

# XVII-ISBS-2019

The 17th International Symposium on Blood Substitutes & Oxygen Therapeutics  
The 26th Annual Meeting of the Society of Blood Substitutes, Japan

November 21 (Thu) – 23 (Sat), 2019  
Nara Kasugano International Forum, Japan

Photo by ryo3 osaka



Venue and Access

Speakers

Scientific Program

General Information

Committees / Sponsors

Abstract Submission

Registration

Accommodation / Excursion

Enjoy Nara

Contact Us

Dear the participants of ISBS.

Thank you very much for coming to Nara! We hope you satisfied the programs and our hospitalities in the 17th-ISBS-2019 and made wonderful memories in autumnal season in Nara. Consider to visit again in spring as you will enjoy another scenery with chelly blossoms in full open. We look forward to seeing you again in Nara in the near future and definitely at the next ISBS in Berlin in 2021.

best regards,  
Hiromi Sakai

Photo Gallery

## WARNING!

We have received a report about a scam activity by telephone call asking for credit card information of a participant for booking hotels under the name of ISBS2019. Apparently they have been collecting information on the website. We and JTB, the official travel agency will never ask you for such personal information by telephone call or e-mails. We ask the participants to report of any similar cases to the organizers.

## WELCOME MESSAGE

Dear respected colleagues,

The 17th International Symposium on Blood Substitutes & Oxygen Therapeutics (XVII-ISBS-2019) will be held in **November 21 -**

**23, 2019 in Nara**, Japan. Experts from China and Japan will co-host the symposium. In the meantime, the 26th Annual Meeting of the Society of Blood Substitutes, Japan, will be held. On behalf of the organizing committee, we are honored to warmly welcome researchers and business friends from all over the world who are engaged in R&D of blood substitutes and related fields to participate in this symposium.

Our programs will include traditional and new topics related to blood substitutes, oxygen therapeutics, and artificial cells, etc.

Specifically, we expect to include substitutes for RBC and platelets, plasma expanders, coagulation factors and growth factors of blood cells, iPS- and ES-derived artificial blood cells, preclinical and clinical evaluations, basic sciences on tissue oxygenation and gas biology, mechanism of adverse reactions, new applications, design of clinical trials, industrial activities and regulatory sciences of blood substitutes, and others. In addition, considering the fact that blood substitute research is one important part of modern transfusion medicine, the organizing committee decided to expand the topics. The programs will cover the new concepts on clinical transfusion, new technologies, new experiences, new development trends and related basic research, updates and perspectives on transfusion related infectious and non-infectious risks, and related basic research, pre-clinical evaluation on pharmacological, toxicological, hemodynamic, and pharmacokinetic studies of various products.

Nara was the capital of ancient Japan from 710 to 784 AD. The conference venue is in the middle of Nara Park near several UNESCO World Heritage sites (Historic Monuments of Ancient Nara) including Kasugataisha-shrine, Todai-ji, and Kohfuku-ji, where sacred wild deer will also welcome you.

We look forward to your attendance in Nara to make this event a success.

Best regards,

Honorary President	Co-presidents		Co-Executive Presidents	
				
<b>Thomas M.S. Chang</b> (McGill Univ., Canada)	<b>Hiromi Sakai</b> (Nara Med. Univ., Japan)	<b>Chengmin Yang</b> (IBT, Chin. Acad. Med. Sci., China)	<b>Hiroshi Azuma</b> (Asahikawa Med. Univ., Japan)	<b>Jiaxin Liu</b> (IBT, Chin. Acad. Med. Sci., China)

## What's New

- December 13, 2019 [Photo Gallery](#) is now open.
- October 29, 2019 [General Information](#) and [Scientific Program](#) have been updated.
- October 18, 2019 [Booking for Excursion](#) is now open.
- September 12, 2019 Extended the deadline for [abstract submission](#) (until September 25).
- July 1, 2019 [Abstract submission](#), [Registration](#) and [Accommodation](#) have been started.
- April 4, 2019 Website is opened.

