Salmonella vaccine

Vaccine's impact should hit agriculture first

Roy Curtiss III, Ph.D., professor and chairman of the Department of Biology, has announced development of two mutant strains of salmonella bacteria that can be used as a vaccine to prevent disease by salmonella in humans and animals.

Salmonella bacteria causes food poisoning in humans and disease in livestock. One species causes typhoid fever.

The first impact of the oral vaccine, which has been successfully tested in laboratory mice, is expected to be in agriculture, especially in the poultry industry where up to 60 percent of chickens raised for human consumption are infested with salmonella bacteria.

The breakthrough was accomplished through genetic engineering techniques that allowed Curtiss to delete two genes from salmonella bacteria that are needed for the bacteria to grow in animals or people. The result is harmless bacteria that provoke a response from the immune system, preparing antibodies (cells that fight disease), to the mucosal immunity system (which guards against disease-causing microbes in the mouth, lungs, intestinal lining and elsewhere), they might be used in developing other vaccines against microbes that gather in those areas—vaccines against whooping cough in chickens and turkeys, and dental cavities in humans, for instance.

The new salmonella strains can be engineered to be bivalent, meaning, they do more than one thing. Like a football player who is a triple threat or a musician who plays several instruments equally well, Curtiss' patented mutants are versatile.

What excites the scientist most is the ability of the mutant strains to carry antigens (toxins, proteins or carbohydrates) to the body so that the antibodies, triggered by the salmonella, give immunity to the specific disease.

In 1984, Curtiss developed, through genetic engineering, a vaccine against dental cavities by using non-disease-causing salmonella that carry surface proteins from the bacteria that form dental plaque. The antibodies induced in saliva then prevent bacteria from forming plaque, and thus cavities.

The mutant salmonella strains should improve the effectiveness of this dental cavities' vaccine, which is still in the experimental stage, Curtiss says.

Curtiss, who has been researching mutant strains of salmonella since 1981, announced his findings at a recent conference on biotechnology, held in San Diego, Calif.

Reagan bestows award on Pake, Levi-Montalcini

Rita Levi-Montalcini, Ph.D., professor of biology emerita at Washington University and 1986 Nobel Prize winner for physiology or medicine, and George E. Pake, Washington trustee emeritus and former provost and executive vice chancellor, were awarded the National Medal of Sciences by President Ronald Reagan on June 25 during a White House ceremony.

The two joined 18 other scientists from throughout the country as recipients of one of the nation's most distinguished science awards.

Levi-Montalcini, director of the Institute of Cell Biology in Rome, Italy, since 1977, was cited for "... a major breakthrough in neurobiology by her discovery of the Nerve Growth Factor and its effect on the growth of the sympathetic nervous system, which set the stage for worldwide studies of the molecules involved in normal and malignant growth.

The scientist came to Washington University in 1947 to conduct her research on the Nerve Growth Factor (NGF) in the University's former Department of Zoology, now the Department of Biology. In 1951, she discovered NGF and isolated it in collaboration with Stanley Cohen, Ph.D., who shared the Nobel Prize with her.

NGF, a protein produced by salivary glands, is important for the growth of certain types of nerve cells. Levi-Montalcini's discovery of NGF laid the groundwork for discovery of many other growth factors, including the epidermal growth factor, which Cohen discovered.

The genes for the epidermal growth factor and for tumors seem to be related, which can have major implications for cancer research.

Also, it is thought NGF may become important for research on growth and regeneration in the nervous system.

Levi-Montalcini retired from Washington University in 1977. She still conducts research on NGF at the Institute of Cell Biology.

Pake, group vice president of Xerox Corp. in Palo Alto, Calif., was cited for "... his commitment to creative excellence in support of institutional purpose. Whether as a research scientist, university administrator or corporate executive, every institution he has served has been measurably strengthened by his contributions."

Pake's research specialties are magnetic resonance, solid state physics.

Continued on p. 2
Alliance award honors donor

Mrs. John S. Lehmann, a Life Member of Washington University's William Greenleaf Eliot Society and a generous donor to the University, has been recognized as a recipient of the Alliance Appreciation Award.

The special recognition award, recently established by the Washington University Board of Trustees, was presented to Mrs. Lehmann by Chancellor William H. Danforth at a luncheon held recently in her honor.

