DEPARTMENT OF HEALTH & HUMAN SERVICES

Food and Drug Administration
Silver Spring, MD 20993

AUG 10 2012

The Honorable Richard J. Durbin
United States Senate
Washington, D.C. 20510-1304

Dear Senator Durbin:

Thank you for your letter of April 3, 2012 in which you express your concern about potential safety issues associated with the consumption of so-called "energy drinks." You also requested that the Food and Drug Administration (FDA or the Agency) take certain actions in response to these issues.

As background, we note that the term "energy drinks" is not defined by statute or regulation. The Agency understands "energy drinks" to mean a class of products in liquid form that typically contains caffeine, with or without other added ingredients. Some products of this type are marketed as beverages (such as cola-type beverages), which are regulated as conventional foods, and others are marketed as liquid dietary supplements.

Within definitional limits set by the Federal Food, Drug, and Cosmetic Act (FD&C Act), the manufacturer of a product in liquid form may choose whether or not to label a product as a conventional food with a Nutrition Facts panel or as a liquid dietary supplement with a Supplements Facts panel. In the course of evaluating individual products on a case-by-case basis, FDA may challenge a company's decision to label the product as one or the other. For example, in 2010, FDA issued a Warning Letter to the manufacturer of a beverage known as "Drank" that was marketed as a dietary supplement.[1] The Agency determined that the product was a conventional food, and the Warning Letter stated that "Drank" was adulterated because it contained an unapproved food additive, melatonin. The Agency's review of this matter is ongoing.

FDA's December 2009 "Draft Guidance for Industry on Distinguishing Liquid Dietary Supplements from Beverages, Considerations Regarding Novel Ingredients, and Labeling for Beverages and Other Conventional Foods" (the Drinks Draft Guidance) discusses the factors that firms should consider when determining whether or not a product in liquid form is properly characterized as a dietary supplement or as a conventional food. The Agency is in the process of preparing a final guidance on this topic with the expectation that it will help both FDA and industry distinguish between beverages, on the one hand, and liquid dietary supplements, on the other.

[1] *http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/ucm201435.htm*

Any substance intentionally added to a conventional food must be used in accordance with a food additive regulation authorizing the substance for such use, unless the substance is generally recognized as safe (GRAS) among qualified experts for its use in the food, or the substance is otherwise exempt from the food additive definition. In evaluating the safety of substances added to food, FDA considers how much of the ingredient is consumed by people in the United States from all sources, and whether or not the available safety information supports such consumption.

FDA's GRAS regulation for caffeine (21 CFR 182.1180) applies specifically to cola-type beverages. This regulation is based on a prior sanction for the then-customary uses of cola nut extracts in cola-type beverages. Over the years, the Agency has not challenged the use of caffeine in other beverages at levels comparable to the prior-sanctioned use level of 200 ppm. Although the regulation is an affirmative statement that the specified level of caffeine in cola-type beverages is GRAS, it does not automatically preclude other uses of caffeine from being considered GRAS, nor does it automatically give GRAS status to other uses. A manufacturer that has made a determination that a food ingredient is GRAS for its intended use(s) may market that ingredient without informing FDA. The Agency, however, may challenge such a determination.

There are a wide range of caffeine levels in energy drinks. The November 22, 2011, Drug Abuse Warning Network report by the Substance Abuse and Mental Health Services Administration (SAMHSA) cited levels ranging from 160 to 500 milligrams (mg) per serving. This compares with other beverages containing caffeine at the following levels:[2]

- brewed coffee: 135 mg per 8 ounce (oz) serving,
- coffeehouse brewed coffee: 330 mg per 16 oz serving,
- soda pop: 35 mg per 12 oz serving.

Regarding the November 2011 report, we are following up with SAMHSA regarding their source data to better assess whether any of the incidents cited in the report involved products marketed as dietary supplements and, if so, whether there were adverse event reports sent to the FDA on those incidents. We can then determine where gaps in our system may exist and how we can fill them in to best protect the public health. We will also have our medical officers review the individual reports that we are able to obtain from SAMHSA.

In response to the emergence of energy drinks as a new class of caffeinated products, FDA completed an updated assessment of the amount of caffeine that people in the United States ingest from all sources. The results show that, even when the consumption of energy drinks is considered, most of the caffeine consumed comes from what is naturally present in coffee and tea. For healthy adults, caffeine intake up to 400 mg per

[2] These are approximate numbers offered only for the purpose of informing this discussion. Caffeine content can vary widely depending on the particular soft drink, and in the case of brewed coffee, depending on the beans, roasting and brewing conditions.

day (mg/d) is not associated with general toxicity, cardiovascular effects, effects on bone status and calcium balance (with consumption of adequate calcium), changes in adult behavior, incidence of cancer, or effects on male fertility. FDA recognizes, however, that some individuals may consume extraordinary amounts of caffeine as compared to those consumed by the majority of consumers in the United States.

FDA monitors the products it regulates, including "energy drinks," by examining current scientific data, monitoring new ingredients added to products, and investigating reports of adverse events. When violations of the FD&C Act and FDA regulations are found, the Agency will pursue regulatory action, as appropriate.

