

## The future of human cell culture media

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Human cell culture has become an essential tool for scientific research. Until now the most widely used media are supplemented with FCS (fetal calf serum), which contains most of the factors required for cell functionality and proliferation. However, fetal calf serum quality varies between batches and contains lots of undefined compounds, which carry the risk of contamination of the culture with undesired proteins or pathogens. Because of these risks, there is a worldwide interest in developing alternatives for such media using autologous proteins or chemically defined compounds. Studies suggest as possible substitutes for

FCS: human serum, albumin, autologous/synthetic or recombinant hormones and proteins, presenting varying levels of success for different cell types.

The main concern of this paper is: Where is the boundary between optimal biosafety and the maximum efficiency of cell culture media? This review was based on research of publication indexes with the aim of following the developments in science and to discuss the bioethical, economic and scientific issues that still need to be worked on and the new perspective for the future, which appears to be a totally xenoprotein-free medium.