



# ICGEB

International Centre for Genetic  
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Knowledge

## ICGEB International SEMINAR PROGRAMME 2017

Thursday, 13 April 2017 | 12:00 noon | ICGEB Seminar Room, W building | Padriciano, 99, Trieste, ITALY



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LncRNAs are emerging as key intermediates that control gene regulation by coordinating 3D chromatin structure. Here we report a new super-enhancer resident enhancer-like lncRNA, UMLILO, which is brought in close proximity to the chemokine genes by pre-formed chromosomal contacts. Despite lacking a homolog in mice, we show that depletion of UMLILO by siRNA or CRISPR-mediated replacement with a reporter is sufficient to abrogate chemokine transcription in human cells. By acting in cis, UMLILO uses the local 3D chromatin compaction of the pre-formed chemokine TAD to direct a trimethylation complex across the chemokine promoters, facilitating their H3K4me3 activation. In this way, we reveal how pre-formed chromatin loop organization can act as a topological platform to insulate a key transcriptional pathway from gene-intrinsic noise, to achieve rapid and robust chemokine expression. As aberrant expression of these chemokines underlies multiple disease states, adjustment of chemokine levels by altering UMLILO activity may represent a valuable therapeutic strategy.

## “Lncing Genome architecture to innate immunity”

Host: M. Giacca

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Open event - Free entrance



More information at:

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