

Dr. Markus Eckstein shares his perspective from the lab on the impact of a DXRX Collaboration – NTRK IHC proficiency testing

In March 2021, Diaceutics offered labs a collaboration opportunity via DXRX – The Diagnostic Network®. The collaboration was an open call for FFPE tissue blocks to help Canadian Pathology Quality Assurance (CPQA-AQCP) build a small tissue microarray for the purpose of NTRK IHC proficiency testing as well as providing NTRK IHC validation assistance.

The focus of the collaboration with labs was to curate secretory breast carcinoma and/or salivary MASC blocks due to the higher incidence of NTRK Fusions in these tumours. Participating labs benefited from working with a renowned global EQA/PT provider to support NTRK IHC proficiency testing and were eligible for free participation in the CPQA pan-TRK EQA program if the lab already offered an NTRK IHC service. The labs also received access to TMA slides and assistance for labs who wished to develop and validate Pan-TRK IHC.



Dr. Markus Eckstein is resident in surgical pathology at the Institute of Pathology of FAU Medical School where he trains in general pathology with a focus on uropathology. He is also a member of the Germany Society of Pathology and the International Academy of Pathology. His main research focus lies on characterization of immune phenotypes, immune evasion mechanisms and the crucial role of immune checkpoint proteins in muscle-invasive bladder cancer. A further focus is the diagnostic assessment of PD-L1 in several cancer types, including bladder cancer and renal cell cancer.

Pan-TRK EQA schemes are not offered by many EQA providers currently and control material is often very scarce. So when the opportunity arose to participate in this collaboration via DXRX, myself and my colleagues at the Institute of Pathology in Erlangen, Germany agreed that we wanted to support it by providing FFPE blocks.

I registered on DXRX which facilitated registration for this EQA program tremendously. When I searched our archive for Pan-TRK positive tumor samples it didn't take long for me to find the desired tumors - mamma analogous secretory carcinomas (MASC), lung cancer samples with known NTRK-fusion. We were able to provide three different blocks (one lung carcinoma and two MASC) to CPQA which were positive in immunohistochemistry using our Pan-TRK antibody EPR17341.

Supporting material for shipment was available on DXRX so we shipped the three blocks to Canada without any hassle. For construction of the TMA, CPQA only needed to take four 6mm cores out of the blocks. There was also the option to return the blocks after the cores were taken and so we decided to go for this option. The FFPE blocks were returned within two months.

Approximately four months later, we obtained three TMA slides for Pan-TRK assay validation and were also enrolled for the Pan-TRK EQA scheme that CPQA could offer due to the support of pathologies from the DXRX network. We stained the TMA slides and returned the results to CPQA online. The final report was provided as a detailed PDF report sent via email. The report comprehensively analyzed each participant's staining results and provided examples of high-quality staining results which can help to improve in house staining of participants with poor staining results.

I am happy that we could support the implementation of this EQA program by providing tumor material. The program supported other labs to externally verify their in-house Pan-TRK assay. Pan-TRK testing by immunohistochemistry can be challenging and therefore EQA schemes are strongly needed in order to improve testing quality. International initiatives further facilitate EQA programs for very rare alterations such as NTRK-fusions.