Xenorenew Culture Systems for Stem Cells

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INTRODUCTION

There is an increasing demand for qualified media, cytokines and reagents in cultivation of stem cells and immune cells in a clinical setting. To address this need and advance the field of xenorenew culture systems from material science, we designed, developed and implemented a set of xenofree media, supplements and reagents for neural stem cell, and 3) mesenchymal stem cell. Our results with xenorenew culture media reagents in these three cell therapy compatible and can be readily used in preclinical and clinical studies closing the gaps in "bench to bed" clinical translation.

MATERIALS AND METHODS

Pluripotent Stem Cell Culture

HDNSC were maintained on CellStart™ coated plates. HDNSC were cultured in KnockOut™ DMEM supplemented with 15% KSR, GlutaMax™, 1X KnockOut™ SR XenoFree GF Cocktail, 0.1 mg/ml basic fibroblast growth factor (Sigma). Cells were passaged at day 4-5 using Tryp200™ select trypsin replacement for 6-9 h after confluence was reached within 4 days.

NKSC were seeded into fresh CELLstart™ substrate-coated flasks. Flasks were incubated at 37°C for 96 h. All immunostained cells were briefly rinsed and immunostained for DCX marker. Primary antibody were applied for half hour. After incubation for 15 min at room temperature and read on microplate reader reader at 485/530 and 530/645.

Expression levels in different samples.

StemPro® MSC SFM are tissue culture media that are feeder-free and feeder-based systems. B27® XF demonstrated good viability when compared to control cells cultured in KSR DMEM – P9.

RESULTS & DISCUSSION

Results presented in this work demonstrate that the xenorenew culture media and reagents are capable of expansion and differentiation of stem cells towards their intended lineages. XSF was shown to maintainpassaging of pluripotent stem cells in feeder-free and feeder-based systems. B27® XF demonstrated good viability and growth of MSC-derived NSC. StemPro® MSC SFM displayed expansion and retention of differentiation potential among different multipotent stromal stem cell populations. These reagents are included in Life Technologies consolidated Cell Culture Media drug master file. In addition, Life Technologies KnockOut™ SR XenoFree pluripotent stem cell expansion supplement and StemPro® MSC SFM are tissue culture media that can be used for human ex vivo tissue and cell culture processing applications.

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REFERENCES


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