

EuroClonality-NGS Consortium on Next-Generation Sequencing for IG / TR immunogenetic analysis

Coordinator: Anton W. Langerak

WorkPackage leaders: Michael Hummel, Patricia Groenen, Monika Brüggemann, Christiane Pott, Fred Davi, Jacques J.M. van Dongen, Kostas Stamatopoulos, Nikos Darzentas, Elizabeth Macintyre, Anton W. Langerak

To address the challenges of NGS technology in IG/TR gene analysis, a consortium has been formed for setting standards in IG/TR NGS methodology and its applications in hemato-oncology. This EuroClonality-NGS consortium consists of several EuroClonality laboratories (formerly BIOMED-2; www.euroclonality.org) experienced in design of assays for detecting IG/TR rearrangements, supplemented by laboratories with an expertise in MRD measurement by IG/TR gene analysis, IG/TR repertoire studies and immunoinformatics. The latter laboratories are members of other European networks, namely EuroMRD (www.euomrd.org) and European Research Initiative on CLL (ERIC; www.ericll.org), respectively.

The main objectives of the EuroClonality-NGS consortium are to develop, standardize, and validate IG/TR NGS assays for (i) **clonality assessment**; (ii) **MRD analysis**; and, (iii) **repertoire analysis**. Even though several IG/TR assays have already been described in literature, there is still place for further optimization in assay design and development with the aims of ensuring better coverage of all the genes and also evaluating other types of rearrangements (partial IGHD-IGHJ rearrangements, IGK locus rearrangements involving the kappa-deleting element etc.). Irrespective of whether existing assays or novel assays are employed, one of the most important aspects in the implementation of NGS assays in routine practice concerns standardization, which not only concerns the analytical phase, but also the pre-analytical (e.g. sample preparation, target choice) and the post-analytical phases (e.g. bioinformatics pipeline). Finally, a very important aim of the consortium is to validate the technology via large-scale testing of clinical samples and in the context of clinical trials.

Importantly, EuroClonality-NGS is a scientifically independent consortium that aims to work in a platform-independent way. For these reasons, there are no exclusive interactions with commercial partners in the NGS field; that being said, collaboration with industry (e.g. SMEs, diagnostic companies, pharmaceutical companies) might at some point be considered if relevant and useful, for example for optimal dissemination of newly developed assays and/or tools. The consortium is organized in several Work Packages, each coordinated by 1-2 leaders and consisting of multiple participants. At present, the consortium is financially supported mainly by EuroClonality to cover meetings costs, (central) reagent costs, and costs for bio-informatics.

September 17, 2013