



Discovery to Delivery in Tendon Research: Team Approaches ORS Tendon Section 2018 Conference

November 15-17, 2018

Oregon Health and Science University, Portland, Oregon

Poster Session

Friday, November 16, 2018 1:00 PM – 3:00 PM

Saturday, November 17, 2018 1:00 PM – 3:00 PM

Presenting authors will stand at their poster during the scheduled poster sessions during the following time:

Even numbered posters – 1:00 pm – 2:00 pm

Odd numbered posters – 2:00 pm – 3:00 pm

Tendon Injury and Repair

Poster # 1

Differential Gene Expression Analysis of Healing in Rat Rotator Cuff Tendons After Supraspinatus Tenotomy and Surgical Repair

Shea Carter, Eckhard Weber, Juliet Leighton-Davies, Rachel Kettle, Sabine Guth
Novartis Institutes for BioMedical Research (NIBR)

Poster # 2

Exosome Educated Macrophages Improve Tendon Healing Over Exosomes

Connie Chamberlain, Anna Clements, John Kink, Ugeun Choi, Peiman Hematti, Ray Vanderby
University of Wisconsin

Poster # 3

Low-Dose Dexamethasone Prevents Cytokine-Induced Cell Death and Injury-Like Response in Both Flexor Tendon-Only and Rotator Cuff Bone-Tendon-Muscle In Vitro Explant Models

Brianne Connizzo, Alan Grodzinsky
Massachusetts Institute of Technology

Poster # 4

Response to Mechanical Loading in Rat Achilles Tendon Healing is Mildly Affected by the Microbiome

Franciele Dietrich-Zagonel, Malin Hammerman, Love Tætting, Fabrícia Dietrich, Pernilla Eliasson, Per Aspenberg
Linköping University

Poster # 5

Second Harmonic Generation (SHG) Imaging of Flexor Tendon Fascicular Structure During Healing

Sushmitha Durgam, Benjamin Singh, Matthew Brokken, Matthew Stewart
The Ohio State University, University of Illinois

Poster # 6

Heterotopic Ossification after Achilles Tendon Rupture is initiated During Orthosis Immobilization but is Unaffected by Weight Bearing and Joint Mobilization Status.

Pernilla Eliasson, Anne-Sofie Agergaard, Christian Couppé, Rene Svensson, Susan Warming, Michael Kjaer, Peter Magnusson
Linköping University, Institute of Sports Medicine Copenhagen

Poster # 7

Control of Glucose Metabolism Is Important in Tenogenic Differentiation of Progenitors Derived Human Injured Tendons

Motomi Enomoto-Iwamoto, Sohtaroh Izumi, Satoru Otsuru, Ngozi Akabudike
University of Maryland, Baltimore

Poster # 8

Subpectoral Biceps Tenodesis Using a Bicortical Button and its Relation to the Axillary Nerve: An Anatomical Landmark Study

Katelyn Fellows, Andrew Odland, Jonathan Hagan, Michael Lee, Gabriella Doyle, Britta Swanson, Kyle Swanson
University of Nevada Reno School of Medicine, Lake Tahoe Sports Medicine Fellowship, Barton Memorial Hospital

Poster # 9

Identification of a Latent Resident Progenitor Population in the Adult Mouse Tendon

Mor Grinstein, Daniel Montoro, Jenna Galloway
Center for Regenerative Medicine

Poster # 10

PDGF Signaling Directs Tendon Stem Cell-Mediated Regeneration and Fibrosis

Tyler Harvey, Sara Flamenco, Chen-Ming Fan
Carnegie Institution for Science, The Johns Hopkins University

Poster # 11

The Function of mTORC1 Signaling in Mouse Model of Patellar Tendon Repair

Kyu Sang Joeng, Ronen Schweitzer
University of Pennsylvania, Shriners Hospital for Children and Oregon Health & Science University

Poster # 12

Biomechanical Comparison of Two Novel Rotator Cuff Degeneration Models

Kirk McGilvray, Jeremiah Easley, Brad Nelson, Eileen Hackett, Anthony Romeo, Theodore Schlegel, Dan Regan, Christian Puttlitz, James Johnson
Orthopaedic Bioengineering Research Laboratory, Colorado State University, Rothman Institute, Steadman Hawkins Clinic