The award symbolizes the alliance between the University and the larger community. It is awarded to individuals who, by unselfish commitment to humankind, have exemplified the ideals of the University and who, through their alliance with the University, have made the institution better and inspired others to do the same.

"I am very pleased with the establishment of this award and especially with the board's selection," said Danforth. "This serves only as a small token of appreciation for all that Mrs. Lehmann has done for the University. Her wonderful backing has contributed in so many ways to Washington University's excellence."

Among her many contributions to the University, Mrs. Lehmann established the John S. Lehmann Visiting Professorship of Law in 1980 in memory of her husband. Her gifts to the University include funds for medical school scholarships, the Clinical Sciences Research Building and campus beautification.

One of the original board members of the Women's Society of Washington University, Mrs. Lehmann was awarded a life membership to the society in 1976. In her work with the Women's Society, Mrs. Lehmann served on the Fine Furniture Committee, which obtained many of the furnishings for the University and Whitehouse homes.

A longtime art enthusiast, she is a member of the St. Louis Art Guild and patron of the St. Louis Art Museum. Mrs. Lehmann studied art with the late Constantino Brumidi and was a member of the fine arts faculty. She became one of his most proficient students and helped establish the Fred Conway Scholarship in his memory. In 1972, she received the St. Louis Globe-Democrat's Woman of Achievement Award for Creative Philanthropy.

Mrs. Lehmann, formerly Anne Shepley Lionberger, is a member of a large and respected St. Louis family. Her late husband, John S. Lehmann, was a 1910 graduate of the Washington University School of Law. He later was involved in the development of a process for extracting saltwater from brine, which led to the formation of the Petrolese Corp. Lehmann served on the University's Board of Trustees from 1941-1965, and as trustee emeritus until his death in 1967.

Mrs. Lehmann's father, the late Isaac H. Lionberger, also was a University trustee, as well as a lecturer in law school and development officer to the University in the early days of its founding. Lionberger served as assistant attorney general under President Grover Cleveland.

Registrar Richard Young dies at 44

A funeral service was held Wednesday, July 22, for Richard E. Young, university registrar at Washington University, who died Sunday, July 19. He was 44.

Washington University has lost a loyal and devoted individual with affection and respect by all who knew him," said Chancellor William H. Danforth.

Mr. Young joined the Washington University staff in 1968 as assistant director of admissions. In July 1976 he was named acting registrar and in October 1976 he was named director of student records. His title was changed to university registrar in 1982.

A native of South Bend, Ind., Mr. Young graduated from Washington University in 1966 with a bachelor's degree in electrical engineering. Immediately after graduating, he joined Emerson Electric as a senior radar engineer. He worked for Emerson until his employment at Washington University.

Bill D. Smith, director of information services at the University, said that Mr. Young was instrumental in the design and implementation of the student information system that has been in place since 1978. "It is a state-of-the-art computer system and is considered one of the best in the country," Smith said. 'Dick Young was one of the leaders in the design team of that system.'

Surviving are his parents, Edward J. and June S. Young, of Mobile, Ala.; a brother, Donald Young, of Toronto, Canada; and his grandfather, Harvey Sperling, of Mobile, Ala.

His parents have established the Richard E. Young Memorial Scholarship in the School of Engineering and Applied Science. Contributions to the fund can be sent to Washington University, Campus Box 1163, St. Louis, MO 63130.

Medal of Sciences — continued from p. 1

sics and magnetism. He is the author of three books on physics and dozens of journal articles.

Pake joined the Washington University faculty in 1948 as an assistant professor of physics, and was named professor in 1953. In 1956, he joined the Stanford University faculty and then returned to Washington in 1962 to become provost. He was given the additional title of executive vice chancellor in 1967. In 1970, Pake became vice president and manager of the Xerox Palo Alto Research Center. Since then, he has moved up to the ranks of Xerox and was named group vice president in 1983.

Also in 1983, the American Physical Society created the George E. Pake Prize, an award for outstanding work by physicists combining research with leadership in management of research or development in industry.

