

## Special lectures

### 1. Present and Perspective of High-Tc Oxide Superconductors

Hideo IHARA

### 2. Vitrification as an Approach of Cryopreservation of Cell, Tissue and Organ

Tsuneo A. TAKAHASHI

## Articles

### 1. Validation Concerning the Uniformity of Shelf Temperature and Thermal Condition of Product in the Freeze-Drying of Pharmaceuticals

Masakazu KOBAYASHI, Ryoji SUNAMA and Konomi HARASHIMA

### 2. A Closed System for Continuous Freeze-Drying of Liquid Material by the Use of Vertical Tubes

Masakazu KOBAYASHI, Konomi HARASHIMA and Hiroichi ARIYAMA

### 3. Development and Application of a New Cryo-Unit for Continuous Observation of Cryo-SEM and Freeze-Replica Images

Seizo FUJIKAWA, Toshiaki SUZUKI, Toyoji ISHIKAWA, Shigetaka SAKURAI, and Yoichi HASEGAWA

### 4. Effect of Freezing by Programmed Cooling Apparatus on Cell Preservation

Zenzo OKAZAKI and Masashi YAMASHITA

### 5. Freezing of Skeletal Muscle with an Osmotic Dehydrating Sheet

Yuji HAGIWARA, Ikuya NONAKA, Rika OKETA and Hiroko ISHII

### 6. Preservation of Several Plant Tissue Cultures by Freezing

Kazuo KIMURA, Yumiko IWAHASHI and Yoshihiro NAKAMURA

### 7. Tolerance of Osmotic Dehydration and Cell Structural Changes Induced by Osmotic Dehydration in Protoplasts and Their Regenerated Cells of *Merchantia polymorpha*

Yasutake SUGAWARA and Masayuki TAKEUCHI

### 8. Effect of Ethylenediamine on the Survival of L-dried *Aquaspirilla*

Takeshi SAKANE and Ko IMAI

9. Maintenance of Bacteriophages for *Pseudomonas aeruginosa* by L-drying

Ko IMAI

10. Freeze-Thawing Behavior of Glucose and Saline Mixture Aqueous Solutions

Kazuhito KAJIWARA, Norio MURASE and Kinji GONDA

11. Heat of Crystallization on Warming after Two Step Freezing of 10% Glycerol Solution with Cryoprotective Polymers

Mitsuo TAKANO and Hisayo ONO

**Lectures presented at the Seminar of Japanese Society of Research of Freezing and ,Drying:  
"Preservation of Cells and Genes of Plants and Animals"**

1. Cryopreservation of Human Platelets

Yasuo IKEDA

2. Frozen Preservation of Autologous Blood

Kazuyoshi SASAKI, and Shinji YUASA

3. Induction of Ice Nucleation by Silver Iodide in Cryopreservation of Mammalian Embryos

Toshizuki KOJIMA, Tadashi SOMA, and Norihiko OGURI

4. Cryopreservation of Fish Sperm

Hisashi KUROKURA

5. Data Banks on Cultures-World Data Center or Microorganisms and Hybridoma Data Bank

Hideaki SUGAWARA

6. 植物細胞・組織の長期保存（要旨）

埼玉大学理学部生体制御学科 菅原 康剛

7. 花粉・葯の保存

農林水産省果樹試験場興津支場 大村 三男

8. 藻類の保存学

国立公害研究所 渡辺 信、笠井 文絵、清水 明、津口 広宏、須田 彰一郎、新山 優子