



PLASMA-FREE PLATELET LYSATE MEDIA FOR IN VITRO EXPANSION OF MESENCHYMAL STEM CELLS

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The Medical University of Graz is seeking companies interested in a collaboration for commercialization of a breakthrough technology for new stem cell media. Stem Cell therapy has the potential to improve organ regeneration in a large spectrum of diseases. Selected types of Stem Cells (SC) need to be expanded ex vivo to produce the required quantity of Stem Cells for clinical application into patients. The majority of expansion procedures are based on the use of fetal bovine serum (FBS).

- FBS harbors the risk of transmission of known and unknown pathogens.
- FBS use for clinical SC culture is prohibited in Germany and will be prohibited in the EU and US in the near future.
- experience already indicates that lysates of human platelet rich plasma (PRP) may replace FBS in some but not all culture systems.
- Procedures for producing PRP do not address the risk of disease transmission by human plasma, the risk of anaphylactoid reactions and of transfusion-related acute lung injury.

We have invented a new standardized procedure to generate platelet lysate by pooling multiple units of human buffy coat-derived PRP to reduce variations.

ADVANTAGES

- ✓ Removing the plasma to exclude the risk of transmitting isoagglutinins, plasma factors and in particular plasma-related diseases and allergic reactions.
- ✓ Substituting the removed plasma by virtually antigen- and antibody-free human albumin solution
- ✓ Minimizes plasma-associated infections
- ✓ Reduces the risk of immunological side effects

Figure 1 shows that in this particular experiment replacement of plasma by human albumin solution led to a more than twice as high proliferation of mesenchymal stem cells as in FBS and PL supplemented culture and to an eight fold as high proliferation rate of mesenchymal stem cells stimulated by conventional FBS.

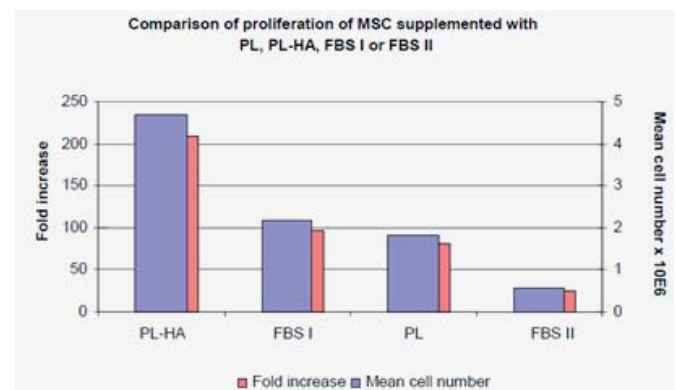


Fig.1: Results of cell numbers and fold increase in MSC cultures with 10% platelet lysate in 5% human albumin (PL-HA), 10% platelet lysate (PL), two lots of FBS (I + II) on day 12. Cells were initially seeded in a density of 50-100 cells/cm².

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COLLABORATION DETAILS

✓ Collaboration can be in the form of a license agreement or a research cooperation. Partner should provide support in manufacturing, marketing, advertising and distribution of the media.

POSSIBLE PARTNERS

- ✓ blood banks
- ✓ stem cell manufacturers
- ✓ media manufacturers

DEVELOPMENT STATUS

- ✓ patent pending