## Committees / Sponsors (Alphabetical Order)

### Committees

#### ◆ Organization Members of XVII-ISBS-2019

##### Honorary President:



Thomas M.S. Chang (McGill Univ., Canada)

##### Co-Presidents:



Hiromi Sakai (Nara Med. Univ., Japan)



Chengmin Yang (IBT, Chin. Acad. Med. Sci., China)

##### Co-Executive Presidents:



Hiroshi Azuma (Asahikawa Med. Univ., Japan)



Jiaxin Liu (IBT, Chin. Acad. Med. Sci., China)

##### Local Organizing Committee: (\*executives)

Chao Chen\* (Northwest Univ., China)  
Hirohisa Horinouchi (Saitama City Hospital, Japan)  
Yasuo Ikeda (Waseda Univ., Japan)  
Teruyuki Komatsu (Chuo Univ., Japan)  
Tohru Maruyama (Kumamoto Univ., Japan)

Gang Chen (IBT, Chin. Acad. Med. Sci., China)  
Yubin Huang (Chin. Acad. Sci., China)  
Koichi Kobayashi (Keio Univ., Japan)  
Feng Ma (IBT, Chin. Acad. Med. Sci., China)  
Masanori Matsumoto (Nara Med. Univ., Japan)

Masaki Otagiri (Sojo Univ., Japan)  
Midori Shima (Nara Med. Univ., Japan)  
Shinji Takeoka (Waseda Univ., Japan)  
Kunping Yan (Northwest Univ., China)  
Kewei You (Redpharm. Co., China)

Hiromi Sakai\* (Nara Med. Univ., Japan)  
Masaru Shimizu (Saijo Hospital, Japan)  
Keizo Yamamoto (Nara Med. Univ., Japan)  
Motoki Yonekawa (Sapporo Hokuyu Hospital, Japan)

#### Local Scientific Programming Committee: (\*executives)

Hiroshi Azuma\* (Asahikawa Med. Univ., Japan)  
Mitsutomo Kohno (Tokai Univ., Japan)  
Zhong Liu (IBT, Chin. Acad. Med. Sci., China)  
Masanori Matsumoto (Nara Med. Univ., Japan)  
Jinhai Shi (Tianjin Inst. Int. Biomed., China)  
Kazuaki Taguchi (Keio Univ., Japan)  
Shinji Takeoka (Waseda Univ., Japan)  
Binglou Wong (HongKong Aihua Biotech., China)

Manabu Kinoshita (NatI Defense Med. Coll., Japan)  
Liangmin Liu (Chin. Third Mil. Med. Univ., China)  
Takashi Matsuhira (Nara Med. Univ., Japan)  
Carl W. Rawsch (Redpharm. Co., China)  
Zhiguo Su\* (Chin. Acad. Sci., China)  
Bonpei Takase (NatI Defense Med. Coll., Japan)  
Ziyuan Wang (Xuzhou Normal Univ., China)  
Hong Zhou (Chin. Acad. Mil. Med., China)

#### International Advisory Board Members: (alphabetical order)

Alayash A (USA)	Abuchowski A (USA)	Bian Y (China)	Biro B (Canada)
Bucci E (USA)	Bülow L (Sweden)	Burhop K (USA)	Chang TMS (Canada)
Chen C (China)	Cooper C (UK)	D'Agnillo F (USA)	Estep T (USA)
Feola M (USA)	Gould S (USA)	Greenburg AG (USA)	Hong Z (China)
Intaglietta M (USA)	Jahr S (USA)	Keipert P (USA)	Kim HW (USA)
Kluger R (Canada)	Kobayashi K (Japan)	Krafft MP (France)	Liu Q (China)
Liu JX (China)	Ma L (USA)	Meßmer K (Germany)	Mozzarelli A (Italy)
Palmer A (USA)	Privalle C (USA)	Pugach I (Russia)	Rausch C (USA)
Riess JG (France)	Sakai H (Japan)	Simoni J (USA)	Su ZG (China)
Tsai AG (USA)	Wang Z (China)	Wei G (China)	Wong B (China-HK)
Xiu RJ (China)	Yang CM (China)	Yu BL (USA)	Zafiris G (USA)
Zal F (France)	Zapol W (USA)	Zhao L (China)	Zhu YJW (China)

## Sponsors

Nara Medical University  
The Society of Blood Substitutes, Japan  
The Chemical Society of Japan  
Nara Visitors Bureau

<a href="#">Home</a>	<a href="#">Venue and Access</a>	<a href="#">Speakers</a>	<a href="#">Scientific Program</a>	<a href="#">General Information</a>	<a href="#">Committees / Sponsors</a>
<a href="#">Abstract Submission</a>	<a href="#">Registration</a>	<a href="#">Accommodation / Excursion</a>	<a href="#">Enjoy Nara</a>	<a href="#">Contact Us</a>	

## Registration

Advance registration is strongly encouraged for smooth operation.

For abstract submission, you are required to complete registration beforehand.

Please click the button below to go to the registration page.

