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Multiscale modelling of experimental data related to biomaterial risk assessment

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ABSTRACT

Biomaterial based solution is now representing a significant portion of remedies offered by the healthcare system. However, currently available technologies for the risk assessment of pre-existing of new biomaterials are not sufficient. Biomaterial response with the body needs to be characterized at different levels from nanoscale (antibody), microscale (cells) to milliscale (tissue) levels. To limit the required number of experiments, computational bioengineering with the development of *in-silico* models can give a better insight into the existing phenomena and provide additional information. These models can be used as a predictive tool to support clinical decision to assess biomaterial toxicity. In order to be efficient, experimental data should serve as input to these *in-silico* models, as well as the results of the simulations should be validated against experiments. Horizon 2020 project PANBioRa is one of the examples where generalized testing system is being developed to standardize the evaluation of biomaterials, and where *in-silico* models have found their role. This mini-symposium aims to present the newest results of the *in-silico* models developed with experimental data related to biomaterial risk assessment.

In this Mini-symposium, the following subjects are welcomed:

- Biomaterial risk assessment
- Coupling between experiments and *in-silico* modelling
- Predictive models to assess medical device behaviour once implanted
- Medical imaging acquisition and analysis for biomaterial risk assessment
- Artificial Intelligence in Biomaterial Assessment