

**Q:** I've been following the mad cow disease epidemic, and I'm really concerned. I'd like to know what steps **AOR** is taking to protect my health against this threat.

**A:** You're right to be concerned about **Bovine Spongiform Encephalopathy (BSE, or "mad cow disease")** and what most scientists believe to be its human form, **new variant Creutzfeldt-Jacob disease (nvCJD)**. Canada has not had any reported cases of BSE in our cattle, and while the Canadian Food Inspection Agency (CFIA) has taken many steps to reduce the risk of a BSE outbreak in this country, the government has not gone far enough to protect the health of Canadians.

We at **AOR** are taking the BSE threat very seriously. Fortunately, in formulating products with bovine ingredients, we have *always* had policies in place to ensure that our materials come from safe sources. Originally, these guidelines were designed to protect our customers from other, non-BSE threats found in commercial livestock, such as **pesticide residues, recombinant bovine growth hormone (rBGH/rBSA), and routine antibiotics**, but the same sourcing policies have also been tailor-made to ensure that our customers are safe from "mad cow," too.

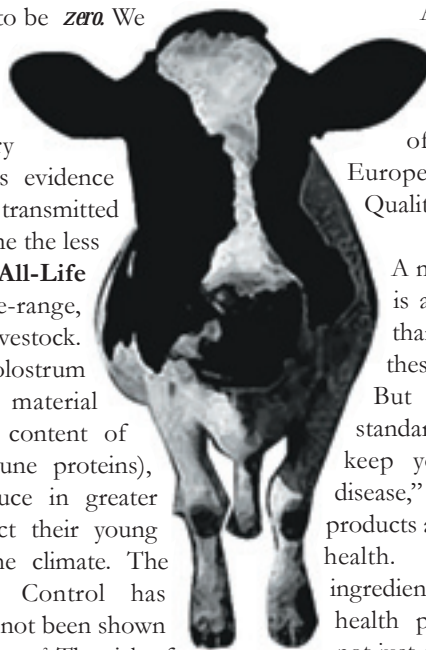
Thus, the glandular material in **T-100X, TG-100, and Adrenal** is sourced entirely from free-range, pasture-fed New Zealand livestock. As you may know, BSE is transmitted by a pathogen known as a **prion**. Animals "catch" prions from other animals by eating prion-infected tissue. Therefore, **animals which do not eat other animals cannot "catch" BSE**. This makes pasture-fed animals completely safe. Likewise, the livestock from which the ossein **microcrystalline hydroxyapatite (MCHA) complex** for **Calcium-Magnesium Plus** is derived comes from free-range, pasture-fed herds – in this case, from Australia. Australia and New Zealand are two of only thirteen countries in the world considered to be at virtually no risk

of a BSE outbreak by the European Commission in their latest report (April 2001).<sup>1</sup> Between the country of origin and the way the livestock is raised, the risk of contracting BSE from these materials can confidently be declared to be **zero**. We absolutely guarantee it.

**All-Life Colostrum** is, of course, a dairy product. While there is evidence that BSE can't even be transmitted through milk,<sup>2</sup> **AOR** none the less has always sourced **All-Life Colostrum** from free-range, pasture-fed, American livestock. We prefer American colostrum over New Zealand material because of its higher content of immunoglobulins (immune proteins), which the cattle produce in greater concentration to protect their young from the more extreme climate. The Centers for Disease Control has concluded that BSE has not been shown to exist in the United States.<sup>3</sup> The risk of BSE from this material is thus the same as the risk from US-sourced, free-range, pasture-fed milk products – which is to say, **there is no risk**, because (as we mentioned) BSE and other prion diseases are transmitted from one animal to another through the consumption of infected material – an event which cannot happen in pasture-fed animals.

Our capsules are mostly either already vegetarian, or are being converted to vegetarian material. The exceptions will be the capsules on products which contain other animal products, as the **whole** product cannot be made vegetarian. For actual **gelatin** capsules, we are using material sourced from countries designated to be in the European Commission's **Geographical Risk of Bovine Spongiform Encephalopathy (GBR)** lowest risk categories;<sup>4</sup> beyond this, we are not sourcing gelatin derived from cattle from *any* European nation, and are using suppliers which have not done so since at least 1998. As a result, **AOR's** gelatin sourcing meets guidelines, regulations, and expert panel decisions

established by the European Commission, the US FDA,<sup>5</sup> the Japanese Ministry of Health and Welfare.<sup>6</sup> These, in turn, are based on the painstaking scrutiny of worldwide BSE conditions by the World Animal Health Organisation (OIE). All manufacturers of gelatins used by **AOR** have received "Certificates of Suitability" from the European Directorate for the Quality of Medicines (EDQM).



A meat-centered diet, of course, is a much greater risk for BSE than any supplement involving these kinds of animal materials. But we at **AOR** have set standards for ourselves designed to keep you safe from "mad cow disease," as from other threats. Our products are designed to optimize your health. When we choose our ingredients, we're looking at the **whole** health picture: emerging concerns, not just classic quality issues like herb standardization or "basic" contaminants like heavy metals. It's just one more part of how we earn your trust anew, every day.

**Q:** Many **AOR** product labels specify that their purity is "assured by HPLC." I'm not familiar with this organization. Can you explain to me who they are, and what they do?

