AN INTRODUCTION TO

Brain Signal

Plasmalogens: Scallop Phospholipid

Certified by the Ministry of Food and Drug Safety of the Republic of Korea as a brain health functional food.

Who We Are

At DR B&H, we are committed to improving brain health because we know how important it is, especially as people get older. Our goal is to help people think better and feel healthier by creating innovative products based on science and trust.

We use natural ingredients, particularly plasmalogens from scallop phospholipids, to support brain health. Our products are carefully developed and tested to ensure they are safe and effective.

As we grow, we will continue to discover new ways to improve brain health and work with experts to make even better products. We believe that a healthier brain leads to a happier life for everyone.

With warm regards,
Hong Jinmoo,
President & Chief Executive Officer

Rapid increases in the number of patients significantly impact the rise in the costs of treatment

SYSTEMATIC REVIEW

Check for updates

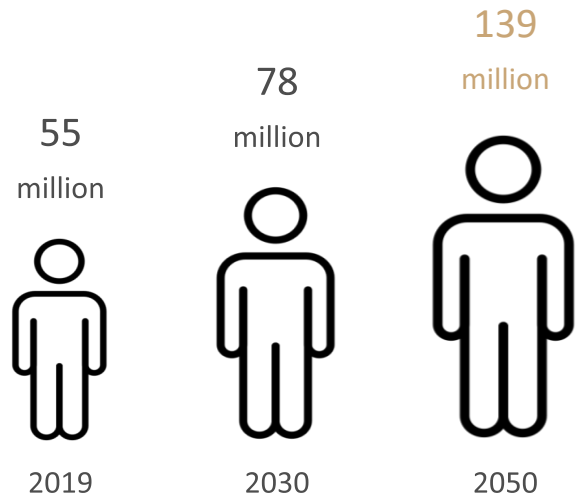
The Costs of Dementia in Europe: An Updated Review and Meta-analysis

Linus Jönsson[1] · Ashley Tate[1] · Oskar Frisell[2] · Anders Wimo[1]

Accepted: 19 October 2022 / Published online: 15 November 2022

Results Based on 113 studies from 17 European countries, the estimated mean costs for all patients by region were highest in the British Isles (73,712 EUR), followed by the Nordics (43,767 EUR), Southern (35,866 EUR), Western (38,249 EUR), and Eastern Europe and Baltics (7938 EUR). Costs increased with disease severity, and the distribution of costs over informal and formal care followed a North-South gradient with Southern Europe being most reliant on informal care.

Conclusions To our knowledge, this study represents the most extensive meta-analysis of the cost for persons with dementia in Europe to date. Though there is considerable heterogeneity across studies, much of this is explained by identifiable factors. Further standardisation of methodology for capturing resource utilisation data may further improve comparability of future studies. The cost estimates presented here may be of value for cost-of-illness studies and economic evaluations of novel diagnostic technologies and therapies for Alzheimer's disease.



Estimated growth in the number of people with dementia from 2019 to 2050.

Every 3 seconds someone in the world develops dementia

1. In Europe, the average cost for a person with dementia is approximately €3,500 to €4,500 ($3,780 to $4,860 USD) per month.

   Annually, this translates to about €42,000 to €54,000 ($45,360 to $58,320 USD) per person.

2. Currently, more than 55 million people are suffering from dementia, which is also the 7th leading cause of death and one of the major causes of disability.

3. Recommendation

Maintaining and Caring for a Healthy Brain: Cognition, Memory Improvement, and More

People seeking help to improve cognitive function affected by aging.

Professionals who need to pay attention to the smallest details in their work.

People who have struggled to recall words during conversations and have spent time trying to remember them.

People who want to care for their brain health with professional-brand products.

Activate your brainpower: Packed with plasmalogens and a variety of brain-boosting nutrients