### Registration Period

July 1(MON) - September 15(SUN): Deadline for early bird registration (reduced rate)

### Registration Fees (Tentative)

	ADVANCE REGISTRATION (by 23:59 September 15)	Regular/On-site Registration (After 0:00 September 15)
Regular (Company)	JPY 70,000	JPY 80,000
Regular (Academia)	JPY 50,000	JPY 60,000
Student	JPY 20,000	JPY 30,000
Accompanying Person	JPY 10,000	JPY 20,000

\*1) Regular and Student registration fee includes the followings: Abstract Book, Social Events below, and lunches (Nov. 21 and Nov. 22 and Nov. 23).

\*2) Accompanying Person means family or friends of the participating scientists with no academic purpose. Accompanying person is welcome to Social Events below.

\*3) No refund can be made for cancellation, however, you can give your right over to your colleague.

\*4) JPY 50,000 is approximately USD 450, EU 400, and CNY 3,000 (Rates as of the 11th of March, 2019)

### Social Events

- Welcome Party    Nov. 20 (WED)    at HOTEL NIKKO NARA
- Banquet            Nov. 21 (THU)    at Nara Kasugano International Forum
- Get-together      Nov. 22 (FRI)    at Restaurant "Half Time" (Nara National Museum)

### Application Procedure

Please register your personal information first and log in to your "My Page".

A valid passport is needed to enter Japan. Attendees who require a VISA and an invitation letter for the application should

address their request to the organizers: [isbs2019@pac.ne.jp](mailto:isbs2019@pac.ne.jp). For your VISA requirement, please refer to the webpage of Ministry of Foreign Affairs of Japan: [https://www.mofa.go.jp/j\\_info/visit/visa/index.html](https://www.mofa.go.jp/j_info/visit/visa/index.html). The invitation letter will be issued upon completion of the registration.

Early Registration



<a href="#">Home</a>	<a href="#">Venue and Access</a>	<a href="#">Speakers</a>	<a href="#">Scientific Program</a>	<a href="#">General Information</a>	<a href="#">Committees / Sponsors</a>
<a href="#">Abstract Submission</a>	<a href="#">Registration</a>	<a href="#">Accommodation / Excursion</a>	<a href="#">Enjoy Nara</a>	<a href="#">Contact Us</a>	

## Abstract Submission

### LATE BREAKING ABSTRACT

We have already closed the website for the abstract submission on 25 Sept. However, the organizing committee has decided to invite authors of very important results to submit their late breaking abstracts for consideration and inclusion in the symposium. Abstracts should be submitted directly by e-mail to the secretariat office using the designated template. The type of presentation, oral or poster, will be decided by the organizing committee.

Because we have to edit and print the program and abstract book, late breaking abstracts may not be included in the book, but distributed as separate sheets on the date of the symposium. The presenters have to make registration through the website.

**We welcome oral and poster presentations from general participants**, in addition to the Symposium of plenary, keynote, and invited speakers.

Please follow the instruction for abstract submission as below.

In order to submit your abstract, click the button below to go to the abstract submission page.

Instruction:

- Please fill out all the required fields in the abstract submission page.
- Abstract must be prepared concisely in English.
- Please use the abstract template. You can download the docx. template below.
- Length: The abstract should be in one page (including statements of introduction, materials & methods, results, discussion, references, acknowledgments, etc.).
- Keywords: Up to 5 keywords required.
- Abstract submission is only accepted through our online system as below.
- After submitting your abstract online, auto-reply mail will be delivered to your registered e-mail. Please make sure to secure your submission number and password.
- You may view, confirm, and edit your abstract during the submission period. Please note that you will not be able to access to your abstract online after the submission deadline.

### Young Excellent Abstract Awards

The organizing committee has decided to bestow Young Excellent Abstract Awards as follows:

- The applicant should be 45 years old or below and the first author of the abstract, and should make his/her presentation.
- The winners will be decided by the organizing committee and awarded with certificates during the conference.

### Topics of the symposium

## ◆ 1. Blood Substitutes

### 1-1. Novel products development, e.g.,

- (a) RBC substitutes,
- (b) platelet substitutes,
- (c) WBC substitutes,
- (d) plasma expanders,
- (e) coagulation factors, and
- (f) blood cell growth factors,

that can be generated by various technologies, such as chemical modification, chemical synthesis, encapsulation, genetic recombination, and iPS or ES cells derived.

### 1-2. Pre-clinical safety and efficacy evaluation on pharmacological, toxicological, hemodynamic, microhemodynamic and pharmacokinetic studies of various products.

### 1-3. Novel technologies on production including pathogen inactivation/removal of biological products.

### 1-4. Clinical research, such as design on clinical trials, studies on efficacy and adverse effects of various products.

