

Vitrified condyle (photo by Kezhou Wu, University of Alberta)

CRYO2021 VIRTUAL MEETING

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to create fistulas, 15 patients underwent aneurysms.

Discussion: Due to the fact that tissue antigen is destroyed by freezing at a temperature of minus 4 degrees, so there is no limit to the use of such biological grafts.

Funding: Not applicable Conflict of Interest: None to disclose Corresponding Author*: prof.srmousavi@gmail.com

P39 FREEZING DAMAGE ASSESSMENT IN EPIDERMAL TISSUE CRYOPRESERVED WITH ANTARCTIC YEAST ISOLATED TYPE1-ANTIFREEZE PEPTIDE

Muhammad Shuaib Khan ^{a,b}, Adamu Abdul Abubakar ^a, Sahar Muhammad Ibrahim Mohd Basyaruddin Abdul Rahman ^c, Mohd Zuki Abu Bakar ^d, Mohammed Mustapha Noordin ^e, Loqman Mohammad Yusof ^{a*}

^a Department of Companion Animal Medicine and Surgery, Faculty of Veterinary Medicine, Universiti Putra Malaysia
^b Faculty of Veterinary and Animal Sciences, Gomal University Dera Ismail Khan Pakistan
^c Department of Chemistry, Faculty of Science, Universiti Putra Malaysia
^d Department of Pre-Clinical Veterinary Studies, Faculty of Veterinary Medicine, Universiti Putra Malaysia
^e Department of Veterinary Pathology and Microbiology, Faculty of Veterinary Medicine, Universiti Putra Malaysia

Sub-zero injuries in living tissue as a result of re-crystallization phenomenon is the major obstacle and complicates the application of cryopreserved tissues destined for transplantation. Understanding the freezing and thawing response of tissue against the sub-zero temperature would provide better understanding in the application of the non-toxic preservation technique of living tissues. The aim of this study was to evaluate the potential of antifreeze peptides (Afp1m) as a cryopreservative for living tissue e.g. skin. To determine the effects of cryopreservation on the tissue using Afp1m, type 1 AFP derived peptide was used to cryopreserve skin graft in low concentration of 0.5, 1.0 and 2.0 mg/ml at -10°C or -20°C for 72 hrs. The histological epidermal tissue distortions were measured using a scoring system. To determine the extent of freezing damage experienced in cryopreserved epidermal region of skin grafts. It was found that relatively less microscopic tissue damages occurred at -10°C compared to -20°C at higher AFP concentration among tested concentrations. It is concluded that epidermis of skin tissue is more sensitive towards cryopreservation and experience comparatively more extents of freezing damage at -20°C using these lower concentrations of Afp1m.

Funding: Not applicable Conflict of Interest: None to disclose Corresponding Author*: shuaibanatomy@gu.edu.pk

P40 THE EFFECT OF CRYOIRRIGATION AND CRYOPRESERVED PLACENTA EXTRACT ON THE CONTENT OF NITROGEN MONOXIDE IN THE GASTRIC MUCOSA IN RATS WITH DICLOFENAC SODIUM-INDUCED GASTROPATHY

Fedir Hladkykh^{*}, Mykola Chyzh

Institute for Problems of Cryobiology and Cryomedicine of the National Academy of Sciences of Ukraine, Ukraine

Finding new ways to decrease the ulcerogenic action of nonsteroidal antiinflammatory drugs is an important task of modern cryomedicine and gastroenterology. It is known that nitrogen monoxide (NO) is a powerful vasodilating agent able to augment the blood supply to the mucous membranes. As a secondary mediator, NO is involved in the vasodilating effects of the vagus nerve and many other vasoactive substances.

Acute diclofenac sodium-induced gastropathy in male rats was reproduced by a single intragastric administration of diclofenac sodium at a dose of 50 mg/kg. Euthanasia of animals was performed after 24 hours. Cryopreserved placenta extract was administered intramuscularly at a dose of 0.16 ml/kg body weight. The content of NO metabolites in the gastric mucosa was determined by spectrophotometric method, based on the oxidation of nicotinamide adenine dinucleotide phosphate during the reaction of NO formation with L-arginine and measured as light absorption at a wavelength (λ) of 340 nm.

