

FUNGAL PROTOPLASTS AS A GENETIC TOOL

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Summary

For the last three decades, protoplasts have been shown to be an effective tool in studying the biochemistry and genetics of fungi, as the thick cell wall is no more a barrier. In this work we describe and discuss this versatile tool in mycology in two ways, preparation level and utilisation level, as shown in Fig.1.

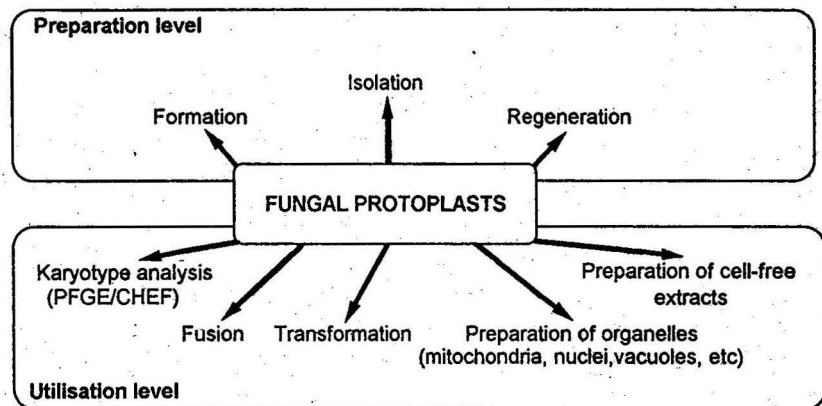


Fig. 1 - Genetic utilisation of fungal protoplasts

At the preparation level we describe the optimal conditions to obtain yeast protoplasts, including buffers employed, incubation time, regeneration of protoplasts, and compare the methodology to obtain the protoplasts from yeast and filamentous fungi. At the utilisation level we analyse the methodology to introduce foreign DNA into host genomes via protoplast transformation, probably the most universal method of gene transfer, and via protoplast fusion, a tool to "illegitimately" transfer nuclear and/or organellar genetic information beyond phylogenetic boundaries. Finally, we conclude about the importance and actuality of fungal protoplasts in mycological research.