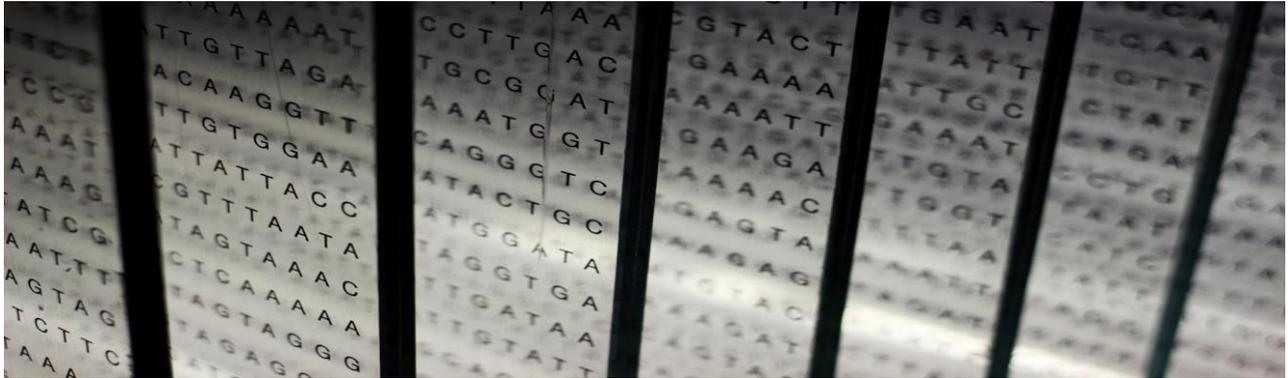


Bioinformatics



Bioinformatics is a field of life sciences in which tools from computer science, statistics, mathematics and engineering are used to analyse and interpret biological data. The most common use of bioinformatics processes is in the analyses of genomic data; for example, the identification of genes, alignment of nucleotide and protein sequences, and researching polymorphisms in DNA.

Given that mathematics and computing can be used to analyse any form of data, the field of bioinformatics has spread into almost all areas of Life Sciences and is used daily in the laboratory. However, the patent world has struggled to adapt to this quickly changing field, which falls into neither the biotechnology nor the computer sciences and electronics classifications. For both areas to come together, expertise is required in both areas. Although the numbers of bioinformatics-related patent applications are still relatively low, they cause problems for patent offices and result in unpredictable objections from examiners. This is reflected in the inconsistent case law that has been issued by the European Patent Office (EPO).

In European Patent Office (EPO) decision [T 784/06](#), concerning [EP0736107B1](#), the Board of Appeal was from the biological division and considered the key question for assessing bioinformatics-related inventions to be whether the technical and non-technical features (generally mathematical or statistical) of the invention interact to produce a tangible, technical effect in the real world. However, in this case, a lack of sufficient explanation of how the technical and non-technical features interacted gave rise to a finding of lack of inventive step because the non-technical steps were ignored in the assessment of inventive step. In EPO decision [T 2050/07](#), concerning [EP1229135B1](#), the Board of Appeal was formed with a computer science chairman, and almost the opposite conclusion was reached: the Board decided that the non-technical features were explained sufficiently in terms of formulae and gave rise to the common technical result that distinguished the invention from the prior art.

In light of such decisions, it is advisable in the EPO to claim all necessary technical and non-technical steps of a bioinformatics invention, and to make sure the description contains sufficient detail as to how these steps are carried out. Furthermore, it is crucial to determine how the steps interact to provide an advantage. The achievement of a 'real world application' also needs to be made clear.

We have explained the general principles of protecting bioinformatics inventions in this AL Factsheet but it is only an introduction, and any live situation will need individual assessment. Please contact us if you need more detailed information.