



# 15TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS

INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS

15TH INTERNATIONAL CONGRESS  
2-5 JULY 2023



NANTES  
FRANCE



INNOVATION



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BY AKER BIOMARINE

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- ✓ Regulate cell membrane phospholipid composition



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- ✓ Looking for research partners to collaborate on research & development.

# 15TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS



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March 2024<sup>^</sup>

<sup>^</sup> denotes second term.



# THANK YOU TO OUR 2023 CONGRESS SPONSORS AND SUPPORTERS

**THANK YOU!** The support that the ISSFAL 2023 Congress has received from sponsors, exhibitors and other supporters is critically important in keeping the cost of registration at a reasonable level, and also to enable the award of 50 free registrations (worth over \$20,000 USD) to New Investigator Award winners, thus encouraging good investigators into, and to remain in, the field of fatty acid research. The meeting organisers and the Society appreciate this support, and urge delegates to take every opportunity to express this appreciation to the representatives of sponsors, exhibitors and other supporters that they come into contact with during the meeting and afterwards.

**GOLD**



**SILVER**



**DANONE**  
ONE PLANET. ONE HEALTH



**DSM**  
BRIGHT SCIENCE. BRIGHTER LIVING.

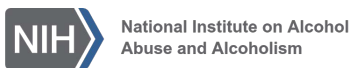
*MeadJohnson*  
**NUTRITION INSTITUTE**

## SATELLITES



## WORKSHOPS

## NEW INVESTIGATOR RESEARCH AND TRAVEL AWARDS



## LANYARDS



## EXHIBITORS



## ADDITIONAL SUPPORT PROVIDED BY:



Gala Dinner Sponsor



# WELCOME

Welcome to Nantes, France, the host city for the 15th ISSFAL Biennial Congress, taking place from 2nd to 5th July 2023. This marks a special occasion as it has been over 10 years since the Congress was last held in Europe and the first time since 2018 that the Society has gathered together.

Our Congress provides a unique platform for seasoned and new members, as well as invited guests, to exchange scientific results in the field of lipids. With a program encompassing Biochemistry and Metabolism of Fatty Acids, Lipids in Health and Disease, and Lipids in Nutrition, we aim to explore all aspects of lipids and their role in understanding human physiology and pathophysiology. Presentations will range from basic research to translational studies and clinical investigations, catering to a diverse audience of researchers, physicians, and nutritionists.

As is customary in our biennial ISSFAL Congresses, we encourage you to seize the many opportunities for collaboration and networking with international peers. Apart from the plenary lectures and oral presentations chosen from a pool of over 300 abstract submissions, poster presentations and various social events will facilitate interactions among all participants.

Nantes, France is best known for its rich history, cultural heritage, and vibrant atmosphere. As the birthplace of Jules Verne, the renowned writer of adventure and science fiction novels, Nantes celebrates its literary legacy through various attractions and events. The city is also famous for its stunning architecture, particularly the magnificent Château des Ducs de Bretagne, a medieval castle that serves as a symbol of Nantes' historical significance. Additionally, Nantes is renowned for its innovative art scene, showcasing contemporary artworks installed throughout the city. With its charming riverside setting, bustling markets, and delectable cuisine, Nantes offers a delightful blend of history, culture, and creativity, making it a captivating destination for delegates from around the world.

Further details about the Congress venues, transportation, and a detailed schedule of events can be found in the following pages. Whether you are a long-standing member or a first-time attendee, our team has dedicated efforts to ensure your visit is both productive and enjoyable. Should you require any assistance, please do not hesitate to reach out to any of the ISSFAL staff or leadership.

Once again, we extend a warm welcome to you and hope you have a wonderful experience at the 2023 Congress.

Best regards,



**Bernadette Delplanque**  
Congress Chair



**Maria Makrides**  
ISSFAL President



## SCIENTIFIC ORGANIZING COMMITTEE

**Bernadette Delplanque**, Congress Chair | Institute of Neurosciences Paris-Saclay (NeuroPSI) France

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## CONGRESS ORGANIZING COMMITTEE

**Bernadette Delplanque**, Congress Chair | Institute of Neurosciences Paris-Saclay (NeuroPSI), France

**Maria Makrides**, ISSFAL President | SAHMRI, Australia

**Peter Clough**, ISSFAL Honorary Secretary | Cobden Research, Ltd., UK

**Philippe Guesnet** | SFEL President, France

## CONGRESS ADMINISTRATION

**Hauck & Associates, Inc.**

# 2023 NEW INVESTIGATOR AWARDEES

*Bold names indicate Travel Award Recipients*

Felicianna	University of Hong Kong	Hong Kong, SAR
<b>Bijou Andriambelo</b>	University of Sherbrooke	Canada
Elmira Arab-Tehrany	Université de Lorraine	France
<b>Sara Arranz</b>	AZTI	Spain
Elodie Baranek	INRAE	France
Malin Barman	Chalmers University	Sweden
Anastasia Blokhina	National Medical Research Center for Therapy and Preventive Medicine	Russia
Christine Bobin	Nantes University	France
Maria Dolores Camacho Muñoz	The University of Manchester	United Kingdom
Laura Carpanedo	Bergische Universität Wuppertal	Germany
Chuchun Liz Chang	Columbia University	United States of America
Yohann Chaudron	MNHL	France
Danielle Christifano, PhD	University of Kansas Medical Center	United States of America
Tetyana Chumak	University of Gothenburg	Sweden
Vincent Ciesielski	Institut Agro	France
Fabiano Cimmino	University of Naples Federico II	Italy
Tiago Conde	Centre for Environmental and Marine Studies	Portugal
Mikel De Uranga	Cinvestav	Mexico
Sugasini Dhavamani	University of Illinois	United States of America
Latife Esgunoglu	University of East Anglia, Southhampton	United Kingdom
Helena Fisk	University of Naples Federico II	United Kingdom
Hélène Fougère	CHUL-Université Laval	Canada
Veronica Gallo	CSIC	Spain
Chang Gao	South Australian Health and Medical Research Institute	Australia
Juan García Santillán	INRAE - Nantes Université	France
Maureen Gerlei	Université de Lorraine	France
Melissa Gonzalez Soto	University of Guelph	Canada
Sebastian Graute	University Medical Centre Hamburg	Germany
Frank Hayford	University of Ghana	Ghana
<b>Cealan Henry</b>	Ulster University	United Kingdom
Marsena Jasiel Ismaiah	The University of Hong Kong	Hong Kong SAR
Genevieve E James	The University of Texas at Austin	United States of America
Reena Kartha	University of Minnesota	United States of America
Christos Kelaiditis	University of Roehampton	United Kingdom
Brinley Klievik	University of Toronto	Canada
Ibuki Kusumoto	University of California, Davis	United States of America
Youenn Launay	Institut Agro	France
Jordan Lehoux	Pôle Chimie Balard Recherche	France
Dandan Li	University of Toronto	Canada
<b>Marrium Liaquat</b>	University of East Anglia	United Kingdom
Ikbāl Malau	China Medical University Hospital	Taiwan
Kristal Maner-Smith	Emory University	United States of America
Anne Manson	University of Manitoba	Canada
Victor Mendoza-Grimau	CSIC	Spain
John Miklavcic	Chapman University	United States of America
Khan Naim	INSERM	France
Amina Bourragat	Université de Bourgogne/INSERM	France
Isabell Nessel	Queen Mary University of London	United Kingdom
<b>Arista Nienaber</b>	North-West University	South Africa
James H O'Keefe	Saint Luke's Mid America Heart Institute	United States of America
Rei-ichi Ohno	University of Wuppertal	Germany
Yongsoo Park	Hanyang university	Korea
Armelle Penhoat	INSERM	France
Rebecca Pfaff	Bergische Universität Wuppertal	Germany
Kuorosh Rezaei	University of Toronto	Canada
<b>Ruxandra Rotarescu</b>	University of Toronto	Canada
<b>Janaina Silva</b>	Universidade de São Paulo	Brazil
Aidan Tyrrell	University of Toronto	Canada
Inge van der Wurff	Open Universiteit	Netherlands
Tosca Van Hoorde	Maastricht University	Netherlands
Glenda Vasku	CSGA	France
<b>Rachel Walker</b>	Pennsylvania State University	United States of America
Yin-Chieh Wu	Louisiana State University Health Sciences	United States of America
Xinyu Yan	King's College London	United Kingdom
Wen Lun YUAN	INSERM	France
Halliru Zailani	China Medical University Hospital	Taiwan
Lizelle Zandberg	North-West University	South Africa
Fangfei Zhang	University of Hong Kong	Hong Kong SAR
Ruihan Zhou	University of Reading	United Kingdom
Lilli Zinnert	University of Wuppertal	Germany
Brad Feltham	University of Manitoba	Canada

# DELEGATE & SPEAKER INFORMATION

The venue for the 2023 Congress in Nantes is the La Cité des Congrès.

Within La Cité, we will be utilizing the Grande Halle located on the entrance level of the Congress Center for the Exhibits and the Poster Sessions as well as the Scientific Program. The following rooms will be used during the Congress:

**Satellite Symposia:** Room 300

**Plenary Session/Breakout 1:** Auditorium 800

**Breakout 2:** Room 300

**Breakout 3:** Room 150

**Exhibit Hall & Poster Sessions:** Grande Halle

**Speaker Ready Room:** Salle E

## Congress Venue

### La Cité des Congrès de Nantes

5 Rue de Valmy

44000 Nantes, France

Phone: +33 2 51 88 20 00

WiFi

Wifi Access Information

Network: ISSFAL

Password: nantes23



## ISSFAL REGISTRATION DESK

The ISSFAL Registration Desk is conveniently located in the Foyer of the Grande Halle just as you enter La Cité. Be sure to check-in at the Registration Desk to pick up your Congress materials, event tickets and name badge. Registration Desk hours are as follows:

**Sunday, July 2:** 08:00–17:30

**Monday, July 3:** 08:00–18:15

**Tuesday, July 4:** 07:00–18:15

**Wednesday, July 5:** 08:00–16:00

## NAME BADGE POLICY

Your badge grants you access to the ISSFAL 2023 Congress. Please handle it with care. Delegates are required to wear their name badge at all times and will not be granted access to the Congress sessions or social events without it. A reprint convenience fee of \$50.00 USD will be assessed for any lost or misplaced badge. This is to help ensure that access to the Congress is properly managed.

## CERTIFICATE OF ATTENDANCE

A Certificate of Attendance will be distributed to each registered delegate following the ISSFAL 2023 Congress via email.

## Business Center

Please contact the ISSFAL Registration Desk if you have any printing or shipping questions.

## Internet Access

ISSFAL attendees will have complimentary internet in all areas of La Cité. Network name and passwords will be posted onsite.

## Smoking

La Cité is a non-smoking facility. Smoking is only permitted outside the Congress facility.