Poster # 13

Surgical Repairing of Fractures of Tibia and Fibula in a Common Marmoset (*Callithrix jacchus*)

Byeong Han Lee, Joong-Hyun Kim, Hee-Jong Eom, Jong-Man Kim, Kyoung-Sun Lee, Sang-Woo Kim, Jong-Sung Kim
Osong Medical Innovation Foundation

Poster # 14

A Novel Chick Embryo Model to Study Scarless Embryonic Tendon Wound Healing

Jiewen Li, Rafael Madero, Feiyang Deng, Jessica Dirksen, Jose Suarez Loor, Catherine Kuo
University of Rochester

Poster # 15

Woven Collagen Biotextiles Enable Mechanically Functional Rotator Cuff Tendon Regeneration During Repair of Segmental Tendon Defects In Vivo

Phillip McClellan, Greg Learn, Derrick Knapik, Jameson Cumsky, Victoria Webster-Wood, James Anderson, Robert Gillespie, Ozan Akkus
Case Western Reserve University, University Hospitals, Carnegie Mellon University

Poster # 16

Type II Diabetes Impairs the Quasi-Static, Viscoelastic, and Fatigue Response of Rat Supraspinatus Tendons

Snehal Shetye, Thomas Leahy, Mengcun Chen, Ashley Rodriguez, Louis Soslowsky
University of Pennsylvania

Poster # 17

Robust Regeneration of Ligaments and Articular Cartilage in the Adult Zebrafish Jaw Joint

Joanna Smeeton, Natasha Natarajan, Gage Crump
University of Southern California

Poster # 18

Pharmacological Inhibition of S100a4-RAGE Signaling Decreases Scar Formation and Improves Tendon Healing

Valentina Studentsova, Jessica Ackerman, Alayna Loiselle
University of Rochester Medical Center

Poster # 19

Localized Delivery of Ibuprofen via Bilayer Delivery System (BiLDS) for Supraspinatus Tendon Healing in a Rat Model

Brittany L. Taylor, Dong Hwa Kim, Julianne Huegel, Sophie Burkholder, Stephanie N. Weiss, Courtney A. Nuss, Harina A. Raja, Louis J. Soslowsky, Robert L. Mauck, Andrew F. Kuntz, Joseph Bernstein
University of Pennsylvania

Poster # 20

Effects of Endothelial Progenitor Cells on Tendon-Bone Regeneration and Repair

Ru Li, Martin Mangino
Virginia Commonwealth University

Poster # ST21

S100a4-lineage Cells Lose S100a4 Expression to Become Alpha-SMA+ Myofibroblasts During Scar-mediated Tendon Healing

Jessica Ackerman, Alayna Loiselle
University of Rochester Medical Center

Poster # ST22

Corticosteroid Treatment to Improve Achilles Tendon Healing is Dose and Time Dependent

Franciele Dietrich-Zagonel, Per Aspenberg, Pernilla Eliasson
Linköping University

Poster # ST23

TGF-beta Signaling is Essential for Cell Recruitment into Pathological Tendons

Guak-Kim Tan, Brian Pryce, Doug Keene, Ronen Schweitzer
Shriners Hospitals for Children

Tendinopathy

Poster # 24

Genistein Treatment Alters Achilles Tendon Gene Expression and Improves Tail Fascicle Mechanical Properties in Estrogen-Deficient Rats

Chad Carroll, Shivam Patel, Ben Gordon, Reuben Howden
Purdue University, University of North Carolina at Charlotte

Poster # 25

Type I Collagen Glycations Alter Lysyl Oxidase-Mediated Cross-Linking in Tendon

David Hudson, Marilyn Archer, Karen King, David Eyre
University of Washington, University of Colorado School of Medicine

Poster # 26

Equine Surgical Tendinopathy Model Simulates Clinical Disease as Evidenced by Multi-Modal Analysis

Sherry Johnson, David Frisbie, Wayne McIlwraith
Colorado State University Orthopaedic Research Center

