**RESULTS FOR EACH SEQUENCE**

1. **Alignment with the IMGT reference directory**
   - Alignment for V-GENE and allele identification
   - Alignment for D-GENE and allele identification
   - Alignment for J-GENE and allele identification

2. **IMGT numbering and translation**
   - V-REGION alignment according to the IMGT unique numbering
   - V-REGION translation

3. **Results of IMGT/JunctionAnalysis**
   - Analysis of the JUNCTIONs
   - Translation of the JUNCTIONs

4. **Analysis of the mutations**
   - V-REGION mutation table
   - V-REGION mutation statistics
   - Mutation hot spots (motifs and positions in germline V-REGION)

5. **IMGT/Collier de Perles**
   - V-REGION translation according to the IMGT unique numbering
   - V-REGION alignment according to the IMGT unique numbering
   - Results of IMGT/JunctionAnalysis
   - Analysis of the JUNCTIONs
   - Translation of the JUNCTIONs

**SYNTHETIC VIEW PER ALLELE**

1. Alignment of a batch of sequences with the closest germline allele
2. **IMGT numbering and translation**
   - V-REGION alignment according to the IMGT unique numbering
   - V-REGION translation

3. **Results of IMGT/JunctionAnalysis**
   - Analysis of the JUNCTIONs
   - Translation of the JUNCTIONs

4. **Protein display and frequency of amino acids**
   - Protein display
   - Protein display with coloured AA according to the AA IMGT Classes
   - Protein display (mutations displayed)

**IMGT/V-QUEST and IMGT/JunctionAnalysis for antibody engineering**

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IMGT/V-QUEST and IMGT/JunctionAnalysis, parts of IMGT®, the international ImMunoGeneTics information system®, are the first and so far unique online tools that provide a standardized and exhaustive characterization of recombinant antibodies, from nucleotide sequences to graphical amino acid sequence 2D representations (IMGT Colliers de Perles).

- IMGT/V-QUEST compares the sequences with the IMGT reference directory, displays the nucleotide and protein alignments according to the IMGT unique numbering and provides an extensive analysis of the mutations.
- IMGT/JunctionAnalysis analyses accurately the junctions of antibody rearranged sequences (IGHD genes and alleles, N- and P-REGION, “gc” content, amino acid physicochemical properties, pI).


**IMGT/V-QUEST+JCTA QUERY PAGE**

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