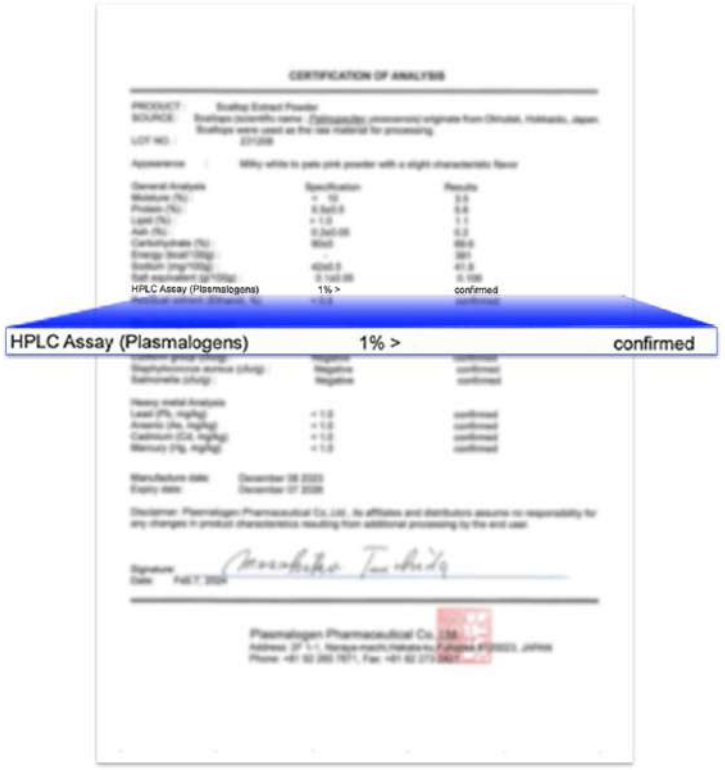
Product Name	**Brain Signal**
Product Type	Dietary Supplement
Content / Retail Price	450mg x 30 capsules (15-day supply) / $55 450mg x 60 capsules (30-day supply) / $95
Dosage and How to Take	Take two (2) capsules daily with water.
Partnering Companies (Research and Development)	Institute of Rheological Function of Food Co. Ltd. Plasmalogen Pharmaceutical Co., Ltd.
Main Ingredients	**Plasmalogens: Scallop Phospholipid**
Key Sub-Ingredients	Phosphatidylserine, Ginkgo Biloba Extract, Vitamin E

- Reduce neuroinflammation
- Support focus and attention
- Boost the growth of new brain cells
- Promote memory improvement
- Aid in recall
- Support neurogenesis

5. Differentiation of Brain Signal

What makes Brain Signal special compared to other products?

Finely selected **scallop extract powder (containing 1,000 µg of plasmalogen per 2-capsule serving)**



01.
High DHA content

The plasmalogen extracted from scallops contains a high amount of DHA, which is one of the beneficial unsaturated fatty acids for brain health.

02.
Have a structure like those in the human brain

Ethanolamine plasmalogens, which are abundant in the human brain, have a similar structure to the components extracted from scallops.

03.
Improvement in memory and cognitive abilities

Enhancement of memory and cognitive abilities by promoting signaling of brain-derived neurotrophic factors, stimulating brain function activation.

04.
Assisting in numerical improvement

Consumption aids in raising plasmalogen levels in the hippocampus.

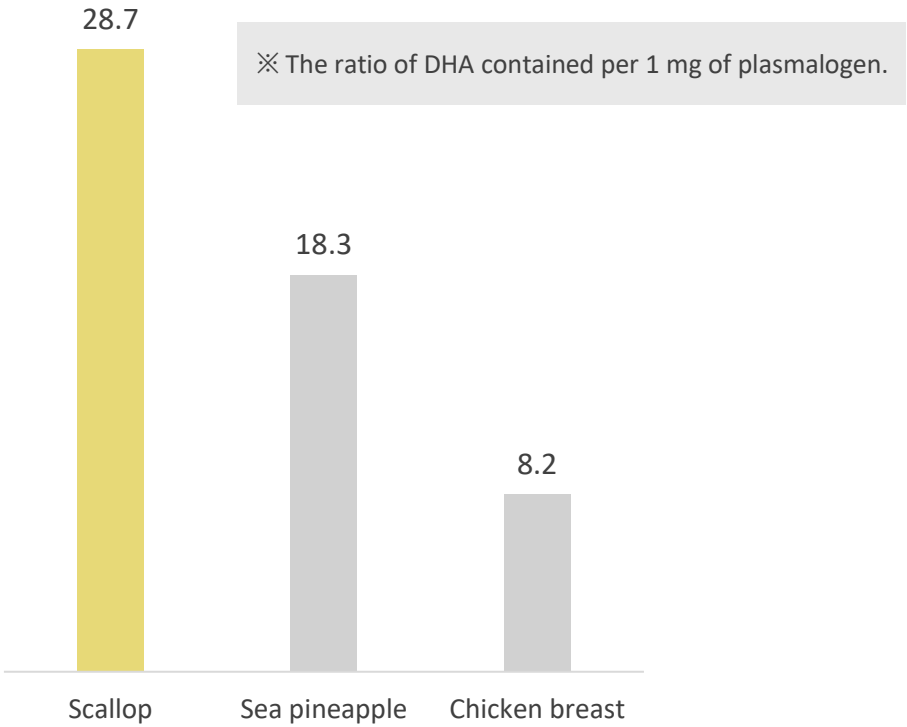
6. Plasmalogen

What is Plasmalogen?