Poster # 27

Advanced Glycation End-Products Impair Mitochondrial Function and Cell Proliferation in Rat Achilles Tenocytes

Shivam Patel, Peter Ferrandi, Rachel Foguth, Feng Yue, Jason Cannon, Jonathan Shannahan, Arman Sabbaghi, Shihuan Kuang, Chad Carroll
Purdue University

Poster # 28

The Role of Glucose Metabolism in a Murine Model of Tendinopathy: A Metabolomics Study

Katie Sikes, Anna McConnell, Brian Cole, David Frisbie
Colorado State University, Rush University Medical Center

Poster # 29

Mapping Multiaxial Strains in the Patellar Tendons of Individuals With and Without Osgood-Schlatter Disease Using Ultrasound Elastography

Grace Weyand, Mark Buckley, Hannah Goldring, Catherine Kuo, Michael Richards, Katherine Rizzone
University of Rochester

Poster # ST30

Blocking CTGF/CCN2 Prevents Development of Fibrotic Tendon Changes and Motor Declines in a Rat Model of Repetitive Overuse Injury

Mary Barbe, Mamta Amin, Michele Harris, Steve Popoff
Temple University, Lewis Katz School of Medicine

Tendon Biology

Poster # 31

Differential Roles for Decorin and Biglycan in Tendon Aging

Zakary Beach, Mihir Dekhne, Ashley Rodriguez, Stephanie Weiss, Thomas Adams, Sheila Adams, Mei Sun, David Birk, Louis Soslowsky
University of Pennsylvania

Poster # 32

Dual Lineage Tracing of Resident Tendon Cells Identifies Four Discreet Populations, with Scleraxis-Lineage Cells Directly Contributing to Organized Tissue Bridging During Tendon Healing

Katherine Best, Alayna Loiselle
University of Rochester Medical Center

Poster # 33

Fibroblast Growth Factor 9 and 18 in Tendon Leads to Muscle Dysfunction, Reduced Grip Force, and Bone Malformations

Elahe Ganji, Kacie Breeding, David Ornitz, Matthew Hudson, Megan Killian
Vanderbilt University, Washington University School of Medicine, University of Delaware

Poster # 34

Collagen VI Plays an Important Role in FDL Tendon Mechanics that is Distinct from the Role of Biglycan

Ryan Leiphart, Snehal Sheyte, Hai Pham, Stephanie Weiss, Marian Young, Louis Soslowsky
McKay Orthopedic Research Laboratory, University of Pennsylvania, National Institute of Dental and Craniofacial Research, National Institutes of Health

Poster # 35

Characterization of Tendon Progenitor Cell Proliferation Rate and Development of Senescence In Vitro

Phong Nguyen, MaryJane Been, Jiewen Li, Catherine Kuo
University of Rochester

Poster # 36

Developmental Plasticity and Regeneration of Zebrafish Tendons

Xubo Niu, Arul Subramanian, Tyler Hwang, Thomas Schilling, Jenna Galloway
Mass General Hospital, University of California, Irvine

Poster # 37

Investigating Hierarchical Collagen Fiber Formation for Functional Tendon, Ligament, and Meniscus Repair

Jennifer Puetzer, Tianchi Ma, Ignacio Sallent, Amy Gelmi, Molly Stevens
Virginia Commonwealth University, Imperial College London

Poster # 38

Fate and Function of Mesenchymal Progenitors in Musculoskeletal Regeneration

R. Wilder Scott, Martin Arostegui, T. Michael Underhill
Biomedical Research Centre, University of British Columbia

Poster # 39

Unique Subpopulation of Col1a1CFP Negative Tenocytes that Exhibit MMP Activity

Catherine Bautista, Xi Jiang, Nathaniel Dymant

University of Pennsylvania

Poster # ST40

Insulin-like Growth Factor-1 Promotes Tenocyte Proliferation Through ERK1/2 Signal Transduction

Nathaniel Disser, Kristopher Sugg, Jeffrey Talarek, Christopher Mendias
Hospital for Special Surgery, University of Michigan, Weill Cornell Medical College