Furniture finds: Rosemary Falk (left), a volunteer for the Furniture Exchange, and June S. Young, whose husband is a postdoctoral student at the medical school, examine a lamp for sale at the exchange, a store run by the Women's Society of Washington University. The store, located at 6531 University Drive, sells a variety of new and used furniture to all students and five-year faculty and staff. The furniture ranges from bookshelves to beds. Because of high demand, the store is open from 10 a.m. to 5 p.m. Monday through Fridays up to Aug. 26. The store, which normally is open during those same hours on Mondays and Wednesdays, will resume its regular schedule in September.

Scientists gather for math conference

Scientists from around the world are meeting Aug. 4-7 at the Adam's Mark Hotel in St. Louis to discuss mathematical modelling, an expanding concept that cuts across many disciplines.

Co-sponsored by Washington University, the Sixth International Conference on Mathematical Modelling (ICMM) will feature 500 papers on aspects of mathematical modelling in engineering, biological, medical, social and military sciences.

Ervin R. Rodin, Ph.D., professor of applied mathematics and systems science, is co-chairman of the conference.

Mathematical modelling is the computer-aided study of mathematical equations that serve as models for physical or theoretical systems — the lift of an aircraft wing, for instance, or the flow of blood through arteries, or evolutionary trends in biology. The mathematical model allows scientists to conjecture and hypothesize without having the real thing at their disposal.

Applications of mathematical modelling range from magetic and fluid dynamics to medical imaging and graphics, population genetics, robotics and the Strategic Defense Initiative (SDI).

For more information, contact Patricia A. Busch, conference co-ordinator, Sixth ICMM, Washington University, Campus Box 1041, One Brookings Drive, St. Louis, Mo. 63130, 889-5806.

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Postmaster and non-residents: Send to: Washington University, Box 1070, One Brookings Drive, St. Louis, Mo. 63130.

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Ramesh K. Agarwal, Ph.D., affiliate professor of mechanical engineering, presented a two-week seminar on Laser Science and Laser Processing at the University of Hawaii in Honolulu, Hawaii. The papers he presented were titled "Melt Pool Dynamics in Laser Processing" and "Thermal Modeling of Laser Cladding." He also gave a talk on "The Origins and Evolution of the English Revolution." He also gave a talk at Suzuki University.

Charles L. Leven, Ph.D., professor of economics, recently was appointed by Mayor Vincent C. Schroeck, Jr., for a second term by the City of St. Louis Tax Reform Commission.

Jeffrey L. Marsh, M.D., professor of surgery and director of the Cleft Palate and Craniofacial Deformities Institute at Children's Hospital, recently presented research findings at the 44th annual meeting of the American Cleft Palate Association in San Antonio, Texas. Five papers were presented before an international audience of more than 500 physicians, dentists and speech-language pathologists and other health professionals involved in research and treatment of cleft lip, cleft palate and other craniofacial abnormalities.

Gary A. Ratkin, M.D., assistant professor of clinical medicine, has been appointed, for the third year, chairman of the Clinical Practice Committee of the American Society of Clinical Oncology. Ratkin is also a member of the Clinical Practice Forum at the annual session of the American Society of Clinical Oncology. The topic of the meeting was "Are Response Criteria in Oncology alterable?"

Heikki Seppa, professor of art and head of metal smithing studies, was named a fellow of the American Craft Council at a recent ceremony in Washington, D.C. The American Craft Council is the nation's leading advocacy organization for contemporary craft. The council's College of Fellows was established in 1975 to honor individuals who, in addition to their annual contributions to the American craft movement, fellowship candidates are chosen on the basis of their contribution to their craft and their influence on the craft field.

Isidore Silver, Ph.D., Rosa May Distinguished University Professor and director of the Humanities Program in the Humanities Program in the Humanities, received a two-year grant of $50,000 from the Division of Research Programs of the National Endowment for the Humanities in support of a work in progress on "Rousseau's Philosophic Thought."
Giant plant sale set for Aug. 24

Approximately 1,500 plants, ranging from ferns to plants in hanging baskets, will be sold during the popular giant plant sale from 10 a.m. to 4 p.m. Monday, Aug. 24, in Friedman Lounge, located on the first floor of Wool Center. Prices for the plants will range from $1.25 to $20. Items must be typed and submitted to the office of the dean of the college by Aug. 10. For more information, call 645-6505.