Plasmalogen is a vital component present in the tissues (cell membranes) of all mammals, including humans.

Notably, 65% of the human brain is composed of lipids, of which 50% are phospholipids; approximately 18% of these phospholipids are plasmalogen-type phospholipids.

A decrease in plasmalogen levels is known to promote apoptosis (cell death), which can lead to Alzheimer's disease and other conditions.



Research indicates that the functionality of scallop-derived plasmalogen is significantly higher compared to plasmalogens from other sources.

Scallop-derived plasmalogen closely resembles the plasmalogen composition of brain nerve cell membranes, resulting in superior bioactivity within the human body.

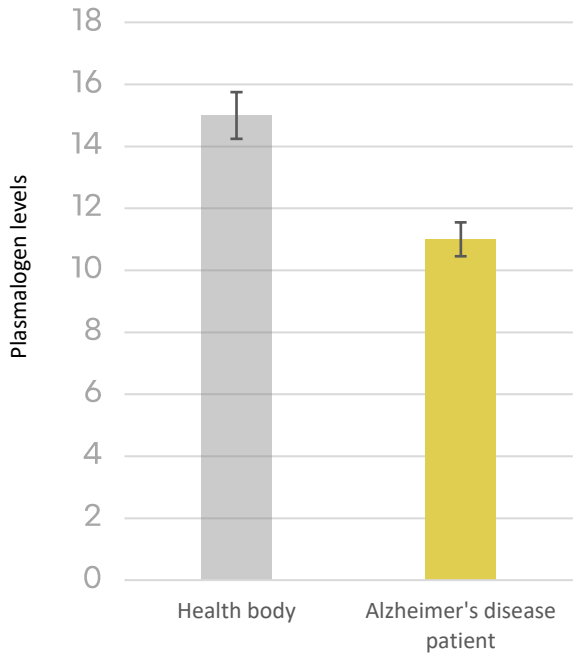
Benefits of Plasmalogen:

1. Anti-inflammatory and Antioxidant Effects
2. Generation of Nerve Cells
3. Improvement of Learning and Memory Function
4. Ion Transport

Importance of Plasmalogen

Absence of Plasmalogen

An essential lipid present in all animal tissues, it is heavily consumed during periods of stress, leading to fatigue, decreased productivity, and a decline with age.



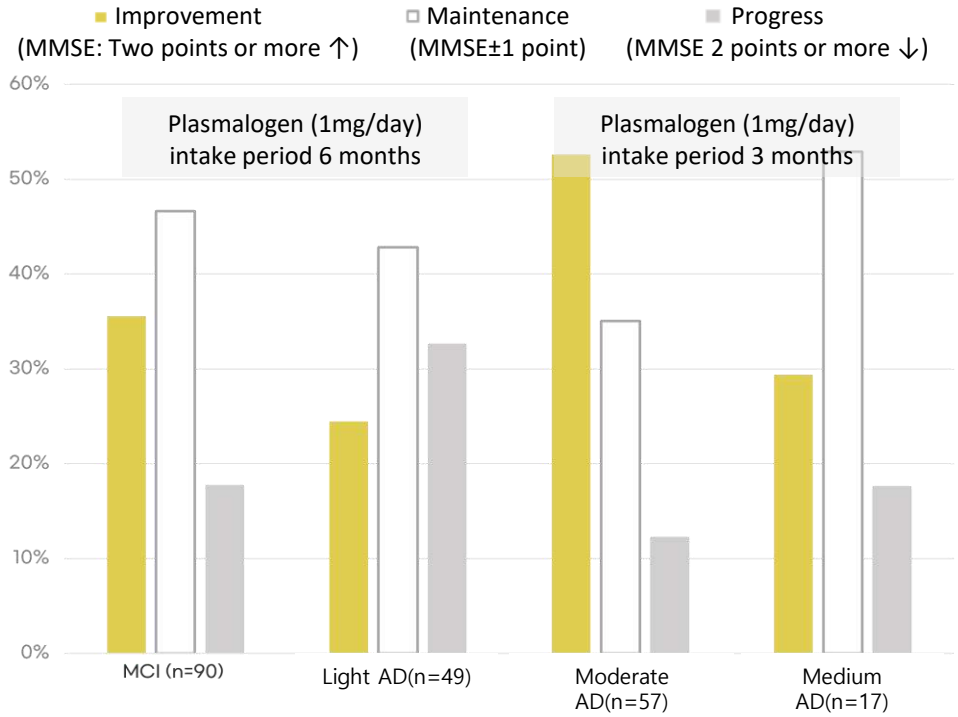
Data source : Guan Z al. J Neuropathol Exp Neurol.58, 740-747 (1999)

