

Telomeres & Telomerase

Session 1 TELOMERASE STRUCTURE AND BIOCHEMISTRY

WEDNESDAY 5/2/2007, 7:30 PM

T. Cech / C. Autexier

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
1	Qiao	Assembly of the yeast telomerase RNP and a new role of the RNA in catalysis	12
2	Cohen	Protein composition of catalytically active human telomerase from immortal cells	12
3	Min	Regulation of <i>T. thermophila</i> telomerase holoenzyme in vivo	12
4	Manor	High resolution mapping of sites for DNA interactions in catalytically active telomerase	12
5	Webb	Identification of the fission yeast telomerase RNA	12
6	Feigon	The terminal loop of human telomerase RNA contains independent processing and localization signals	12
7	Chang	Telomerase repeat addition processivity is enhanced at critically short telomeres in <i>S. cerevisiae</i>	12
8	Fakhoury	Function of heterologous mouse and human telomerase complexes	12
9	Lue	Telomerase from <i>C. albicans</i> protects telomeres against aberrant degradation in vivo and exhibits a primer extension activity that is dependent on regulatory proteins in vitro	12
10	Lee	Defining biochemical functions for the <i>S. castellii</i> Est1 and Est3 telomerase-associated proteins	12

Session 2 END RESECTION AND PROTECTION

THURSDAY 5/3/2007, 9:00 AM

J. Karlseder / E. Blackburn

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
11	Raices	<i>C. elegans</i> telomere structure	12
12	Lowden	Genesis of end-to-end chromosome fusions in <i>C. elegans</i>	12
13	Vodenicharov	Cell cycle determinants for DNA degradation at unprotected telomeres	12
14	Gao	A telomere-specific RPA complex mediates yeast telomere function	12
15	Ishikawa	The Pot1 complex maintains telomere integrity in fission yeast	12
16	Shakirov	Evolution of POT proteins in plants	12
17	Meier	MRT-1, a nuclease required for in vivo telomerase activity and DNA crosslink repair in <i>C. elegans</i>	12
18	Tzfati	<i>Tetrahymena</i> telomeric repeats incorporated onto <i>K. lactis</i> telomeres cause telomere uncapping and growth arrest	12
19	Dave	A novel role for Rqh1 in suppressing break-induced de novo telomere addition in fission yeast	12
20	Rog	Rqh1 SUMOylation regulates telomere replication in fission yeast	12

21	Ueno	Telomere loss of Pot1 disruptant is suppressed by deletion of RecQ helicase, but <i>pot1 srs2</i> double mutant is synthetically lethal	12
22	Surovtseva	Three POT-like proteins play distinct roles at <i>Arabidopsis</i> telomeres	12

Session 3 POSTER SESSION I

THURSDAY 5/3/2007, 2:00 PM

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
23	Teixeira	Becoming of a single critically short telomere	
24	Alves	Direct observation of an active human telomerase monomer at the single molecule level	
25	Arneric	Tel1p mediates preferential elongation of short telomeres by telomerase	
26	Astromskas	Overexpression of genes regulating telomere length in <i>S. castellii</i>	
27	ayouaz	NHEJ/HR direct and indirect effects lead to telomere alteration in human cells	
28	Bah	Understanding human telomerase function with the humanized yeast system	
29	Basenko	Genetic requirements for survivor formation in <i>K. lactis</i>	
30	Bayne	Tissue-specific regulation of telomerase activity by estrogen in mice	
31	Bigot	Premature cell cycle arrest of congenital DM1 satellite cells	
32	Bonneton	Pif1p helicase cooperates with finger domain of telomerase yeast	
33	Boule	The Pif1p DNA helicase preferentially unwinds RNA-DNA hybrids	
34	Buseman	Developing high resolution single telomere length analysis (STELA) to determine the extent of telomerase-mediated telomere extension per population doubling	
35	Calado	<i>TERT</i> mutations are associated with acute myeloid leukemia	
36	Cao	Amplification of exogenous hTERT in normal human cells that fail to upregulate hTR expression sufficiently	
37	Cerone	Identification of novel genes required to maintain functional telomeres in human cells	
38	Chai	Effects of DNA repair proteins on human telomeric G-overhangs	
39	Chen	Hypoxia induces telomerase reverse transcriptase (TERT) expression and alters cell proliferation and apoptosis in non-tumor fish tissues in vivo—The marine medaka (<i>O. melastigma</i>) model	
40	Chen	How human telomeric protein TIN2 recognizes TRF1 and TRF2	
41	Chow	Immortal human cells for myoblast regenerative therapy	
42	Compton	Binding and remodeling of telomeric DNA templates by Rad51 paralogs	
43	Naeger	Telomere dysfunction as a cause for genomic instability in Werner Syndrome	
44	Lingner	Accumulation of human telomerase RNA in cajal bodies promotes telomere elongation	
45	Wu	<i>S. cerevisiae</i> Est3p regulates telomere recruitment of telomerase	
46	Dejardin	Locus specific chromatin proteomics—Protein composition of human telomeres	