## Lost Property

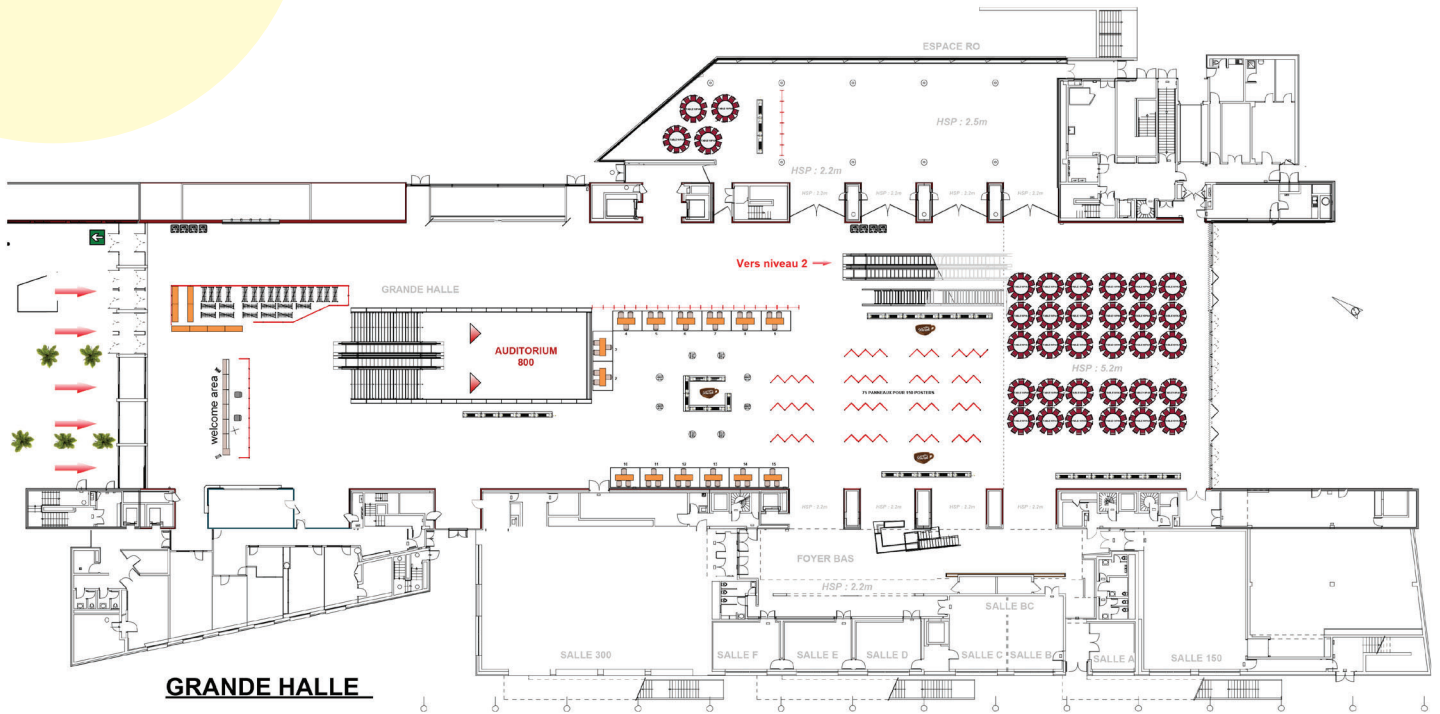
Please report any lost or unattended items immediately to ISSFAL staff. Should you lose anything while at the Congress, do enquire at the ISSFAL Registration Desk where any found property will be held.

# EXHIBIT & POSTER HALL / GRANDE HALLE

Posters will be available for review during all three days of the Congress.  
Formal presentation of posters will take place during the breaks and lunch.

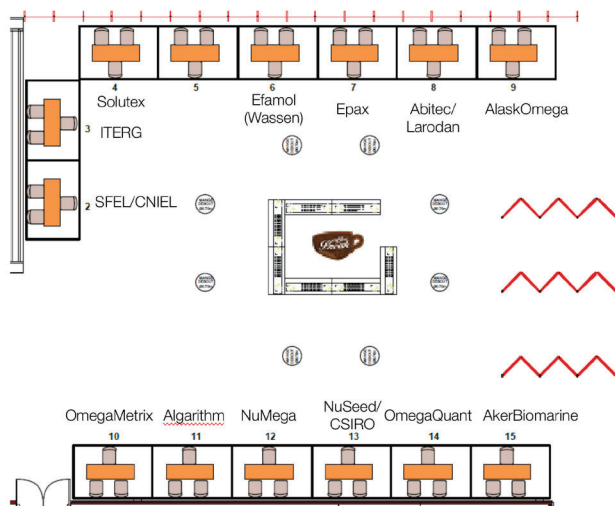
## UNOPOSED EXHIBIT & POSTER PRESENTER HOURS

	MONDAY, JULY 3	TUESDAY, JULY 4	WEDNESDAY, JULY 5
<b>Morning Break</b>	09:30–10:00	09:30–10:00	09:30–10:00
<b>Lunch Break</b>	12:15–13:30	12:20–13:30	12:20–13:30
<b>Afternoon Break</b>	16:05–16:30	16:05–16:30	



## MEETING ROOM FLOOR PLAN

- **Plenary Session/Breakout 1:** A800
- **Breakout 2:** Room 300
- **Breakout 3:** Room 150
- **Exhibit Hall & Poster Sessions:** Grande Halle
- **Speaker Ready Room:** Salle E



## EXHIBITOR BOOTH LISTING

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Aker Biomarine	15
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Algorithm	11
Efamol	6
EPAX	7
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NuMega	12
NuSeed	13
OmegaMetrix	10
OmegaQuant	14
SFEL	2
Solutex	4



## SPEAKER READY ROOM | *Salle E*

Please identify yourself as a Congress presenter to the ISSFAL Registration Desk staff and you will be directed to the Speaker Ready Room. Speaker Ready Room hours are as follows:

<b>Sunday, July 2</b>	15:00–18:00
<b>Monday, July 3</b>	08:00–18:00
<b>Tuesday, July 4</b>	08:00–18:00
<b>Wednesday, July 5</b>	08:00–14:00

Due to the large number of presentations in the program, speakers are urged to visit the Speaker Ready Room no later than four (4) hours prior to their scheduled session, and preferably on the day prior to the presentation. An audio-visual technician will be available to assist speakers with pre-flighting their presentation. Please bring a copy of your presentation to the Speaker Ready Room on a flash drive/USB stick.

## SCHEDULED MEALS & SOCIAL PROGRAM

### BREAKFAST

Breakfast will not be provided to delegates over the course of the Congress as many hotels include this in their room rate. Please check with your hotel. There are of course a number of Cafes and Breakfast places available throughout Nantes.

### COFFEE BREAKS & LUNCHES

#### Grande Halle

ISSFAL 2023 Congress registration includes morning and afternoon coffee breaks as well as buffet lunch on Monday 3 July, Tuesday 4 July, and Wednesday 5 July.

## WELCOME RECEPTION AT NANTES CITY HALL

Hôtel de Ville (City Hall) - Paul-Bellamy room  
(entrance Cour Rosmadec - 2 rue de la Commune)

### Sunday, July 2 | 18:00–20:00

Invited by Nantes Metropole Mayor  
Musical performance by Continental Jazz Band  
Hors d'oeuvres and beverages will be provided. ONLY those attendees who registered for the Congress may be allowed to attend this special event.



## GALA DINNER AT CHÂTEAU DE LA POTERIE

*Sponsored in part by Bleu Blanc Coeur and Valorex  
Musical performance by Antoine*

### Wednesday, July 5 | 18:30 - 1:00

Say goodbye to your colleagues at Château de la Poterie which is just a short river boat ride from central Nantes. All delegates are responsible for their own transportation to the boat launch or to the Château. ISSFAL will provide bus transportation back to central Nantes at the conclusion of the event. Boats will leave promptly at 19:00 and provide a scenic 45 minute ride along the historic Erdre River.

#### Boat Launch Address:

#### Bateaux Nantais | 6:30 PM Departure

Scenic Boat Trip on the Erdre River with Drinks  
Return 23:30 to 01:00 by bus – departures every 30 minutes Pl.  
Waldeck Rousseau, 44000 Nantes, France  
Phone: +33 2 40 14 51 14

#### Gala Dinner Address:

#### Château De La Poterie

La Poterie, 44240 La Chapelle-sur-Erdre, France  
Phone: +33 2 40 72 57 57



## SATELLITE SYMPOSIA SUNDAY, 2 JULY

ISSFAL will host three Sponsored Satellite Symposia on Sunday, 2 July. This program will be held at the Congress location, La Cité des Congrès. A separate registration is required to attend. The fee includes breaks, and admission to all of the symposia. If you have signed up for this event, please see your final confirmation email for any additional Satellite information. Please refer to the schedule and details program for more information.

# EXHIBITORS & SPONSORS

## **Abitec / Larodan** BOOTH 8

ABITEC Corporation, along with its subsidiary Larodan, is a renowned global leader in the development and manufacture of high-quality functional lipids and surfactants. With an unwavering commitment to excellence, ABITEC leverages its world-class technical, scientific, regulatory, and manufacturing expertise to deliver superior product-based solutions in solubilization, emulsification, and lubrication to its esteemed global customers. The lipid excipients, including Larodan's exceptional research-grade lipids, produced by ABITEC, are critical components in a multitude of drug formulations across various dosage forms, including oral, transdermal, topical, and parenteral applications. As drug development technology continues to advance, the demand for complex delivery systems that enhance the body's absorption and utilization of active ingredients becomes paramount. ABITEC and Larodan remain at the forefront of these new technologies, continuously striving to provide the most effective and innovative solutions in the market.

## **Aker BioMarine** BOOTH 15

Aker BioMarine is a biotech innovator and Antarctic krill-harvesting company, dedicated to improving human and planetary health. Listed on Oslo Stock Exchange, the company develops krill-based ingredients for nutraceutical application including Superba Krill®, NKO® and K-REAL® krill oil, and LYSOVETA™ - an LPC supplement for brain, eye and liver health through targeted transportation of EPA and DHA. Aker BioMarine's fully transparent value chain stretches from sustainable krill harvesting in pristine Antarctic waters through its Montevideo logistics hub, Houston production plant, and to customers around the world. Lysoveta is a novel dietary supplement for targeted delivery of lysophosphatidylcholine

(LPC-EPA/DHA) derived from krill. DHA and EPA cannot be de novo synthesized efficiently in the brain and must be transported, by the Mfsd2a transporter, across the blood-brain barrier (BBB). The Mfsd2a is the major transporter for DHA/EPA uptake into the brain and only recognizes esterified DHA and EPA in the form of lysophosphatidylcholine (LPC). The LPC transport does not only provide accretion of DHA/EPA by the brain but is also critical for providing LPC as building blocks for formation of neurons and regulation of membrane phospholipid composition. Mfsd2a is also present in other vital organs such as eye and liver, highlighting the wide ranging potential for beneficial effects of dietary LPC. We are dedicated to developing further insights and unlocking the potential for LPC in improving human health.

## **AlaskOmega** BOOTH 9

AlaskOmega® is produced from wild-caught Alaska Pollock oil sourced from the Bering Sea that is certified sustainable by the Marine Stewardship Council. AlaskOmega® omega-3 ingredients are available in ultra-high purity ethyl ester and triglyceride concentrates up to 80% EPA and DHA content. AlaskOmega® omega-7 ingredients are available in a 50% and 70 concentration. We are happy to support omega-3 and omega-7 research with donation of AlaskOmega® test materials on select projects.

## **Algorithm** BOOTH 11

Fish-Free Omega-3, Straight from the Source! Algorithm produces plant-based, ocean-friendly Omega-3 ingredients derived from micro-algae. Our Omega-3s top the charts in fresh, undetectable taste, stability and versatility. Through our patented processes, innovative delivery methods and novel applications, we strive to make the consumption of Omega-3s easy, enjoyable and eco-friendly for everyone.



# EXHIBITORS & SPONSORS

## **CNIEL BOOTH 2**

CNIEL is the French dairy interbranch organisation, set up in 1973 as an association approved by public authorities. It is a private, non-profit organisation with a mission to assist economic relations between French dairy producers and processors; as well as to generate scientific dairy knowledge by supporting and coordinating research programmes in several fields (farming techniques and sciences, environment, food safety, nutrition and human health); and to promote dairy products through promotional and informational campaigns.

## **Danone**

Dedicated to bringing health through food to as many people as possible, we are a leading global food & beverage company built on four businesses: Essential Dairy and Plant-Based Products, Waters, Early Life Nutrition and Medical Nutrition. At Danone, we aim to inspire healthier and more sustainable eating and drinking practices, in line with our vision - Danone, One Planet. One Health - which reflects a strong belief that the health of people and the health of the planet are interconnected. We deliberately concentrate on high-growth and health-focused categories, and commit to operating in an efficient, sustainable and responsible manner.

## **DSM**

Our Health, Nutrition & Care business group aims to keep the world's growing population healthy through good nutrition and care. Health, Nutrition & Care provides unique science-based solutions for consumers at every life stage with a rich innovation portfolio that includes ampli-D®, a rapid-acting

potent form of vitamin D, an extensive algal lipids portfolio, human milk oligosaccharides-prebiotics, and personalized nutrition initiatives such as Hologram Sciences™. In 2023, DSM became a part of DSM-Firmenich to establish the leading creation and innovation partner in nutrition, beauty and well-being. In preparation for this, we have completed the sale of our Materials businesses in transactions that amount to in excess of €5 billion in aggregate. We continue our approach of actively managing our businesses for growth supported by complementary acquisitions, including of the Erber Group (animal nutrition) and Royal CSK (dairy cultures) in recent years, that strengthen and develop our critical capabilities.

