

Scientific Report of The 11th Biennial Meeting of SFRR-Asia

“The 11th Biennial Meeting of the Society for Free Radical Research-Asia (SFRR-Asia 2024) and the Chinese National Conference of Redox Biology and Medicine 2024” were successfully held in Beijing, China from October 21-23, 2024 with the strong support from the local and international organizing committee members and all participants. The conference with the theme "The new era of precision redox biology and medicine: from basic research to intervention of aging and disease" facilitated a comprehensive exchange and discussion on the most recent advancements in basic redox biology and medicine. There was a broad spectrum of topics as following:

1. Basic research on redox biology and medicine

- 1.1 New approach for precision redox research
- 1.2 Discovery of new molecules in redox network
- 1.3 Redox modification of biomacromolecules
- 1.4 Redox signalling in organelles/cell fate/development/reproduction

2. Redox homeostasis in aging and diseases

- 2.1 Redox and aging
- 2.2 Redox and obesity, vascular function and metabolism
- 2.3 Redox and cancer, infection and immunity
- 2.4 Redox and neural function & mental health
- 2.5 Redox and plant biotic stress
- 2.6 Redox and environmental challenge (Hypoxia, Apnea, Sedentary, Aerospace, Plateau, UV, Cold/Heat, etc.)

3. Precision redox intervention and health management

- 3.1 Traditional Medicine Prophylaxis-Therapeutics and Redox Balance
- 3.2 Intelligence materials for precision redox intervention
- 3.3 Lifestyle and redox regulation
- 3.4 Natural products and nutrition in anti-aging and health management

The conference spanned three days and attracted 730 researchers from 16 different countries and regions to participate and exchange ideas, which is the record-breaking in the history of SFRR-Asia. Six world-renowned distinguished scientists delivered fabulous plenary lectures. A total of 68 invited experts presented updates on state-of-

the-art research in redox field across 14 topics. Additionally, 48 international young experts presented their latest research findings. 57 outstanding young scholars gave excellent Flash Talks. Furthermore, 207 scholars gave poster presentations, and 32 sponsors and academic publishers from different countries also attended the conference for extensive exchanges. The conference awarded 8 young investigator awards. 12 excellent oral presentations and 20 outstanding poster presentations were recognized and honored. Specially Merit Awards were presented to the former Presidents and Organizers for their outstanding leadership, contribution, and dedication to redox society.

On the opening ceremony, the past ten SFRR ASIA biennial meetings were displayed via video document with great memories. The 11th SFRR-Asia Biennial Meeting is a new start and transition to the next two decades. For the first time, a special session entitled "Redox Future Perspective Forum" was set to draw the road map for future redox biology and medicine through open discussion. Twelve distinguished scientists from around the world shared their deep insights focused on "Redox is the basis of life and the common reason for diseases", "The main challenge of redox biology and medicine research in the future", and "Advocating International Redox-decode Project". These deliberations culminated in the proposal of constructive suggestions to chart the next twenty years of Redox research (termed Redox Road-Map).

At this meeting, seven layers (7L) were proposed aiming "to know redox, to decode redox, and to utilize redox". L1, New technology for precision redox research; L2, Exploring the redox network inside and outside of cells; L3, Biochemical mechanisms of redox, concerning redox modification of biomacromolecules, redox relay, and redox architecture. L4, Redox regulation in organelle function, quality control and cell fate. L5, Redox physiology in development and reproduction and its modulation by environmental challenge. L6, Redox stress in the pathogenesis of various diseases. L7, Precision redox intervention in health management. In the following day's satellite meeting on Oct. 24, how to enhance the intense international collaborations among different regional societies and how to extend the interactions with other scientific fields and clinical research were intensely discussed.

In the future we all Redox-ers will work together with multidisciplinary global-level collaboration in both basic and clinical research and bring breakthroughs in elucidation of redox mystery which will benefit human health.