### 1-5. Others.

## ◆ 2. Bio-nano carriers for oxygen/carbon monoxide/nitric oxide therapeutics

### 2-1. New products and their manufacturing technologies

### 2-2. Biological nano oxygen carrier therapeutics for hypoxia related diseases, such as tumor, vascular disease and donor organ preservation during transplantation, with emphasis on pre-clinical efficacy, safety evaluation and related basic research

### 2-3. Biological nano carbon monoxide carrier therapeutics for inflammatory and oxidative diseases.

### 2-4. Biological nano nitric oxide carrier therapeutics for various diseases.

### 2-5. Research on the design of clinical trials, evaluation on efficacy and adverse reactions of various products and related basic research.

### 2-6. Others

## ◆ 3. Artificial cells

### 3-1. New products that can be used for blood perfusion, drug controlled-release, enzyme immobilization and their manufacturing technologies as well as related basic research.

### 3-2. Clinical application and other applications, evaluation on the efficacy, safety and related basic research.

### 3-3. Nanosized soluble artificial cells.

### 3-4. Others.

## ◆ 4. Updates and perspectives on clinical transfusion and its adverse reactions

### 4-1. New concepts on clinical transfusion, new technologies, new experiences, new development trends and related basic research

### 4-2. Updates and perspectives on transfusion related infectious and non-infectious risks, and related basic research

### 4-3. Patient blood management

### 4-4. Others.



## Template



## Advance Registration

Those who submit abstracts are required to complete online registration beforehand.

Notice of Acceptance:

Acceptance notice including presentation details will be sent to you by the end of September by email.

Please click the button below to submit your abstract. (From July 1st)

Submit Abstract

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## Scientific Program

[Detailed Program](#)[Instruction for Chairs and Presenters](#)

# The 17th International Symposium on Blood Substitutes & Oxygen Therapeutics

21 Nov. (Thur)			
	Room1	Room2	Room3
	Noh Theatre #	Reception Hall	Conference rooms 1&2
8:30	Gate Open		
9:00	Registration Starts	Poster setting up on the walls	
9:30	Opening: H. Sakai & C. Yang (Co-Presidents, ISBS) H. Hosoi (President of Nara Med. U.)	Totally 35 Poster Presentations	
9:50-10:30	Presidential 1: Thomas M.S. Chang (Canada) Chair: C. Yang		
10:30-11:10	Presidential 2: Hiromi Sakai (Japan) Chair: H. Nishide		
11:10-11:20	Break	Poster viewing	
11:20-12:00	Plenary 1: Jonathan S. Jahr (USA) Chair: J. Liu		
12:00-12:40	Plenary 2: Koji Eto (Japan) Chair: A. Yoshioka		
12:40-12:50	Break		
12:50-13:30			Luncheon 1: Shigeyuki Kano (Japan) Chair: H. Sakai
13:30-13:50	Break	Poster viewing	Break
	General Meeting of SBSJ		
13:50-15:10	1. Keys to Develop Blood Substitutes (1) Chairs: L. Bülow & H. Sakai	Banquet preparation	3. Artificial Cells and Functional liposomes 13:50-15:50 Chairs: J. Szebeni & T. Ishida
	Keynote 1: Koichi Kobayashi (Japan) Keynote 2: Marcos Intaglietta (USA) Keynote 3: Leif Bülow (Sweden)		Invited 4: János Szebeni (Hungary) Invited 5: Hiroshi Azuma (Japan) Invited 6: Tatsuhiro Ishida (Japan)
15:10-15:50	Plenary 3: Chao Chen (China) Chair: C. Yang		Oral 1: Ben Wang (China) Oral 2: Kon Son (Japan) Oral 3: Tianshu Li (Japan) Oral 4: Runkei Hu (Japan)
15:50-16:00	Break	Poster viewing	Break
16:00-18:05	2. Keys to Develop Blood Substitutes (2) Chairs: F. Ma & H.W. Kim	Banquet preparation	4. Strategies to PEGylate HBOCs Chair: S. Acharya & S. Bruno
	Keynote 4: Hae Won Kim, A.G.Greenburg (USA) Keynote 5: Masaki Otagiri (Japan) Invited 1: Hidenobu Ohta (Japan) Invited 2: Feng Ma (China) Invited 3: Kenichi Miharada (Sweden) (18:00)		Invited 7: Peter E. Keipert (USA) Invited 8: Seetharama Acharya (USA) Invited 9: Stefano Bruno (Italy) Invited 10: Tao Hu (China) Oral 5: Takashi Matsuhira (Japan) Oral 6: Weili Yu (China) Oral 7: Brandon Reeder (UK) (18:05)
18:05-18:30	Stage preparation	Poster viewing	
18:30-19:00	Stage Show (Gagaku instrumental music show)	Banquet preparation	
19:00-21:00	Commemorative Photograph	Banquet (2nd Floor) (poster viewing)	
21:30	Building closed		