## **Efamol (Wassen) BOOTH 6**

Efamol have been pioneering the importance of Essential Fatty Acids for over 40 years. Our specialised formulations reflect the latest findings from research, and we have a dedicated team who are responsible for reflecting scientific advances in our NPD programme. We have more published Essential Fatty Acid research on our products than any other brand.

## **EPAX BOOTH 7**

A world leader in marine ingredients, Epax® is committed to delivering innovative products of unmatched purity and quality. It all started with production of premium quality cod liver oil in Norway in 1838. Fast forward 180 years, and we are proud to say that we continue to deliver the very best quality marine ingredients, only now in the form of highly concentrated Omega-3 oils.



# EXHIBITORS & SPONSORS

## GOED

GOED (Global Organization for EPA and DHA Omega-3s) represents the worldwide EPA and DHA omega-3 industry, with a mission to increase consumption of EPA and DHA omega-3s around the world. The membership is built on a quality standard unparalleled in the market and members must comply with quality and ethics guidelines that ensure members produce quality products that consumers can trust. Our 180+ members represent the entire supply chain of EPA and DHA omega-3s, from fisheries and crude oil suppliers to refiners, concentrators and finished product brands.

## ITERG BOOTH 3

An Industrial Technical Center (CTI), Institute of Fats & Related Products, in Canéjan (33) and its subsidiary IMPROVE, dedicated to the recovery of vegetable proteins, in Dury (80). These two entities create a unique group, leader in the valorization of lipids and proteins, serving the agricultural sector and the agro-industry, in line with the expectations of the industry.

## KD Phyto

KD Phyto® is your ideal partner for customized phyto-extract products and plant-based lipids, offering responsibly sourced - minimally processed plant metabolites for food, cosmetics, and pharma applications. With strong focus on Cannabinoids, KD Phyto® excels by providing industrial solutions for plant-sourced API and food additives that fuel the development of novel applications. We have built a world-class manufacturing infrastructure, that provides one-stop, full-service product

development and manufacturing capabilities – from raw material sourcing to finished product packaging.

## Mead Johnson Nutrition Institute

The Mead Johnson Pediatric Nutrition Institute is a global network dedicated to advancing and applying the latest breakthroughs in nutrition science to benefit infants and children worldwide. Our only purpose is to be at the forefront of pediatric nutrition research.

## National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health

The mission of the National Institute on Alcohol Abuse and Alcoholism (NIAAA) is to generate and disseminate fundamental knowledge about the adverse effects of alcohol on health and well-being, and apply that knowledge to improve diagnosis, prevention, and treatment of alcohol-related problems, including alcohol use disorder, across the lifespan. The Laboratory of Molecular Signaling at NIAAA contributes to the mission through the investigation on the neurodevelopmental and neuroprotective molecular mechanisms of omega-3 polyunsaturated fatty acids counteracting neurotoxic effects of ethanol. The neurodevelopmental and neuroprotective actions of docosahexaenoic acid (DHA) are mediated by mechanisms involving membrane- and metabolite-related signal transduction. Ethanol depletes DHA and phosphatidylserine (PS) from neuronal membranes and increases the neuronal susceptibility to cell death. In contrast, DHA stimulates



# EXHIBITORS & SPONSORS

the synthesis of neuronal PS, facilitating the translocation and activation of kinases such as Raf-1, protein kinase C (PKC) and Akt, and promoting neuronal survival. DHA is also metabolized to an endocannabinoid-like lipid mediator N-docosahexaenylethanolamine (synaptamide) in the brain, that potently promotes neurogenesis and synaptogenesis and exerts anti-inflammatory effects. Synaptamide binds to the GAIN domain of the GPR110 (ADGRF1) receptor, triggers the cAMP/protein kinase A (PKA) signaling pathway, and activates the cAMP-response element binding protein (CREB). The DHA status in the brain influences not only the PS-dependent signal transduction but also the metabolite formation and expression of pre- and post-synaptic proteins that are downstream of the CREB and affect neurotransmission. The combined actions of these processes contribute to the neurodevelopmental and neuroprotective effects of DHA, ameliorating adverse impact of ethanol during development and in adulthood.

## **NuMega BOOTH 12**

Nu-Mega Ingredients (a subsidiary of Clover Corporation) is one of the world's leading suppliers of microencapsulated Omega-3 and Omega-6 powders, emulsions and nutritional

oils. Nu-Mega's expansive association with Omega-3 clinical research and innovation in delivery system technology aligns with the company's strategic focus of delivering science-based nutritional bioactives which provide health benefits to adults, infants and children. Nu-Mega's Driphorm® powder and Gelporm® emulsion ingredient solutions address the specialized needs of infant nutrition, sports nutrition, dietary supplements and the vegetarian/vegan markets. The latest addition is Premneo®, a novel, high DHA liquid emulsion, specifically designed for enteral supplementation of preterm infants to support normal cognitive development.

## **NuSeed BOOTH 13**

Nuseed is a global seeds business that offers localized support. We are advancing canola, carinata, sorghum, and sunflower by adding VALUE BEYOND YIELD for growers, end-use customers, consumers and our planet. Our regional teams deliver top seed, service and new opportunities for farm customers in Australia, Europe, North and South America. Their local work and Nuseed's global reach maximize our R&D and help build strong Nuseed Value Chains that supply sustainable plant-based solutions to our end-use customers.



# EXHIBITORS & SPONSORS

## **OmegaMetrix** BOOTH 10

Founded in 2007, Omegametrix is the international laboratory for determining the Omega-3 Index. We determine your HS-Omega-3 Index® and explain exactly what that means. Equipped with the latest technology, we determine your personal HS-Omega-3 Index® and measure another 24 fatty acids in our specialist laboratory. We attach great importance to an exact and validated measurement, which is subjected to strict quality tests.

## **OmegaQuant** BOOTH 14

OmegaQuant is an independent, CLIA-certified lab that offers Omega-3 Index, Vitamin D, Prenatal DHA and Mother's Milk DHA testing to researchers, clinicians and the public. OmegaQuant partners with academic and corporate researchers to provide a full range of fatty acid analytical services. We also consult in study design and assist in data interpretation

## **SFEL** BOOTH 2

Created in 1943, the French Association for the Study of Fatty Bodies (AFECG) became the French Society for the Study of Lipids (SFEL) in 2010. The Society brings together players from industry and academic research laboratories, oil and fat specialists at national and international level and organize or participate in meetings, conferences, national or international exhibitions. SFEL establishes relations with all French or

foreign scientific or technical companies or personalities on all matters relating to the aims of the association. SFEL provides award grants for scholarships or prizes intended to promote research of general interest in the oils, fats, lipids and related industries and in particular through the annual award of the Chevreul Medal. SFEL is a member of the European Federation for the Science and Technology of Lipids (Euro Fed Lipid). SFEL is also a member of the International Society for Fat Research (ISF).








## **Solutex** BOOTH 4

Solutex is a leading manufacturer and supplier of highly concentrated omega-3 EPA/DHA fatty acids and specialized on biolipid research and innovation, critical to the development of next-generation formulas for the health and wellness industry. Our vision is to deliver healthier lives for all through sustainable innovation. The company was the first industry leader equipped with supercritical CO2 technology, which isolates EPA and DHA from omega-3 oil sources, enabling the development of differentiated products tailored towards the nutraceutical and pharmaceutical industries. Plus, we are pioneers in Specialized Pro-Resolving Mediators (SPMs) for immune-nutrition support – delivered via our IP-protected LIPINOVA® ingredient brand and our HDAS Resolution Physiology Laboratory in Spain that allows us to observe SPM levels of activity and inflammatory parameters in biological samples.



# PROGRAM AT-A-GLANCE

Schedule Subject to Change

	DAY 1 – 1 July (Saturday)			DAY 2 – 2 July (Sunday)						
9:00	ISSFAL Executive Committee <i>Invitation Only</i>				Satellite 1: (8:45 AM - 11:00 AM) R300 <i>Omega-3 Science: Making sense of Controversies and Contraindications</i>					
Noon					Satellite 2: (11:15 AM - 1:30 PM) R300 <i>ISSFAL Prematurity Statement (ISSFAL Statement #7)</i>					
14:00	ISSFAL Board of Directors <i>Invitation Only</i>				Satellite 3: (2:30 PM - 4:45 PM) R300 <i>DHA and neurocognitive outcomes in infants and children</i>					
18:00				Welcoming Reception at Nantes City Hall						
	DAY 3 – 3 July (Monday)			DAY 4 – 4 July (Tuesday)			DAY 5 – 5 July (Wednesday)			
8:00				Meet the Professors Breakfast (Invite Only)						
8:15	Opening Ceremony A800			7:30 AM - 8:30 AM						
8:30	Plenary 1 <i>N-3 PUFA in neuroinflammation, synaptic plasticity and mood and cognitive disorders</i> Prof. Sophie Layé NutriNeuro, INRAE   France A800			Plenary 3 <i>The Evolving Role of 15-LOX in Inflammation</i> Prof. Valerie O'Donnell Cardiff University   Wales A800			Plenary 5 <i>Of Healthy Diets and Cardiovascular Disease: Lessons from the CORDIOPREV Study</i> Dr. Javier Delgado Lista Reina Sofia University Hospital of Córdoba   Spain A800			
8:45										
9:00										
9:15										
9:30	Coffee Break/ Posters & Exhibits			Coffee Break/ Posters & Exhibits			Coffee Break/ Posters & Exhibits			
9:45										
10:00	PS01 Fatty Acids and Related Lipids in Diabetes A800	PS02 Lipids in Brain, Neurosciences and Neurological Disorders R300	PS03 Dietary Lipids and the Microbiome R150	Sponsored Workshop Recent advances on the role of SFA on metabolic health. From nutrients to dairy foods. A800 	PS09 Lipid Nutrition & Aging R300	PS10 New Frontiers in Lipidomics R150	SFEL Medaille Award & Session  Prof. Richard Bazinet University of Toronto A800	PS 16 Lipids and Cardiovascular Diseases R300	PS17 Plant Sources of Long-Chain PUFA R150	
10:15										
10:30										
10:45										
11:00										
11:15										
11:30	Early Career Award <i>Docosahexaenoic acid in pregnancy and the neonatal period and child cognitive development</i> Jacqueline Gould, BSc, BHSc (Hons Psych), PhD SAHMRI   Australia A800			N-3 Along the Food Chain 20 Years of "One Health" Development in France: The Bleu-Blanc-Coeur Concept Dr. Pierre Weill Bleu-Blanc-Coeur and Université Rennes 1   France A800			Alexander Leaf Award Professor Michel Lagarde INSA - Lyon   France ISSFAL President 2006-2009 A800			
12:15	Lunch / Posters & Exhibits			Lunch / Posters & Exhibits			Lunch / Posters & Exhibits ISSFAL Member Meeting A800			
13:15										
13:30	Plenary 2 <i>Requirements and effects of Omega-3 Fatty Acids for Extremely Preterm Infants: Perspective of a Pediatrician</i> Dr. Isabelle Marc University of Laval   Canada A800			Plenary 4 <i>The Endocannabinoidome: An Expanded Endocannabinoid System Tightly Communicating with the Gut Microbiome</i> Dr. Vincenzo Di Marzo University of Laval   Canada A800			Plenary 6 <i>Control of Acute and Chronic Pain by Omega-3 Fatty Acids Derived Pro-resolution Mediators</i> Prof. Ru-Rong Ji Duke University   USA A800			
13:45										
14:00										
14:15										
14:30	Sponsored Workshop Specialized Pro-resolving Lipid Mediators A800 	PS04 Maternal and Infant Lipid Nutrition I R300	PS05 Lipids & Cancer R150	Sponsored Workshop Fatty Acids, Lipids and Cannabis A800 	PS11 Dairy Fats And Cognitive/ Brain Health R300	PS12 Inflammation & Allergy R150	PS18 Hot Topics A800	PS19 Lipid Metabolism R300		
14:45										
15:00										
15:15										
15:30										
15:45										
16:00	Coffee Break/ Posters & Exhibits			Coffee Break/ Posters & Exhibits			New Investigator Research Awards and Closing Ceremony			
16:15										
16:30	PS06 Lipid Mediators A800	PS07 Maternal and Infant Lipid Nutrition II R300	PS08 Essential Role of Lipids in Visual Function R150	PS13 <i>The Role of Minor Milk Derived Fatty Components</i> A800	PS14 Acute Omega-3 Injection Therapies for Organ Injuries: A "New" Frontier R300	PS15 Lipids & Multi-Nutrient Interaction R150				
16:45										
17:00										
17:15										
17:30										
17:45										
18:00										
19:00	Young Investigator Social			Corporate Dinner <i>Invitation Only</i>			Closing Gala Dinner Château de la Poterie			

# 2023 SATELLITE SYMPOSIA

Satellite Symposia registration is required and can be easily added to your Congress registration. The cost is 40 Euros and you may attend any or all of the Satellites for that amount. The Satellite Symposia will be held on Sunday, 2 July in the same La Cité Congress venue as the main ISSFAL Congress. Boxed Lunch is Included

If you are attending only the Satellite Symposia and no other Congress events, the fee is €90.00 - please contact ISSFAL at [admin@issfal.org](mailto:admin@issfal.org) to confirm.