Poster # ST 41

Temporomandibular Joint Articular Disc: Development Guided Regeneration

Kenneth Weekes, Deepanwita Pal, Brian Pryce, Ronen Schweitzer, Brian Johnstone
Oregon Health & Science University, Shriners Hospital for Children

Biology and Pathology of the Enthesis

Poster # ST42

Impaired 1,25 Dihydroxyvitamin D Action Underlies Enthesopathy Development in Murine Hypophosphatemic Rickets

Eva Liu, Janaina Martins, Wanlin Zhang, Marie Demay
Brigham and Women's Hospital, Massachusetts General Hospital

Poster # ST43

WITHDRAWN

Poster # ST44

Location-Dependent Changes in Nuclear Morphology in the Achilles Tendon due to Ankle Rotation

Keshia Mora, Samuel Mlawer, Alayna Loiselle, Mark Buckley
University of Rochester

Poster # ST45

Zebrafish as a Model of Tendon-Bone Attachment Injury and Regeneration

Marie-Therese Noedl, Jenna Galloway
Massachusetts General Hospital, Center for Regenerative Medicine

Tendon Development

Poster # 46

Optimizing Growth Factor Induction of Tenogenesis of Mesenchymal Stem Cells

Jennifer Barrett, Ibtesam Rajpar
Virginia Tech

Poster # 47

Nuclear Receptor Nr5a2 Promotes Tendon at the Expense of Cartilage Fates in the Zebrafish Lower Jaw

Hung-Jhen (Olivia) Chen, Jared Talbot, Jenna Galloway, Gage Crump
University of Southern California, The Ohio State University, Massachusetts General Hospital, Harvard Stem Cell Institute

Poster # 48

Transcriptome Dynamics During Tendon Postnatal Growth

Heather Dingwall, Mor Grinstein, Terence Capellini, Jenna Galloway
Harvard University, Massachusetts General Hospital

Poster # 49

Dysregulated Elastic Fiber Assembly Alters Tendon Mechanics in Fibulin-5 Knockout Mice

Jeremy Eekhoff, Spencer Lake
Washington University in St. Louis

Poster # 50

Multiple Roles of Scleraxis in Cell Recruitment and Collagen Organization at Distinct Stages of Tendon Growth

Deepanwita Pal, Alice Huang, Lingyan Wang, John Brigande, Ronen Schweitzer
Shriners Hospital for Children, Icahn School of Medicine at Mount Sinai, Oregon Health & Science University

Poster # 51

Embryo Movements Regulate Tendon Mechanical Property Development

Xuan Pan, Jiewen Li, Edward Brown, Catherine Kuo
University of Rochester

Poster # 52

Mechanotransduction Regulates Tenocyte-ECM Dynamics in Zebrafish

Thomas Schilling, Arul Subramanian, Lauren Kanzaki, Jenna Galloway
University of California, Irvine, Massachusetts General Hospital, Harvard Stem Cell Institute

Poster # 53

Patterns of Cellular Addition to the Developing Tendon

Sandra Schlesinger, SeongKyung Seo, Alice Huang, Ronen Schweitzer
Oregon Health and Science University, Shriners Hospital for Children, Icahn School of Medicine at Mount Sinai

Poster # 54

Identifying Novel Factors Involved in Mechanotransduction in Tendon Development

Arul Subramanian, Pavan Nayak, Lauren Kan, Thomas Schilling
University of California Irvine

Poster # 55

Characterization of a "Unique" Population of Mesenchymal Progenitors in the Developing Mouse Limb

Martin Arostegui, Ross Scott, Arthur Sampaio, Tully Underhill
University of British Columbia

Poster # ST56

Mechano-signal Pathway Regulating Tendon and Ligament Via Mxk

Hiroshi Asahara, Kensuke Kataoka, Mariko Kato, Ryo Nakamichi
The Scripps Research Institute, Tokyo Medical and Dental University

Poster # ST57

Absence of the Extracellular Matrix Protein ADAMTSL2, Mutated in Geleophysic Dysplasia, Results in Short Tendons and Reduced Bone Length

Dirk Hubmacher, Ronen Schweitzer, Suneel Apte
Icahn School of Medicine at Mt. Sinai, Shriners Hospital for Children, Cleveland Clinic Lerner Research Institute