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SBI Pharmaceuticals Co., Ltd

Tokyo Metropolitan University

National Center for Geriatrics and Gerontology

**Publication of a Research Paper on 5-ALA from Tokyo Metropolitan University
in FEBS Open Bio**

-5-ALA/SFC extend healthspan in *Drosophila*-

SBI Pharmaceuticals Co., Ltd., (Head office: Minato-ku, Tokyo; Representative Director & President: Yoshitaka Kitao; "SBI Pharmaceuticals"), a subsidiary of SBI Holdings, Inc., engaged in research and development of pharmaceuticals, healthy foods, and cosmetics using 5-aminolevulinic acid (5-ALA) *, Graduate School of Science, Tokyo Metropolitan University (Hachioji City, Tokyo; President: Takaya Ohashi) and Department of Neurogenetics, National Center for Geriatrics and Gerontology (Obu City, Aichi; President: Hidenori Arai) hereby announce the publication of a research article entitled "5-aminolevulinic acid and sodium ferrous citrate improves muscle aging and extend healthspan in *Drosophila*" in an international academic journal, FEBS Open Bio.

Journal	:	FEBS Open Bio
Title	:	5-Aminolevulinic acid and sodium ferrous citrate ameliorate muscle aging and extend healthspan in <i>Drosophila</i>
URL	:	https://febs.onlinelibrary.wiley.com/doi/10.1002/2211-5463.13338
Abstract	:	Declines in mitochondrial functions are associated with aging. The combination of 5-ALA and sodium ferrous citrate (SFC) increases mitochondrial activity in cultured cells. In this study, we investigated the effects of dietary supplementation with 5-ALA hydrochloride /SFC on the healthspan and lifespan of <i>Drosophila melanogaster</i> . Adult <i>Drosophila</i> fruit flies were fed cornmeal food containing various concentrations of 5-ALA hydrochloride combined with SFC. We found that feeding 5-ALA/SFC preserved muscle architecture and maintained the mitochondrial membrane potential in aged animals. Moreover, 5-ALA/SFC mitigated age-associated declines in locomotor functions and extended organismal lifespan.

These results revealed a novel mechanism of action by which 5-ALA/SFC benefits physical functions and protects against aging in *Drosophila*.

(*) 5-aminolevulinic acid: An amino acid produced in mitochondria. It is an important substance that serves as a functional molecule related to energy production in the form of heme and cytochromes, and its



productivity is known to decrease with age. 5-aminolevulinic acid is contained in food such as shochu lees, red wine and Asian ginseng. It is also known as a material forming chloroplasts in plants.

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