Herbs with Anti-Lyme Potential
by James A. Duke, PhD

By what authority do I, a botanist, venture to write a short contribution for this special issue of Townsend Letter on Lyme disease? Like many (some speculate all) Americans, I have chronic Lyme disease, at least according to my Lyme Aware Medical Practitioner (LAMP), Dr. Ken Singleton, MD, and according to the battery of tests that were run. In 2000 or 2001, I had the bull’s eye erythema and took a two-week course of Doxycyclin. The arthralgic symptoms disappeared, and, like my allopathic GP, I thought I was cured. But no! In late 2005, floating myalgia and arthralgia reappeared with a vengeance. Borrelia and possible coinfections were coming back after a long quiescence. Since then I have studied two herbalists protocols, those of Stephen Buhner (2006) and David Winston (2006); their protocols are rigorous and, to me, rather frightening. Both suggest at least nine months of antibiotics and, between them, more than 70 herbs to fight the disease or at least alleviate the symptoms. So, during the last two years, my 76th and 77th, I took more antibiotics and more herbs than I ever took in my relatively long life. I don’t know that I am any better. But I am not any worse! Is it the three months of antibiotics? The 12 months of herbs? Or both? Or chance? I don’t really know.

Now, in the beginning of 2007, I am focusing on certain herbal remedies, a few of those many herbs mentioned by Buhner and Winston, and allicin (from garlic; allicin is reportedly in double-blind studies for Lyme at present). I may bypass the pharmaceutical antibiotics this year. I think of the Biblical garlic as the best of herbal “antibiotics.”

Allicin

Allicin, one of the most active antiseptics in garlic is now being investigated in a double-blind study on Lyme (hard to know how one could double-blind, as the allicin is a pretty powerful aromatic). I eagerly await the conclusion of this trial. I am embarked on my own personal trials with allicin this year, hoping it will do better by me than the many other antibiotics and herbs I tried last year.

Temporarily out of my standardized garlic preparation, I have resorted to “food farmacy” to get my daily dose of allicin. Conventional herbalists suggest a dose of one clove garlic a day for many septic situations. I’m trying to get at least the equivalent of two cloves per day. In The Green Pharmacy (Rodale, 1997), I mention that one easy way to do this is to blend one clove with half an onion (which also contains some allicin), a small carrot, and a stick of celery (or proportionate multiples of each). This keeps well in the blender in the refrigerator. Then add other raw veggies, e.g., green pepper, parsley, tomato, what have you, to taste. You’ll have the garlic smell and taste about you, but many Americans can cope with this dosage. It is doable. Some say that green tea will reduce the garlic breath. Mrs. Duke has not yet agreed to this optimistic suggestion.

Since I am working on a new “food farmacy” contract with Rodale Press, and since I am out of my standardized allicin product, recently I resorted to the following:

**Lyme Lunch** (And Mrs. Duke almost passed out when she passed me after luncheon experiment # 1; I hope the Borrelia is just as appalled as Mrs. Duke, even to the point of avoiding me.)

**Garlic Doggone:** On one slice nine-grain bread, slather one side with mustard, the other side with ketchup. Sprinkle on Tabasco or cayenne to taste; another slather of diced raw onion; one thin sliced garlic clove; cover with coleslaw loaded with celeryseed. Forget the hotdog; fold over, and toast no more than a minute. (Total one clove of garlic, finely diced; very good; I’ll enjoy this one more often.)
Super Slaw Soup: This is my saffron slaw soup recipe, minus the saffron (with Biblical cumin, curry, mustard, turmeric, one whole diced onion, two tablespoons pickled diced garlic, and a handful of frozen nettle leaves, plus some non-Biblicals: one half cabbage shredded, diced bell pepper, two stalks celery, celery seed, and fresh ground black pepper (to facilitate update of curcumin and others of the many COX-2-s in this spicy soup). I add three whole garlic cloves only for the last ten minutes of simmering. Dr Larry Lawson provided me with info to make me think that three cloves (boiled ten minutes) should have the allicin activity of one raw clove. The slaw soup is a little spicy, but on a day with a wind chill of 0°F, I sip my hot and hot slaw soup as I type, hoping and the allicin gets the message through to my Borrelia. (Equivalent to about two to three cloves raw garlic, but good.)

