

qPortal – A Science Gateway for Biomedical Applications

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ABSTRACT

Modern biomedical research aims at drawing biological conclusions from large, highly complex biological datasets. Nowadays, it is common practice to make extensive use of high-throughput technologies that produce big amounts of heterogeneous data. In addition to the ever-improving accuracy, methods are getting faster and cheaper, resulting in a steadily increasing need for large amounts of storage, data management, and easily accessible means of analysis. We present qPortal, a web-based science gateway providing users with an intuitive way to manage and analyze quantitative biological data. Pre-programmed analysis pipelines, quality control workflows, and visualization tools are offered to the user. Through intensive user interactions, appropriate data models have been developed. These models build the biological data management system and provide possibilities to annotate data, query existing metadata for statistics and future re-analysis on a high-performance computing system via a coupling to gUSE, a workflow management system.

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