47	Chang	TPP1 interacts with POT1a/b TO mediate telomere end protection
48	Depcrynski	Defining the regulatory mechanisms underlying the chaperone/telomere association
49	DeZwaan	Hsp90 supports telomerase DNA binding and extension activity
50	Dimitrova	The role of 53BP1 at dysfunctional telomeres
51	Du	Very short telomeres is diagnostic for patients with bone marrow failure due to dyskeratosis congenita
52	Duncan	Telomere Q-FISH signal translated into a kilobase length measurement
53	Dvorackova	In vivo localization of <i>A. thaliana</i> myb-like proteins
54	Ertem	The telomerase template antagonist GRN163L in combination with chemotherapeutics reduces tumor volume in multiple myeloma xenograft models
55	Bryan	Interactions of <i>Tetrahymena</i> telomerase with its DNA substrate
56	GAO	The role of telomerase in preventing chromosome instability resulting from double-strand breaks near telomeres in mammalian cells
57	Gelinas	Structural and functional characterization of the <i>S. cerevisiae</i> telomere capping complex
58	Genest	Conditional inactivation of the J binding protein 1 in <i>Leishmania</i>
59	Germe	How does a mutated version of topoisomerase II suppress a telomere defect?
60	Ly	Functional characterization of yeast telomerase RNA dimerization
61	Gladyshev	Telomeres of rotifers of Class Bdelloidea
62	Calado	Mutations in the <i>SBDS</i> gene associate with bone marrow failure via telomere shortening independent of telomerase
63	Greenwood	Identification of factors necessary for de novo telomere addition in <i>S. pombe</i>
64	Gumus Akay	Effects of genomic changes on telomerase activity in gastric cancer
65	Nosek	<i>TER</i> genes in yeasts with long telomeric repeats—Introduction to a large-scale comparative analysis of yeast telomerase RNA
66	Tomaska	Two forms of TAZ1 protein—The mode of generation and potential functions
67	Bailey	Telomeric sister chromatid exchange, DNA repair and aging
68	Hajek	Alpha anomer of 5-aza-2'-deoxycytidine downregulates <i>hTERT</i> mRNA expression in human leukemia HL-60 cells
69	Hills	Telomere length in subpopulations of hematopoietic cells
70	Hirano	Telomere inhibits checkpoint only at its own end—Effect of multiple Cdc13 proteins in end protection
71	Hiyama	Role of telomere and telomerase in human mesenchymal stem cells
72	Hiyama	<i>POT1</i> transfection may cause shortening of telomere 3' overhang increasing chemoresistance and alternative lengthening of telomeres in cancer cell
73	Hockemeyer	Mouse POT1b protects telomeres against telomere shortening by excessive nucleolytic degradation

