Summary of the 3rd Face-to-face MAQC Project Meeting
December, 1-2, 2005, Palo Alto, CA

The MAQC Project: Calibrated RNA Samples, Reference Datasets, and QC Metrics/Thresholds for Microarray Quality Control

Meeting Date/Place: December 1-2, 2005, Palo Alto, CA
Summary Date: December 12, 2005
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MAQC Website: http://edkb.fda.gov/MAQC/

1. **Overall**: The MAQC project, which aims at establishing calibrated RNA samples, reference datasets, and QC metrics/thresholds for microarray quality control, successfully held its 3rd face-to-face meting in Palo Alto, California on December 1-2, 2005. Over 100 people from more than 50 organizations representing industry, academia, government agencies, and other stakeholders attended the meeting (see attached table for a list of meeting participants). More than 30 speakers presented their results during the meeting, and Dr. Ronald Davis of Stanford University gave an excellent keynote address on "Data Quality in Genomics", emphasizing the importance of high quality genomic data in research and clinical diagnostics.
2. **The MAQC Project and FDA's VGDS**: FDA representatives from NCTR, CDER and CDRH clearly illustrated the importance of the MAQC project by discussing major challenges encountered in analyzing the VGDS (Voluntary Genomic Data Submission) datasets and the implications in regulatory uses of genomic data. A focus of the Palo Alto meeting was on the evaluation of various ways of analyzing microarray data and objective QC metrics for performance assessment. It was agreed that the MAQC datasets are important for the community to reach consensus on microarray data analysis.
3. **The Quality of the MAQC Datasets**: The meeting extensively reviewed the quality of the large MAQC datasets (collected from 30 test sites on seven microarray platforms and three alternative technology platforms) and agreed that the overall quality of the data was excellent. Quality problems with a few test sites were also discussed. Participants shared results and ideas about performance metrics for microarray quality control.
4. **Data Integrity Check**: In order to avoid error propagation in data analysis, each manufacturer was strongly encouraged to double-check the integrity of the data from its platform and make sure that no clerical errors were introduced during the data transfer process.
5. **Biogen Idec Was Accepted as an Official Data Analysis Site**: Lisa Croner of Biogen Idec gave a presentation on "An Extensive Survey of Analysis Methods" and illustrated the areas where Biogen Idec might contribute to the MAQC effort. A decision was made to include Biogen Idec as an additional MAQC data analysis site.
6. **TeleChem ArrayIt Data Generation**: Mark Schena and Paul Haje from TeleCehm ArrayIt indicated that three test sites (TeleChem ArrayIt, Yale University, and Wake

Forest University) were expected to finish generating data according the MAQC study guidance and submit the data to MAQC by the end of December.

7. **Interest in Extending the MAQC Project to Rat**: There was a great interest in extending the current MAQC project, which uses human RNAs, to rat samples which are more frequently used in toxicogenomic studies. Implementation details regarding the rat MAQC will be worked out by surveying the needs of the toxicogenomics community. Federico Goodsaid (CDER) will be coordinating the rat MAQC effort.

8. **Publication Plan with *Nature Biotechnology***: The meeting agreed that it is critical to make the MAQC datasets and results available to a greater scientific community as soon as possible. The proposal (listed in the MAQC-3 meeting Agenda) of publishing the MAQC results with a set of 12 manuscripts in a high-impact, peer-reviewed scientific journal was extensively discussed, and individual manuscript-drafting teams were assembled. Arrangement has been made with *Nature Biotechnology* to publish MAQC results in a supplemental issue (tentatively scheduled for September 2006).

9. **Data Analysis and Manuscript-drafting Meeting in Boston**: It was emphasized that the results presented at the Palo Alto meeting should be considered preliminary because each data analysis site did not have much time to analyze the data before the meeting. Each analysis site should critically assess each other's assumptions and conclusions in data analysis. Thus, a data analysis meeting was proposed to be held at the University of Massachusetts in Boston in late January (Jan. 30-31) or early February (Feb. 3-4), 2006 to decide additional analyses that need to be performed for each manuscript and for the MAQC group to reach general consensus on data analysis practice. Detailed outline for each manuscript will also be discussed. Thanks to Rick Jensen for agreeing to host the meeting.

10. **Timeline for MAQC Manuscripts**: Each manuscript-drafting team should work according to the following tentative timeline:

Dec-23-05:	Detailed outline (for circulation within each manuscript-drafting team);
Jan-13-06:	Detailed outline (revised, for circulation within MAQC);
Feb-3/4-06:	Data analysis and manuscript-drafting meeting in Boston (tentative);
Feb-28-06:	Initial draft version of manuscripts (for circulation within each manuscript-drafting team);
Mar-15-06:	1st version of manuscripts (for circulation within MAQC);
Mar-22-06:	Discuss 1st version of manuscripts in San Diego (after the MAQC panel discussion at the CHI QPCR meeting) (tentative);
Apr-10-06:	2nd version for internal review (many organizations);
May-10-06:	3rd version for internal review (many organizations);
May-31-06:	Submission of manuscripts;
Jun-Aug-06:	Peer review and revision;
Sep-06:	Publication

The next MAQC Teleconference:

Thursday, December 15, 2005 (9 am PST / 11 am CST / 12 pm EST / 17:00 GMT)
USA Toll Free Number: **888-566-5020**
International caller: +1-210-795-9594
PASSCODE: **79451**

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