Stellingen
behorend bij het proefschrift

Technical Advances in Molecular Pathology: A Journey into the Archives

1 MLPA is less limited by poor DNA integrity than conventional PCR because the probe target sequences (the combined locus-specific domains of the 2 ligated oligonucleotides) are only 50 to 70 bp *'this thesis'*

2 In samples with tumor heterogeneity, HRM prescreening may reveal mutations which would be missed if relying on automated Sanger sequence analysis only. *'this thesis'*

3 The implementation of fully automated nucleotide extraction decreases labor and turnover time and more importantly lowers the burden on the patient by allowing for the isolation of high quality DNA/RNA from minimal amounts of material obtained by minimal invasive technologies. *'this thesis'*

4 In the near future, digital pathological archives with microscopic images together with whole genome and whole transcriptome sequence data will become as important as the FFPE tissue archives have proven to be over the last decades. *'this thesis'*

5 The major challenge for diagnostic pathologists moving towards "individualized diagnostics" is combining the different biological levels, (DNA, RNA, protein) to functionally classify malignant tumors. *M. Dietel, Virchows Arch. (2006) 448:744*

6 The history of technological innovation is filled with stories of mistaken predictions about the usefulness or the risk of an innovation. *J Lantos et al, Jpeds (2011) 159,6:879*

7 Careful characterization and analysis of whole genome sequencing data can reduce the noise resulting from formalin fixation induced DNA damage and lead to calling a high-confidence set of somatic mutations. *S.E. Yost et al, Nucleic Acids Res. (2012) 40(14): e107*

8 The only way of being sure that nothing important has been missed is to examine it all. *M.R. Stratton, Science (2011) 331: 1553*

9 What force is at the base of the universe cannot only be identified by scientific observations and experiments. Therefore, the words from the bible book of Psalms (ch. 33 vs.6), written on the left wing of the Flentrop-organ in the large auditorium of the Academy building, deserve more reflection.

10 The following also applies to molecular pathology: Past performance should not be taken as a guarantee of future performance.

11 Technological obstacles can be overcome; even the whole genome can be sequenced in a day. What remains is: who or what is to interpret the data.

Ronald van Eijk, 8 mei 2013