



Matt Mullin

Licorice Root Lollipop Shows Sweet Promise in Reducing Tooth Decay

BY DEBRA BELT

UCLA researchers hope they have created a tooth-friendly candy in a new sugar-free, orange-flavored lollipop containing an extract of licorice root that has shown promise in targeting and killing *Streptococcus mutans*, the primary bacteria responsible for tooth decay.

First reported in 2006, microbiologist Wenyuan Shi, PhD, chair of the Oral Biology Department at UCLA, discovered that compounds from the Chinese herb, *Glycyrrhiza uralensis*, commonly referred to as licorice root, contains active antimicrobial compounds. This ingredient is now infused and available in a bacteria-killing lollipop.

The licorice root extract in this lollipop can effectively kill *S. mutans*, a common bacterium that could release harmful cavity-causing acids. Only 15 milligrams of licorice powder per lollipop eliminates 99.9 percent of this bacteria in the mouth within five to 10 minutes, Shi told the

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The Natural Dentist Announces Anticavity Fluoride Rinse

→ The Natural Dentist Healthy Teeth and Gums Anticavity Fluoride Rinse strengthens tooth enamel to help minimize the risk of cavities. It is all natural, with no alcohol, artificial sweeteners, dyes, or preservatives. It soothes and protects gums, and preserves mouth moisture with aloe vera gel and glycerin. It kills bad breath germs with xylitol and grapefruit seed extract. It has a minty flavor, with



cool menthol freshening, but none of the "burn" or staining of other brands. It will be available at leading retail locations. For more information, go to www.thenaturaldentist.com.

A Red Flag in Going Green

"Green" products are environmentally friendly when used as designed; however, disposing of them can be tricky.

In a Jan. 24 *Wall Street Journal* article by Sara Schaefer Muñoz, the author addressed how people are coping with the need to throw away many products, including "green" products like fluorescent light bulbs, that may pose potential problems in the landfill. According to Muñoz, many retailers, including Best Buy, Home Depot, and Ace Hardware, are embracing a new role as recycling facilitators.

The article also highlighted the problem of mercury in fluorescent light bulbs. By themselves, the bulbs pose little potential hazard, but one environmental expert voiced concern over the impact millions of these bulbs may have being dumped in landfills or incinerated.

To find ways to recycle old bulbs, go to www.earthg11.org, and www.epa.gov/bulbrecycling.



Honors

Thomas Schiff, DMD, recently retired from the University of the Pacific Arthur A. Dugoni School of Dentistry, has received a fellowship from the American Academy of Oral and Maxillofacial Radiology. Schiff was recognized for the "noteworthy excellence as described in the Academy By-Laws." Additionally, he was appointed as the department chairperson of the Scottsdale Dental Center under the deanship of Gordon Christiansen.



Thomas Schiff, DMD

UPCOMING MEETINGS

2008

May 1-4	CDA Spring Scientific Session, Anaheim, 800-CDA-SMILE (232-7645), cda.org .
May 2-3	Evidence-based Dentistry Champion Conference, ADA headquarters, Chicago, ada.org/goto/ebdconf .
May 4	International Conference on Evidence-based Dentistry, ADA headquarters, Chicago, ada.org/goto/ebdconf .
May 6-9	Conference for Oral Health in the Americas, Lima, Peru, http://www.fdiworldental.org/public_health/3_1conferences.html .
July 16-20	56th Annual Meeting and Exhibits, Academy of General Dentistry, www.agd2008orlando.org .
Sept. 12-14	CDA Fall Scientific Session, San Francisco, 800-CDA-SMILE (232-7645), cda.org .
Sept. 24-27	FDI Annual World Dental Congress, Stockholm, congress@fdiworldental.org .
Oct. 16-19	American Dental Association 149th Annual Session, San Antonio, Texas, ada.org .
Oct. 25-29	American Public Health Association Oral Health Section's annual meeting and exposition, San Diego, www.apha.org/meetings .

