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SBI Holdings, Inc.

SBI Pharmaceuticals Co., Ltd.

Notice on Publication by Univ. of Hawaii of Paper on 5-ALA in Electronic Edition of U.S. Science Journal *Clinical and Translational Science*
Publication of the results of clinical studies on the relationship between 5-ALA and glucose levels

SBI Holdings, Inc. (“SBIH”) conducts research and development on cosmetics, health foods and pharmaceuticals using 5-aminolevulinic acid (5-ALA) at its subsidiary SBI Pharmaceuticals Co., Ltd. (head office: Minato-ku, Tokyo; Representative: Yoshitaka Kitao; “SBI Pharmaceuticals”). In relation to this, The University of Hawaii at Manoa Group has recently published the results of clinical studies on the relationship between 5-ALA and glucose levels in the electronic edition of the U.S. science journal *Clinical and Translational Science*, as described below.

* SBI Pharmaceuticals provided 5-ALA for the above clinical studies, and they were planned, implemented and summarized in a paper under the management of The University of Hawaii.

- Journal: Clinical and Translational Science Vol. 5, Issue 4 pages 314-320(2012)
- Title: Use of Dietary Supplement 5-Aminolevulinic Acid (5-ALA) and Its Relationship with Glucose Levels and Hemoglobin A1c among Individuals with Prediabetes
- Summary: In the studies, examinees with prediabetes (people who are not diabetic now but are at risk of developing diabetes in the future) were divided randomly into two groups. One group took low or high doses of 5-ALA, and the other took placebos that do not contain 5-ALA. Then, the relationship between the intake of 5-ALA and the ability of cells to absorb sugar (glucose tolerance) was examined. The results showed that no harmful symptoms caused by 5-ALA were found during the three-month examination period. In addition, a clear decrease in glucose levels was observed among those who took 5-ALA two hours after they underwent the oral glucose tolerance test (OGTT).
- Reference: Wiley Online Library (<http://onlinelibrary.wiley.com/>)
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Based on the above results, researchers of The University of Hawaii pointed out that taking 5-ALA could be useful for those with prediabetes, and concluded their paper with the words, “Further investigation of 5-ALA as a dietary supplement in relation to wellness, diabetes and its complications is heartily encouraged.”

SBI Pharmaceuticals will continue to explore various possibilities of utilizing 5-ALA and conduct R&D on it, hoping to contribute to the health of as many people as possible in the world.

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