



UNIVERSITÀ
DEGLI STUDI
DI TRIESTE



Dipartimento di
Scienze della Vita

Post-doctoral position: University of Trieste – Schoeftner lab

RNA:DNA hybrid management in osteosarcoma

A post-doctoral position is available in Stefan Schoeftner's laboratory in the Department of Life Sciences at the University of Trieste (Italy). Research in the Schoeftner laboratory is focusing on non-coding RNA biology, genomic instability and the development of patient derived tumor organoid models.

Topic of the available position:

RNA:DNA hybrids form by persistent pairing of RNA with its template DNA, generating a three-stranded structure that blocks the progression of the replisome leading to replication stress, DNA breaks and genomic instability.

In osteosarcoma, high RNA:DNA hybrid related genome instability is driven by low expression or frequent mutations of single components of the DAXX/ATRAX histone H3.3 chaperon/nucleosome remodeling complex. Although threatening genomic stability, these alterations are tolerated because RNA:DNA hybrid-related DNA damage favor homologous recombination driven "alternative lengthening of telomeres" (ALT) to ensure telomere function in telomerase negative cancer cells.

The available project focusses on the investigation of mechanisms the recruit RNA:DNA hybrid repressing complexes to control genomic instability at telomeres and across the genome using osteosarcoma as a model system. This will be achieved by using experimental approaches involving protein-protein interaction, genome wide RNA:DNA hybrid mapping, chromatin structure studies and telomere analyses. The project is funded by an AIRC grant (2020-2024).

Interested candidates with PhD or equivalent degrees can contact sschoeftner@units.it to express their interest and receive additional information. Start of contract: April/May 2022. The fellowship is renewable for 3 yrs. Candidates should have experience in molecular and cell biology, cell culture techniques and microscopy. Expertise in chromatin analysis, FISH or technologies related to genomic instability would be preferable.

Selected publications 2015-2021

Buemi et al. Nature Communications 2021 accepted

Campaner et al. Cancers 2021; PMID: 33371412

Petti et al. Nature Communications 2019; PMID: 30824709

Comisso et al. Oncogene 2017; PMID: 28319064

Scarola et al. Nature Communications 2015; PMID: 26158551

For more information on the laboratory, please visit:

<https://dsv.units.it/it/ricerca/ambiti/gruppi/20381>

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www.precanmed.eu

