

「筋収縮の調節タンパク質—構造、機能および疾患—」研究会は以下の国際シンポジウムと同時開催です。

トロポニン発見40周年記念国際シンポジウム

第33回生理研カンファレンス

Regulatory proteins of striated muscle

— structure, function and disorder—

〔筋収縮の調節タンパク質—構造、機能および疾患—〕

平成17年 10月25日—10月28日

自然科学研究機構 岡崎コンファレンスセンター

October 25

17.00 – Registration,

18.30- 20.30 Welcome reception (Okazaki New Grand Hotel)

October 26

8.30 – Registration

9.00 –9.10 Opening remark N. Mizuno (NIPS)

1. Regulation by troponin and tropomyosin (Chaired by I. Ohtsuki and Y. Maeda)

9.10 – 9.50 I. Ohtsuki (Jikei Univ.)

Structure, Function and Disorder of Troponin

9.50– 10.20 J. Gergely (Boston Biomed, Res. Inst.)

Highlights of the regulation of striated muscle contraction by Ca^{2+}

10:20–10.30 Coffee break

10:30–11.00 Y. Maeda (RIKEN Harima)

Structural basis of troponin-tropomyosin mediated calcium regulation

11.00–11.30 R. J. Fletterick (Univ. Calif.SanFrancisco)

Ca Ion and Troponin Switch

11.30–12.00 B. J. Sykes (Univ. Alberta)

Structure and Dynamics of Calcium Regulatory Proteins;
from solution to intact muscle fibers

12.00 – 13.20 Group photo

Lunch

(Chaired by S.E. Hitchcock-DeGregori and T. Wakabayashi)

13.20- 13.50 T. Wakabayashi (Teikyo Univ.)

Structural basis for Ca^{2+} -regulated muscle relaxation.

13.20 – 14.20 E. Hitchcock-DeGregori

(Robert Wood Johnson Med Sch.)

Tropomyosin: A regulator of actin filament dynamics and contractile function

14.20 – 14.50 L. S. Tobacman (Univ. Illinois)

The Thin Filament as a Regulatory Molecular Assembly

14.50– 15.10 Coffee break

15.10 – 15.40 M.A. Geeves (Univ. Kent)

Cooperativity in Tropomyosin and Troponin on the Thin Filament .

15.30– 16.10 M. Miki (Fukui Univ.)

Conformational changes of the reconstituted skeletal muscle thin filament observed by fluorescence measurements

16.10–18.00 **Poster**

18.00– 19.00 Evening meal

(Chaired by T. Arata and H. Kagawa)

19.00–19.30 T. Arata (Osaka Univ.)

Calcium structural transition of troponin in the complex, on the thin filament, and in muscle fibers as studied by site-directed spin-labeling ESR.

19.30– 19.50 M. Tanokura (Univ. Tokyo)

Solution structure of the complex of troponin C with troponin I fragment from scallop striated adductor muscle

19.50 –20.10 Y. Nitanaï (RIKEN, ERATO)

Crystal structure of tropomyosin: a flexible coiled-coil

20.10 –20.30 H. Kagawa (Okayama Univ.)

A C. elegans model for studying troponin regulation of muscle contraction and animal behavior

October 27

2. Cardiac regulation and disorders (Chaired by R. J. Solaro and R.L. Moss)

9:00 – 9:30 R. L. Moss (Univ. Wisconsin Med. Sch.)

Cooperative mechanisms in the activation of force and the kinetics of force development in striated muscle.

9.30 – 10.00 R. J. Solaro (Univ. Illinois Chicago, Center for Cardiovasc.Res.)

Heart Failure, Ischemia/Reperfusion Injury, and Cardiac Troponin

10.00 – 10.30 J. Mogensen (Skejby Univ. Hosp.)

Clinical troponin I mutations in cardiomyopathies

10:30 – 10.50 Coffee break

10.50 – 11.20 S. Morimoto (Kyushu Univ. Sch. Med.)

A knock-in mouse model for dilated cardiomyopathy caused by $\Delta K210$ mutation in cardiac troponin T.

11:20 – 11.50 T. Toyooka (TUERO Tohoku Univ.)

Cardiac troponin as the most specific and sensitive biomarker for myocardial cell degradation in clinical practice

11.50 – 13:00 Lunch

13.00–14.10 **Poster**

3. Regulation by myosin (Chaired by A. G. Szent-Gyorgyi and K. Kohama)

14.10 –14.40 A. G. Szent-Gyorgyi (Brandeis Univ.)

How calcium regulates some myosins: past and present.

14.40 –15.10 K. Kohama (Gunma Univ.)

Calcium inhibition of Physarum myosin.

4. EC-coupling and disorder (Chaired by Y. Ogawa and M. Iino)

15.10– 15.40 M. Endo (Saitama Med.Sch.)

Calcium-Induced Release of Calcium from the Sarcoplasmic Reticulum

15.40 – 16.10 Y. Ogawa (Juntendo Univ. Med Sch)

Dysregulation of the gain of CICR through ryanodine receptor 1 (RyR1); the putative mechanism underlying malignant hyperthermia

16.10 – 16.30 Coffee break (Chaired by

16.30– 17.00 M. Iino (Univ. Tokyo)

Regulation of cell function by Ca^{2+} oscillation

17.00 – 17.30 C. Toyoshima (Univ. Tokyo)

Ion pumping by calcium ATPase of sarcoplasmic reticulum

5. Contractile proteins (Chaired by K. Wakabayashi and N. Yagi)

17:30 – 18:00 K.. Wakabayashi (Osaka Univ.)

Roles of Structural Alterations of Thin Actin Filaments in Muscle
Contraction

18:00 – 18:30 H. E. Huxley (Brandeis Univ.)

Current evidence about structural changes in myosin heads during their
interaction with actin in the crossbridge cycle

19:00– 21:00 **Party**

October 28

6. Motor proteins (Chaired by S. Ishiwata and T. Yanagida)

9.00 – 9.30 S. Ishiwata (Waseda Univ.)

Cooperative Functions of Actomyosin Motors Focusing on the
Auto-Oscillation (SPOC)

9.30 – 10.00 T. Yanagida (Osaka Univ.)

Dynamic structural polymorphism of actin filaments revealed by single
molecule FRET measurement

10.00 – 10.20 T. Oda (RIKEN Harima)

Modeling of F-actin structure using electron microscopy and X-ray fiber
diffraction

10:20 – 10:40 Coffee break

10.40 – 11.10 K.. Kinoshita Jr (Waseda Univ.)

How Two-Foot Molecular Motors May Walk

11.10 – 11:40 E. Katayama (Univ. Tokyo)

Actomyosin sliding as revealed by quick-freeze deep-etch replica
electron microscopy of myosin crossbridges during in vitro motility
assay

7. Closing session Closing remarks

11:40 – 12:00

12:00 – 13:00 **Lunch**