

## **Real-world usefulness of CGP liquid biopsies on-site in thoracic oncology. The IHU RespirERA experience**

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Access to cost effective, easy to use, distributed NGS kits for liquid biopsy testing (LBx) are critical to helping support more rapid treatment decision making, notably for advanced lung cancers, both at tumor progression, but certainly at tumor diagnosis too. These kit-based methods allow a broad range of laboratories to perform high-quality NGS testing, including CGP NGS assays, which improves patient access to targeted therapies in a short turnaround time. Kitted LBx assays can typically be categorized into either amplicon-based targeted panels or hybrid capture based assays, with varying costs, NGS workflows, including automation of different steps and resulting genomic content. On-site (so called "in-house") LBx have certain advantages in comparison to centralization LBx, since, beside to get access rapidly to the results and to be cost-effective, i) the raw data are available systematically and can be re-analyzed easily if needed by different expert members of the laboratory, ii) the DNA left can be biobanked for further studies including benchmarking projects, and, iii) the global workflow seems to be more sustainable in the future, when integrating the green deal, since avoidable blood tubes transportation in long distance. Finally, assessment of LBx results can be easily and rapidly compared with NGS tissue biopsy testing (TBx) made on site in the same laboratory. However, CGP LBx on site need to be performed in accredited laboratories and by expert molecular pathologists, which guarantee the quality and the robustness of the results. A summary of our strategy to develop on-site both NGS LBx and NGS TBx in advanced lung cancer evaluation will be presented. We describe the on-site use of multiple NGS-based LBx products, review their features and benefits and discuss how they might be used clinically to for a better care in advanced NSCLC.