74	Hoke	A novel TRF2 phosphorylation site is regulated by PIKKs and influences telomere length regulation
75	Nehyba	IRF-4 induces telomerase—Mechanism and function
76	Gilley	Non-genetic factors associated with telomere maintenance in elderly male twins
77	Hug	Single-strand DNA binding proteins at telomeres
78	Jain	A novel mode of survival without telomerase, and an insight into the role of telomeres in the survival of DNA damage
79	Ji	A novel role of the catalytic protein subunit of yeast telomerase in enzyme fidelity and telomere length homeostasis
80	Carroll	Identification and functional characterization of novel telomere variant alleles in Japanese patients with bone-marrow failure syndromes
81	Kibe	The role of RPA and Pot1 in telomere length regulation
82	Knecht	Spatial configuration (3D) of the telomeres in Hodgkin and Reed-Sternberg cells
83	Christodoulidou	Interstitial telomeres in continuous in vitro growth
84	Kumar	Expression of ribozymes against human telomerase RNA—Reflections on telomerase-regulated genes
85	Fajkus	HMGB1 associates with TERT and stimulates telomerase activity
86	Kunicka	Telomerase activity in head and neck cancer
87	Kurzhals	Genetic control of somatic cell response to telomere loss
88	Kuznetsov	Regulation of telomere binding protein Pot1 by Dfp1-Hsk1 kinase
89	Latrick	Mechanistic insight into POT1-TPP1 induced telomerase processivity
90	Le Bel	Searching for genes and/or pathways involved in a RAD52-, telomerase-independent mechanism of survival in yeast
91	Comai	Wrn has a deleterious function at telomeres that is repressed by the amino terminal domain of TRF2
92	Li	<i>T. brucei</i> Rap1 participates in the regulation of VSG expression from subtelomeric expression site
93	Liew	Characterization of the <i>tlh1-4</i> ⁺ , telomere-linked recQ DNA helicase genes in <i>S. pombe</i>
94	Lin	Examination of telomerase activity in resting human B cells and CD4+, CD8+CD28+ and CD8+CD28- T cells
95	Lisaingo	Telomere dynamics and genome instability in mouse embryonic stem cells
96	Liu	Expression of telomerase-associated chaperones during breast cancer progression
97	Liu	The role of PARP proteins in telomere capping in vivo
98	Gilley	Analysis of DNA damage-induced phosphorylation of human TRF2
99	Luke	Siz2 dependent SUMOylation negatively regulates telomerase dependent telomere elongation

Session 4 TELOMERES AND DNA DAMAGE SENSING

THURSDAY 5/3/2007, 7:30 PM

T. de Lange / E. Gilson

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
100	Godinho Ferreira	DNA repair and damage checkpoint inhibition are separable functions of telomeres	12
101	Lazzerini Denchi	Independent repression of ATM by TRF2 and ATR by POT1	12
102	Churikov	POT1 loss activates an ATR-Chk1 checkpoint pathway and causes telomere growth	12
103	Anderson	Tel2 mediates localization of Tel1 to sites of DNA damage	12
104	Takai	The function of mammalian Tel2, ortholog of the budding yeast telomere length regulator	12
105	Konishi	Temperature-sensitive TRF2—New tool for analysis of telomere dysfunction	12
106	Giraud-Panis	TRF2 regulates holiday junctions processing in telomeric DNA	12
107	Xu	Characterization of TRF2 splice variants	12
108	Williams	DNA double strand breaks are not sufficient to initiate recruitment of TRF2	12
109	Marcand	Pathways of NHEJ inhibition at telomeres in yeast	12

Session 5 PROTEINS BOUND TO TELOMERIC AND SUB-TELOMERIC CHROMATIN

FRIDAY 5/4/2007, 9:00 AM

F. Ishikawa / D. Wuttke

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
110	Zijlmans	Telomerase regulation by telomeric proteins at individual chromosome ends in vivo	12
111	Croy	Deciphering the mechanisms of ssDNA recognition by the <i>S. pombe</i> Pot1 DNA-binding domains	12
112	Bertuch	Distinct faces of the Ku heterodimer mediate DNA repair versus telomeric functions	12
113	Louis	KU, subtelomeres, telomere length and homologous recombination in yeast	12
114	Feeser	Crystal structure and functional analysis of the Rap1 C-terminus—Insights into telomeric silencing and telomere length regulation	12
115	Lei	Structural analysis of the shelterin complex	12
116	Rhodes	Chromatin structure and its modulation by histone modifications	12
117	Songyang	Regulation of telomere maintenance by cellular compartmentalization of telomere binding proteins	12
118	Benetti	Epigenetic control of telomeric and subtelomeric regions in mammals	12
119	Lansdorp	Conserved orientation of telomere and major satellite repeats in murine chromosomes	12
120	Murnane	Chromatin modifications associated with silencing of telomeric transgenes in mouse embryo fibroblasts	12
121	Falconer	Telomere chromatin in murine embryonic stem cells	12