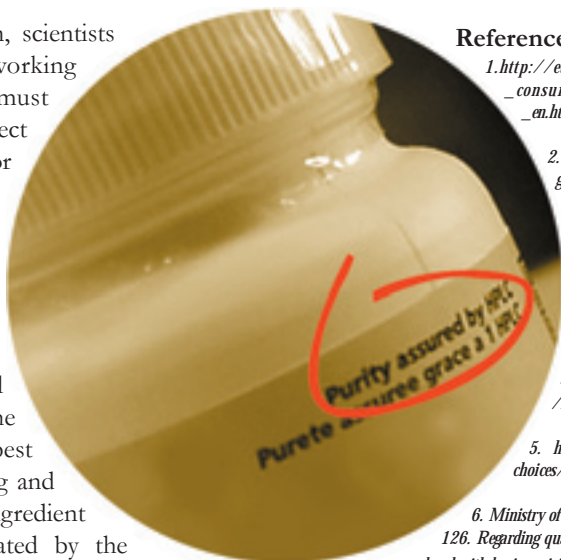
**A:** HPLC actually isn't an *organization*, but a *technology*. HPLC stands for **High Performance Liquid Chromatography**. It's a method used to test for the presence and amount of many substances in nutritional supplements. HPLC analysis can be used to ensure that an herbal supplement contains the right concentration of many key active components or "marker" phytochemicals, such as the **Ginkgoflavoneglycosides** in **Ginkgo biloba**, or the **sitoinosides** in **Ashwagandha (Withania somnifera)**. HPLC can also be used to make sure that the material is free of toxic components,

ranging from pesticides and solvents to *natural* toxins such as the **ginkgolic acid** in *Ginkgo*, or **methyleugenol** in cinnamon.

The principle behind HPLC is simple. You take the material that you want to test, dissolve it thoroughly, and then expose the dissolved material to a “filter” which will only collect the substance about which you want information. Then, you remove the material caught on the “filter” by immersing it in a fresh dissolving material. At that point, you’ll have extracted as much of the important component from your raw material as was present in the original sample – and you *won’t* have anything else. That allows you to tell exactly how much of the particular ingredient was present to begin with.

This sounds like a simple process, but it’s actually a very complex science, especially since one plant can contain a variety of closely-related compounds. Sophisticated methods are required in some cases to make sure that you really are measuring just the *specific* ingredient that you’re looking for, and not one of its close chemical cousins. At the same time, it’s often very useful to know how much of those other components are there, so that you can be sure that you have a genuine, full-spectrum herbal extract, and not one that has been “spiked” with a synthetic version of a single, isolated ingredient to create the illusion of a potent extract. You want to know, for instance, that your **Guggul** extract is rich in the key marker molecules **guggulsterones E and Z** – but you also want to be sure that the other key “fingerprint” molecules are present in the pill.

To get it right, then, scientists and technicians working with HPLC must determine the correct “filter” to screen for the desired (or undesired!) ingredient. They must also determine the correct substance or substances to dissolve the material at every step in the process, and the best method for detecting and measuring the key ingredient once it’s been isolated by the “filter” and then returned into a



solution. Control of the temperature at which the “screening” process takes place, and the amount of time for which it is allowed to run, are also necessary to get accurate and consistent results.

When you’re done, the equipment will graph the collected information on a **chromatogram**. Each in a string of chemically similar compounds can form different “peaks” on the computer printout, which can then be identified and quantified from known standards.

Though it’s done routinely, HPLC is sophisticated science, and it doesn’t come for free. Many companies choose to just accept the claims printed on their raw material suppliers’ certificates of analysis (“**C of As**”) at face value. This can be a major mistake, because unscrupulous or incompetent suppliers may run the tests improperly, or simply *make up* “results” for their import documentation.

**AOR** recently came across a truly extreme example of this. One company offered to sell **AOR** a green tea extract at a very favorable price, and provided a very credible-looking C of A claiming that it contained 45% EgCG (**epigallocatechin gallate**, which is believed to be the most important antioxidant in green tea). An independent lab analysis proved its EgCG content to be just 6%!

By having our suppliers’ materials tested at our end, **AOR** can ensure that what’s on the label is in the bottle. We insist on certainty when it comes to the quality, purity, and potency of our products – so we insist on third-party HPLC lab testing.

#### References

1. [http://europa.eu.int/comm/dgs/health\\_consumer/library/press/press123\\_en.html](http://europa.eu.int/comm/dgs/health_consumer/library/press/press123_en.html)
2. Bradley R. *The research programme on transmissible spongiform encephalopathies in Britain with special reference to bovine spongiform encephalopathy*. Dev Biol Stand. 1993;80:157-70.
3. [http://www.cdc.gov/ncidod/diseases/cjd/bse\\_cjd\\_qa.htm](http://www.cdc.gov/ncidod/diseases/cjd/bse_cjd_qa.htm)
4. [http://europa.eu.int/comm/food/fs/sc/ssc/outcome\\_en.html](http://europa.eu.int/comm/food/fs/sc/ssc/outcome_en.html)
5. <http://www.fda.gov/opacom/morechoices/industry/guidance/gelguide.htm>
6. Ministry of Health and Welfare. Notification 126. *Regarding quality and safety on drugs which are produced with bovine originated raw material*. 2000-12-12.

**We want to hear from you!**

Send your question to:

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Don’t forget to include your name and location.

