SOME RECENT ASPECT ON HYBRIDOMA TECHNOLOGY

G.-A.Luckenbach

Priv.Doz.Dr.G.-A.Luckenbach, Sandoz Research Institute, Brunnerstrasse 59, A-1235 Vienna, Austria

Hybridoma technology, i.e. the fusion of an antigen-specific B-lymphocyte with an appropriate myeloma cell line, has resulted in a vast number of different reagents (monoclonal antibodies, MAb) with specificity for such molecules as enzymes and hormones, external and internal structures of bacteria, viruses and eucaryotic cells. So far, the majority of these reagents have been of mouse or rat origin, due largely to easy access to laboratory animals for immunization and the availability of myeloma cell lines. For in vitro diagnostic and scientific purposes these MAb have proven excellent tools with a high degree of reliability. For clinical use, however, these animal proteins harbour the danger of inducing immune responses as hypersensitivity and neutralizing antibodies. Thus, different methods are being developed to avoid these undesirable effects, including attempts to produce human MAb or make them as human as possible. Obviously, it would be most logical to fuse antigen-specific human B-lymhocytes with human or mouse myeloma cells. This approach works, but has limitations particularly in the genetic stability of the resulting hybridomas. In another approach one tries to immortalize human B-cells with Epstein-Barr-virus, but here also the stability of the clones is generally not sufficient. There remains the use of gene technology, transfecting eucaryotic cells or bacteria with genomic DNA carrying the information for the antigen binding site from mouse in combination with the constant part of the molecule of human origin. This last approach is still very much matter of experimentation and its presumed merits under debate.

Advances in Forensic Haemogenetics 2
Edited by W. R. Mayr