EXHIBITIONS

The Gallery of Art and the Japan Foundation of Tokyo will host "Paris in Japan," organized by the Gallery of Art and the Japan Foundation of Tokyo.

CALENDAR

Aug. 6-27

Lectures

Thursday, Aug. 13
4 p.m. Dept. of Chemistry Seminar. "The Chemistry of Metal Complexes Containing High Transition Metal Ligands," McCullogh, prof. of chemistry, Hope College, 311 McMillen.

MISCELLANEOUS

Thursday, Aug. 6
8:30 a.m. Sixth International Conference on Mathematical Modelling at the Adam's Mark Hotel, 112 N. Fourth St. (Alta F.L., Aug. 7, 8:30 a.m. — 4:10 p.m., Adam's Mark Hotel.) The conference is sponsored by Washington University, the Institute for Applied Sciences in St. Louis, the Air Force Office of Scientific Research, and the International Association for Mathematical Modelling, among other organizations. For more info., call Patricia A. Bush, conference coordinator, at 889-5806.

Monday, Aug. 24
10 a.m.-4 p.m. Plant Sale sponsored by the Women's Society and the Women's Panhellenic Association. Friedman Lounge, first floor. Wohl Center. Prices for the plants range from $1.25 to $20. Plants will go to the Women's Society's Scholarship Fund and the association's general fund. For more info., call 645-6505.

Tuesday, Aug. 25
7 p.m. Performing Arts Department "Welcome Back to School Party." "Welcome back to school party" is an orientation for students interested in drama and dance.

Calendar Deadline

The deadline to submit items for the Sept. 3-12 calendar of the St. Louis Post-Dispatch is Aug. 20. Items must be typed and submitted to the office of the dean of the college by Aug. 10. For more information, call 645-6505.

EXHIBITIONS

A three-hour cruise aboard "The President" riverboat is one of a multitude of activities planned for new students during Orientation Week.

From chancellor's fireside stories to riverboat cruise, new students will receive warm welcome to campus

From learning how to study in college, to bopping to the music of Bob Kuhn Brass, Washington University's new students will get a diverse taste of University life during Orientation Week Aug. 21-Sept. 7. Approximately 1,352 freshmen and 155 transfer students will be enrolled at the University this fall.

Highlights of the week include a welcoming address by Chancellor William H. Danforth; a three-hour cruise aboard the "The President," with music by Bob Kuhn Brass; an academic convocation in Graham Chapel that officially opens the school year; a welcome to the city by Karen Foss, news anchor at KSDK-TV Channel 5; the dean's meetings for parents, a reception hosted by the chancellor and his wife, Elizabeth, and a discussion on letting go of college-bound children.

Several activities are slated for Washington's new international and black students during Orientation Week. Among the events for international students are a formal orientation program, a reception hosted by the Danforths, a bus tour of St. Louis, a trip to Meramec Caverns near Stanton, Mo., and discussions designed to acquaint the students with Washington University and the city. The Danforths also will host a picnic for transfer students.

On Sunday, Aug. 23, local area black churches will provide shuttle buses to transport students to their congregations. Various denominations will be represented. The Association of Black Students (ABS) is sponsoring the event. In addition, ABS is sponsoring a lecture by Atlan ta attorney and professional orator Patricia Russell-Cloud, who will discuss the black students' role on a predominantly white campus. Other ABS-sponsored activities include a formal welcoming ceremony, where new black students will meet administrators and other students; a pool party and barbecue; and a Labor Day picnic at Creve Coeur Park. The College of Arts and Sciences will sponsor a picnic for black students as well.

Approximately 300 more freshmen will live in the residence halls this year than last year, according to Fink. Fink says many transfer students will live off campus in Parkview Village and Delahiveire Place, where the University leases apartments.

"We're also offering a good incentive for upperclassmen who have University housing to move to Delahiveire Place," Fink says. "Two-bedroom furnished apartments at Delahiveire Place are being offered at a rate comparable to that of a double room in the residence halls. We're hoping about 100 upperclassmen will move to Delahiveire Place under this arrangement."

For more information about Orientation Week, call Marcia Hayes-Harris at 889-6679.