The study showed that the introduction of diclofenac sodium led to a decrease by 41.5% (p<0.05) of NO metabolite levels in the gastric mucosa homogenates of rats relative to intact animals and amounted to 550 mmol/g of tissue. These findings were consistent with literature data on the ability of nonsteroidal anti-inflammatory drugs to endogenous nitrogen monoxide form resulting from inhibition of NO synthases. Administration of cryopreserved placenta extract resulted in an attenuation of diclofenac-induced decrease in NO content in the gastric mucosa which amounted to 780 mmol/g of tissue, and was only 13.3% lower than that of the intact animals (p<0.05). Cryoirrigation of the gastric mucosa, similar to the introduction of cryopreserved placenta extract, lowered diclofenac sodium-induced decrease in NO metabolites. Combined cryoirrigation and administration of cryopreserved placenta extract led to a statistically significant (p<0.05) increase in NO level in gastric mucosa homogenates, completely diclofenac sodium-induced eliminating changes and amounted to 940 mmol/g of tissue, which was 1.1% higher than the respective value in the intact group of animals.

The obtained data indicate the ability of cryopreserved placenta extract, as well as the action of low temperatures to decrease the diclofenac sodium-induced NO reduction in the gastric mucosa. We suggest this being a mechanism of their gastrocytoprotective action.

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Conflict of Interest: None to disclose **Corresponding**

Author*: fedir.hladkykh@gmail.com

P41 DETECTION AND CHARACTERIZATION OF ANTIFRREZE ACTIVITY FROM *BRASSICA JUNCEA* LEAF CUTICLE

Kailash Yadav, Satya Prakash, Renu Deswal *

Molecular Physiology & proteomics Laboratory, Department of Botany, University of Delhi, India

Antifreeze proteins (AFPs) possess the ability to lower the freezing point of water and restrict the growth of intracellular ice crystals. AFPs were initially isolated from Antarctic fishes followed by their discovery in insects, fungi, bacteria, and plants. Translation of freezing tolerance from Rabi crops like Brassica to freeze sensitive crops is of significance to avoid freeze injury and subsequent yield loss in crops like legumes. Besides, antifreeze molecules can also be used in the food, biomedical, and petroleum industry. Therefore, this study was aimed to explore the potential AFPs from the cuticle of Brassica juncea leaves. Cuticle proteins enriched fraction identified using nano LC-MS/MS (liquid chromatography-tandem mass spectrometry) was scanned for potential AFPs using CryoProtect server



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Stained full thickness cartilage section after vitrification (photo by Kezhou Wu