GON Potiikker; (Garlic/Onion/Nettle) Cook up a mess (one to two cups) of diced Biblical stinging nettles, adding one-half Biblical onion and three cloves diced Biblical garlic in the last five to ten minutes of simmering. (Drink the potiikker, equivalent to almost one clove raw garlic.) Freeze the greens or have them for supper with diced raw onion and garlic and vinegar with hot peppers. (Use according to your capacity to handle more garlic. I have a tough gut that can handle this. Many people do not.)

Chamomile-Oregano Tea (Better Beverage Sources of COX-2-Inhibitor Apigenin) (No Garlic)

So, except for the Chamomile-Oregano chaser, those are simple “food farmacy” recipes that can give you good doses of allicin (and dyspepsia too). As of now, I am not sure that allicin or garlic will curb Borrelia or spirochetes in general, but I’m predicting that garlic and/or allicin will prove competitive with synthetic anti-Lyme compounds. And I think many of us would rather take the Biblical garlic than some new pharmaceutical, unknown to our genes.

At the Fourth Annual Natural Supplements Symposium (San Diego, Jan 19-21, 2007), after a careful weekend of listening, I came out with the rather startling conclusion. I now believe the evidence base (including centuries or millennia of folklore) for herbal medicine is as good as the evidence base for pharmaceuticals. Remember how many “evidence-based” pharmaceutical recommendations have flip-flopped in the last decade genetically familiar compounds it needs, and, yes, for excluding genetically familiar chemicals it does not need. So when you offer your body a wholesome food, herb, or spice, you offer a menu of thousands of phytochemicals, many genetically familiar and many of which can homeodynamically help your body back to your homodynamic norm. Identified as a chronic Lyme patient, I believe that chronic Lyme sufferers need a

I am bold enough to speculate that your genes have known many of these phytochemicals for thousands of years (for the faith-based) and millions of years (for the evolutionarily inclined). and how reliably we can predict that, over the next decade, half of the newly FDA-approved “evidence-based” pharmaceuticals will have to be recalled permanently, or relabeled, in spite of the average $1.7 billion dollar study required to prove each “safe and efficacious.” I suppose the most costly flip-flop to mankind was the HRT flip-flop, costing thousands of individual cancer deaths and the unknown financial and emotional expense for patients and their families, while netting the pharmaceutical industry billions of dollars.

I introduce here one new line of evidence, in this case, for herbs and Lyme disease. It is not strong evidence, not necessarily proving that the herbs are efficacious for Lyme Disease, but enumerating, for some of the more promising herbs, some of the phytochemicals that might contribute to the alleviation or correction of Lyme Disease. I call this line of evidence the Multiple Activity Menu (MAM). I am bold enough to speculate that your genes have known many of these phytochemicals for thousands of years (for the faith-based) and millions of years (for the evolutionarily inclined). Having coevolved with these chemicals, your gene-directed body has evolved homeodynamic (homeostatic to old folks like me) processes for grabbing (sequestering for the erudite) lot of help. I believe that many, not necessarily all, the phytochemicals listed below may help bring the Lyme patients back to norm, something they desperately seek. I do not say cure; I say, alleviate.

Readers wishing to run the MAM query can do so for more than one hundred of the most important diseases for the more promising remedial herbs of some 3000 herbal species in the database. Visit the MAM website at http://www.ars-gnn.gov/duke/dev/all.html. You too can run queries similar to those answered below. Or you can run more complex queries. In the following, the ubiquitous vitamins and minerals were excluded. So were the sources of the data omitted. So were the quantitative data available for many of the chemicals. You can download these as well. What I present below are the barebone - Internet Technology (IT) people call them “stripped” - MAMs.

Caveats: Clearly those plants that have been best studied phytochemically and faithfully recorded in this database will automatically score higher than those that have not been so intensively investigated phytochemically. We are developing a ratio: (anti-Lyme phytochemicals/ total phytochemicals listed for the species)
to level the playing field for comparing species. In that future utopian world, when all the important medicinal phytochemicals have been analyzed for all species, a Gatesian computer program might query the database: which of the 250,000 species of higher green plants is best for Individual Genotype X with disease(s) Y (and Z)? I firmly believe the polychemical approach tailored to the genome will prove far superior to the monochemical approach tailored to the average individual, if there is any such average individual.

James A. Duke, PhD, is an economic and phytochemical botanist who works around the world aggregating and disseminating the empirical knowledge of ethnobotanical medicines. As a lead scientist at the United States Department of Agriculture (USDA) for 30 years, he worked closely on the screening of plants for anticancer activity with the National Cancer Institute and created a public database (http://www.ars-grin.gov/duke), which remains one of the USDA's largest web draws. He is the author of hundreds of scientific and popular books and is an active lecturer and teacher and occasionally appears on television.