* Plasmalogen depletion discovered in the brains of patients who died from Alzheimer's disease (1995, 1999)

* Plasmalogen depletion confirmed in the serum of living Alzheimer's disease patients (2007)

After consuming Plasmalogen

Dr. Fujino announces cognitive function improvement in dementia patients after consuming plasmalogens extracted from scallops.



Data source : J Alzheimers Dis Parkinsonism 9: 474, 2019

Test Method: Open-label clinical trial

Test Subjects: 227 individuals (with moderate Alzheimer's disease)

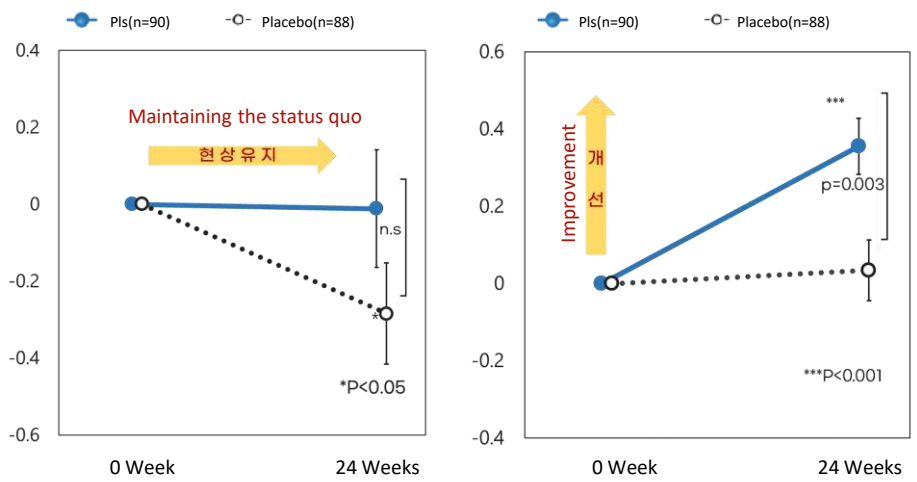
Testing Institutions: 23 medical facilities

8. Effects on Cognitive Function

Post-Plasmalogen Consumption Examination and Testing

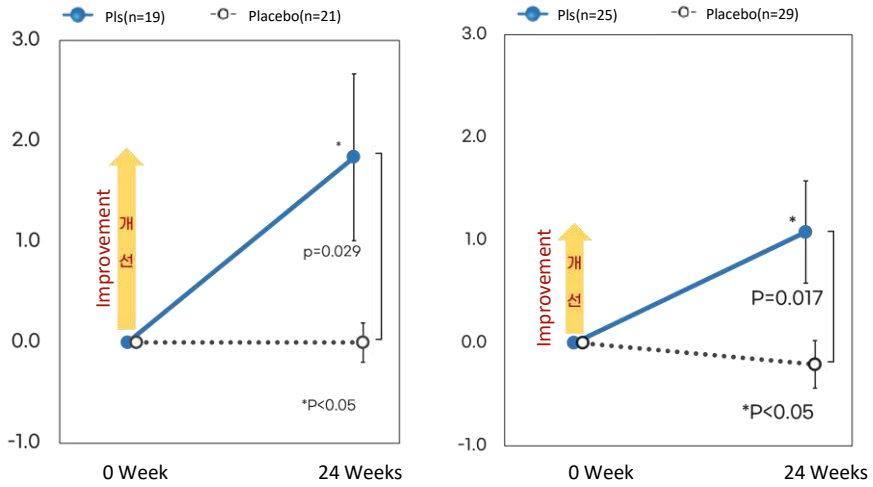
Test Method	Randomized Controlled Trial (RCT)
Test Subjects	328 individuals (MCI/mild Alzheimer's disease)
Test Sites	25 medical facilities

Improvement of cognitive function in MCI



Cognitive Impairment Assessment:
Mini-Mental State Examination

Improvement of memory in mild Alzheimer's disease



Comprehensive Memory Test:
Wechsler Intelligence Scale

MCI: Mild Cognitive Impairment

Cooperation with the top authority in plasmalogen research

レオケン

Takehiko Fujino (藤野 武彦), M.D., Ph.D.

