

G2P Knowledge Centre: An integrated genotype-phenotype data access portal and online collaborative network

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The unprecedented quantity and complexity of genotype-phenotype (G2P) data currently being generated by research and diagnostic labs worldwide, together with a shift toward online data dissemination and collaborative work patterns, has spawned the need for new data handling, integration and online community workspace tools. To tackle data handling issues, the GEN2PHEN Project has spearheaded the creation of a hybrid federated-centralised database network where disparate G2P data (for both Mendelian traits, and data from genome-wide association studies (GWAS)) are held in multiple distributed databases. These independent databases are then interlinked using common exchange formats and data standards.

The 'G2P Knowledge Centre' (<http://www.gen2phen.org>) leverages this broad yet complex network, and enables valuable distributed G2P data to be quickly located through an intuitive yet powerful **holistic search tool**. Allied to the data search is the provision of a user annotation system whereby any user may leave comments or feedback on any search result, dataset or resource. These annotations are then made available to the original data provider and the wider G2P community, adding real value to the data and a second-level peer-review system. To further foster an online collaborative G2P community, the 'G2P Knowledge Centre' provides discrete online workspaces (Interest Groups) as well as blogs, news items, events listings, training materials and full access to the many outputs of the GEN2PHEN project.

Acknowledgements: GEN2PHEN is funded by the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement 200754.