## SATELLITE 1

### EPA And DHA Omega-3s: Making Sense Of Controversies & Contraindications

**Sunday, 2 July** | 8:45 AM - 11:00 AM

Sponsored by GOED (Global Organisation for EPA & DHA)

This symposium will explore multiple controversial issues that have been cited as potential reasons for concern around the use of EPA- and DHA-rich oils. The panel of industry and academic experts will delve into the origins of these issues, present the current state of the research and help set the record straight once and for all.

## SATELLITE 2

### Challenges And Opportunities Of Implementing ISSFAL's Statement On Omega-3 Fatty Acids And Prematurity Prevention

**Sunday, 2 July** | 11:15 AM - 1:30 PM

Sponsored by ISSFAL

Taking a workshop format, this symposium, based on the recent ISSFAL Statement #7 relating to the role of Omega-3 in the prevention of prematurity, will present a summary of the evidence behind the statement and then with a panel of international researchers will explore the challenges and opportunities of implementing its recommendations. Themes to be discussed include its integration into pregnancy health care, how to identify and define low in omega-3 status, sources of Omega-3 to maintain/correct low status and priorities for future research.

## SATELLITE 3

### Long Term Effects On Child Neurocognition Of Balanced Long Chain PUFA Nutrition

**Sunday, 2 July** | 2:30 PM - 4:45 PM

Sponsored by Nu-Mega Ingredients Ltd

A wide ranging programme will present aspects of l-cPUFA nutrition for the neonate and in early childhood. Presentations will include consideration of topics such as nutrient deficiency and Omega-3 DRI's, the effects of Omega-3 on neurocognition in children with malnutrition and neonatal DHA and cognition.





# 2023 SPONSORED WORKSHOPS

*Workshops are sponsored by industry and can be attended by any delegate.  
There is no additional charge.*

## **Specialized Pro-resolving Mediators (SPMs): Why are they essential to the resolution of inflammation?**

**Monday, 3 July | 2:30 PM - 4:00 PM**

Sponsored By Solutex

### **SPEAKERS**

**Dr. Valerio Chiurchiù, PhD**

Institute of Translational Pharmacology, CNR and IRCCS Santa Lucia Foundation | Italy

**Dr. Josep Vergés Milano, PhD.**

CEO & Scientific Director at Osteoarthritis Foundation International (OAFI) | Spain

**Gustavo A. Higuera, PhD.**

Solutex Corporation | Spain

Inflammation is a vital biological response triggered by the immune system in response to injury, infection, or tissue damage. It serves as a protective mechanism aimed at eliminating harmful stimuli and initiating the healing process. However, if inflammation is not properly regulated, it can lead to chronic conditions and tissue damage.

The resolution of inflammation is a complex and highly regulated process that occurs once the injurious stimuli have been neutralized and the healing process is initiated. It involves the active suppression of pro-inflammatory signals and the restoration of tissue homeostasis.

One crucial aspect of the resolution phase is the production of specialized pro-resolving mediators (SPMs), which play a pivotal role in dampening inflammation and promoting tissue repair.

SPMs have shown promise in various preclinical and clinical studies as potential therapeutic agents. They have demonstrated anti-inflammatory effects (and pro-resolving actions) in models of inflammatory diseases and have been explored for their potential in osteoarthritis, wound healing, tissue regeneration and chronic pain.

Understanding the mechanisms underlying resolution and exploring the therapeutic potential of SPMs may lead to new strategies for the treatment of chronic inflammatory conditions and enhance the body's natural ability to resolve inflammation.

**During the workshop we will deepen on the physiological mechanisms that determine the active resolution of the inflammatory response by SPMs, their immunomodulatory role in inflammatory chronic diseases such as neurodegeneration and we will address the most recent data published in humans after SPM supplementation together with the lipidomics evidence and potential for personalized nutrition.**

## **Recent Advances On The Role Of SFA On Metabolic Health: From Nutrients To Dairy Foods**

**Tuesday, 4 July | 10:00 AM - 11:30 AM**

Sponsored By CNIEL

Chair: **Philippe Legrand, PhD** | Agrocampus, Rennes | France

### **An update and a reassessment of the impact of saturated fatty acids with a focus on dairy foods**

**Ian Givens, BSc (Hons), PhD, DFdSci (hc), FRSB, CBiol., RNutr** | Institute for Food, Nutrition and Health (IFNH) | UK

### **Full-fat dairy effects on blood lipids and CVD risk factors: towards a role of milk polar lipids**

**Marie-Caroline Michalski, PhD** | INRAE | France

### **New doors opening on the essential roles of dairy fatty acids in human nutrition**

**Prof Vincent Rioux**

INSERM, INRAE, Univ. Rennes, Nutrition-Metabolisms-Cancer (NuMeCan) | France



# 2023 SPONSORED WORKSHOPS

Workshops are sponsored by industry and can be attended by any delegate.  
There is no additional charge.

## Fatty Acids, Lipids and Cannabis: The Influential Effects of Fatty Acids and Cannabinoid Interactions with the Endocannabinoid System

Tuesday, 4 July | 2:30 PM - 4:00 PM

Sponsored By KD Phyto



KD Phyto Sponsored Cannabis Workshop Chair:  
**Alisia Ratliff, PMP, FRSC**

### *KD Phyto Sponsored Cannabis Workshop Description:*

The increased legalization of medical and recreational cannabis worldwide has triggered an exponential growth in preclinical and clinical studies in recent years. Science and research show that cannabinoids interact intensively with the endocannabinoid system (ECS) that is found throughout the body in all vertebrates. The ECS has important regulatory functions in the brain and body, including motor control, cognition, emotional responses, motivated behavior, and contributes to health and homeostasis. This workshop will focus on how dietary omega-3 acids influence the endocannabinoid system as well as the pharmacology of cannabinoids in the gut microbiome.

### SPEAKERS:

**Aim 1:** Connect the concepts of how omega-3 acids interact with the endocannabinoid system.

**Aim 2:** Analyze the pharmacology of cannabinoids in the gut microbiome.

**Aim 3:** Synthesize a solid foundation on how the endocannabinoid system contributes to homeostasis.

1. **Alisia Ratliff:** Introduction to KD Phyto (Cannabinoids Division of KD Pharma)
2. **Vincenzo Di Marzo, PhD:** The gut microbiome: a new intermediate in cannabinoid complex pharmacology? (30 minutes, 20 minutes Presentation, 10 min question)
3. **Sophie Layé, PhD:** Dietary n-3 polyunsaturated fatty acids influence the endocannabinoid system in the brain, a role in synaptic plasticity and behavior (30 minutes, 20 minutes Presentation, 10 min question)
4. **Alisia Ratliff:** Final Remarks



# ISSFAL 2023 CONGRESS DETAILED PROGRAMME

2-5 July 2023 | Nantes, France

## SUNDAY, 2 JULY – SATELLITE SYMPOSIA

La Cite Congress Center | Room 300

**GOED**  
OMEGA-3

### **SATELLITE 1: EPA And DHA Omega-3s: Making Sense Of Controversies & Contraindications (Sponsored by GOED)**

08:45 - 11:00 **Sunday, 2nd July, 2023**

*Sponsored by GOED*, This symposium will explore multiple controversial issues that have been cited as potential reasons for concern around the use of EPA- and DHA-rich oils. The panel of industry and academic experts will delve into the origins of these issues, present the current state of the research and help set the record straight once and for all.



### **SATELLITE 2: Challenges And Opportunities Of Implementing ISSFAL's Statement On Omega-3 Fatty Acids And Prematurity Prevention (Sponsored by ISSFAL)**

11:15 - 13:30 **Sunday, 2nd July, 2023**

*Sponsored by ISSFAL*: Taking a workshop format, this symposium, based on the recent ISSFAL Statement #7 relating to the role of Omega-3 in the prevention of prematurity, will present a summary of the evidence behind the statement and then with a panel of international researchers will explore the challenges and opportunities of implementing its recommendations. Themes to be discussed include its integration into pregnancy health care, how to identify and define low in omega-3 status, sources of Omega-3 to maintain/correct low status and priorities for future research.



### **SATELLITE 3: Long Term Effects On Child Neurocognition Of Balanced Long Chain PUFA Nutrition (Sponsored by NuMega Ingredients Ltd.)**

14:30 - 16:45 **Sunday, 2nd July, 2023**

*Sponsored by Nu-Mega Ingredients Ltd*: A wide ranging programme will present aspects of l-cPUFA nutrition for the neonate and in early childhood. Presentations will include consideration of topics such as nutrient deficiency and Omega-3 DRI's, the effects of Omega-3 on neurocognition in children with malnutrition and neonatal DHA and cognition. Please note, attendance at these popular sessions requires an additional registration costing Euro 40 for the whole day.

### **18:00 | Welcome Reception at Nantes City Hall**

Pre-registration required, included in delegate registration; Spouse/Guests are additional 20 Euros per person.

