Beyond big data: actionable knowledge for translational science in infectious diseases

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Abstract
Life sciences are currently living a revolution. The improvement of laboratory technologies, *e.g.* NGS and other omics technologies, allows the generation of more and more voluminous, complex and heterogeneous data. At the same time, the improvement of information technologies increases the capacity of storage, transfer and treatment of the numerical data. A new encyclopaedic knowledge is now emerging from the combination of those phenomena and it becomes necessary to rethink the organisation of the biological data, then the methods to integrate them, mine them and extract a useful knowledge.
In this context and in order to be in a favourable position to promote innovation, the question that should be addressed would be "What are the essential features requested for data to be turned in actionable knowledge?" rather than "How big is the data?".
This is a central concern for BIOASTER which can generate with both academic and industrial partners a large set of preclinical, clinical and molecular data in the fields of infectious diseases and microbiology. We will rapidly depict the challenges associated to the management and the transverse integration of high-dimensional data to notably serve the objectives of translational research. We will also illustrate the way BIOASTER and the CNRS/IN2P3 computing center (CC-IN2P3) have initiated a partnership to access to a robust infrastructure and to deploy the needed data storage and computing resources.