- Emeritus Professor, Kyushu University School of Medicine
- Head of Clinical Research Department, The Japanese Plasmalogen Society
- Chairman, Brain Oriented Obesity Control System (BOOCS) Medical Group
- CEO, Institute of Rheological Function of Food Co., Ltd.
- Author of numerous books, including:
  - "Neither Dementia nor Cancer is Incurable! (BOOCS)"
  - "BOOCS Diet (Asahi Corporation)"
  - "Relieve Brain Fatigue to Cure Diseases! (PHP Corporation)"

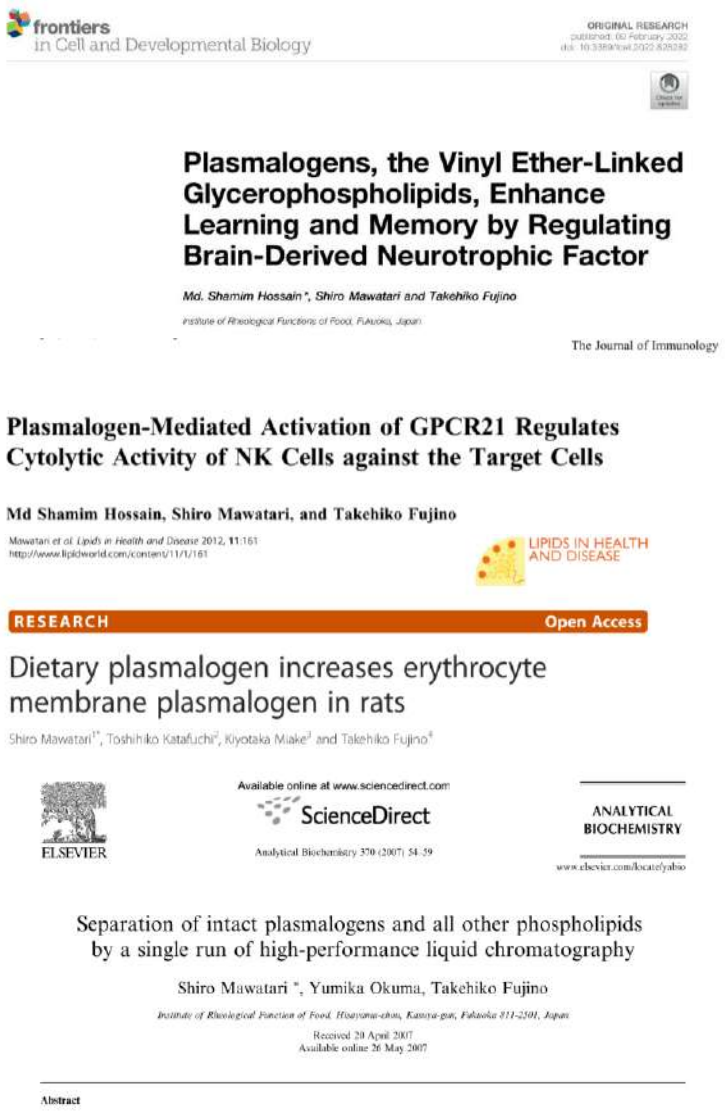
fbr 藤野ブレインリサーチ

BOOCS CLINIC FUKUOKA

PLS | プラズマローゲン研究会 The Japanese Plasmalogen Society

IPLS

The most academic papers published on plasmalogens



Title	Author	Year
Plasmalogen-Mediated Activation of GPCR21 Regulates Cytolytic Activity of NK Cells against the Target Cells	*Md Shamim Hossain, Shiro Mawatari, and Takehiko Fujino*	2022
Plasmalogens, the Vinyl Ether-Linked Glycerophospholipids, Enhance Learning and Memory by Regulating Brain-Derived Neurotrophic Factor	*Md. Shamim Hossain, Shiro Mawatari and Takehiko Fujino*	2022
Therapeutic Efficacy of Plasmalogens for Alzheimer's Disease, Mild Cognitive Impairment, and Parkinson's Disease in Conjunction with a New Hypothesis for the Etiology of Alzheimer's Disease	*Takehiko Fujino, Md Shamim Hossain, and Shiro Mawatari*	2020
PUFA-Plasmalogens Attenuate the LPS-Induced Nitric Oxide Production by Inhibiting the NF-kB, p38 MAPK and JNK Pathways in Microglial Cells	*Mohammed Youssef, Ahmed Ibrahim, Koichi Akashi, and Md Shamim Hossain*	2019
Plasmalogens Inhibit Endocytosis of Toll-like Receptor 4 to Attenuate the Inflammatory Signal in Microglial Cells	*Fatma Ali, Md. Shamim Hossain, Sanyu Sejimo, Koichi Akashi*	2019
Biochemical and Biophysical Research Communications	*Sanyu Sejimo, Md Shamim Hossain, Koichi Akashi*	2018
Oral ingestion of plasmalogens can attenuate the LPS-induced memory loss and microglial activation	*Md. Shamim Hossain, Ayako Tajima, Satoshi Kotoura, Toshihiko Katafuchi*	2018
Neuronal Orphan G-Protein Coupled Receptor Proteins Mediate Plasmalogens-Induced Activation of ERK and Akt Signaling	*Md. Shamim Hossain, Kurumi Mineno, Toshihiko Katafuchi*	2016
.....		
Separation of intact plasmalogens and all other phospholipids by a single run of high-performance liquid chromatography	*Mawatari Shiro, Okuma Yumika, Fujino Takehiko*	2007

11. Patents and Research Achievements

Ongoing research to continuously find better improvements

Name of Patent	Patent Number
Neurogenesis promoter for brain nerve cells (Japanese patent)	Patent No. 6016363
Brain neurogenesis promoter (US patent)	US8822437
A test method for diagnosing cognitive impairment using blood samples	Patent No. 6025568
A testing method for diagnosing cognitive impairment using blood samples (Chinese patent)	CN103314291