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
122	Ma	Approaches to identify the substrates of Tel1p in yeast	
123	Mandell	Analysis of the t-RPA complex	
124	Matsuguchi	Studying the roles of interactions among telomerase components in <i>S. cerevisiae</i>	
125	Mazzucchelli	Proteomic analysis of cells treated by G-quadruplex targeting drugs—TMPyP4, telomestatin, BOQ1, three different proteome alterations	
126	Meeker	A chromogenic in situ hybridization (CISH) technique for visualizing telomeric DNA in fixed tissue sections	
127	Royle	Extraordinary instability in human telomeres caused by the presence of (CTAGGG) _N repeats	
128	Meyn	The human telomeric proteins TRF2, TRF1 and TIN2 are involved in a novel DNA damage response	
129	Morin	Budding yeast Exo1 is modified in a checkpoint-dependent manner when telomeres are uncapped	
130	Morrish	Evidence for telomere recombination mechanisms in primary and tumor mouse cells	
131	Nabetani	Gapped and single-stranded structures of telomeric DNA in human ALT cells	
132	Nagai	Chromosomal double-strand break is recruited to the nuclear pore complex in budding yeast	
133	Nguyen	Nuclear degradation of telomerase	
134	Nimmo	Requirements for human telomerase reverse transcriptase's (hTERT) contribution to tumorigenesis	
135	Olivier	Following the intra-nuclear trafficking of the yeast telomerase RNA	
136	Ottaviani	The <i>D4Z4</i> subtelomeric element behaves as a CTCF-dependent insulator and displaces telomeres toward the nuclear periphery	
137	Palm	POT1 requires TPP1 to protect telomeres consistent with their correspondence to ciliate TEBP _{α/β}	
138	Pandita	The histone code and telomere stability	
139	Nugent	The role of <i>S. cerevisiae stn1</i> in telomere capping can be separated from its interaction with <i>cdc13</i>	
140	Heierhorst	Mdt1 is required for efficient recombinational telomere maintenance and repair of 3'-blocked DNA double strand breaks	
141	Podell	The TEN domain of human TERT—Genetic evidence for direct interaction with the POT1-TPP1 telomere protein complex	
142	Meng	Ten1p promotes the telomeric DNA binding activity of Cdc13p in vitro	
143	Raz	Telomeres form aggregates in senescent cells	

144	Regal	Erosion of telomeric single-stranded overhang in patients with acquired aplastic anemia carrying telomerase complex mutations
145	Rhodin Edsö	Functional analyses of <i>S. castellii</i> Cdc13 domains
146	Roberts	Design and characterization of a Cdc13-DNA system to investigate telomerase accessibility and activity
147	Savage	Characterization of a large pedigree with very short telomeres and variable dyskeratosis congenita phenotype
148	Riha	A hypomorphic allele of telomerase delays onset of growth defects in <i>Arabidopsis</i> without preventing telomere shortening
149	Sealey	Characterization of a DNA binding domain in human telomerase reverse transcriptase
150	Seimiya	Acute anti-proliferative effect of a synthetic telomerase inhibitor, MST-312, on human cancer cells
151	Shimamoto	G-tail telomere HPA—Application for measurement of mouse 3'-overhangs
152	Shtessel	Analysis of <i>C. elegans</i> telomere replication mutants
153	Sikora	Cell cycle analysis of telomerase assembly and association with telomeres in human cells
154	Smiraldo	TRF2 and DNA double-stranded break repair
155	Smith	The essential function of yeast Tel2
156	Song	Dissecting the role of AtPOT1 in the positive regulation of telomere length
157	Steinberg-Neifach	Telomere deficiency and virulence in <i>C. albicans</i>
158	Stone	Stepwise protein-mediated RNA folding directs assembly of telomerase ribonucleoprotein
159	Subramanian	Tel1 can function at fission yeast telomeres independent of its interaction with Nbs1
160	Taboski	The effects of telomerase loss upon an in vitro generated tumor cell model
161	Beattie	DNA-PK phosphorylation in telomere maintenance
162	Tom	Identification of a specific telomeric overhang processing nuclease activity in <i>T. thermophila</i>
163	Toogun	The yeast p23 molecular chaperone promotes telomerase substrate switching
164	Ujvari	Why do short pythons have short telomeres?
165	Uringa	In vitro and in vivo models to study the role of RTEL in telomere length regulation and genome stability
166	Valente	Characterization of two essential fission yeast proteins containing Myb domains
167	van der Torre	Dissecting the cellular response to uncapped telomeres
168	van Overbeek	Apollo, an artemis-related nuclease, interacts with TRF2 and protects human telomeres in S phase
169	Vega	Pif1p levels affect telomere end protection
170	Verdun	Telomeres are recognized as DNA damage during replication, and processed by the homologous recombination machinery