# No food and beverages are allowed in Noh theatre

22 Nov. (Fri)			
	Room1	Room2	Room3
	Noh Theatre #	Reception Hall	Conference rooms 1&2
8:30	Registration Starts	Poster viewing	
9:00-10:40	<b>5. Hemostasis and Artificial Platelets</b> Chairs: R. Xia & S. Takeoka  Invited 11: Judith Martini (Austria) Invited 12: Rong Xia (China) <b>Keynote 6:</b> Yasuo Ikeda (Japan) <b>Keynote 7:</b> Shinji Takeoka (Japan)	<b>6. Characterization of New HBOCs</b> Chairs: C. Cooper & H. Horinouchi  Invited 15: Yiping Jia (FDA, USA) Invited 16: Chris Cooper (UK) Invited 17: Hirohisa Horinouchi (Japan) Invited 18: S. Klaynongsruang (Thailand) Invited 19: Yubin Huang (China)	<b>7. Gas Biology and ROS Control</b> Chairs: K. Taguchi & A.F. Topunov  Invited 24: Kazuaki Taguchi (Japan) Invited 25: Hiroaki Kitagishi (Japan) Oral 11: Ye Cao & Y.S. Wong (Singapore) Oral 12: Mayumi Ikeda (Japan) Oral 13: Shun Oshiro (Japan) Oral 14: Semhar Ghirmay (Sweden) Oral 15: Alexey F. Topunov (Russia)
10:40-10:50	Break	Break	Oral 15: Alexey F. Topunov (Russia)
10:50-12:15	Chairs: R. Xia & S. Takeoka  Invited 13: Yumiko Matsubara (Japan) Oral 8: Osamu Ishida (Japan) Invited 14: Kohsuke Haggisawa (Japan) Oral 9: Liguoz Zhu (China) Oral 10: Junrong Du (China)	Chairs: A. Palmer & B. Takase  Invited 20: Bonpei Takase (Japan) Invited 21: Pedro Cabrales (USA) Invited 22: A. Wang, R. Kluger (Canada) Invited 23: Andre F. Palmer (USA)	10:55- 11:05 Break  <b>8. New PFC Materials</b> Chair: M.P. Krafft & K.B. Ferenz  Invited 26: Marrie P. Krafft (France) Oral 16: Xiaoting Fu (Japan) Oral 17: Katja B. Ferenz (Germany)
12:15-12:20	Break	Break	
12:20-13:00		<b>Luncheon 2:</b> Midori Shima (Japan) Chair: Y. Ikeda	
13:00-13:20	Break	Poster viewing	
13:20-14:00	<b>Plenary 4:</b> Jiaxin Liu (China) Chair: M. Matsumoto		
14:00-14:40	<b>Plenary 5:</b> Masahiro Satake (Japan) Chair: H. Azuma		
14:40-14:50	Break	Break	
14:50-16:40	<b>9. Transfusion Managements and Blood Substitutes</b> Chairs: J. Liu & M. Satake  <b>Keynote 8:</b> Jin Liu (China) Invited 27: Amy G. Tsai (USA) Invited 28: Zhong Liu (China) Invited 29: Katsuo Terui (Japan) Invited 30: Limin Chen (China)	<b>10. Characterization of New HBOCs and plasma substitutes</b> Chairs: Z. Su & T. Komatsu  <b>Keynote 9:</b> Ziguoz Su (China) Invited 33: Takaaki Sato (Japan) Invited 34: Hans Bäumler (Germany) Invited 35: Teruyuki Komatsu (Japan) Invited 36: Kunping Yan (China)	
16:40-16:50	Break	Break	
16:50-18:15	Chairs: L. Chen & H. Azuma  Invited 31: Lihua Hu (China) Invited 32: Manabu Kinoshita (Japan) Oral 18: Yusuke Naito (Japan) Oral 19: Ling Li (China) Oral 20: Qin Zhou (China)	Chairs: H. Bäumler & T. Maruyama  Invited 37: Toru Maruyama (Japan) Invited 38: Surapong Chatpun (Thailand) Oral 21: Richard Hickey (USA) Oral 22: Xiaoli Liu (Denmark) Oral 23: Jing Wang (China)	
18:15-18:45	Walk to the nearby restaurant in Nara National Museum		
19:00-21:00	"Get Together" (Supper), at "Halftime" in Nara National Museum		

