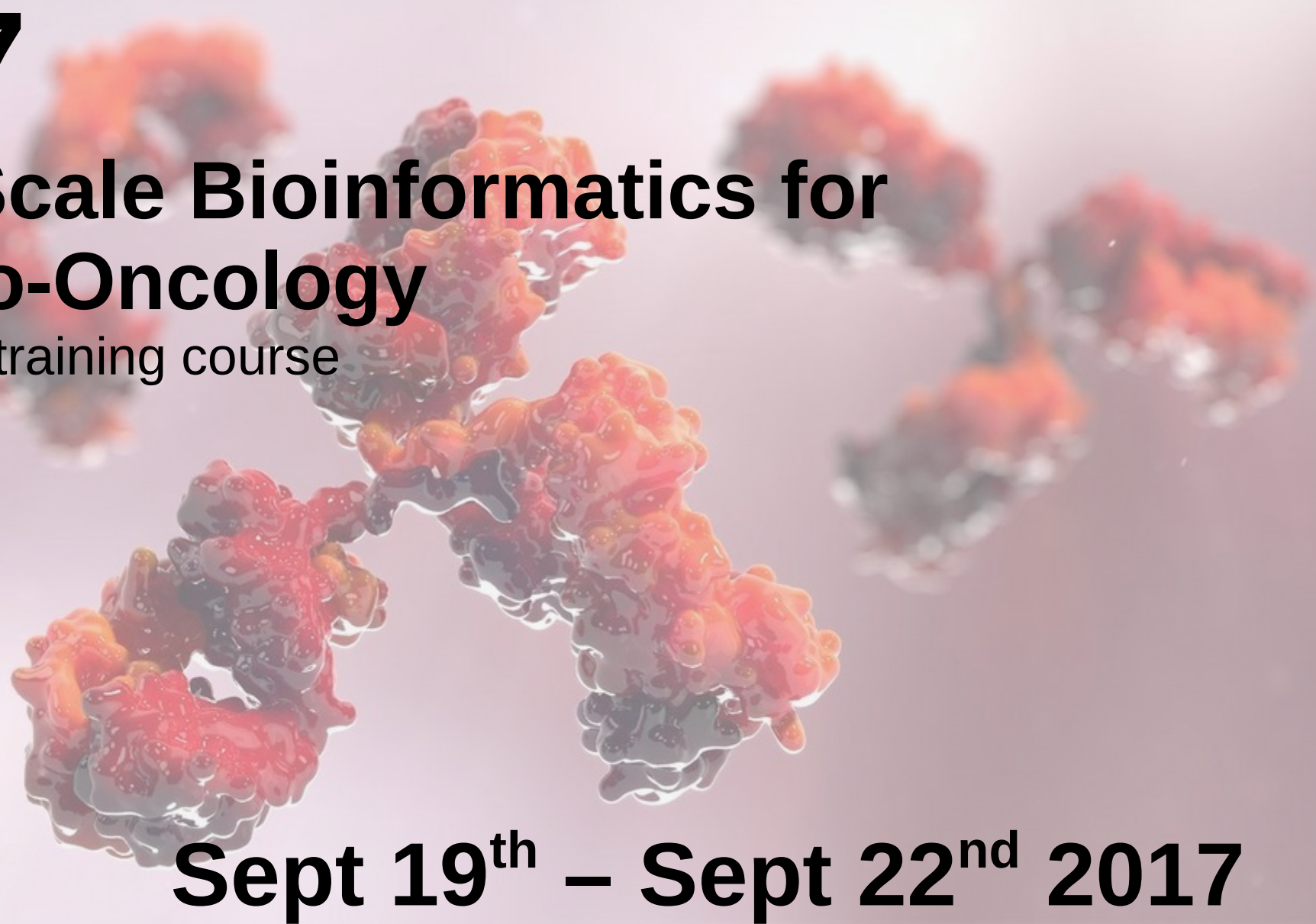


IO17

Large Scale Bioinformatics for Immuno-Oncology

A hands-on training course



Sept 19th – Sept 22nd 2017

Course Description

The immuno-oncology approach leverages on the unique capability of the immune system to recognize and kill tumour cells. This action is hampered by escape mechanisms put in place by tumour cells like, for instance, the engagement immune checkpoints, i.e. inhibitory molecules that modulate the amplitude and duration of immune responses. Immunotherapies that block checkpoint molecules are amongst the most promising approaches in immuno-oncology for the enhancement of antitumour immunity. Thanks to high-throughput technologies, such as next-generation sequencing (NGS) and proteomics, we have now access to large-scale tumour data that can be used to investigate the interplay between tumour and immune cells and the role of the immune system in tumour progression and response to therapy. In this course, you will learn to use bioinformatics tools and mathematical modelling techniques operating on high-throughput tumour data, in order to extract features that can be used to characterise this complex tumour-immune cell interface, such as:

- tumour antigens recognized by T cells
- tumour-infiltrating immune cells
- deregulated signalling pathways in cancer and immune cells

A fully practical, hands-on approach will ensure that the newly acquire skills can be used with a great deal of autonomy.

Instructors:

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Course website:

<http://gtpb.igc.gulbenkian.pt/bicourses/IO17>