171	Rubelj	Telomere dynamics and genome stability in human pancreatic tumor cell line MIAPaCa-2
172	Wang	A live cell dynamic approach to telomere uncapping
173	Wang	DNA-PK regulates telomere length and genomic stability in human somatic cells
174	Wang	Genetic evidence for an additional base-pairing element involved in the telomere-telomerase in <i>K. lactis</i>
175	Wark	Her-2 amplification and 3D telomere organization in primary breast cancer
176	Weise	Regulation of human TERT promoter during liver regeneration in transgenic mice
177	Klingelhutz	Telomere restoration and extension of proliferative lifespan in autosomal dominant dyskeratosis congenita fibroblasts
178	Witzany	Telomeres in evolution and development from biosemiotic perspective
179	Wu	Deprotected mouse telomeres retain nucleosomal organization
180	Wyatt	Characterization of physical and functional anchor site interactions in human telomerase
181	Chen	The smallest vertebrate telomerase RNA from teleost fish
182	Ly	Natural TERC template mutations function as dominant negatives to shorten telomeres in patients with hematologic disorders
183	Xin	Novel natural mutations in telomere binding protein factors identified in patients with hematological disorders
184	Selig	Effects of hypomethylation of subtelomeric repeats on telomeric function in human cells
185	Yoo	Rat homolog of PinX1 is a nucleolar protein and involves in the regulation of telomere length
186	Yu	Regulation of telomere structure and functions by subunits of the INO80 chromatin remodeling complex
187	Zappulla	Dissecting structural requirements of Ku and Cdc13p in yeast telomerase functions in vivo and in vitro
188	Zhang	Silencing of TEIF expression by RNA interfering induces senescence in cancer cells
189	Zhang	Telomere shortening frequently occurs in mesenchymal sarcomas and correlates with cancer differentiation
190	Zhang	A genetic screen to uncover genes required for telomere addition at DNA double-strand breaks
191	Zhao	A novel method to determine the size of telomere G-rich overhang
192	Rubtsova	New properties of components of telomerase

Session 7 TELOMERE LENGTH REGULATION

FRIDAY 5/4/2007, 7:30 PM

D. Shore / V. Zakian

#	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
193	Shore	Exploring mechanisms of telomere length regulation and capping	12
194	Sabourin	Telomerase and Tel1 preferentially bind short telomeres in yeast	12

195	Sugimoto	Cdc13 telomere cap decreases Mec1 association but does not affect Tel1 association	12
196	Runge	Tel1p association with short telomeres converts them to a telomerase-extendible state	12
197	Bhattacharyya	Mre11 nuclease and monitoring activities in yeast telomere healing	12
198	Kupiec	Telomere length control in yeast	12
199	Mozdy	Large-scale screen reveals new genes that affect telomerase RNA abundance and telomere length in yeast	12
200	Gallardo	Following the intracellular trafficking of the yeast telomerase RNA	12
201	Zhu	Control of TRF1 by Rad50 and ATM in telomere length maintenance	12
202	Lou	Endogenous genes regulated by telomere length in human cells	12