2009

May 14-17	CDA Spring Scientific Session, Anaheim, 800-CDA-SMILE (232-7645), cda.org .
Sept. 11-13	CDA Fall Scientific Session, San Francisco, 800-CDA-SMILE (232-7645), cda.org .
Oct. 1-4	American Dental Association 150th Annual Session, Honolulu, Hawaii, ada.org .

To have an event included on this list of nonprofit association continuing education meetings, please send the information to Upcoming Meetings, CDA Journal, 1201 K St., 16th Floor, Sacramento, CA 95814 or fax the information to 916-554-5962.

Lasers Aid in Eliminating Bacteria in Root Canals

High-tech dental lasers used mainly to prepare cavities for restoration now can help eliminate bacteria in root canals, according to research published in the *Journal of the American Dental Association*.

Researchers in Austria credit the development of miniaturized, flexible fiber tips for allowing the laser to be used in endodontic treatment.

Ulrich Schoop, MD, and a team of researchers in the dental school at the University of Vienna used 60 extracted human teeth with one root each to test the effects of laser irradiation on root canals using an erbium, chromium:yttrium-scandium-gallium-garnet (Er,Cr:YSGG)

laser. He and his colleagues inoculated the root canals with one of two types of bacteria (*Enterococcus faecalis* and *Escherichia coli*) and then irradiated the canals using either a 1- or 1.5-watt power setting.

The team found that the laser reduced the amount of *E. coli* at the lower power setting and reduced it to below the detection level at the higher setting. It also was effective in eliminating *E. faecalis*.

Researchers also found that the laser removed the smear layer and debris from the root canal walls, and that the temperature rise during irradiation was within safe borders.

The authors concluded that the Er,Cr:YSGG laser may be suitable for cleaning and disinfecting root canals,

and that it can be used safely if the common precautions for using lasers are observed and the energy levels and irradiation times are within the proposed range. They also suggested that clinical studies are needed to confirm their laboratory findings.

In a related article published in *JADA*, Roy H. Stevens, DDS, MS, and colleagues at the Kornberg School of Dentistry, Temple University, described their study of an Er,Cr:YSGG laser with a new tip that emits radiation radially. Stevens' team examined the efficiency of this new laser tip in disinfecting root canal dentin walls infected with *E. faecalis*. They found that it significantly reduced the amount of *E. faecalis* in contaminated root canals.

Dairy Products May be Moovelous for Healthy Gums

A recent study published in the *Journal of Periodontology* indicated that routine intake of dairy products may also help promote periodontal health. The study analyzed the periodontal health of 942 individuals and determined those who regularly consumed dairy products such as milk, cheese, and yogurt had a lower instance of gum disease.

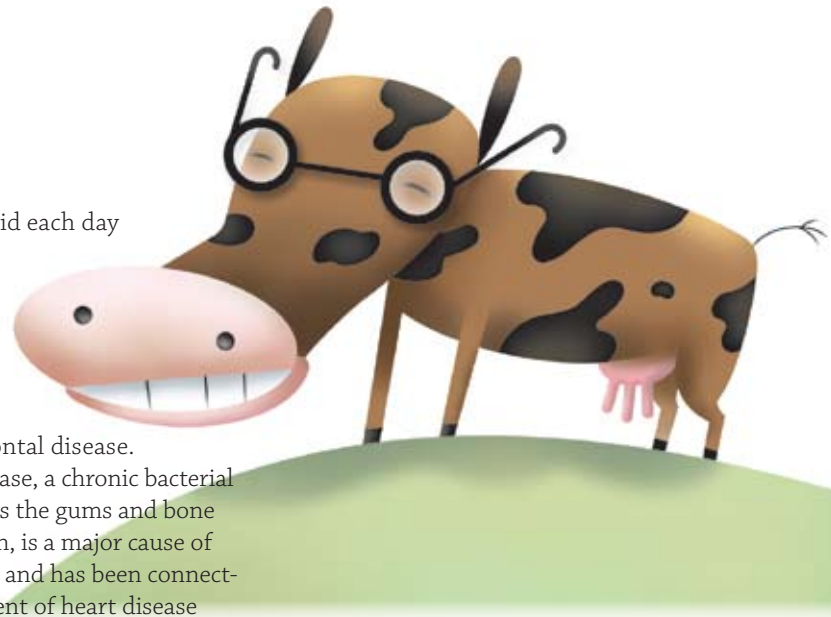
Research has suggested that periodontal disease may affect overall systemic health, said study author Yoshihiro Shimazaki, DDS, PhD, of Kyushu University in Fukuoka, Japan. This study reinforces what much of the public already knows, that dairy foods are important in helping achieve a healthy lifestyle, including a healthy mouth.

