**Supplemental Table S3: NGS Bioinformatics Pipeline Validation Articles for Systematic Review.**

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| **PMID** | **Title** | **Citation** |
| 23810757 | Clinical validation of a next-generation sequencing screen for mutational hotspots in 46 cancer-related genes. | 13 |
| 24142049 | Development and validation of a clinical cancer genomic profiling test based on massively parallel DNA sequencing. | 14 |
| 24189654 | Validation and implementation of targeted capture and sequencing for the detection of actionable mutation, copy number variation, and gene rearrangement in clinical cancer specimens. | 15 |
| 24211364 | Performance of common analysis methods for detecting low-frequency single nucleotide variants in targeted next-generation sequence data. | 16 |
| 24211365 | Validation of a next-generation sequencing assay for clinical molecular oncology. | 17 |
| 24758382 | Analytical validation of whole exome and whole genome sequencing for clinical applications. | 18 |
| 24830819 | The validation and clinical implementation of BRCAplus: a comprehensive high-risk breast cancer diagnostic assay. | 19 |
| 24838331 | Clinical validation of KRAS, BRAF, and EGFR mutation detection using next-generation sequencing. | 20 |
| 24983367 | Validation and utilisation of high-coverage next-generation sequencing to deliver the pharmacological audit trail. | 21 |
| 25395014 | Evaluation of an integrated clinical workflow for targeted next-generation sequencing of low-quality tumor DNA using a 51-gene enrichment panel. | 22 |
| 25480502 | Targeted next-generation sequencing in chronic lymphocytic leukemia: a high-throughput yet tailored approach will facilitate implementation in a clinical setting. | 23 |
| 23810758 | Comparison of clinical targeted next-generation sequence data from formalin-fixed and fresh-frozen tissue specimens. | 24 |
| 23907151 | Next-generation sequencing-based multi-gene mutation profiling of solid tumors using fine needle aspiration samples: promises and challenges for routine clinical diagnostics. | 25 |
| 25954997 | Extended RAS and BRAF Mutation Analysis Using Next-Generation Sequencing. | 26 |

Table lists published articles that underwent full systematic literature review.

PMID, unique identifier number used in PubMed (US National Library of Medicine, https://www.ncbi.nlm.nih.gov/pubmed, last accessed 3/28/2017).