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P29 DIRECT (ALKALINE AND NEUTRAL COMET AND TUNEL) BUT NOT INDIRECT METHODS (SCD AND SCSA) RELATE THE PERCENTACES OF SPERM WITH FRACMENTED DNA TO CHROMATIN DAMAGE IN CRYOPRESERVED BOAR SPERM Spain P30 EFFECT OF CRADENT VITHIFACION SOLUTIONS AND ISODER FLY EMBRYOS Idan Alyagor, Israel P31 VITHIFICATION OF MOUSE CUMULUS-OOCYTE COMPLEXES SOLDIER FLY EMBRYOS Moslern Mohammaad, Iran P33 EVITHIFICATION OF MOUSE CUMULUS-OOCYTE COMPLEXES SELECTED WITH BRILLIANT CRESVL BULE AN IMPROVED PROTOCOL FOR IMMATURE OOCYTE VITRIFICATION P33 EQUILIBRIUM VITRIFICATION OF MOUSE OCYTES WITH LOWER P33 EQUILIBRIUM VITRIFICATION OF MOUSE OCYTES WITH LOWER P34 LOW-TEMPERATURE PHASE TRANSITIONS IN DORMANT GRAPE BUDS Olena Bobrova, Ukraine P35 CRYOPRESERVATION OF APICAL AND AXILLARY SWEET POTATO MERISTEMS BY VITRIFICATION TECHNIQUES Anna Mazgowska, Ukraine P35 CRYOPRESERVATION OF APICAL AND AXILLARY SWEET POTATO MERISTEMS BY VITRIFICATION TECHNIQUES Anna Mazgowska, Ukraine P35 CRYOPRESERVATION OF APICAL AND AXILLARY SWEET POTATO MERISTEMS BY VITRIFICATION TECHNIQUES Madia Chernobali, Ukraine P35 LOW-STIGATIONS ON CLASSY STATE OF SUGARCANE SHOOT TIPS BY MICROALGAE CELLS Microandowska, Ukraine P35 LEY OF ROZEN VEINS IN VASCULAR AND RECONSTRUCTIVE SURGERY Signel Mousavi, Iran P38 DEP OF ROZEN VEINS IN VASCULAR AND RECONSTRUCTIVE SURGERY Sady Prakash, India P40 THE EFFECT OF CRYOPRESERVED INTROCEN MONOXIDE IN THE CASTRIC MUCOSA IN RATS WITH DICLOPENCE ASTROPENT MONOXIDE IN THE CASTRIC MUCOSA IN RATS W			
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P42 FIRST SPERM CRYOPRESERVATION PROTOCOLS DESIGNED FOR IBERIAN THREATENED FRESHWATER SPECIES: IBERIAN TOOTHCARP (APHANIUS IBERUS) AND VALENCIA TOOTHCARP (VALENCIA HISPANICA)Marta Blanes-García, SpainP43 DEVELOPMENT OF A PROTOCOL FOR THE CRYOPRESERVATION OF PUFFERFISH (TAKIFUGU ALBOPLUMBEUS) SPERMVictor Gallego, SpainP44 EFFECT OF LOW TEMPERATURE STORAGE IN SEA URCHIN EGGS VIABILITYSara Campos, SpainP45 EFFECTS OF PENETRATING CRYOPROTECTANTS ON SPERMKang H. Kho, South Korea		P41 DETECTION AND CHARACTERIZATION OF ANTIFREEZE ACTIVITY FROM BRASSICA JUNCEA LEAF CUTICLE	Satya Prakash, India
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P44 EFFECT OF LOW TEMPERATURE STORAGE IN SEA URCHIN EGGS Sara Campos, Spain VIABILITY Spain P45 EFFECTS OF PENETRATING CRYOPROTECTANTS ON SPERM Kang H. Kho, South Korea CRYOPRESERVATION OF PACIFIC ABALONE, HALIOTIS DISCUS HANNAI South Korea		P43 DEVELOPMENT OF A PROTOCOL FOR THE CRYOPRESERVATION OF PUFFERFISH (TAKIFUGU ALBOPLUMBEUS) SPERM	Victor Gallego, Spain
P45 EFFECTS OF PENETRATING CRYOPROTECTANTS ON SPERM Kang H. Kho, CRYOPRESERVATION OF PACIFIC ABALONE, HALIOTIS DISCUS HANNAI South Korea		P44 EFFECT OF LOW TEMPERATURE STORAGE IN SEA URCHIN EGGS VIABILITY	Sara Campos , Spain
		P45 EFFECTS OF PENETRATING CRYOPROTECTANTS ON SPERM CRYOPRESERVATION OF PACIFIC ABALONE, HALIOTIS DISCUS HANNAI	Kang H. Kho, South Korea

Thursday July 22

8:00 AM	9:00 AM	LIVE - POSTER SESSION 3		
		P46 EVALUATING THE EFFICACY OF SELECTIVE INHIBITION OF ARACHIDONATE 15-LIPOXYGENASE (ALOX15) DURING HUMAN SEMEN CRYOPRESERVATION IN PROTECTING FREEZE THAW INDUCED SPERM DAMAGE	Shubhashree Uppangala, India	
		P47 MITO-TEMPO IMPROVES CRYOPRESERVATION PERFORMANCE OF BULK SEMEN BY CONTROLLING APOPTOSIS RATE, DNA FRAGMENTATION AND ROS PRODUCTION	Reza Masoudi, Iran	