Study participants aged 40 through 79 were examined on two periodontal parameters that can indicate gum disease, periodontal pocket depth, and clinical attachment loss of gum tissue. Researchers observed that subjects who consumed 55 or more grams of products

containing lactic acid each day had a significantly lower prevalence of deep PD and severe CAL, therefore demonstrating a lower instance of periodontal disease.

Periodontal disease, a chronic bacterial infection that affects the gums and bone supporting the teeth, is a major cause of tooth loss in adults, and has been connected to the development of heart disease and increased risk of stroke. It also can contribute to complications from diabetes, respiratory disease, or osteoporosis.

Millions of adults already suffer from periodontal disease, said Susan Karabin, DDS, president of the American Academy of Periodontology. By regularly consuming dairy products such as cheese and milk, something many people do each day, the risk of developing gum disease may decrease. These findings are important since maintaining healthy gums is a critical component to maintaining a healthy body.



New Scenic Relaxation Videos

High-quality DVD images create peaceful visual environment, and ease anxiety of patients in doctor's offices, hospitals, or hospice care facilities. Titles include programs depicting spring; autumn; a day at the zoo; secret courtyards; marine life;

beaches; brooks; ponds; and a day in the country. Each HUG Video program lasts about an hour. Dentists and other health care professionals have been reaping the benefits of HUG Videos since 1996. For more information, visit <http://www.hugvideo.com>.

New Logo May Help Consumers Make Smart Choices

The ADA's new "Smile Healthy" certification program is designed to help consumers identify which foods and beverages are good for oral health.

The just-introduced logo signifies a "smart choice for oral health" and will appear on one-gallon containers of fluoridated bottled water. The ADA anticipates future Smile Healthy product categories could include sugar-free beverages and foods, as well as dairy products.

ADA President Mark J. Feldman, DMD, said "Some people may not live in areas where their drinking water is fluoridated or perhaps they prefer the taste or convenience of bottled water. Now when you see the Smile Healthy logo on bottled water, you know you're doing something good for your oral health!"

The ADA has long supported the addition of fluoride in optimal amounts to water to help prevent tooth decay and hopes consumers will look for the Smile Healthy logo when purchasing bottled water.

The first company to be granted a license to use the Smile Healthy logo on one of its products is Water Source One, a large national bottled water manufacturer with 15 production facilities across the United States.



Recognized as a smart oral health choice

ADA American Dental Association



“Polydopamine coatings can, in turn, serve as a versatile platform for secondary surface-mediated reactions.”

Mussel-inspired Polymer Coating Reported

Dopamine is one of several catecholamines or chemical compounds derived from the amino acid tyrosine. In a recent issue of *Science*, National Institute of Dental and Craniofacial Research grantees and colleagues reported they have developed an aqueous, dopamine-rich solution that, through simple dip coating of objects, forms versatile polymer coatings.

Inspired by the composition of natural adhesive proteins in marine mussels, the scientists found their method of dopamine self-polymerization formed thin, surface-adherent polydopamine coatings on a variety of inorganic and organic materials. They included noble metals, i.e., those that are resistant to corrosion or oxidation; oxides; polymers; semiconductors; and ceramics.

