

Associazione di Biologia Cellulare e del Differenziamento

Cell Stress: Survival and Apoptosis

Organising Committee

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Programme & Abstracts

Bari, 9-10 September 2016

<http://CSSA2016.azuleon.org>

Friday, 9 September

- 12:00** **REGISTRATION AND WELCOME MINGLING COCKTAIL**
- 14:00-14:10** **OPENING**
- 14:10-15:10** **DNA AND RNA STABILITY**
Chair: Alessandra Montecucco (Pavia)
- 14:10-14:30** *Morena Catillo (Pavia)*
Splicing of transcripts for splicing factor SRSF1 is finely tuned in response to cell metabolism
- 14:30-14:50** *Cristina Mazzoni (Rome)*
RNA oxidation and ageing in mRNA degradation mutants of *S. cerevisiae*
- 14:50-15:10** *Annapina Russo (Naples)*
Regulatory role of rpL3 in cell response to nucleolar stress induced by Act D in tumor cells lacking functional p53
- 15:10-16:10** **CELL DEATH AND METABOLISM**
Chair: Valter Longo (Los Angeles, CA, USA)
- 15:10-15:30** *Nicoletta Guaragnella (Bari)*
Cell fate decision in yeast: within and between glucose sensing, Hog1 SAPK and mitochondrial retrograde pathways
- 15:30-15:50** *Enzo Martegani (Milan)*
Accumulation of activated Ras in mitochondria and apoptosis
- 15:50-16:10** *Flavia CuvIELLO (Potenza)*
Modulation of mitochondrial pyruvate carrier expression in HEK293 and HepG2 cells
- 16:10-16:30** **COFFEE BREAK AND POSTER VIEWING**
- 16:30-17:30** **PLENARY LECTURE**
Valter Longo (Los Angeles, CA, USA)
Nutrient signaling, cellular protection and regeneration, and healthspan
- 17:30-19:00** **POSTER SESSION**
- 19:00-20:00** **HOST-PATHOGEN INTERACTION**
Chair: Cristina Mazzoni (Rome)
- 19:00-19:20** *Rosanna Salvia (Potenza)*
The multifunctional polydnavirus ANK1 protein: new insights for apoptotic pathway
- 19:20-19:40** *Luisa Rubino (Bari)*
Carnation Italian ringspot virus p36 expression enhances necrotic cell death in response to acetic acid in *Saccharomyces cerevisiae*

Regulatory role of rpL3 in cell response to nucleolar stress induced by Act D in tumor cells lacking functional p53

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Many chemotherapeutic drugs cause nucleolar stress and p53-independent pathways mediating the nucleolar stress response are emerging. Here, we demonstrate that ribosomal stress induced by Actinomycin D (Act D) is associated to the up-regulation of ribosomal protein L3 (rpL3) and its accumulation as ribosome-free form in lung and colon cancer cell lines devoid of p53. Free rpL3 regulates p21 expression at transcriptional and post-translational levels through a molecular mechanism involving extracellular-signal-regulated kinases1/2 (ERK1/2) and mouse double minute-2 homolog (MDM2). Our data reveal that rpL3 participates to cell response acting as a critical regulator of apoptosis and cell migration. It is noteworthy that silencing of rpL3 abolishes the cytotoxic effects of Act D suggesting that the loss of rpL3 makes chemotherapy drugs ineffective while rpL3 overexpression was associated to a strong increase of Act D-mediated inhibition of cell migration. Taking together our results show that the efficacy of Act D chemotherapy depends on rpL3 status revealing new specific targets involved in the molecular pathways activated by Act D in cancers lacking of p53. Hence, the development of treatments aimed at upregulating rpL3 may be beneficial for the treatment of these cancers.