# No food and beverages are allowed in Noh theatre

23 Nov. (Sat)			
	Room1	Room2	Room3
	Noh Theatre #	Reception Hall	Conference rooms 1&2
8:30	Registration Starts	Poster viewing	
9:00-9:40	<b>Plenary 6:</b> Felice D'Agnillo (FDA, USA) Chair: C. Chen		
9:40-9:45	Break	Poster viewing	
9:45-11:45	<b>11. R&amp;D of HBOCs (1)</b> Chairs: M. Kinoshita & Amy G. Tsai  <b>Keynote 10:</b> Carleton J.C. Hsia (USA) Invited 39: Franck Zal (France) Invited 40: Zafiris Zafirelis (USA) Invited 41: William R. Light (USA) Invited 42: Carl W. Rausch (Hong Kong) (11:35)	<b>12. Applications of Blood Substitutes and Related Technologies</b> Chairs: J. Shi & N. Rikihisa  Invited 43: Jinhai Shi (China) Oral 24: Dongfang Zhou (China) Oral 25: Donald Belcher (USA) Oral 26: Chiko Shimbori (Canada) Invited 44: Naoaki Rikihisa (Japan) Oral 27: Soichiro Seno (USA) Invited 45: Hequn Zou (China) (11:45)	
11:45-11:50	Break	Poster viewing	
11:50-12:30	<b>Presidential 3:</b> Chengmin Yang (China) Chair: T. Chang		
12:30-13:20	Break	Poster viewing / Lunch Break	
		<b>Poster removal</b>	
13:20-14:50	<b>13. R&amp;D of HBOCs (2)</b> Chairs: T. Chang & K. Kobayashi  Invited 46: Allan Doctor (USA) Invited 47: Olga Bockeria (USA) Invited 48: Bing Lou Wong (China) Oral 28: Jan Simoni (USA) Oral 29: Maria Seriakov (Austria)	<b>14. New Applications of HBOCs</b> Chairs: N. Matsuno & L. Hosta-Rigau  Invited 49 : Naoto Matsuno (Japan) Invited 50 : Jun Araki (Japan) Oral 30: Michelle M.T. Jansman (Denmark) Oral 31: Tao Li (China) Oral 32: Tatsuya Shonaka (Japan)	
14:50	Awards Announcement Closing Remarks Next ISBS-2021 (Europe) Announcement		

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## Speakers (Alphabetical Order)

### President Lectures



Thomas M.S. Chang  
[McGill University, Canada]

*What is the most effective replacement for blood loss?*



Hiromi Sakai  
[Nara Medical University, Japan]

*Artificial Red Cells Project in Japan*



Chengmin Yang  
[Inst. Blood Transfusion, Chin. Acad. Med. Sci., China]

*The exploration and discussion about the guiding principle of HBOCs research and design*

### Plenary Lectures



Photo

Felice D'Agnillo  
[CBER, FDA, USA]

*Preclinical Perspective on the Cardiovascular Responses to Hemoglobin-Based Oxygen Carriers*



Koji Eto  
[Kyoto University, Japan]

*Turning Stem Cells into Platelets*



Jonathan S Jahr  
[Univ. of California, Los Angeles, USA]

*Blood Component and Transfusion Requirements and Mortality in the Two Largest Phase III Trials of HBOCs.*



Jiaxin Liu  
[Inst. Blood Transfusion, Chin. Acad. Med. Sci., China]

*Development and future of Chinese Transfusion Medicine*





Masahiro Satake  
[Japanese Red Cross]

*Current blood program and blood substitutes*



Chao Chen  
[Northwest Univ., China]

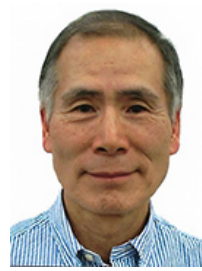
*Preclinical Investigation of Polymerized Porcine Hemoglobin*

## Keynote Lectures



Leif Bülow  
[Lund University, Sweden]

*Protein engineering in the design of safe and robust HBOCs*



Hae Won Kim, A. Gerson Greenburg  
[Brown University, USA]

*Acellular Hemoglobin-based Oxygen Carrier (HBOC)-mediated Bradycardia: Another Affair with Nitric Oxide?*



Carleton Hsia  
[Synzyme, AntiRadical Therapeutics, NanoBlood, USA]