The scientists reported, “Polydopamine coatings can, in turn, serve as a versatile

platform for secondary surface-mediated reactions... This two-step method of surface modification is distinctive in its ease of application, use of simple ingredients and mild reaction conditions, applicability to many types of materials of complex shape, and capacity for multiple end users.”

The production-scale availability of recombinant mussel adhesive proteins will enable researchers to formulate adhesives that are water-impervious and ecologically safe, and can bind materials ranging from glass, plastics, metals, and wood to materials, such as bone or teeth, biological organisms, and other chemicals or molecules, H.G. Silverman wrote in a recent abstract on “Understanding Marine Mussel Adhesion” published in *Marine Biology*.

To read more about the paper on mussel-inspired polymer coating go to the “Science News In Brief” menu under “News and Reports” online at www.nidcr.nih.gov/.

Carefully Dispose of Used Lead Aprons

An article in the *Journal of the Michigan Dental Association* has prompted that state’s Department of Community Health to advise dentists not to donate lead shields or aprons for use in therapeutic weight training.

Many charity organizations construct weight products for special needs children and may have inadvertently exposed the lead inside the aprons and shields, creating potentially hazardous items.

The State of Michigan is now asking dentists to dispose of surplus aprons and shields as hazardous waste, having them contact their local radiographic film manufacturers, amalgam recyclers or hazardous water haulers for proper disposal.





Studies Suggest Periodontal Diseases are Ageless to Women

“Thanks” to hormonal fluctuations that occur during various times of their lives, studies now suggest that periodontal diseases are a threat to women of all ages.

One study, published in the *Journal of Periodontology*, looked at 50 women between the ages of 20 to 35 with varying forms of periodontitis. The study found that the women who took oral contraceptive pills had more gingival bleeding upon probing and deeper periodontal pockets than their counterparts who were not taking oral contraception.

“Younger women often think that periodontal disease is a condition associated with old age,” said study author Brian Mullally, PhD. “Our study shows that it is very possible for younger

women to experience periodontal disease. It is important for women to alert their dental practitioners of any medications they are taking, such as oral contraceptive pills, because it is possible that their oral health may be affected. It might also be prudent where possible for young women to ensure that their periodontal health has been checked before commencing oral contraceptive therapy.”

A second study in the *Journal of Periodontology* examined 1,256 postmenopausal women and looked for a potential association between periodontal bacteria and bone loss in the oral cavity. The study results showed that women with periodontal bacteria also were more likely to have bone loss in the oral cavity that often leads to tooth loss if not treated.

“Our study’s findings are important for postmenopausal women because they suggest that good periodontal health is extremely important in the postmenopausal years,” said Renee Brennan, PhD, study author.

New Technology Ventures Launched

The Academy of General Dentistry has launched three new technology ventures on its Web site, all of which are member benefits that allow education and interaction. GD, general discussion, is an area where members can review clinical, peer-reviewed case studies and dialogue with colleagues about the findings; AGD Podcasting, is a series of interviews with dental experts; and a member blog, The Daily Grind, which is available to the public.

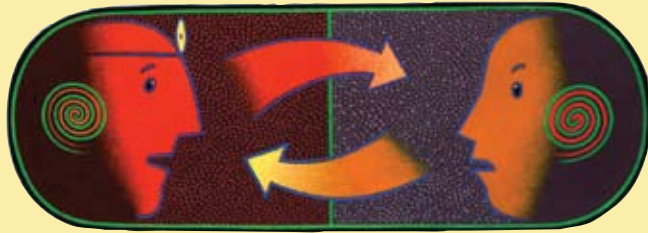
In GD, peer-reviewed case studies, published exclusively on the AGD Web site, will be uploaded on a bimonthly basis so that members can review the research as well as discuss the findings with colleagues to learn even more.

