterized by a genomic instability, 7) the origin of species through acquisition of genomes by a fusion of a prokaryote and an bacterium during a symbiogenesis at the time of Oxygen Revolution, 8) the cancer genomes are not human genomes, and they are also different from one another because of their genetic instability, 9) modern eukaryotes have genomic sequences inherited from anammox bacteria, and modern anammox bacteria have genomic sequences homologous to eukaryote sequences, indicative of inheritance from a common ancestor. A synthesis of those observations led Hsu to formulated the *Theory of Origin of Cancer* through the acquisition of the genome of an anammox bacterium by a prokaryote during an environmental crisis when the terrestrial atmosphere became oxygenated. While the prokaryote genome evolved into those of single-celled eukaryotes, of fungi, of plants, and of animals, each species is characterized by its genome, the anammox genome of the anaerobic bacterium has evolved into the cancer genomes during the last 2 billion years.

The Hsu theory explains all the 9 new observations, and contradicts the oncogene theory which is proven wrong by the genomic studies of the TCGA Project. The Hsu theory is particularly significant because its points a way to cure cancer. If cancer cells have inherited their genomes from an anammox bacterium, its anammox metabolism

 NH4+ + NO2-  = N2 + 2H2O

requires the a) presence of nitrite to render the cell anaerobic, b) a continuous supply of nitrite as a substrate of the metabolic reaction.

The link between cancer-mortality rate and the nitrite in drinking water is thus explained. Even more significant is the recognition the cancer cells could be killed if there is no nitrite in its interior. The Hsu theory explains the fact that cancer-mortality rate is reduced to half in areas of cancer epidemics when the source of drinking water is a pure clean water.

However, a half of the patients who drank the same nitrite-free water still died of cancer. This fact requires a postulate that not all nitrite that “feeds” cancer cells are exogenous; tumor growth could be sustained by endogenous nitrite. The presence of nitrate and nitrite crystals in cancer cells testify the such endogenous reactions.

Dr. Chen Tonyou of Chendu’s Military Cancer Hospital uses pure clean water from the Yangtze River at Yajian on the Tibetan border, with additives of extracts from Chinese herbs, as drinking water for the patients, and they have a survival rate of up to 95%. This clinical observation suggests that herbs may serve the function of an anti-oxidant that prevents the formation of endogenous nitrite.

 NH4+ + 2O2 = NO2-+ 2 H2O + 2H+

The Hsu Theory provides the rationale to explain the uncontrolled growth of cancer cells, and also suggests a cure by the Sulan Health Water, which is defined as a Clean Pure Water, with a Maximum Permissible Contamination Level of 002 mg/l nitrite-nitrogen, with additives.

We should recall that the judgment that cancer is not carcinogenic, by the EPA of the United States and by the WHO, is based upon the experimental results that nitrite has failed to induce mutations of human genomic sequence to cause tumor growth. Now that TCGA has discovered, after a 450 million-dollar fiasco, that cancer is not caused by somatic mutations of human genome, the judgment based upon a false premise has no scientific basis. At the same time, the statistical, experimental, and now theoretical evidences are undeniable that nitrite-pollution of sources of drinking water is the culprit of cancer. I am petitioning the PRC Government that clinical trials be carried out in China. If the results are to verify our predictions, the MPCL of nitrite-nitrogen should be placed at 0.002 mg/l as recommended by the Chinese Ministry of Health. All sales, all imports of mineral water, soft drinks, or alcoholic beverages that have nitrite exceeding the newly promulgated MPCL should be forbidden. At that time, the PRC Government could start a foreign aid to export the CUESWE to help our arrogant friends to produce pure clean water as source of potable water-supply.

**Biographical Sketch of the Speaker**

Kenneth Hsu was born in Nanjing China in 1929. He graduated from National Central University (Nanjing) with BS in Geology. He went to US for graduate studies receiving his M. A. at Ohio State in 1950 and Ph.D. in 1953. He was research associate, 1954-1963 at the Exploration and Production Research Shell Development Company, Houston, Texas. Taught at State University of New York Binghamton and University of California Riverside, before he was offered by the Swiss Federal Insitute of Technology in 1967 the chair in Experimental Geology, where he retired in 1995 as Prof. of Geological Processes.

Hsu has developed a multidisciplinary approach to solve problems. As a young man, he recognized tectonic mélanges as the shear zones when ocean plates plunges under continental plate, and this work forms a basis for the Theory of Plate Tectonics. He became active in the JOIDES Deep-Sea Drilling Project and became an geological oceanographer. He was well known for his books The *Mediterranean was a Desert* and *The Great Dying.* He wrote a popular account of *Challenger at Sea* to report the success of the Earth Science Revolution, and *Climate makes History* just before his retirement to relate the influence of climatic changes on the changing fates of the nations.

Hsu was called by Comrade Xiaoping to return China to serve the People of the Land of his Birth. He has given training course to geologists of the Ministry of Geology. He worked with colleagues at the Institute of Geology and Geophysics and re-interpreted the Geologic history of China, they published in 1999 The *Tectonic Facies Map of China*, and in 2002 *The Geologic Atlas of China*. His theory of hydrocarbon occurrences in relic-back arc basins was the theoretical basis for the discoveries of the giant gas fields in the Tarim and East Szechuan Basins.

Hsu returned to China every year after his retirement to develop innovative in the environment and energy sectors. His interpretation of Chinese finding of a link between cancer and nitrite led of to his discovery of the origin of cancer, and his finding that the Sulan Water, pure clean water with herbal additives could prevent and cure cancer. He has also invented the system of Carbon-capture utilization for Environment rehabilitation and Sustainable economic development with

Water- and Energy Recycling.

Hsu is recognized internationally for his contributions was awarded the Wollaston and Penrose Medals, the highest honors in geology. He was President of the International Asssociation of Sedimentology, Chainman of the Marine Geology Commission, Executive Member of the Scientific Commission on Ocean Research, Members of the JOIDES Executive and Planning Committees, etc. He was elected to the U.S. National Academy, the Academia Sinica, and other academies of Sciences.