

Safe, Consistent, Cost-Effective Cell Culture

AventaCell BioMedical has adopted a state-of-the-art gamma irradiation process, as a pathogen reduction treatment (PRT), for viral inactivation to create an UltraGRO™-PURE GI (UG-P GI) product. **UG-P GI** offers minimized pathogen contamination risk for compliance with regulatory requirements, while providing comparable cell culture performance with human mesenchymal stem cells (hMSCs) and other applicable cell types for clinical applications.

Benefits of UltraGRO™-PURE GI

- **US FDA DMF # 34284**
- **JAPAN PMDA Certificate**
- **Ph. Eur. General Chapter 5.2.12.4 Compliance**
- UltraGRO™-PURE GI supplements for producing clinical grade cells
- Gamma irradiation has been accepted by regulatory agencies as a validated PRT
- Comparable cell culture performance maintained
- Viral inactivated products w/o loss of potency

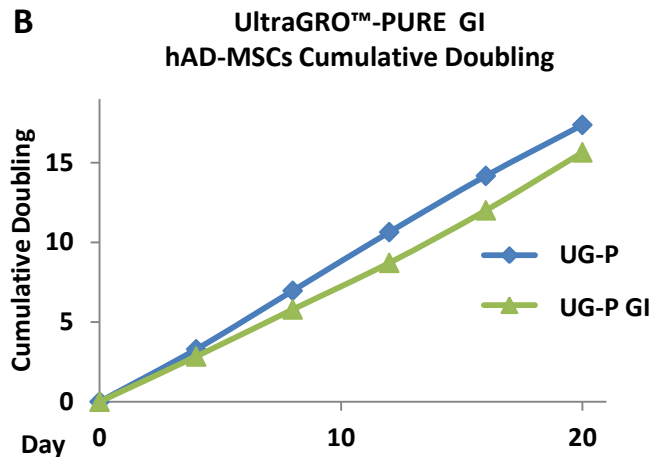
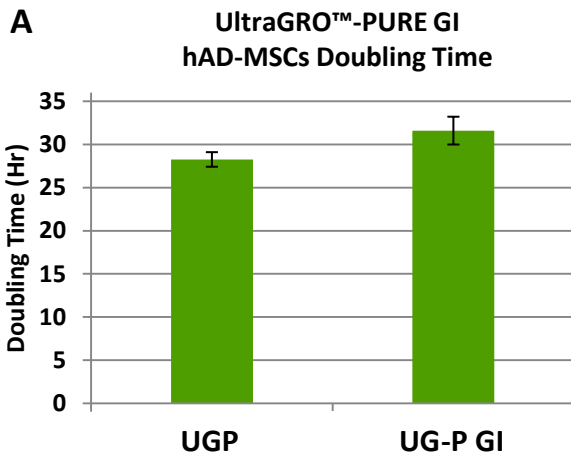


Fig. 1: Gamma irradiation has low impact on UG-P GI potency for MSC cell expansion. Media with 5% (v/v) UG-P GI retained comparable growth kinetics and yields.

Marker %	Cell type	CD73	CD90	CD105	CD34	CD45	CD11b	CD79a	HLA-DR
UG-P GI	AD-MSC	99.97	99.88	95.33	0.34	0.40	0.78	0.37	1.65
	UC-MSC	95.51	99.98	99.09	0.80	0.31	1.08	1.11	1.97
	BM-MSC	99.94	99.50	99.95	0.93	0.15	0.15	0.34	1.45

Table1: Immuno-phenotypical characterization of human MSCs. Human MSCs derived from adipose tissue (AD), umbilical cord matrix (UC), bone marrow (BM) cultured in UltraGRO™-PURE GI for 5 passages displayed characteristic expression of MSC surface markers.