*SanFlow for Unmet Medical Needs Caused by Superoxide Toxicity*



Yasuo Ikeda  
[Waseda University, Japan]

*Innovative research approach to produce a large quantity of regenerated platelets/platelet substitutes in Japan*



Marcos Intaglietta  
[University of California, San Diego, USA]

*Restoration of oxygen carrying capacity/delivery capacity in anemia*



Koichi Kobayashi  
[Keio University, Japan]

*History of Blood Substitutes Research in Japan*



Jin Liu  
[West China Hospital, Sichuan Univ., China]

*Individualized Red-cell Transfusion Strategy for Non-cardiac Surgery in Adults: a prospective, open-label, randomized clinical trial*



Masaki Otagiri  
[Sojo University, Japan]

*Human Albumin Based Drug Delivery : SNO-Albumin dimer for cancer therapeutic application*



Zhiguo Su  
[Chin. Acad. Sci., China]

*Hemoglobin modification engineering*



Shinji Takeoka  
[Waseda University, Japan]

*Evaluation of fibrinogen dodecapeptide(H12)-coated, ADP-encapsulated liposomes as hemostatic nanoparticles*



◆ (Luncheon Seminars)



Shigeyuki Kano

[Res. Inst. Natl Center for Global Health & Med., Japan]

*Big issues for the world malaria elimination*



Midori Shima

[Nara Medical University, Japan]

*New therapy for hemophilia A by factor VIII mimicking bispecific antibody*

## Invited Lectures



Seetharama A Acharya

[Dept. Med., Albert Einstein College of Medicine, USA]

*Increased Oxygen Extraction from RBCs during Anemia by High O<sub>2</sub> Affinity Hb in Plasma: Combining Supra Plasma Expansion with O<sub>2</sub> Transfer Catalysis by Hb for Treating Anemia.*



Jun Araki

[Shizuoka Cancer Center Hospital, Japan]

*Normothermic preservation of the rat hind limb with artificial oxygen-carrying hemoglobin vesicles and the possibility of therapeutic application*



Hiroshi Azuma

[Asahikawa Med. Univ., Japan]

*Induction of B7-H3 positive myeloid-derived suppressor cells (MDSC) by liposomal nanoparticles*



Hans Bäumler

[Charité-Universitätsmedizin Berlin, Institute of Transfusion Medicine, Germany]

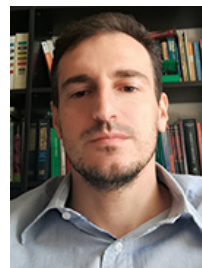
*Hemoglobin submicron particles as carriers for oxygen and drugs*



Olga Bockeria

[Medical Technology Associates II, VP Clinical Development, USA]

*Mitered oxygen delivery and transport to prevent ischemia and reperfusion injury of the heart*



Stefano Bruno

[University of Parma, Italy]

*Different oxygen stress induced by high- and low-affinity PEGylated hemoglobin-based oxygen carriers in a Guinea pig exchange transfusion model*



Pedro Cabrales

[Univ. of California, San Diego, USA]

*PolyHb toxicity is determined by molecular weight*



Surapong Chatpun

[Prince of Songkla University, Thailand]

*Characterization of hydroxypropyl, acid-thinned waxy tapioca starch based plasma expander*



Limin Chen

[Inst. Blood Transfusion, Chin. Acad. Med. Sci., China]

*What we learned from HCV: Road leads to the control of transfusion-transmitted infectious diseases*



Chris Cooper

[University of Essex, UK]

*New design approaches for a recombinant haemoglobin based oxygen carrier*



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[KaloCyte, University of Maryland, USA]

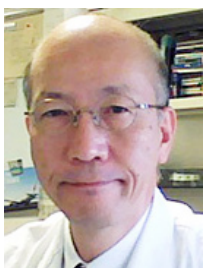
*ErythroMer: Bio-inspired Design and Performance Data for Nanofabricated Artificial Red Blood Cells*



Kosuke Hagiwara

[National Defense Medical College, Japan]

*Combination therapy using fibrinogen  $\gamma$ -chain peptide-coated, ADP-encapsulated liposomes and hemoglobin vesicles for trauma-induced massive hemorrhage in thrombocytopenic rabbits*



Hirohisa Horinouchi

[Saitama City Hospital, Japan]

*Hemoglobin Vesicle: resuscitation fluid for hemorrhagic shock*



Lihua Hu

[Huazhong Univ. Sci.&Eng., China]

