

EMBARGOED RELEASE
For release Monday, 25 JULY 2005

Contact: Marlene M. Machut
Mars, Incorporated
McLean, Virginia USA
908-850-2190

Research Finds Flavanols in Cocoa May Help Treat Diabetes, Strokes and Dementia

Mars, Incorporated Has Synthesized Flavanol Molecules,
Is In Discussions with Pharma Companies to Develop New Medicines

Lucerne, Switzerland, July 25, 2005 – Molecules in cocoa credited for the “heart-healthy” benefits of certain cocoa and dark chocolate may also in the future help treat diabetes, strokes and vascular dementia, and could soon be available to pharmaceutical companies for development into new medications, scientists said Monday.

Opening a two-day meeting in Switzerland, researchers said their findings point toward a potential major new class of medications, based on novel synthesized flavanols, to help prevent or treat serious illnesses. “The mounting scientific evidence on cocoa flavanols is extraordinary,” said Dr. Norm Hollenberg, Professor of Medicine at Harvard Medical School and one of the first researchers to identify the potential health benefits of cocoa flavanols. “This is a scientific breakthrough that could well lead to a medical breakthrough.”

Additionally, Mars scientists have discovered that entire “libraries” of cocoa flavanols can be synthesized, and that new flavanols can be developed from natural flavanols, enhancing their feasibility for use in pharmaceutical medications.

The research was discussed among scientists from around the world at a meeting convened by Mars, Incorporated, which has supported cocoa research for more than 15 years. The company confirmed that it is holding serious discussions with large pharmaceutical companies for a licensing or joint venture

agreement that could enable some of these compounds to be developed as prescription drugs.

“Our company has a heritage of highly regarded research in nutrition and health science, through partnerships with some of the world’s finest scientists and universities,” said Dr. Harold Schmitz, Chief Science Officer for Mars. “This science is now moving beyond nutrition toward the research and development of important health care solutions.”

Added Schmitz, “Because Mars is a privately held company, we have the freedom to make the long-term research commitments that deliver truly innovative results.”

The Swiss meeting provided an opportunity for scientists from around the world, who are working independently on different cocoa flavanol research, to share their findings in a peer-review setting. The presentations provided new insight into the potential benefits of cocoa flavanols for treatment of serious illnesses such as dementia, diabetes and stroke. This research builds upon more than 80 peer-reviewed publications that have covered, test tube and clinical research on cocoa flavanols.

Among the findings discussed at the two-day meeting:

- The specific cocoa flavanol molecules responsible for a beneficial aspirin-like effect (a reduction in platelet aggregation) have been identified for the first time. This has major implications for pharmaceutical applications.
- Two clinical trials found that cocoa flavanols can increase blood flow to key areas of the brain, suggesting the potential for treatment of vascular impairment associated with elderly people, including dementia and strokes.
- Building on previous findings that cocoa flavanols can boost synthesis of nitric oxide by blood vessels, increasing blood flow, a new clinical study found that such increases can also be achieved among people with

diabetes. This suggests that cocoa flavanols could aid in treatment of serious vascular complications associated with long-term diabetes.

- The ability to synthesize cocoa flavanols has become a reality, and the mechanisms behind their actions in the body are now becoming understood.

Mars has been actively exploring effective ways of making flavanols available in nutritional foods. On June 30, the company announced creation of a new business unit, Mars Nutrition for Health & Well-Being, which is dedicated to the development of new foods, snacks, beverages and lifestyle support to better serve the nutritional and well-being needs of consumers.

Mars Nutrition for Health & Well-Being has already launched its first great-tasting nutrition bar called CocoaVia™, available online at www.cocoavia.com. With 80 calories per serving and a nutrition profile that combines heart healthy ingredients, vitamins and minerals with a premium chocolate, rich in the natural flavanols preserved by a special process, it is the only global brand purposely designed to deliver both chocolate pleasure and real heart health benefits. CocoaVia™ will be followed by a number of food solutions targeting a variety of nutritional needs and benefits in the months to come.