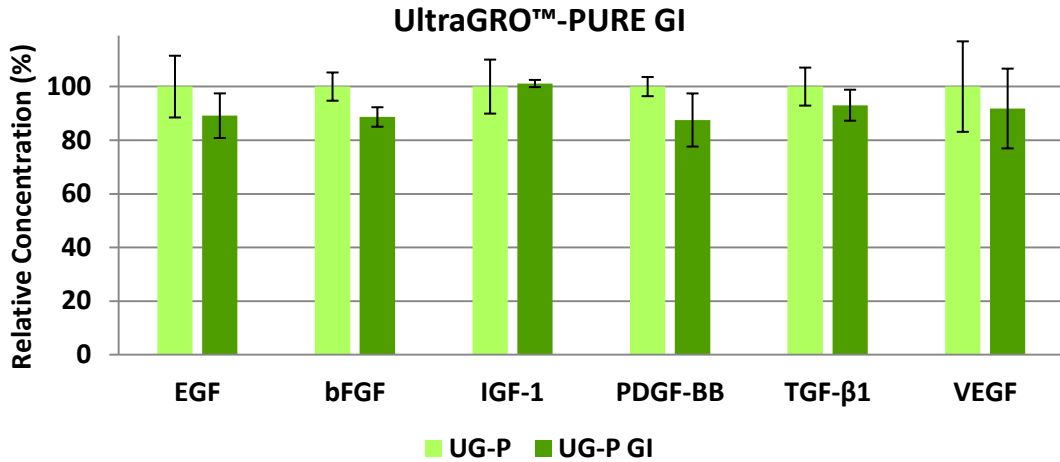


Fig. 2: Growth factors retained comparable cytokine levels after receiving gamma irradiation.

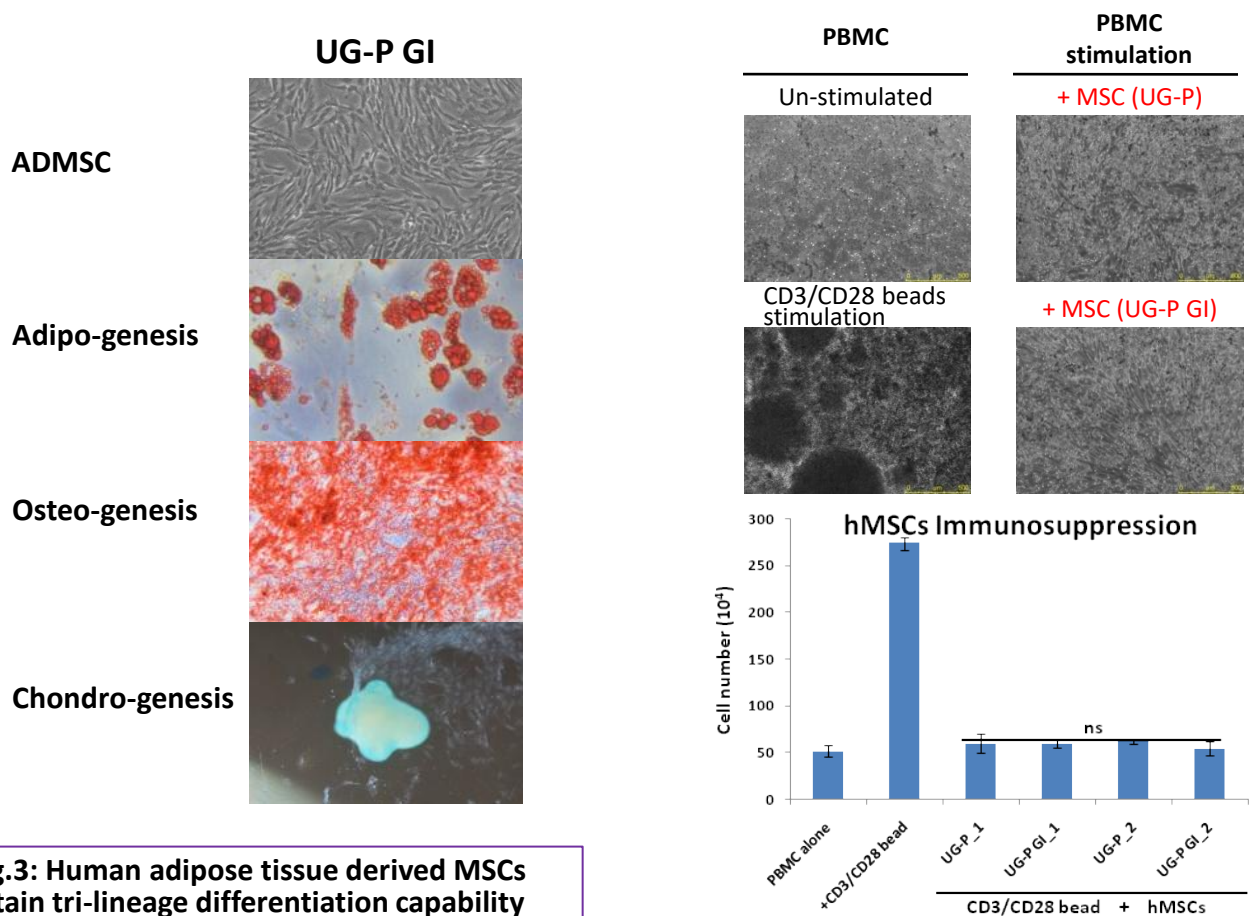


Fig.3: Human adipose tissue derived MSCs retain tri-lineage differentiation capability after cultured in UltraGRO™-PURE GI supplemented medium for three passages.

Fig.4: MSCs retained immunomodulation potency