References

Some Multiple Activity Menus

MAM: Garlic (Allium sativum) and Lyme
Source: http://www.ars-grin.gov/duke/dev/all.html
Analgesic: adenosine; allithiamin; caffeic-acid; chlorogenic-acid; ferulic-acid; quercetin; salicylic-acid
Anesthetic: linalool
Anti-arthritis: quercetin; salicylic-acid
Antibacterial: ajone; allicin; allin; allistatin-i; allistatin-ii; alpha-phenillandrene; apigenin; caffeic-acid; chlorogenic-acid; citral; diallyl-disulfide; diallyl-sulfide; diallyl-tetrasulfide; diallyl-trisulfide; endolysin; ferulic-acid; geraniol; kaempferol; lignon; linalool; muramidase; myricetin; oleanolic-acid; p-coumaric-acid; p-hydroxy-benzoxic-acid; quercetin; rutin; salicylic-acid; sinapic-acid; vanillic-acid
Anti-inflammatory: ajone; allicin; alpha-linolenic-acid; apigenin; caffeic-acid; chlorogenic-acid; ferulic-acid; kaempferol; linalool; myricetin; oleanolic-acid; quercetin; quercetin-3-o-beta-d-glucoside; rutin; salicylates; salicylic-acid; vanillic-acid
Anti-nociceptive: quercetin; rutin
Antiseptic: 2-propene-1-sulfinothiocic-acids-2-propenyl-ester; ajone; allicin; allicin-1-propenyl-thiosulfinate; caffeic-acid; chlorogenic-acid; citral; diallyl-sulfide; diallyl-tetrasulfide; diallyl-trisulfide; geraniol; kaempferol; linalool; myricetin; oleanolic-acid; p-coumaric-acid; phloroglucinol; salicylic-acid; trigonelhne; vanillic-acid
Anti-stress: apigenin
COX-2-Inhibitor: ajone; apigenin; caffeic-acid; kaempferol; oleanolic-acid; quercetin; salicylic-acid
Collagen-Sparing: caffeic-acid; chlorogenic-acid
Cyclooxygenase-Inhibitor: ajone; allicin; apigenin; kaempferol; oleanolic-acid; quercetin; salicylic-acid
Immuno-stimulant: allicin; allin; alpha-linolenic-acid; caffeic-acid; chlorogenic-acid; diallyl-disulfide; ferulic-acid; inulin; s-allyl-cysteine
Neuroprotective: kaempferol; quercetin
MAM: Stinging Nettle (Urtica dioica) and Lyme
Analgesic: adenosine; aesculatin; caffeic-acid; chlorogenic-acid; coumarin; ferulic-acid; gallic-acid; quercetin; scopoletin; serotonin; ursolic-acid
Anesthetic: cinnamic-acid; coumarin; scopoletin
Anti-arthritis: glucosamine; quercetin; ursolic-acid
Antibacterial: acetic-acid; acetophenone; aesculatin; caffeic-acid; chlorogenic-acid; cinnamic-acid; caffeic-acid; chlorogenic-acid; citral; ferulic-acid; gallic-acid; isouquerctrin; isoformanetin; kaempferol; malic-acid; oleanolic-acid; p-coumaric-acid; quercetin; rutin; scopoletin; sinapic-acid; tannic-acid; ursolic-acid; vanillic-acid
Anti-inflammatory: aesculatin; caffeic-acid; chlorogenic-acid; cinnamic-acid; coumarin; ferulic-acid; gallic-acid; isouquerctrin; isoformanetin; kaempferol; oleanolic-acid; quercetin; rutin; scopoletin; ursolic-acid; vanillic-acid
Anti-nociceptive: isoquerctrin; quercetin; rutin
Antiseptic: aesclutcin; caffeic-acid; chlorogenic-acid; citral; formic-acid; gallic-acid; kaempferol; malic-acid; oleanolic-acid; oxalic-acid; p-coumaric-acid; scopoletin; tannic-acid; vanillic-acid
Anti-stress: gaba
COX-2-Inhibitor: caffeic-acid; kaempferol; oleanolic-acid; quercetin; ursolic-acid
MAM: Sweet Annie (Artemisia annua) for Lyme
Source: http://www.ars-grin.gov/duke/dev/ali.html

MAM: Dragon’s Blood (Croton lechleri) and Lyme

MAM: Cat’s Claw (Uncaria tomentosa) and Lyme

MAM: Hu Xiang (Failopia japonica) and Lyme