**ISSFAL Registration Desk Hours for Sunday, 2 July are 08:00 to 17:00**

**Speaker Ready Room will be available from 15:00 to 18:00, Sunday, 2 July**

### **Online Detailed Program**

*(Scan or Click the QR Code)*



# ISSFAL 2023 CONGRESS DETAILED PROGRAMME

2-5 July 2023 | Nantes, France

## DAY 1

08:15 - 08:30	<b>Opening Ceremony</b> Room A800   Co-Chair: Bernadette Delplanque & Maria Makrides		
08:30 - 09:30	<b>Plenary 1: N-3 PUFA in neuroinflammation, synaptic plasticity and mood and cognitive disorders</b> <b>Prof. Sophie Layé</b>   NutriNeuro, INRAE   France Room: A800   Chair: Bernadette Delplanque		
09:30 - 10:00	<b>Coffee Break/Posters &amp; Exhibits</b> Grand Foyer		
10:00 - 11:30	<b>PS01 Fatty Acids and Related Lipids in Diabetes</b> <b>Chair: Laurance Harbige &amp; Roxana Valdes-Ramos</b> Room: A800	<b>PS02 Lipids in Brain, Neurosciences and Neuro-logical Disorders</b> <b>Co-Chairs: Hee-Yong Kim &amp; Christos Kelaiditi</b> Room: 300	<b>PS03 Dietary Lipids and the Microbiomes</b> <b>Co-Chairs: Anne- Marie Minhane &amp; Fabiano Cimmino</b> Room: 150
10:00 - 10:15	188 Omega-6 and Omega-3 Fatty Acids in Metabolism, Inflammation and Pathogenesis of Type-2-Diabetes (20 Minutes) <b>Laurence Harbige</b> (UK)	37 Nutritional medicine against long COVID: The interplay between inflammation and omega-3 fatty acids in depression <b>Kuan-Pin Su</b> (Taiwan)	38 Different Levels and Pattern of Lipid-Derived Gut Microbial Metabolites after Fermentation of Different Lipid-rich Foods <b>Zongyao Huyan</b> (Netherlands)
10:15 - 10:30	148 Vitamin D and Omega-3 fatty acid supplementation in patients with type 2 diabetes mellitus. (20 Minutes) <b>Roxana Valdes-Ramos</b> (Mexico)	64 Red blood cell docosahexaenoic acid relates to preserved brain glucose uptake in cognitively unimpaired individuals at risk of Alzheimer's disease <b>Aleix Sala-Vila</b> (Spain)	212 A probiotic supplementation prevents lipid metabolism alterations and limits weight gain possibly via inhibition of intestinal FXR activity in mice fed a high fat diet <b>Emmanuelle Meugnier</b>
10:30 - 10:45	8 A traditional marine diet affects glucose homeostasis in Greenlandic Inuit: A randomized crossover study (15 Minutes) <b>Lotte Lauritzen</b> (Denmark)	158 Associations of n-3 polyunsaturated fatty acid status and intake with depression in Swiss adolescents with and without diagnosed paediatric major depressive disorder: a case-control study <b>Jeannine Baumgartner</b> (Switzerland)	231 Plant lecithins in high-fat diets preserve the gut microbiota diversity of mice in relation with specific faecal lipids <b>Marie-Caroline Michalski</b> (France)
10:45 - 11:00	19 Loss of an inflammation resolution receptor increases pulmonary PUFA-derived oxylipins and inflammation in mice that are glucose-intolerant (15 Minutes) <b>Saame Shaikh</b> (USA)	250 Dietary n-3 Polyunsaturated Fatty Acids Improve Long-Term Neuropathological and Functional Outcome after Repeated Mild Traumatic Brain Injury <b>Dr. Hee-Yong Kim</b> (USA)	269 Antibiotic-induced effects on the fatty acid composition of faeces in a rat model <b>Tamas Marosvolgyi</b> (Hungary)
11:00 - 11:15	127 N-3 polyunsaturated fatty acid-modified Fat-1 microbiota prevents the alteration of the colonic mucus layer through endoplasmic reticulum stress prevention in obesogenic conditions (15 Minutes) <b>Amina Bourragat</b> (France)	277 Phosphatidic acid: a key lipid in normal and pathological neuronal function <b>Nicolas Vitale</b> (France)	63 Short chain fatty acids (SCFAs): Important mediators for the Gut-Brain communication? <b>Marrium Liaquat</b> (UK)
11:15 - 11:30		187 Effects of high-EPA supplementation on stress, anxiety and depression in young adults: Preliminary findings from NutriMOOD <b>Christos F. Kelaiditis</b> (UK)	208 The endocannabinoidome lipid mediator oleoylethanolamide as a therapeutic approach for obesity and insulin resistance: modulation of body composition, mitochondrial bioenergetics and gut microbiome <b>Fabiano Cimmino</b> (Italy)
11:30 - 12:15	<b>2023 Norman Salem Jr. Early Career Award</b> <b>Docosahexaenoic acid in pregnancy and the neonatal period and child cognitive development</b> <b>Jacqueline Gould, PhD</b>   South Australian Health and Medical Research Institute Room: A800   Chair: Richard Bazinet & Norman Salem Jr.		

# ISSFAL 2023 CONGRESS DETAILED PROGRAMME

## 2-5 July 2023 | Nantes, France

### DAY 1

12:15 - 13:30	<b>Lunch / Posters &amp; Exhibits</b>		
13:30 - 14:30	<b>Plenary 2 Requirements and effects of Omega-3 Fatty Acids for Extremely Preterm Infants: Perspective of a Pediatrician</b> <b>Dr. Isabelle Marc</b>   University of Laval   Canada Room: A800   Chair: Maria Makrides		
14:35 - 16:05	<b>Sponsored Workshop: Specialized Pro-resolving Lipid Mediators (SPMs): Why are they essential to the resolution of inflammation?</b> (Sponsored by Solutex) Room: A800	<b>PS04 Maternal and Infant Lipid Nutrition I</b> <b>Co-Chairs: Jacqueline Gould &amp; Rachel Walker</b> Room: 300	<b>PS05 Lipids &amp; Cancer</b> <b>Co-Chairs: Tom Brenna &amp; Elmira Arab-Tehrany</b> Room: 150
14:35 - 14:50	During the workshop we will deepen on the physiological mechanisms that determine the active resolution of the inflammatory response by SPMs, their immunomodulatory role in inflammatory chronic diseases such as neurodegeneration and we will address the most recent data published in humans after SPM supplementation together with the lipidomics evidence and potential for personalized nutrition.  Chair: Sonia Moreno  <b>Dr. Valerio Chiurchiù, PhD</b> (Italy)  *** <b>Dr. Josep Vergés Milano, PhD.</b> (Spain)  *** <b>Gustavo A. Higuera, PhD.</b> (Spain)	44 Evaluating an Omega-3 Test-and-Treat Program, as Part of Routine Pregnancy Care, to Prevent Preterm Birth.  <b>Maria Makrides PhD</b> (Australia)	13 C2-hydroxylated fatty acids in health, pathology and therapy  <b>Pablo Escriba Ph.D.</b> (Spain)
14:50 - 15:05		94 Long-chain omega-3 polyunsaturated fatty acids are reduced in neonates with substantial brain injury undergoing therapeutic hypothermia after hypoxic-ischemic encephalopathy  <b>Simon Dyall PhD</b> (UK)	26 FADS2 Function at the 11q13 Major Cancer Hotspot Region Alters Fatty Acid Metabolism in Human Cancers  <b>Kumar Kothapalli PhD</b> (USA)
15:05 - 15:20		107 Addition of dairy lipids and probiotic in infant formulas modulates gut microbiota and intestinal physiology with long-term consequences: a preclinical study in a minipig model  <b>Sophie Blat</b> (France)	28 FADS1 main function is modular of arachidonic acid / dihomo-gamma-linolenic acid (20:4n-6/20:3n-6) balance  <b>Tom Brenna PhD</b> (USA)
15:20 - 15:35		124 Modification of serum fatty acids in preterm infants by parenteral lipids and enteral docosahexaenoic acid (DHA) + arachidonic acid (AA)  <b>Anders K Nilsson</b> (Sweden)	65 Antitumor agent incorporated in vivo into glycerophospholipids: biophysical implications.  <b>Marta Salvador-Castell</b> (Spain)
15:35 - 15:50		155 N-3 polyunsaturated fatty acid intake and status in Swiss pregnant women in association with antenatal depressive symptoms  <b>Jeannine Baumgartner PhD</b> (Switzerland)	234 Inhibition of stearyl-coa desaturase-1 decreases lymphocytic cell proliferation and increases the biosynthesis of n-10 and n-12 monounsaturated fatty acids  <b>Jérémie Doiron MSc</b> (Canada)
15:50 - 16:05		206 Maternal dietary Conjugated Linoleic Acid and DHA influence positively fetal brain metabolism  <b>Elisabetta Murru PhD</b> (Italy)	265 Targeted delivery of Piperine- curcumin-loaded marine-derived liposomes for breast cancer treatment  <b>Elmira Arab-Tehrany PhD</b> (France)
16:05 - 16:30	<b>Coffee Break / Posters &amp; Exhibits</b>		
16:30 - 18:00	<b>PS06 Lipid Mediators</b> <b>Co-Chairs: Ed Dennis &amp; Thierry Durand</b> Room A800	<b>PS07 Maternal and Infant Lipid Nutrition II</b> <b>Co-Chairs: Susan Carlson &amp; Claire Bourlieu-Lacanal</b> Room 300	<b>PS08 Essential Role of Lipids in Visual Function</b> <b>Co-Chairs: Martin-Paul Agbaga &amp; Elodie Masson</b> Room 150
16:30 - 16:45	133 Specificity of Each Phospholipase A2 Toward AA/EPA/DHA Regulates Production of Downstream PUFA-Derived Mediators  <b>Edward Dennis PhD</b> (USA)	259 A DHA-Food Frequency Questionnaire: A pragmatic way to identify pregnancies that benefit from high dose DHA supplementation  <b>Dr. Susan Carlson PhD</b> (USA)	79 Dietary VLC-PUFA are Rapidly Retroconverted to EPA, DPA, and DHA in Mice  <b>Robert Anderson MD, PhD</b> (USA)
16:45 - 16:00	18 An inflammation-regulated metabolite, arachidonoyl-taurine, protects from diet-induced hepatic fibrosis and steatosis in mice  <b>Trisha Grevengoed PhD</b> (Denmark)	225 Docosahexaenoic Acid Intake Recommendations and Early Preterm Birth in a Clinical Setting  <b>Danielle Christifano PhD</b> (USA)	139 Dietary supplementation with $\omega$ -3 very-long-chain polyunsaturated fatty acids enhances retinal function and reduces cardiometabolic risk factors in mice  <b>Alan Remaley PhD</b> (USA)

# ISSFAL 2023 CONGRESS DETAILED PROGRAMME

2-5 July 2023 | Nantes, France

## DAY 1

17:00 - 17:15	112 Isoprostanes as a diagnostic tool for subclinical mastitis and potential predictor of mastitis in dairy cows <b>Erik Noschka MedVet, MS, PhD</b> (Australia)	236 FADS variants and associations with red blood cell fatty acid composition, patterns and estimated desaturase activities in pregnant woman from African descent: The NuPED study <b>Lizelle Zandberg PhD</b> (South Africa)	173 Detection of epoxides and vicinal diols of bis-allylic deuterated docosahexaenoic acid in rat retinas by LC/MS/MS <b>Genevieve James MS, Nutrition</b> (USA)
17:15 - 17:30	10 Use of oxylipins to determine the dietary $\alpha$ -linolenic acid (ALA) requirement <b>Anne Manson</b> (Canada)	257 Prenatal EtOH reduces placental lipid droplet mobilization and n-3 fatty acids: A potential link with negative fetal developmental outcomes? <b>Bradley Feltham MSc</b> (Canada)	181 Novel Insights Into the Role of Very Long Chain Fatty Acids In Neuronal Function. <b>Martin-Paul Agbaga PhD</b> (USA)
17:30 - 17:45	57 Investigating oxylipins as oxidative stress markers in cell culture models <b>Lilli Zinnert</b> (Germany)	263 Effect of various saturated fatty acids sources on oxidative stability and nutritional profile of docosahexaenoic acid-enriched infant follow-on formulas <b>Claire Bourlieu-Lacanal PhD</b> (France)	2255 Lipidomics, a useful approach in the untargeted lipid analysis of human ocular tissues <b>Olivier Berdeaux</b> (France)
17:45 - 18:00	150 N-acyl ethanolamine involvement in the permeability barrier through epidermal tight junction formation <b>Anna Nicolaou PhD</b> (UK)	67 The association between maternal dietary intake of polyunsaturated fatty acids in pregnancy, related maternal gene variants, and ADHD in Dutch children. <b>Tosca Van Hoorde MSc</b> (Netherlands)	235 Cholesterol metabolism, oxysterols and retinal integrity <b>Elodie Masson</b> (France)
19:00 - 23:59	<b>Young Investigator Social</b>		

## DAY 2

07:30 - 08:30	<b>Meet the Professors Breakfast</b> ( <i>Invite only, details soon</i> ) Room R0 A tradition of the ISSFAL Congress, join us for the Meet the Professors Breakfast. This is an opportunity for young investigators to sit side by side with some of the most experienced, longstanding researchers in the Society. A form will be sent for individual registration closer to the event dates. Space is limited to young investigators who are members of the Society, a post graduate or PhD student (awarded in the last 7 years) working in a relevant field at a recognized institution and a named author on at least one abstract at the 2023 Congress (does not need to be a presenting author). Room A800		
08:30 - 09:30	<b>Plenary 3 The Evolving Role of 15-LOX in Inflammation</b> <b>Prof. Valerie O'Donnell Cardiff University   Wales</b> Room A800   Chair Kevin Lin		
09:30 - 10:00	<b>Coffee Break / Posters &amp; Exhibits</b>		
10:00 - 11:30	<b>Sponsored Workshop: Dairy Fats &amp; Health</b> (Sponsored by CNIEL) Room A800	<b>PS09 Lipid Nutrition &amp; Aging</b> Co-Chairs: Kevin Lin & Nathalie Bernoud-Hubac Room 300	<b>PS10 New Frontiers in Lipidomics</b> Co-Chairs: Ana Nicolaou & Sara Arranz Room 150
10:00 - 10:15	<b>Recent advances on the role of SFA on metabolic health: From nutrients to dairy foods</b> <b>Chair: Philippe Legrand</b> Agrocampus, Rennes (France) ***	103 Combine effects of Ketogenic Diet and GDNF injection on the Schwann cells in a mouse model of Krabbe's disease. <b>Catherine Mounier PhD</b> (Canada)	71 Abrupt decrease of arachidonic acid in the lateral ventricle choroid plexus during aging at the root of brain inflammation? <b>Melanie Plourde PhD</b> (Canada)
10:15 - 10:30	An update and a reassessment of the impact of saturated fatty acids with a focus on dairy foods <b>Ian Givens</b> (UK)	166 Production and characterization of DHA-rich phospholipids extracts suitable for the prevention of Alzheimer disease <b>Narcisa Bandarra PhD</b> (Portugal)	108 Human Plasma and Erythrocyte Lipidomic Profiles After Controlled Intakes of 0.25, 0.5, and 1 g/d of EPA+DHA from Fish Oil <b>Ken Stark PhD</b> (Canada)
10:30 - 10:45	Full-fat dairy effects on blood lipids and CVD risk factors: towards a role of milk polar lipids <b>Marie-Caroline Michalski</b> (France)	268 Translational Pharmacology Considerations in Repurposing Nervonic Acid - a Dietary Monounsaturated Fatty Acid for Neurodegenerative Diseases <b>Reena Kartha MS, PhD</b> (USA)	152 Maternal overweight-induced changes in the plasma phospholipidome are associated with altered immune cell frequencies in cord blood <b>Sebastian Graute</b> (Germany)

