

**Supplementary Figure 1.** Varying sequence coverage of different gene features of class I (HLA-A, -B, -C) and class II (HLA-DRB1, -DQB1, -DPB1) HLA genes in the IPD-IMGT/HLA releases 3.20.0 (2015) and 3.36.0 (2019). Exons 2 and 3 in class I genes and exon 2 in class 2 genes are mandatory for submission to IPD-IMGT/HA.

**Supplementary Table 1:** An overview over currently available HLA genotyping software.

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| Tool | Resolution | Licence | Input Data | Source |
| ALPHLARD(-NT) [[35]](https://paperpile.com/c/sqiuyU/igFp) | Class I + II; 3-field | Not available | WGS, WES | Not available |
| ATHLATES [[72]](https://paperpile.com/c/sqiuyU/PrBq) | Class I + II; 3-field | Academic non-commercial use only | WES | https://www.broadinstitute.org/viral-genomics/athlates |
| GenDx NGSengine | Class I + II; 4-field | Commercial | targeted data | https://www.gendx.com/products/ngsengine |
| HLA\*PRG:LA [[80,83]](https://paperpile.com/c/sqiuyU/WFip%2Br9cT) | Class I + II; 3-field | Open source | WGS, WES, targeted data | https://github.com/DiltheyLab/HLA-LA |
| HLA-HD [[99]](https://paperpile.com/c/sqiuyU/JBVe) | Class I + II; up to 3-field | Academic non-commercial use only | WES  | https://www.genome.med.kyoto-u.ac.jp/HLA-HD/ |
| HLA-Vbseq [[71]](https://paperpile.com/c/sqiuyU/ploG) | Class I + II; 2-field | Academic non-commercial use only | WGS | http://nagasakilab.csml.org/hla/ |
| HLAssign [100[]](https://paperpile.com/c/sqiuyU/rz72) | Class I + II; 3-field | Open source | Targeted HLA enrichment /wo PCR | https://www.ikmb.uni-kiel.de/resources/download-tools/software/hlassign |
| HLAforest [[69]](https://paperpile.com/c/sqiuyU/sjsw) | Class I + II; 2-field | Academic non-commercial use only | RNA-seq | https://github.com/FNaveed786/hlaforest |
| HLAminer [[101]](https://paperpile.com/c/sqiuyU/cIEO) | Class I; up to 2-field | Academic non-commercial use only | RNA-seq, WGS, WES | https://github.com/warrenlr/HLAminer |
| HLAProfiler [[102]](https://paperpile.com/c/sqiuyU/NbTn) | Class I + II; 2-field | Academic non-commercial use only | RNA-seq | https://github.com/ExpressionAnalysis/HLAProfiler |
| HLAreporter [[85]](https://paperpile.com/c/sqiuyU/AjoB) | Class I + II; 2-field | Open source | WES | http://paed.hku.hk/genome/software.html |
| HLAscan [[36]](https://paperpile.com/c/sqiuyU/cK30) | Class I + II; 2-field | Open source | WGS, WES, targeted data | http://www.genomekorea.com/display/tools/HLA\_SCAN |
| Kourami[[86]](https://paperpile.com/c/sqiuyU/HPxW) | Class I + II; 3-field | Open source | WGS | https://github.com/Kingsford-Group/kourami |
| neXtype [[7]](https://paperpile.com/c/sqiuyU/32wv) | Class I + II;up to 3-field | In-house only | Exon amplicons | Not available |
| Omixon HLA Twin | Class I + II; 4-field | Commercial | targeted data | https://www.omixon.com/products/hla-twin/ |
| OptiType [[79,82]](https://paperpile.com/c/sqiuyU/JQAR%2BgIak) | Class I + II; 2-field | Open source | WGS,WES, RNA-seq  | https://github.com/FRED-2/OptiType |
| PHLAT [[70,103]](https://paperpile.com/c/sqiuyU/Uv7K%2BJirI) | Class I + II; 2-field | Academic non-commercial use only | WES, RNA-seq  | https://sites.google.com/site/phlatfortype/ |
| Polysolver [[104]](https://paperpile.com/c/sqiuyU/7WJq) | Class I + II;2-field | Academic non-commercial use only | WES | https://software.broadinstitute.org/cancer/cga/polysolver |
| seq2HLA [[68]](https://paperpile.com/c/sqiuyU/W1dU) | Class I + II;1-field | Open source | RNA-seq | https://bitbucket.org/sebastian\_boegel/seq2hla |
| xHLA [[41]](https://paperpile.com/c/sqiuyU/mcsJ) | Class I + II;2-field | Academic non-commercial use only | WGS, WES | https://github.com/humanlongevity/HLA |

**Additional References**

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