*Patient blood management*



Yubin Huang

[Changchun Inst. Appl. Chem. CAS, China]

*Design of Hemoglobin-Polymer Nano-assemblies for Oxygen Transfusion and Other Biomedical Attempts*



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[Tokushima University, Japan]

*Immunological response to PEGylated liposomes: production of anti-PEG antibodies and their affection on PK of second dose*



Yiping Jia

[FDA, USA]

*CMC Regulatory Considerations in the Drug Development of Hemoglobin-Based Oxygen Carriers*



Peter Keipert

[Keipert Corp., USA]

*Pegylated HBOCs with higher oxygen affinity effectively target oxygen delivery to ischemic and/or hypoxic tissues*



Manabu Kinoshita

[National Defense Medical College, Japan]

*Medical countermeasure using hemoglobin vesicles against trauma hemorrhagic shock*



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*Biological Roles of Endogenous Carbon Monoxide in Blood*



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*Designs and Benefits of Oxygen Carriers from Site-Selectively Coupled Cross-Linked Hemoglobins*



Teruyuki Komatsu  
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*Hemoglobin-Albumin Cluster "HemoAct™" as Red Blood Cell Substitute and O<sub>2</sub> Therapeutic Reagent*



Marie Pierre Krafft  
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*Advances in Fluorocarbon-Assisted Oxygen Delivery, Diagnostics and Theranostics*



William R. Light  
[VirTech Bio, USA]

*VirTech Bio's progress and future plans with a large human hemoglobin polymer*



Zhong Liu  
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*20 Year Journey of blood safety in China*



Feng Ma  
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*Erythrocytes derived from hematopoietic stem cell-independent pathway*



Judith Martini  
[Medical University of Innsbruck, Austria]

*Bleeding management is coagulation management: The European approach of targeted coagulation therapy in massive bleeding*



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*Albumin Fusion Protein: Next Generation of Albumin Preparation*



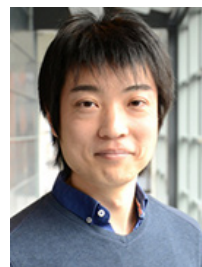
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*Megakaryocytes and Platelets from a Novel Source, Human Adipose-derived Mesenchymal Stem Cells*



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[Lund Univ., Sweden / Kumamoto Univ., Japan]

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*Hemoglobin vesicles treatment in future perinatal medicine*



Andre Palmer  
[The Ohio State University, USA]  
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Carl W. Rausch  
[8-BioMed, Hong Kong]  
*A different perspective on hemoglobin solutions: The need to move beyond the mis-directed classification of "blood" substitutes*



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*Artificial red blood cells as potential photosensitizers in laser treatment against red birthmarks*



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[China Protein Drug Quality Alliance, China]  
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*Carbon monoxide bound Hemoglobin-vesicles are effective in treating inflammatory disorders*



Bonpei Takase  
[National Defense Medical College, Japan]  
*Chronic anti-arrhythmogenic effect of liposome-encapsulated hemoglobin (HbV) on the Myocardium through improving myocardial electrical remodeling and the arrhythmogenic substrate in hemorrhagic shock heart syndrome*



Katsuo Terui  
[Saitama Medical University, Japan]  
*Critical obstetric hemorrhage: perinatal system problem in Japan and need for blood substitutes*



Amy G. Tsai  
[University of California, San Diego, USA]  
*Microvascular response to blood transfusion in a moderately anemic hamster model shows the importance of oxygen delivery over oxygen-carrying capacity.*



Binglou Wong  
[Inst. Blood Transfusion, Chin. Acad. Med. Sci., China]  
*From a different angle: How to make hemoglobin based oxygen carrier (HBOC) work for human application.*



Rong Xia  
[Huashan Hospital Affiliated to Fudan Univ.,  
China]

*Basic and clinical aspects of platelet  
transfusion Refractoriness*



Kunping Yan  
[College of Life Sciences, Northwest  
University, China]

*The study of 300% isovolemic  
exchange transfusion with polymerized  
porcine hemoglobin in rats*



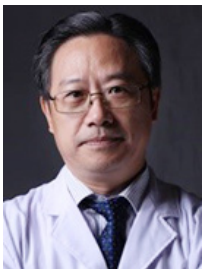
Zaf Zafirelis  
[Hemoglobin Oxygen Therapeutics LLC,  
USA]

*Hemopure, in the aftermath of HBOC  
industry's collapse following the fateful  
2008 FDA/NIH workshop: What have  
we learned since then?*



Franck Zal  
[Hemarina, France]

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carrier for organ preservation: a safety  
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