# ISSFAL 2023 CONGRESS DETAILED PROGRAMME

2-5 July 2023 | Nantes, France

## DAY 2

10:45 - 11:00	<p style="text-align: center;">* * *</p> <p>New doors opening on the essential roles of dairy fatty acids in human nutrition</p> <p style="text-align: center;"><b>Vincent Rioux</b> (France)</p> 	281 Enrichment of neuronal cells with DHA, via AceDoPC, decreases the production of Abeta peptide by modulating membrane fluidity – a potential therapeutic strategy for Alzheimer disease <b>Adina-Nicoleta Lazar PhD</b> (USA)	161 The skin lipid profile changes as we age, with consequences for the epidermal barrier and skin health <b>Alexandra Kendall PhD</b> (UK)
11:00 - 11:15		146 EPA and DHA can modulate Protein arginine methyltransferase 4 in Alzheimer's disease <b>Cristiane Citadin PhD</b> (USA)	167 Lipid profile of erythrocyte membranes as a novel inflammatory biomarker to distinguish metabolically healthy obesity in children for more precise nutritional recommendations <b>Sara Arranz PhD</b> (Spain)
11:15 - 11:30		174 Lysophosphatidyl choline Docosahexaenoic acid (LPC-DHA) is a novel therapeutic approach for the prevention and treatment of Alzheimer's disease <b>Sugasini Dhavamani PhD</b> (USA)	282 African American Women with Cardiometabolic Complications of Pregnancy Have Decreased Serum Abundance of Specialized Pro-Resolving Lipid Mediators and Endocannabinoids <b>Kristal Maner-Smith</b> (USA)
11:35 - 12:20	<p><b>N-3 Along the Food Chain 20 Years of “One Health” Development in France: The Bleu-Blanc-Coeur Concept</b> Dr. Pierre Weill   Bleu-Blanc-Cœur and Université Rennes 1   France Room A800   Chair: Bernadette Delplanque</p>		
12:20 - 13:30	Lunch / Posters & Exhibits		
13:30 - 14:30	<p><b>Plenary 4 The Endocannabinoidome: An Expanded Endocannabinoid System Tightly Communicating with the Gut Microbiome</b> Dr. Vincenzo Di Marzo University of Laval   Canada Room A800   Chair Richard Bazinet</p>		
14:35 - 16:05	<p style="text-align: center;"><b>Sponsored Workshop</b> (Sponsored by KD Phyto) Room A800</p>	<p style="text-align: center;"><b>PS11 Dairy Fats And Cognitive/ Brain Health</b> Co-Chairs: <b>Javier Fontecha &amp; Jonathan Bernard</b> Room 300</p>	<p style="text-align: center;"><b>PS12 Inflammation &amp; Allergy</b> Co-Chairs: <b>Jessica Ellis &amp; Helena Fisk</b> Room 150</p>
14:35 - 14:50	<p>Fatty Acids, Lipids and Cannabis: The Influential Effects of Fatty Acids and Cannabinoid Interactions with the Endocannabinoid System</p> <p style="text-align: center;">Chair: <b>Alisia Ratliff, PMP, FRSC</b> Cannabinoids Division of KD Pharma</p> <p style="text-align: center;"><b>The gut microbiome: a new intermediate in cannabinoid complex pharmacology?</b></p> <p style="text-align: center;"><b>Vincenzo Di Marzo, PhD</b> (Italy) (20 minutes Presentation, 10 minutes Q&amp;A)</p>	200 A dietary supplement enriched in polar lipids could prevent age-related mild cognitive impairment <b>Dr Javier Fontecha PhD</b> (Spain)	22 Association between Blood N-3 Fatty Acid Levels and Risk for COVID-19 in the UK biobank <b>William Harris PhD</b> (USA)
14:50 - 15:05		74 Dairy fat intake during early life improves cognitive and psychomotor performances in a primate model, the grey mouse lemur ( <i>Microcebus murinus</i> ) <b>Yohann Chaudron</b> (France)	117 Short-chain fatty acids (SCFA) in infant plasma – relation to levels in breast milk and maternal plasma and subsequent atopic disease and sensitization in the infants <b>Malin Barman PhD</b> (Sweden)
15:05 - 15:20		270 Effects of dietary whey protein phospholipid concentrate from milk on circulating lipid mediators and memory in rats <b>Ibuki Kusumoto</b> (Japan)	134 Associations between maternal fish intake, maternal or cord polyunsaturated fatty acids (PUFA) with prevalence of asthma at 7 years in a high fish-eating population. <b>Cealan O Henry PhD</b> (UK)
15:20 - 15:35	142 Effect of milk fat globule membrane supplementation on psychological health: a randomized clinical trial in healthy adults with moderate stress <b>Maher Fuad PhD</b> (New Zealand)	41 Incorporation of DHA into neuronal membranes by ACSL6 is critical for protection against age-related neuroinflammation and neurological disease <b>Jessica Ellis PhD</b> (USA)	

# ISSFAL 2023 CONGRESS DETAILED PROGRAMME

2-5 July 2023 | Nantes, France

## DAY 2

15:35 - 15:50	<p><b>Dietary n-3 polyunsaturated fatty acids influence the endocannabinoid system in the brain, a role in synaptic plasticity and behavior</b></p> <p><b>Sophie Layé, PhD</b> (France) (20 minutes Presentation, 10 minutes Q&amp;A)</p>	<p>40 Associations between perinatal biomarkers of maternal dairy product consumption and child cognitive development: Results from the EDEN cohort study</p> <p><b>Jonathan Bernard PhD</b> (France)</p>	<p>172 Optimizing the Synergistic Action of Medium-chain Triglycerides and Omega-3 Fatty Acids for Preserving Cellular Metabolic Homeostasis and Inhibiting LPS-induced Pro-inflammatory Responses</p> <p><b>Chuchun Liz Chang PhD</b> (USA)</p>
15:50 - 16:05	<p>***</p> <p><b>Final Remarks</b></p> <p><b>Alisia Ratliff</b></p> 	<p>125 Deep phenotyping and biomarkers of various dairy fat intakes in an 8-week randomized clinical trial and 2-year swine study</p> <p><b>Jean-Charles Martin PhD</b> (France)</p>	<p>101 Adipose tissue inflammation in human obesity and response to chronic marine omega-3 fatty acid supplementation.</p> <p><b>Helena Fisk PhD</b> (UK)</p>
16:05 - 16:30	<b>Coffee Break / Posters &amp; Exhibits</b>		
16:30 - 18:00	<p><b>PS13 The Role of Minor Milk Derived Fatty Components</b></p> <p><b>Co-Chairs: Vincent Rioux &amp; Anouk Feitsma</b> Room A800</p>	<p><b>PS14 Acute Omega-3 Injection Therapies for Organ Injuries: A “New” Frontier</b></p> <p><b>Co-Chairs: Richard Deckelbaum &amp; Adina Michael- Titus</b> Room 300</p>	<p><b>PS15 Lipids and Multi-Nutrient Interaction</b></p> <p><b>Co-Chairs: David Vauzour &amp; Simon Dyall</b> Room 150</p>
16:30 - 16:45	<p>80 New insight into the absorption of milk sphingomyelin by enterocytes in vitro</p> <p><b>Nina Ritsch MSci</b> (France)</p>	<p>285 Acute vs long term omega-3 therapies – Why and how for different organs?</p> <p><b>Prof. Richard Deckelbaum MD,CM</b> (USA)</p>	<p>77 Considering omega-3 fatty acids and vitamin D across the food system for health: the Om3D consortium</p> <p><b>Sebastien Marze PhD</b> (FR)</p>
16:45 - 17:00	<p>209 Metabolism of odd chain fatty acids in vivo in mice and in vitro in Fao rat hepatoma cells.</p> <p><b>Vincent Ciesielski</b> (France)</p>	<p>286 Acute omega-3 fatty acid therapy and neurological injuries – opening a new field</p> <p><b>Adina Michael-Titus PhD</b> (UK)</p>	<p>93 Should omega-3 polyunsaturated fatty acid - nutrient interactions be considered a missing link in ageing research?</p> <p><b>Simon Dyall PhD</b> (UK)</p>
17:00 - 17:15	<p>120 Milk fat globule membrane modulates inflammatory pathways in human monocytes: a crossover human trial</p> <p><b>Anouk Feitsma PhD</b> (Netherlands)</p>	<p>240 Neonatal Ischemic Brain Injury: Omega-3 Fatty Acid Diglyceride Emulsions as a Novel Injectable Acute Therapeutic</p> <p><b>Hylde Zirpoli PhD</b></p>	<p>58 Therapeutic and analytical interests of lipophenols: from synthesis to quantification and in vivo evaluation.</p> <p><b>Céline Crauste</b> (France)</p>
17:15 - 17:30	<p>192 Effects of MFGM-providing ingredients on intestinal functions using an in vitro quadricellular model of intestinal epithelium</p> <p><b>Sophie Blat</b> (France)</p>	<p>284 Interactions of MCT with omega-3 fatty acids enhance efficacy of fish oil lipid emulsions in acute therapy – evidence from cells, animal models, and humans</p> <p><b>Chuchun Chang PhD</b> (USA)</p>	<p>116 Omega-3 PUFAs and polyphenols interaction on brain function: are we barking up the right tree?</p> <p><b>David Vauzour PhD</b> (UK)</p>
17:30 - 17:45	<p>202 Adaptation of cellular lipid metabolism of Caco-2 cells to food matrices supplemented with milk fat globule membrane.</p> <p><b>Victoria Martínez-Sánchez</b> (Spain)</p>	<p>Presentations followed by Interactive Roundtable Chair, Richard Bazinet University of Toronto <i>All speakers and audience participation</i></p>	
17:45 - 18:00	<p>162 Compound-specific analysis provides further insights into the association between dairy fatty acid biomarkers (15:0, 17:0) and dairy intake</p> <p><b>Camilla Parzanini PhD</b> (Canada)</p>		
<b>Evening</b>	<b>Open Evening to Enjoy Nantes</b>		