The first case study, “Nickel sensitivity: A case report,” written by Gary S. Berkowitz, DDS, and Ronald J. Lehane, DDS, MS, describes one patient’s sensitivity reaction to the metal part of a crown and what was done to correct the problem.

“Creating a section of the Web site where members can view new research increase the education of our members,” says Norm Magnuson, DDS, FAGD, chair of the AGD’s Publications Review Council.

AGD Podcasting is available for members to download on the AGD Web site. Wes Blakeslee, DMD, FAGD, conducts interviews with notable general dentists and specialists. The first interview was with Michael S. McCracken, DDS, PhD, director of Graduate Prosthodontics at the University of Alabama at Birmingham.





Stuck for Something to Say?

The National Maternal and Child Oral Health Resource Center at Georgetown University has a new resource to help dental professionals communicate with patients of limited literacy.

"A Way with Words: Guidelines for Writing Oral Health Materials for Audiences with Limited Literacy" offers suggestions on how to set an appropriate tone, choose words, craft sentences, lists, headings, and paragraphs that optimize communicating effectively with those with limited literacy. A list of resources for more information is included, as well as how to design documents and presenting unfamiliar terminology.

Single or multiple print copies of this resource are available at no charge from the HRSA Information Center, P.O. Box 2910, Merrifield, Va., 22116; (888) ASK-HRSA (275-4772); fax: (703) 821-2098; or e-mail: ask@hrsa.gov. Electronic copies are available from OHRC Web site.

Proprietary Handpiece Lubrication Oil

The FDA has certified Handpiece Experts proprietary lubricant oil for use with all handpiece makes and models. Dental handpieces are high-performance precision cutting instruments that rotate a bur at more than 400,000 rpm. Such a high-friction environment causes pre-

mature wear on handpiece components and is a major cause of instrument failure. Handpiece Experts Oil reduces friction; contributing to prolong handpiece life. For additional information, visit www.handpieceexperts.com, or contact Mark Scott at (866) 937-882, ext. 105.



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Daily Bruin, UCLA's daily newspaper.

Before the growth of cavities, harmful bacteria in the mouth produce acids that create holes in the outermost layer of the teeth. *S. mutans* is one of the more virulent cavity-causing bacteria, and the licorice root extract specifically kills only the harmful bacteria in the mouth, not other beneficial bacteria, said Aria Eshraghi, a microbiology graduate student who worked with Shi in the past.

Shi's research, as reported in the *Journal of Natural Products*, published by the American Chemical Society and the American Society of Pharmacognosy, also determined that dental plaque per se is not bad for teeth, as long as the decay-causing bacteria are not present in it. Shi found that plaque can actually act as protection from the recolonization of the bad bacteria.

Shi said his study provides a scientific

basis for the age-old practice common in China and other cultures of chewing licorice root.

The lollipop idea originally derived from a discussion between Shi and an executive of Delta Dental about trying to use medical rather than surgical approaches to combat tooth decay. The discussion led Delta Dental to offer Shi \$1 million for his study. Since then, the company has provided close to \$10 million for the lollipop project.

Since the inception of the project, it has not been easy for Shi and his researchers to meet the expectations of big corporations. The lollipops had to not only please consumers, but also garner positive feedback from many other groups such as clinical trials and research staff.

There are reasons why the special licorice root is extracted and pulverized into a lollipop. The lollipop form gives fewer chances for consumers to choke, so

it is better than in candy or gum form. Also, for candy or gum, the ingredient could only be released briefly, making them less effective than the longer-lasting lollipop, Shi said.

Shi sees his lollipop as part of a trend toward medicined dentistry, which means less surgical approaches to dental problems, he said.

The lollipop is now available online for anyone to buy via the Web site of C3 Jian, a research company. Within the next year, Shi thinks that they could be in drug stores.

— Derived from reports in the *UCLA Daily Bruin*, *Reuters Health*, and *Journal of Natural Products*.