Mars, Incorporated, one of the world's top processors of cocoa, is a privately held company that produces some of the world's leading confectionery, food, petcare, beverage, electronics products, and now health & nutrition products, and operates in more than 65 countries. Headquartered in McLean, Virginia, Mars, Incorporated employs more than 7,000 associates in the United States and 39,000 associates worldwide with 15 manufacturing facilities nationally and more than 100 manufacturing facilities globally. The company's global sales exceed \$18 billion annually.

#

2005 Cocoa Flavanols Meeting

Lucerne, Switzerland

25-26 July 2005

Background:

- ◆ **Objective:** Approximately 20 science and medical experts from around the world gathered to discuss the newest research regarding potential medical benefits from cocoa flavanols.
- ◆ **Findings:** This new science clearly expands the impact of cocoa flavanols beyond food and nutrition toward potential medical benefits and treatments for serious diseases.
- ◆ **Co-Chairs:** Norm Hollenberg, M.D., Ph.D., Professor of Medicine, Harvard Medical School; and Thomas Lüscher, M.D., Chief of Cardiology, University Hospital Zurich
- ◆ **Meeting Convened by:** Mars, Incorporated, McLean, Virginia.

Individual Science Presentations:

- ◆ **Specific Compound Identified Behind Aspirin-Like Effect**
For the first time, laboratory research has identified the specific molecules that can explain the beneficial aspirin-like effects (reduced platelet aggregation) of cocoa flavanols. This has major implications for pharmaceutical applications.

Researcher: Carl Keen, Ph.D., Professor of Nutrition and Internal Medicine, University of California, Davis.
- ◆ **New Research Supports Positive Impact on Brain Blood Flow**
Two blind studies of approximately 60 people found that cocoa flavanols can increase blood flow to key areas of the brain. This finding suggests positive implications for vascular impairment associated with the elderly, including dementia and strokes. The findings build on preliminary data that was shared with the National Academy of Science.

Researchers: Ian MacDonald, Ph.D., Professor of Physiology, University of Nottingham, UK; and Naomi Fisher, M.D., Assistant Professor of Medicine, Harvard Medical School, and Director of Hypertension Services, Brigham and Women's Hospital, Boston.

◆ **New Research Points to Flavanols' Effect on Vascular Complications of Diabetes**

Harvard University research published December 2003 in *Journal of Hypertension* found that cocoa flavanols appear to increase synthesis of nitric oxide by blood vessels, increasing blood flow. A new study of approximately 20 human subjects found that similar increases in blood flow can be achieved among people with diabetes. This suggests that cocoa flavanols could aid in treatment of serious vascular complications associated with long-term diabetes.

Researchers: Thomas Lüscher, M.D., Chief of Cardiology, University Hospital, Zurich; and Norm Hollenberg, M.D., Ph.D., Professor of Nutrition and Internal Medicine, Harvard Medical School.

◆ **New Research is Revealing the Mechanisms Behind Flavanol Benefits**

In addition to cocoa flavanol benefits observed in clinical studies, laboratory research also is beginning to identify the mechanisms responsible for these benefits.

Researchers: Hagen Schroeter, Ph.D., Assistant Research Nutritionist, Department of Nutrition, University of California, Davis; and Helmut Sies, M.D., Ph.D., Professor and Chairman, Department of Biochemistry and Molecular Biology, Faculty of Medicine, Heinrich Heine University, Düsseldorf.

◆ **Entire Libraries of Cocoa Flavanol Compounds Can Be Synthesized**

With the ability to synthesize entire libraries of specific cocoa flavanol compounds, mass production of related pharmaceutical products can become a reality.

Researchers: Helmut Sies, M.D., Ph.D., Professor and Chairman, Department of Biochemistry and Molecular Biology, Faculty of Medicine, Heinrich Heine University, Düsseldorf; and Harold Schmitz, Ph.D., Chief Science Officer, Mars, Incorporated.

#