deposited strains, but also Acetobacter microorganisms which had the stated characteristics in common with the deposited strains. In the board's judgment, finding other stable, cellulose high-producing Acetobacter strains in nature was a chance event, and relying on chance for reproducibility amounted to an undue burden in the absence of evidence that such chance events occurred and could be identified frequently enough to guarantee success. The board concluded that the claim was not repeatable without undue burden over the entire breadth of the claim.

The claimed subject-matter in **T 639/95** concerned a method for producing PHB biopolymers in a host transformed with genes encoding the enzymes ß-ketothiolase, acetoacetyl-CoA reductase and polyhydroxy butyrate (PHB) synthetase. The board found that the experimental plan for identifying and isolating the PHB gene was very general. Some references were missing and/or incomplete. There were no results and no details which could facilitate the repetition of the work. The board thus held that the total amount of experimental effort necessary amounted to an undue burden for the skilled person.

However, in **T 412/93**, where errors and omissions prejudiced the reproducibility of one of the examples in toto and of another example in part, the reproducibility of the invention was not affected, as the examples were alternatives to previous ones.

In **T 612/92**, further scientific research would have been necessary in order to carry out the invention in some of the areas claimed. The board held the requirements of Art. 83 EPC 1973 were not fulfilled because there were serious doubts as to whether such a method could be performed over the whole range that was claimed (see **T 694/92**, OJ 1997, 408).

However, in **T 223/92** the disclosure enabled those skilled in the art to reproduce the invention, possibly in a time-consuming and cumbersome way, but, in the given circumstances, without undue burden of experimentation and without needing inventive skill (see also **T 412/93**).

T 1456/06 concerned the level of disclosure required for enablement of a claim directed to peptide vaccines. It was apparent from the prior art that the development of peptide-based vaccines to treat cancer – the sole specific type of vaccine mentioned in the application as filed – was not only extremely laborious, but also fraught with uncertainties. The application as filed did not disclose any telomerase peptide which might – plausibly – be regarded as a suitable candidate for a vaccine, nor did it contain either technical information as to how to identify possible candidate peptides, or instructions on how to proceed in case of failure. The board concluded that identifying immunogenic fragments of the telomerase protein suitable for the manufacture of a vaccine by a trial and error procedure constituted an undue burden to a person skilled in the art.

The application in **T 1364/08** concerned viruses for the treatment of cellular proliferative disorders. It provided no experimental data proving that the claimed adenovirus was able to replicate in cells having an activated Ras-pathway but not in normal cells. No data was present demonstrating that such a virus could be useful for the treatment of Ras-mediated cell proliferative disorders. However, based on what was described in the application as