Conclusion
On the one hand there is both historical and recent anecdotal evidence of successfully treating and preventing cancer in humans with traditional seaweed formulations. And there is epidemiological evidence that seaweed consumption has made a difference in lung and breast cancer rates in Japan. Plus recent research indicates a number of ways seaweed affects cancer cells in vitro and in animals. But on the other hand, no long term clinical studies have been published that verify exactly how seaweed impacts cancer in human beings. So you will have to draw your own conclusion what role sea vegetables might play as a curative, a preventative or simply a healthy whole food in your diet.

Footnotes:


2. www.nccam.nih.gov/about/advisory/capcam/minutes/2002feb.htm


11. Unpublished Data from Jane Teas, Ph.D., School of Public Health, University of South Carolina. Jane.teas@palmetto health.org
**Traditional Usage**
Throughout Asia seaweed has been used for centuries as a medicinal botanical to treat many serious conditions, including cancer. Today in this country there are also traditional uses of seaweed being applied by macrobiotic practitioners. Michio Kushi and his wife have both published books on dietary treatment of cancer in which sea vegetables play a strong role. This approach to cancer prevention and treatment have proved so successful that the Cancer Advisory Council of the NIH’s Center for Complimentary and Alternative Medicine recently initiated and funded research to verify the anecdotal evidence.

**Recent Research**
These traditional uses are also being verified in modern Asian labs and universities. For example, in 1985, Dr. Yamamoto and colleagues took a recipe from traditional Chinese medicine using a hot water extract of kelp powder and found that it inhibited cancer cell growth in rats up to 95%. Many other experiments on animals and cancer cells in vitro have come from Asia in the past decade. These present well documented evidence that certain elements in seaweed have anti-tumor, anti-mutagenic, anti-carcinogenic and apoptotic (cell self-destruction) properties.

For example, research on the sulfated polysaccharides of kelps (and other brown algae) was done in the 1990’s by the Research Institute of Glycotechnology Advancement in Japan. They isolated two active elements called F-Fucoidan and U-Fucoidan and determined that both can cause apoptosis (self destruction) in many different types of cancer cells (stomach, colon, leukemia, etc.). “Moreover the apoptosis was observed to take place without disturbing normal cells.” They also note that “the Prefecture of Okinawa, whose inhabitants enjoy some of the highest life expectancies in Japan, also happen to have one of the highest per capita consumption rates of kombu (kelp) in Japan.”

**Breast Cancer and Sea Vegetables**
This connection of low cancer rates and high seaweed consumption is central to a study published 1983 by Jane Teas, associated then with the Harvard School of Public health. She linked the low incidences of breast cancer in post menopausal Japanese women to their high intake of seaweed, particularly the Laminaria species, which include several kelps (kombu) and alaria (wakame). In her own words: “Several possible mechanisms for the influence of Laminaria on breast cancer are proposed: Laminaria is a source of nondigestible fiber, thereby increasing fecal bulk and decreasing bowel transit time; it changes the post hepatic metabolism of sterols; it contains an antibiotic substance that may influence fecal ecology; it contains 1-3 beta glucan, which alters enzymatic activity of fecal flora; and it stimulates the host mediated immune response.”

**Lung Cancer and Sea Vegetables**
More recently Jane Teas has proposed in yet to be published work that there may be a connection between lower lung cancer rates in Japanese males (who are twice as likely to be smokers as American males) and their diet, which includes about 5g of dried seaweed per day. She proposes 4 or 5 possible explanations for seaweeds’ effectiveness based on a number of published research papers:

When fucoidan (from kelp) was added to bronchopulmonary cancer cells in mice, tumor growth slowed significantly.

When fucoidan was injected into mice and monkeys, it increased the blood levels of a unique substance (SDF-1) that binds with cancer cells and allows white cells to transport them from the body.

Seaweed also increased hyaluronic acid, the intercellular solution that makes normal cells able to hold off infiltration of healthy tissue.

Seaweed was also found to decrease blood platelet stickiness. When platelets don’t stick together, cancer cells have more difficulty hiding from scavenging white cells. Seaweed was also found to keep tumor cells from sticking to cell walls of blood vessels and the lymph system.