In addition, FDA is conducting a review of recently published safety studies on caffeine. Although this project to identify safety studies on caffeine is still underway, the available studies do not indicate any new, previously unknown risks associated with caffeine consumption. FDA's safety evaluations are based on current scientific knowledge and do not preclude the Agency from changing its regulations if new safety information becomes available.

As your letter noted, the regulatory framework for liquid dietary supplements is somewhat different than for beverages. Under the FD&C Act, a dietary ingredient (such as caffeine or guarana) intended for use in a dietary supplement does not require premarket approval and is not required to be GRAS. To restrict the use of a dietary ingredient in a dietary supplement, FDA must demonstrate that the ingredient adulterates the product under the dietary supplement adulteration provisions of the FD&C Act; e.g., because the ingredient presents an unreasonable risk of illness or injury under the conditions of use recommended in the labeling of the supplement (see 21 *United States Code* (U.S.C.) 342(f)(1)(A)).

For dietary supplements, the Agency reviews adverse event reports that are submitted in accordance with the requirements in the Dietary Supplement and Nonprescription Drug Consumer Protection Act, and follows up as appropriate. Additionally, as FDA becomes aware of manufacturers, distributors, bottlers, and suppliers of liquid dietary supplements using new dietary ingredients in their products without a required premarket notification, the Agency will use the authority provided under section 413(a)(2) of the FD&C Act (21 U.S.C. 350b(a)(2)) to take regulatory action.

In your letter, you also urged FDA to clarify the definition of conventional foods, so that the distinction between dietary supplements and conventional foods will be less uncertain. In our view, a major reason for the confusion between product categories is the statutory language that distinguishes a dietary supplement from a conventional food. The Dietary Supplement Health and Education Act of 1994 (DSHEA) defined "dietary supplement," in relevant part, as a product that is "not represented as a conventional food," striking earlier statutory language that classified products based on whether they "simulated" conventional food. Because of this statutory change, FDA now generally must consider multiple factors to determine whether or not a product is "represented" as a conventional food. This is a more difficult standard for FDA to meet, as it necessitates a

complex evaluation of the different ways in which a product can be "represented" as a conventional food in labeling, advertising, or by other means such as packaging and product placement.

As discussed above, we expect that the Drinks Draft Guidance, once finalized, will help both FDA and industry draw a line between beverages and liquid dietary supplements. If this expectation is realized, we will consider issuing guidance on the demarcation between other types of conventional foods and dietary supplements.

You also asked that FDA investigate energy drinks that are marketed as dietary supplements to ensure that they are not in fact conventional foods and to investigate the caffeine levels in the same products. FDA has taken action on conventional foods that are unlawfully marketed as dietary supplements. In addition to the Drank Warning Letter described above, on May 23, 2012, FDA issued a Warning Letter to Rockstar, Inc.,[3] stating, among other things, that the firm's Rockstar Roasted Coffee and Energy products were represented as conventional foods and, accordingly, were not dietary supplements as defined under section 201(ff) of the FD&C Act (21 U.S.C. 321(ff)). The letter further stated that use of the term "energy supplement" on the product labels and use of a "Supplement Facts" panel for nutrition labeling did not make the products dietary supplements, because the products were represented for use as conventional foods in their labeling, packaging, and appearance. FDA evaluates products such as these to ensure that the ingredients comply with the food additive provisions of the FD&C Act.

Finally, you requested that FDA consider the safety of the use of taurine, guarana and ginseng in energy drinks, particularly in combination with caffeine, and that the Agency require manufacturers to provide evidence of the safety of these ingredients. Although FDA has not conducted a formal assessment of the safety of the use of taurine or guarana in energy drinks, we discuss the safety information we have on these ingredients below.

Taurine is an amino acid normally present in foods derived from fish and meat, and it is also produced in the human body. The European Commission (EC) assessed the use of taurine in energy drinks and, due to limited information, they were "unable to conclude that the safety-in-use of taurine in the concentration range reported for taurine in 'energy' drinks has been adequately established." The EC also concluded that "[f]urther studies would be required to establish an upper safe level for daily intake of taurine."[4] FDA has not approved taurine as a food additive for use in conventional foods. However, the Flavor and Extract Manufacturers Association of the United States (FEMA) considers it to be GRAS for flavor use.

Guarana extract is derived from the plant *Paullinia cupana*. Its seeds contain caffeine as a natural component. Guarana seeds are 2 to 4.5% caffeine by weight, in contrast to coffee beans, which are 1 to 2.5% caffeine by weight. With respect to conventional foods, guarana is an approved food additive for flavor use as specified in the FDA's

---

[3] *http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/2012/ucm309080.htm*
[4] *http://ec.europa.eu/food/fs/sc/scf/out22_en.html*

regulation on natural flavoring agents and adjuvants (21 CFR 172.510); this regulation does not provide for non-flavor uses.

When either taurine or guarana is used as a flavor, it is typically used at very low levels and in accordance with current Good Manufacturing Practices (cGMP). FDA is not aware of any GRAS determinations by FEMA or other entities for non-flavor uses of taurine or guarana. With respect to their use in dietary supplements, taurine and guarana would likely not be considered new dietary ingredients due to their probable use as dietary ingredients prior to 1994.

[redacted]

Thank you, again, for contacting us concerning this matter. If you have any further questions or concerns, please let us know.

Sincerely,

Jeanne Ireland
Assistant Commissioner
for Legislation