# ISSFAL 2023 CONGRESS DETAILED PROGRAMME

2-5 July 2023 | Nantes, France

## DAY 3

08:30 - 09:30	<b>Plenary 5 Of Healthy Diets and Cardiovascular Disease: Lessons from the CORDIOPREV Study</b> <b>Dr. Javier Delgado Lista Reina</b> <b>Sofia University Hospital of Córdoba   Spain</b> Room A800   Chair: Jean-Marie Bard			
10:00 - 11:30	<b>SFEL Medaille Award &amp; Session</b> (Sponsored by SFEL) Room A800	<b>PS16 Lipids and Cardiovascular Diseases</b> Co-Chairs: Marius Smuts & Rozenn Lemaitre Room 300	<b>PS17 Plant Sources of Long-Chain PUFA</b> Co-Chairs: Xue-Rong Zhou & Richard Broughton Room 150	
10:00 - 10:15	<b>2023 CHEVREUL Medal</b> <b>Professor Richard Bazinet</b> University of Toronto   Canada  292 Using carbon 11, 12, 13 and 14 to study brain fatty acid metabolism. Highlights of a few fun findings along the way with an emphasis on translation.  * * *  <b>2021 CHEVREUL Medal</b> <b>Professor Bob Gibson</b> University of Adelaide   Australia  291 New understandings of the clinical roles for omega 3 fatty acids	21 Omega-3 fatty acid biomarkers and incident atrial fibrillation: an individual participant-level, pooled analysis of 17 international prospective studies  <b>James O'Keefe, MD (USA)</b>	4 Omega-3 Eicosapentaenoic (EPA) Polar Lipid Rich Extract from Microalgae Nannochloropsis Decreases Plasma Triglycerides and Cholesterol in Real-World Normolipidemic Supplement Consumer Population Head of Research  <b>Eneko Ganuza PhD (USA)</b>	
10:15 - 10:30		23 Omega-6 fatty acid, eicosadienoic acid, is related to lower risk of peripheral vascular disease: The Multi-Ethnic Study of Atherosclerosis (MESA)  <b>Natalie Weir M.S. (USA)</b>	29 Development of plant-based long-chain omega-3 oils  <b>Xue-Rong Zhou PhD (Australia)</b>	
10:30 - 10:45		32 Effects of Fish Oil-Derived N-3 Polyunsaturated Fatty Acids on the Generation and Thrombogenic Activity of Circulating Extracellular Vesicles  <b>Ruihan Zhou PhD (UK)</b>	115 Physicochemical stability and in vitro digestibility of vegan ketogenic oil-in-water emulsions stabilized with commercial protein isolates  <b>Melissa Mosselman (Netherlands)</b>	
10:45 - 11:00			238 Higher n-3 LCPUFA status associates positively with blood pressure in pregnant African women: The NuPED cohort  <b>Marius Smuts PhD (South Africa)</b>	119 Enriching the tissues with EPA and DHA in the omnivorous consumer: Several solutions are additive and even synergistic!  <b>Mathieu Guillevic PhD (France)</b>
11:00 - 11:15			251 Very long-chain saturated fatty acids, cardiovascular disease and mortality  <b>Rozenn N. Lemaitre PhD (USA)</b>	229 The Future of Sustainable Aqua Feeds? Assessment of Genetically Modified, Plant Based Oils on the Phospholipid Composition of Atlantic Salmon.  <b>Richard Broughton PhD (UK)</b>
11:15 - 11:30		211 Upregulated vasoactive lipid mediators in systemic lupus erythematosus contribute to endothelial dysfunction  <b>Maria Dolores Camacho Muñoz PhD (UK)</b>	27 Blood and tissue DHA synthesis and turnover rates in mice fed Ahiflower® oil compared to flaxseed and DHA oil using compound-specific isotopic analysis  <b>Adam Metherel PhD (Canada)</b>	
11:35 - 12:20	<b>2023 Alexander Leaf Award: Professor Michel Lagarde, PhD, DSc   INSA - Lyon   France   ISSFAL President 2006-2009</b> <b>283 Functional lipidomics: from prostaglandin E1 to docosahexaenoic acid, and beyond.</b> Room A800   Chair Maria Makrides			
12:20 - 13:30	<b>Lunch / Posters &amp; Exhibits</b>			
13:00 - 13:30	<b>ISSFAL Members Meeting   Room A800</b> <b>Biennial Update for ISSFAL Members on Society Activities</b>			

# ISSFAL 2023 CONGRESS DETAILED PROGRAMME

## 2-5 July 2023 | Nantes, France

### DAY 3

<b>13:30 – 14:15</b>	<b>Plenary 6 Control Of Acute And Chronic Pain By Omega-3 Fatty Acids Derived Pro-Resolution Mediators</b> <b>Ru-Rong Ji   Duke University   USA</b> Room A800   Chair: Adina Michael- Titus	
<b>14:20- 16:05</b>	<b>PS18 Hot Topics</b> Co-Chairs: Adam Metherel Room A800	<b>PS19 Lipid Metabolism</b> Co-Chairs: Richard Bazinet Room A300
<b>14:20 - 14:35</b>	60 Inhibition of eicosapentaenoic acid (EPA) elongation by docosahexaenoic acid increases EPA levels, not retroconversion <b>Adam Metherel PhD</b> (Canada)	39 The polychaete <i>Platynereis dumerilii</i> has complete enzymatic activities required for the biosynthesis of omega-3 long-chain polyunsaturated fatty acids <b>Marc Ramos-Llorens PhD</b> (Spain)
<b>14:35 - 14:50</b>	78 Serum and milk PUFA, but not milk volume, are dependent on serum ferritin concentrations in a study of low milk supply in humans <b>Rachel Walker</b> (USA)	34 New insights into LDLR regulation and trafficking: the interplay of MHC-I like molecules with PCSK9 <b>Sepideh Mikaeeli MSc</b> (Canada)
<b>14:50 - 15:05</b>	84 Analytical considerations for the use of dried spot technology for fatty acid profiling <b>Robert Gibson</b> (Australia)	164 Contents and activities of desaturase and elongase enzymes in liver, brain, testicle and kidney from mice: Dependency of substrate <b>Rodrigo Valenzuela PhD</b> (Chile)
<b>15:05 - 15:20</b>	170 Physicochemical properties of liposomal solutions of marine, dairy, and egg lecithin for the encapsulation of vitamin D <b>Michel Linder PhD</b> (France)	210 Interactions lipids-proteins of oilseeds: impact on in vitro digestibility <b>Lina Toutirais</b> (France)
<b>15:20 - 15:35</b>	111 Validation of a novel in vivo oxidative status (IVOS) biosensor to quantify ischemia by utilizing isoprostanes as biomarker in an equine model – a pilot study <b>Erik Noschka MedVet, MS, PhD</b> (Australia)	145 Soy protein reduces hepatic delta-6 desaturase activity compared to dairy protein independent of changes in Fads2 gene expression <b>Melissa Gonzalez Soto MSc</b> (Canada)
<b>15:35 - 15:50</b>	287 Probing cardiac and renal ketone metabolism in healthy adults: PET ketone imaging plus a ketone-nicotinamide riboside supplement in the fasted and fed state <b>Valérie St. Pierre</b> (Canada)	143 Whole-body tissue distribution in rats after a single dose of <sup>14</sup> C-labelled eicosapentaenoic and docosahexaenoic acids in either lyso-phosphatidylcholine, phosphatidylcholine or triglyceride forms <b>Nils Hoem PhD</b> (Norway)
<b>16:00 - 16:30</b>	Closing Ceremony	
<b>18:30 - 23:59</b>	<b>Closing Gala Dinner at the Château de la Poterie</b> <i>Sponsored in part by Bleu Blanc Coeur and Valorex</i> Ticketed event. Pre-registration required.	

# 2023 PLENARY SPEAKERS

## N-3 PUFA In Neuroinflammation, Synaptic Plasticity And Mood And Cognitive Disorders



### Prof. Sophie Layé

**French National Institute for Agricultural Research, INRA  
Laboratoire Nutrition et Neurobiologie Intégrée (NutriNeuro), France**

*Sophie Layé is the head of the NutriNeuro Institute (INRA Univ Bordeaux, Bordeaux INP) that she created in 2011. The research conducted in the Institute aims to decipher the effect of nutrition on cognitive decline and mood disorders to define a protective nutrition for the brain. She also co-heads OptiNutriBrain, an international associated laboratory, with Pr F Calon (Université Laval, Québec). Since 2018, she leads Food4BrainHealth, an international research network (Inra, CNRS, Univ Bordeaux, Univ Bourgogne, Univ Saclay, Univ Toronto, McGill, Univ Laval). Sophie is recognized for her work on the contribution of unbalanced nutrition in mood and cognitive disorders and how lipids (omega3, omega6, etc.) participate to neuroplasticity and neuroinflammation*

## Communicating With The Gut Microbiome



### Dr. Vincenzo Di Marzo

**Chairholder and Professor  
Faculty of Agricultural and Food Sciences  
Faculty of Medicine | Université Laval, Canada**

*Dr. Vincenzo Di Marzo holds the Canada Excellence Research Chair on the Microbiome-Endocannabinoidome Axis in Metabolic Health (CERC-MEND) at Université Laval in Quebec, Canada and Associate Research Director at the Institute of Biomolecular Chemistry of the National Research Council (ICB-CNR) in Naples, Italy. He is also the coordinator of the Endocannabinoid Research Group in the Naples region, and the director of the Joint International Research Unit between the Italian National Research Council and Université Laval, for Chemical and Biomolecular Research on the Microbiome and its impact on Metabolic Health and Nutrition (UMI-MicroMeNu). He holds a master's degree in chemistry from the University of Naples "Federico II" in 1983, and a PhD in biochemistry from Imperial College of Science, Technology and Medicine in London in 1988. He is co-author of over 760 articles published in peer-reviewed journals (H index 131 according to Scopus). In 2014-2021 he has been listed for 8 consecutive years among the Highly Cited Researchers (top 1% in the world) in all scientific disciplines.*

## Of Healthy Diets And Cardiovascular Disease: Lessons From The CORDIOPREV Study



### Dr. Javier Delgado-Lista

**Professor at the Faculty of Medicine and Nursing | University of Cordoba  
Reina Sofia University Hospital of Córdoba, Spain**

*Dr. Delgado Lista is Professor at the Faculty of Medicine and Nursing of the University of Cordoba, where he also serves as Vice Dean of Hospital Affairs. He has a position linked as Medical Staff in the Internal Medicine Unit, in the Reina Sofia University Hospital of Córdoba, and is Co-Principal Investigator of the GC-09 group of the Maimonides Institute of Biomedical Research. He is a member of the CIBER of Obesity and Nutrition, and of the Research Group "Gene-Environment Interaction" (Code Group CTS525) of the Andalusian Plan for Research, Development and Innovation. With regard to his membership in management and evaluation structures, he is a Member of the Innovation Commission of IMIBIC, of the Information Systems Commission of the Reina Sofia University Hospital of Córdoba, of the Selection and Evaluation Board of the "María Castellano Arroyo" Program of the Junta de Andalucía, of the Executive Board of the Spanish Society of Arteriosclerosis and of the Diabetes Working Group, Obesity and Nutrition of the Spanish Society of Internal Medicine.*

*Regarding his indicators of scientific production, he has participated in more than 30 Phase II-IV Clinical Trials, being Principal Investigator in 11 of them. He was founder and head of a technological Spin-Off company (Padmedicine S.L.) during the triennium 2012-2015, he is Main Author of 6 Patents, has more than 170 publications indexed in ISI-JCR, with 3 of them "Highly Cited in Field" and 2 with more than 200 citations. Its H index is 37, he has more than 20 Citations/Article and he has been cited more than 4500 times. He has been Principal Investigator of several Research Projects, national and international. Finally, he has recently received the Mention of Excellence in Teaching of the University of Córdoba 2022.*

*The main lines of Dr. Delgado Lista's research are the study of the influence of diet on chronic diseases (with special attention to cardiovascular diseases, obesity and Diabetes Mellitus) and the development of technological innovation projects in medicine (ehealth).*

# 2023 PLENARY SPEAKERS

## Requirements And Effects Of Omega-3 Fatty Acids For Extremely Pre-Term Infants: Perspective Of A Paediatrician

**Dr. Isabelle Marc**

Full Professor, Department of Pediatrics  
Faculty of Medicine | Université Laval, Canada



*Dr. Isabelle Marc is a clinician researcher at the Research Centre of the CHU de Québec, and an associate professor at the Department of Pediatrics at Laval University. She has built her research environment around her clinical practice as a pediatrician. Dr. Marc works on the effects of maternal life habits (exercise, sleep, breastfeeding) on child growth and development. Several of her studies have been realised with her students in cohorts in which she is involved. She developed an exercise laboratory for pregnant women and children at the Research Centre, which allows her to collect objective measurements of this population's physical condition.*

*Dr. Marc is interested in the effects of omega-3 on the neonatal morbidity of extremely premature infants (less than 28 weeks of gestation). A supplementation with omega-3 administered to the lactating mother is an effective way to provide a daily dose of omega-3 to the preterm child through breast milk. She now wants to demonstrate the positive effects of this intervention on the infant's health, growth, and development.*

