

PRESS RELEASE

September 7, 2021  
MIRAILAB BIOSCIENCE Inc.

**MIRAILAB BIOSCIENCE Releases**  
*NMN+ 5-ALA Plus*  
**for Antiviral Properties Against COVID-19**

*Nagasaki University study finds 5-ALA has antiviral effects in human cells*

**Tokyo, Japan, September 7, 2021** -- MIRAILAB BIOSCIENCE (Headquarters: Chuo-ku, Tokyo, CEO: Megumi Tanaka), creator of the world's highest quality NMN ( $\beta$ -nicotinamide mononucleotide) fortified nutraceuticals, is proud to announce:

**NMN+ 5-ALA Plus**  
On sale from September 7, 2021

The new compounding ingredient, a type of amino acid known as "5-ALA," was found to suppress SARS-CoV-2 (new coronavirus) infection by researchers at Nagasaki University, which published the findings in February, 2021. In laboratory tests of nasal-derived and colon-derived human cells, 5-ALA was added 48 to 72 hours before infecting the cells with the new coronavirus, and the number of cells infected with the virus was found to decrease by as much as 95% compared to cases without 5-ALA (Reference 1).

5-ALA is a precursor for ingredients that are essential to life. It is also thought to suppress new coronavirus infections through the following three mechanisms.

1. Protoporphyrin IX and heme, which are produced in the body using 5-ALA, bind to the "peplomer protein" on the surface of the new coronavirus to prevent the virus from invading cells (Reference 2).
2. Protoporphyrin IX and heme bind to the "guanine quadruplex structure" (Reference 3), which is characteristic of viral genomic RNA, and suppress the growth of the virus (Reference 4).
3. 5-ALA induces heme oxygenase 1 production in cells, which has anti-inflammatory effects (Reference 5).

Without 5-ALA and its derivatives, the existence of humans and other animals would not be possible, and it is naturally obtained through many kinds of foods, such as natto, spinach, tomatoes, etc. During the human lifespan, 5-ALA is generally observed to reach peak levels in the body around the age of 17, but to achieve similar levels in the autumn years, you would need to ingest 50kg of spinach or 100kg of tomatoes per day.

NMN+ 5-ALA Plus contains 25mg of 5-ALA per capsule. Given the results of this Nagasaki University study, we are especially encouraged to offer the NMN+ series with 5-ALA.

#### Reference 1 - 5

- 1 : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7846235/pdf/main.pdf>
- 2 : [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8118678/pdf/10593\\_2021\\_Article\\_2920.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8118678/pdf/10593_2021_Article_2920.pdf)
- 3 : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8186786/pdf/pone.0250654.pdf>
- 4 : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5909458/pdf/gky187.pdf>
- 5 : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7396584/pdf/fimmu-11-01467.pdf>

NMN+ 5-ALA Plus is available for purchase at the Mirai Lab Online Store, Amazon.co.jp, Yahoo! Shopping, and Rakuten Ichiba shopping sites.

Price: ¥29,160 (tax included)

- Mirai Lab Official Online Store  
<https://mirai-lab.jpn.com/>
- Amazon.co.jp  
<https://amzn.to/3hGcjzA>
- Rakuten Ichiba  
<https://www.rakuten.co.jp/mirai-lab/>
- Yahoo! Shopping  
<https://store.shopping.yahoo.co.jp/mirai-lab>





## Product Information

### PRICE

¥29,160 (tax included)

### CONTENTS

18.54 g (309 mg x 60 capsules)

Made in Japan

### NUTRITION INFORMATION

Per 2 capsules (618 mg): Energy 1.84 kcal / Protein 0.025 g / Fat 0.009 g / Carbohydrate 0.41 g / Table salt equivalent 0.00009 g

### INGREDIENTS

Starch (made in Japan), amino acid powder (with 5-aminolevulinic acid phosphate),

nicotinamide mononucleotide, starch degradation product/HPMC, sucrose fatty acid ester, ultrafine silicon dioxide.

**RECOMMENDED USE:**

Take 1 or 2 capsules daily with water or lukewarm water.

**STORAGE:**

Store in a cool place away from high temperature, high humidity, and direct sunlight.

**PRECAUTIONS**

- Please check the ingredients first and do not consume if you have a related allergy. In rare cases, the product may not fit you depending on your constitution and physical condition. In that case, please stop taking it.
- If you are prescribed any medication or provided ambulatory care, please consult with your doctor first.
- An intake over the recommended dose will not cure any disease or improve health. Please do not exceed the recommended daily dose.
- Please keep out of the reach of young children.
- Please close the cap tightly after use and store the product in a cool, dark place.
- Once opened, please use within one or two months.

For more information:

MIRAILAB BIOSCIENCE Inc.

[info@mirailab-bio.com](mailto:info@mirailab-bio.com)