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MDCK proliferation and flu production in suspension culture on various microcarriers

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Cell-based influenza vaccine production is quickly growing in the vaccine industry to meet the threat of pandemic outbreaks and to eliminate health concerns associated with egg protein allergies. Madin Darby Canine Kidney (MDCK) is a commonly used cell line for production of influenza virus and the cell-based manufacture of inactivated flu vaccines. Expansion of MDCK cells allows for rapid response and quick scale up compared to the traditional egg based vaccine manufacturing process. This study examines the feasibility of using microcarrier-based cell culture for the expansion of MDCK cells in 3D. Several media were compared for their ability to support MDCK cell growth in planar and suspension culture as well as their ability to support flu virus production from MDCK cells. ProMDCK (2D) and ProMDCK (3D) (Lonza) supported excellent cell proliferation and virus production in both planar culture and on multiple types of microcarriers. The preparation and usage of the various microcarriers were based on the manufactures' recommendations and were evaluated for ease of use, ability to support cell proliferation and virus production, and ability to support MDCK expansion without cell dissociation in disposable culture systems.

Biography

Karen Roderick completed her undergraduate studies at Hood College and works as a Research Associate for Lonza BioScience, Walkersville. Her focus is on the development of non-animal origin culture media for vaccine and therapeutic medicine.

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