## The Evolving Role Of 15-LOX In Inflammation

**Prof. Valerie O'Donnell**

School of Medicine  
Cardiff University, Wales

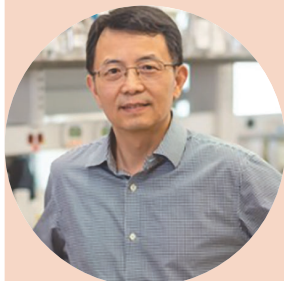


*Since 2007, Professor O'Donnell's group has discovered large numbers of lipids made by human platelets, neutrophils and monocytes, via the lipoxygenase and cyclooxygenase pathways. They have shown that these lipids can innate immunity including promoting blood clotting, immune signaling and antibacterial activities of leukocytes. They belong to families of enzymatically oxidized phospholipids (eoxPL), and their elevated generation is found in human thrombotic disease, while their deficiency leads to bleeding defects and protection against vascular inflammation. This work is done in collaboration with Prof Peter Collins and Dr Vince Jenkins (UHW). On arriving in Cardiff, O'Donnell defined with her colleagues how lipid oxidation mediated by vascular enzymes can control blood pressure both in vitro and in vivo. Main findings include showing how cellular lipoxygenases and cyclooxygenases catalytically consume nitric oxide resulting in vasoconstriction and how neutrophils patrol the vasculature maintaining blood pressure through dampening bacterial-induced inflammation. While based at University of Alabama at Birmingham, O'Donnell worked with the Freeman lab to characterize how nitric oxide and lipid oxidation pathways intersect (published in JBC, Biochemistry), defining new biochemical routes to nitrolipid synthesis, and showing these lipids have potent anti-inflammatory actions. These studies contributed to a patent which is licenced to Complexa Inc and the lipids are now in Phase II trials for vascular inflammation. O'Donnell studied at University of Berne, Switzerland on a Marie Curie Fellowship (1994-1996) and earned her PhD at University of Bristol (1990-1993).*

## Control Of Acute And Chronic Pain By Omega-3 Fatty Acids Derived Pro-Resolution Mediators

**Prof. Ru-Rong Ji**

Distinguished Professor of Anesthesiology, School of Medicine  
Professor in Anesthesiology | Professor in Neurobiology | Professor in Cell Biology  
Duke University, United States of America



*Chronic pain is a major health problem in the US, affecting 100 million Americans. The long-term goal of the lab is to identify molecular and cellular mechanisms that underlie the genesis of chronic pain and, furthermore, to develop novel pain therapeutics that can target these mechanisms. We are interested in the following questions. (1) How do neuroinflammation and activation of glial cells (microglia and astrocytes) regulate pain and spinal cord synaptic plasticity via neuro-glial and neuro-immune interactions? (2) How do secreted miRNAs regulate neuronal signaling and synaptic transmission and pain as novel neuromodulators and pain mediators? (3) How do pro-resolution lipid mediators such as resolvins and protectin control pain via GPCR and arrestin signaling? (4) Do pain and itch share similar mechanisms? (5) How does Toll-like receptor (TLR) signaling in primary sensory neurons regulate pain and itch? (6) How can bone marrow stem cells produce long-term pain relief via secreting anti-inflammatory and trophic factors? We employ a multidisciplinary approach that covers in vitro, ex vivo, and in vivo electrophysiology, neuronal and glial cell biology, transgenic mice, and behaviors.*

# ISSFAL AWARD

## 2023 Early Career Award

**Jaqueline Gould, PhD**

**South Australian Health and Medical Research Institute (Australia)**

**Docosahexaenoic acid in pregnancy and the neonatal period and child cognitive development**



The Dr. Norman Salem Jr. Early Career Award is intended to honour an investigator at an early stage of his or her career, and who has published significant research papers in the field of lipids and fatty acids. The prize (US \$4,500 + registration to the awarding ISSFAL meeting) will be awarded every 2 years during the biennial congress. The first such award was made at the congress in Kansas City in 2008 and has been awarded at all subsequent ISSFAL Biennial Meetings.

## 2023 Alexander Leaf Award

**Michel Lagarde, PhD, DSc**

**INSA - Lyon | France ISSFAL President 2006-2009**

**Functional lipidomics: from prostaglandin E1 to docosahexaenoic acid, and beyond.**



Starting in 1972 at the Pasteur Institute of Lyon, I worked on human platelet activation, considering cyclic AMP as a central regulator, and prostaglandin E 1 (PGE 1) an activator of adenylate cyclase, used to decrease platelet activation. We then became interested in endogenous production of PGE 1 from dihomogammalinolenic acid (20:3w6/DGLA), which led us to investigate oxygenation of exogenous DGLA into PG 1s (PGD 1, E 1 & F 1a). Such an oxygenation study led to comparison with that of arachidonic acid (20:4w6/ArA) into PG 2s, just when the occurrence of thromboxane (Tx) A 2/B 2 was described by Bengt Samuelsson in 1975. Extending to the third precursor of prostanoids, eicosapentaenoic acid (20:5w3/EPA), the compared analysis of cyclo-oxygenase and lipoxygenase products, in a short scale lipidomics approach, showed that thromboxane synthase highly preferred PGH 2 to PGH 1 and PGH 3. From the functional viewpoint, pre-enrichment of human platelets with DGLA or EPA decreased platelet reactivity associated with a lower endogenous ArA oxygenation.

On the other hand, investigation of pathological situations showed a platelet hyperactivity from diabetic patients and elderly people, which was ex vivo normalized by EPA intake, even at low amount. On the other side, an impairment of TxA 2 production, due to platelet cyclo-oxygenase deficiency, was described in patients suffering from thrombocytopenia.

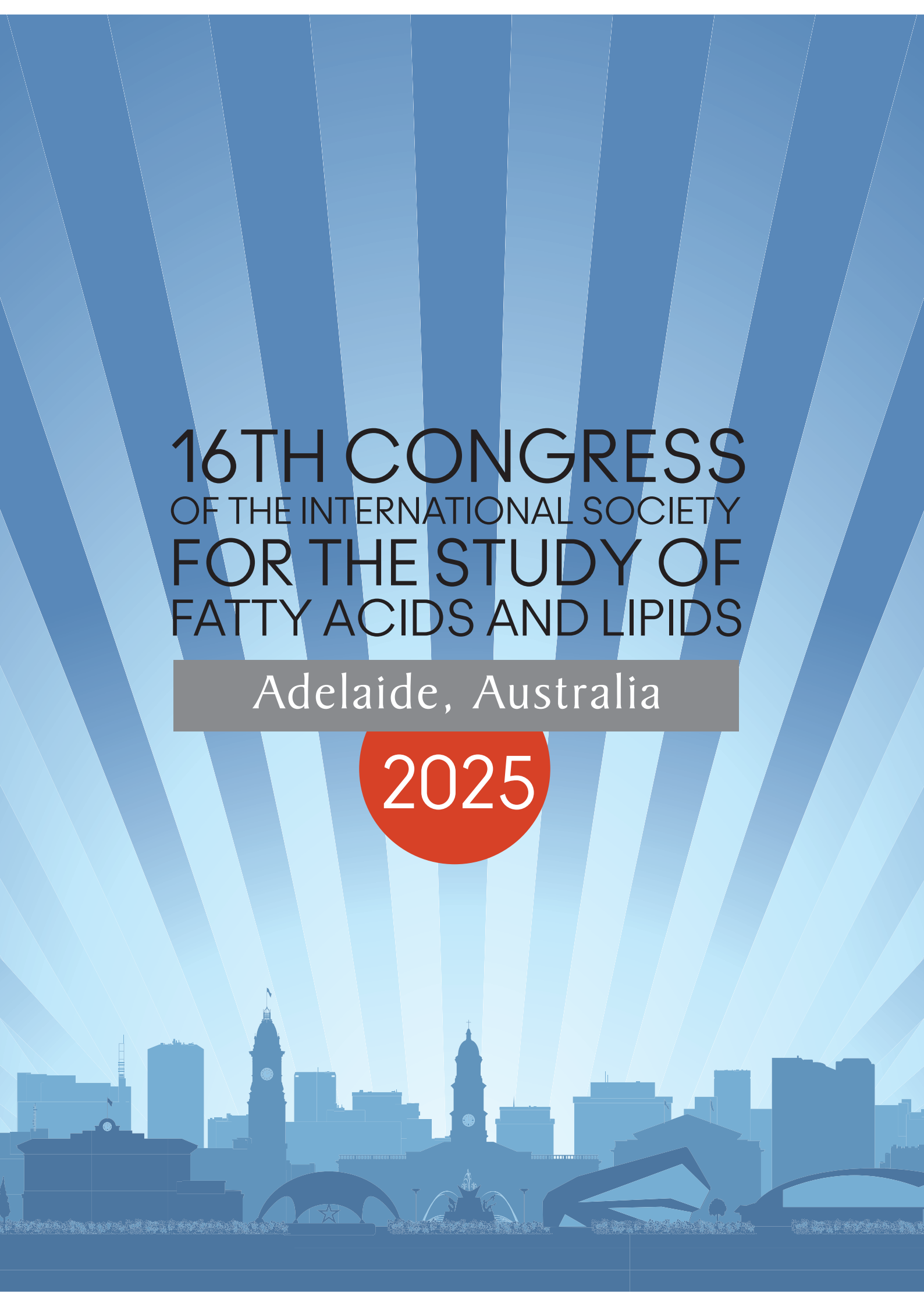
Adding docosahexaenoic acid (22:6w3/DHA) with EPA to human platelets in vitro potently decreased platelet activation through different mechanisms, but DHA appeared more potent than EPA. Extended studies with other polyunsaturated fatty acids of nutritional value, such as linoleic, alpha-linolenic, stearidonic and adrenic acids, showed different interactions for their incorporation into platelet phospholipids. Definitely, DHA and EPA were the most active, differing in their metabolic pathways, explaining why they potentiate each other for inhibiting platelet activation. Extended in vivo studies on DHA intake showed bimodal effects on human platelet activation (inhibition from 200 to 800 mg/day, with antioxidative activity, but no inhibition at 1600 mg/day with increased oxidative stress. In addition, a significant inhibition was observed after 400 mg/day in type-2 diabetics and cystic fibrosis patients.

Lipoxygenase pathways, initially considered as a cyclo-oxygenase side oxygenation route, was studied more deeply, which showed that the PUFA monohydroxylated derivatives are able to counteract platelet aggregation, especially when induced by the stable thromboxane A 2 analog U46619. On the opposite, their precursor hydroperoxides are able to potentiate platelet activation by increasing endogenous PGH 2 /TxA 2 production, as a response to increased oxidative stress, as in aging for instance. As an extent to the inhibition of platelet activation by mono-OH-PUFA, the double lipoxygenation of PUFA leads to the strong inhibitors diOH-PUFA, such as all the trans,cis-trans/E,Z,E-8S,15S-diOH-ArA, E,Z,E-10S,17S-diOH-DHA (PDX) or E,Z,E-6S,9S/R-diOH-ALA (linotrans).

On the other hand, looking at the DHA rat brain uptake from blood showed that sn-2-DHA-LysoPC was more efficient than unesterified DHA. However, sn-2-DHA-LysoPC being quickly isomerized into its position isomer sn-1-DHA-LysoPC, we prevented this isomerization by acetylating the sn-1 position, leading to acetyl,docosahexaenoyl-GPC (AceDoPC), which still favours brain DHA uptake, when compared with unesterified DHA. However, it is worth to state that sn-1-DHA-LysoPC can be used to make the endocannabinoid synaptamide, through the DHA transfer to a phosphatidylethanolamine polar head group, followed by a phospholipase D cleavage to release synaptamide. Moreover, and unexpectedly, AceDoPC appeared to inhibit cyclooxygenases through an aspirin-like action, and to generate acetylcholine in response to phospholipase D cleavage of the AceDoPC polar head (with « intra-molecular » acetylation of the released choline moiety). In addition to the efficient DHA transport to the brain, the latter unexpected activities seem to be promising in some neurodegenerative diseases.







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OF THE INTERNATIONAL SOCIETY  
FOR THE STUDY OF  
FATTY ACIDS AND LIPIDS

Adelaide, Australia

2025