Session 8 TELOMERES IN SENESCENCE, PROLIFERATION AND CANCER SATURDAY 5/5/2007, 9:00 AM

J. Shay / S. Artandi

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
203	Artandi	Telomerase promotes epithelial proliferation in vivo by rapidly altering gene expression in components of critical developmental pathways	12
204	Flores	The longest telomeres mark adult stem cell compartments, generation of long-lived mice	12
205	Shay	Telomerase immortalized cells have stem cell characteristics	12
206	Ju	Telomere dysfunction induces environmental defects limiting hematopoietic stem cell function and engraftment	12
207	Rudolph	Exo1 deletion prevents DNA damage signal induction and prolongs lifespan of telomere dysfunctional mice without accelerating cancer formation	12
208	Else	p53 deficiency partially rescues the phenotype of the adrenocortical dysplasia (<i>acd</i>) mouse at the expense of increased carcinogenesis	12
209	Hsiao	Knockdown of tankyrase 1 induces a senescence phenotype in HTC75 cells	12
210	Bazarov	Transient expression of p16 ^{INK4a} leads to stable suppression of telomerase in normal and malignant breast epithelial cells	12
211	Abreu	Regulation of telomerase trafficking in cancer cells	12
212	Carlton	Active telomeres in human cancer cells	12
213	Wright	The comparative biology of replicative aging	12
214	Holt	Upregulation of telomerase function during tissue regeneration	12

Session 9 TELOMERES AND RECOMBINATION SATURDAY 5/5/2007, 2:00 PM

R. Reddel / M. McEachern

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
215	Reddel	TRF2 suppresses phenotypic hallmarks of alternative lengthening of telomeres without preventing telomere maintenance	12
216	Harris	Mutant telomeric repeats can promote increased recombination at telomeres in <i>K. lactis</i>	12

217	Lustig	Mre11 as a sensor for the induction of telomere recombination	12
218	Zellinger	Ku suppresses formation of extrachromosomal telomeric circles and alternative telomere lengthening in <i>Arabidopsis</i>	12
219	Nakamura	Positive and negative regulations of recombination-based telomere maintenance in fission yeast	12
220	Johnson	Identification of ALT-specific genetic changes by whole genome profiling in liposarcomas	12
221	Rong	Telomerase-independent telomere maintenance and its developmental regulation in <i>Drosophila</i>	12
222	Bøe	Replication protein A is required for telomere capping in cells that use alternative lengthening of telomeres	12
223	Root	The Fanconi anemia pathway is involved in recombinational telomere maintenance in ALT-immortalized human cells	12
224	Morrish	Endonuclease-independent line-1 retrotransposition at mammalian telomeres	12

Session 10 CONSEQUENCES OF TELOMERE DYSFUNCTION

SUNDAY 5/6/2007, 9:00 AM

J. Cooper / C. Greider

#	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
225	Tomita	The telomere bouquet controls the meiotic spindle	12
226	Canudas	Shelterin tethers cohesin complexes to telomeres	12
227	Lieberman	A role for the origin recognition complex (ORC) in telomere maintenance	12
228	Azzalin	Efficient replication of human telomeres requires the DNA/RNA helicase UPF1	12
229	Arnoult	Studying lagging vs. leading strand replication at mammalian telomeres by quantitative CO-FISH	12
230	Gagos	Continuous growth after telomerase silencing, is accompanied by high rates of structural chromosomal instability, telomeric recombination and chromosomal losses or non-disjunctions	12
231	Rochette	DNA repair of UV-induced damage in telomeres	12
232	Marrone	Autosomal recessive dyskeratosis congenita and Hoyeraal-Hreidarsson syndrome due to homozygous telomerase reverse transcriptase mutations	12
233	Errington	Impact of disease-associated telomerase RNA variants and telomerase-associated proteins on telomere length	12
234	Armanios	Telomerase mutations in families with idiopathic pulmonary fibrosis	12