Quantification method for ether phospholipids	Patent No. 6399294
Quantification method for plasmalogens	Patent No. 6308393
Ether-type glycerolipid production method	Patent No. 7021953
Method for producing ether lipids.	Patent No. 6626099
Ether lipids and manufacturing methods	Patent No. 6349532
Method for quantifying plasmalogens using PLA1 processing (US Patent)	US10324100
Manufacturing method of functional materials containing plasmalogens	Patent No. 6518800
Immunomodulatory composition (PCT)	PCT/JP2021/016826
.....	
Topical allergy treatment for the skin	Patent Application No. 2021-022051

Institute of Rheological Function of Food's Research Achievements

1. Development/patent registration of high-purity plasmalogen extraction/manufacturing method (2009)
2. Clinical effects of plasmalogen oral administration:
   1) Improvement in Alzheimer's disease animal model (2012, 2013)
   2) Improvement of mild Alzheimer's disease through randomized double-blind trials (2017)
   3) Improvement of mild cognitive impairment (forgetfulness) through randomized double-blind trials (2018)
   4) Improvement of moderate/severe Alzheimer's disease through open-label clinical trials (2019)

12. Medias

Activate your brainpower: Packed with plasmalogens and a variety of brain-boosting nutrients

[TV] tvN [Welcome to Bullochon]
“Once again, the golden days (Plasmalogens)” 2025.03.01

As a well-known expert on plasmalogens, introduced the importance of how plasmalogens can aid in the improvement of dementia.

[TV] BS-TBS [Health Science Mystery!]
“Frontline of Rejuvenation” 2018.02.23

As one of the "6 Keywords Leading to Rejuvenation," plasmalogens are introduced.

[TV] NHK Kyushu 2016.11.09

News on the effectiveness of plasmalogen presented at the 1st International Plasmalogen Symposium was reported on NHK Kyushu.

[TV] TBS [Door to Dreams] 2015.02.08

Under the headline "Radical Approach to the Puzzle [Dementia]! '1 in 5' in Crisis!? The 'Unknown Power' of What Substance," plasmalogens are introduced.

[Newspaper] Kyushu Medical Journal 2017.03.20

A specialized medical information newspaper in Kyushu has published an article on recent research findings, including the cognitive enhancement effects through double-blind experiments.

[Web] CognitionNet 2017.06.010

A special feature on the latest research findings on plasmalogens, derived from scallops, is published on the specialized site for cognition [CognitionNet].

[Magazine] JMS/JAPAN MEDICAL SOCIETY
2017.01.01

Contents from domestic and international researchers on basic and clinical aspects are published from the 1st International Plasmalogen Symposium (Fukuoka).

THANK YOU.

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