

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™-Advanced GI (UG-A GI) product. **UG-A GI** offers minimized pathogen contamination risk while preserving potent cell culture performance with human mesenchymal stem cells (hMSCs) and other applicable cell types for clinical applications.

Benefits of UltraGRO™-Advanced GI

- **JAPAN PMDA Certificate**
- **Ph. Eur. General Chapter 5.2.12.4 Compliance**
- UltraGRO™-Advanced GI supplements for producing clinical grade cells
- Gamma irradiation has been accepted by regulatory agencies as a validated PRT
- Minimal impact on cell culture performance
- Viral inactivated products w/o loss of potency

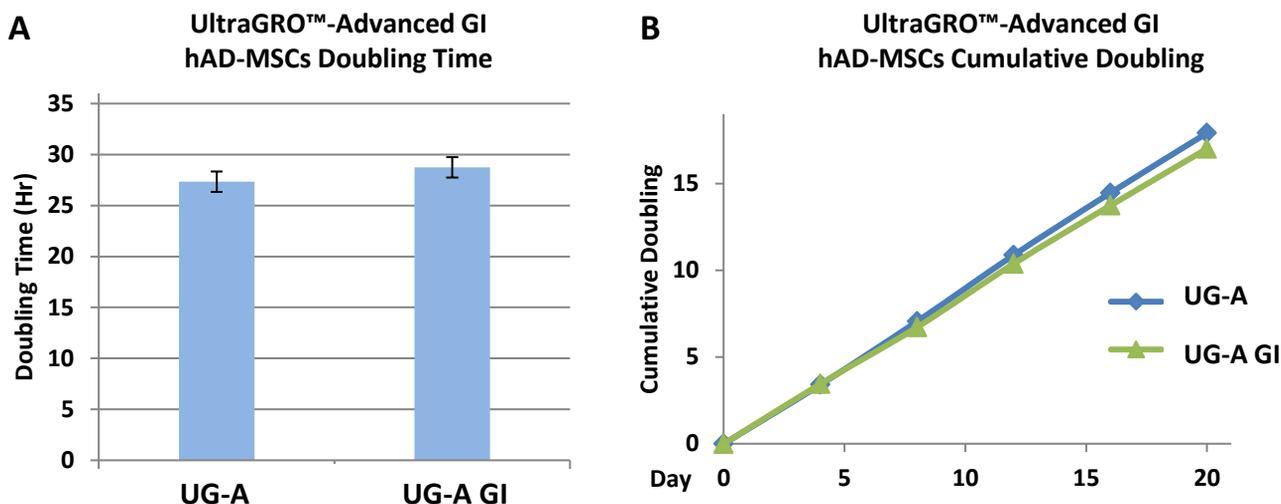


Fig. 1: Gamma irradiation has low impact on UG-A GI potency for MSC cell expansion. Media with 5% (v/v) UG-A GI retained comparable growth kinetics and yields.

Marker %	Cell type	CD73	CD90	CD105	CD34	CD45	CD11b	CD79a	HLA-DR
UG-A GI	AD-MSC	99.95	98.71	99.47	0.49	0.07	1.40	0.16	1.65
	UC-MSC	98.12	99.94	99.91	0.25	0.12	1.94	0.51	1.97
	BM-MSC	99.98	100.00	98.39	0.86	0.11	0.74	0.18	1.58

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



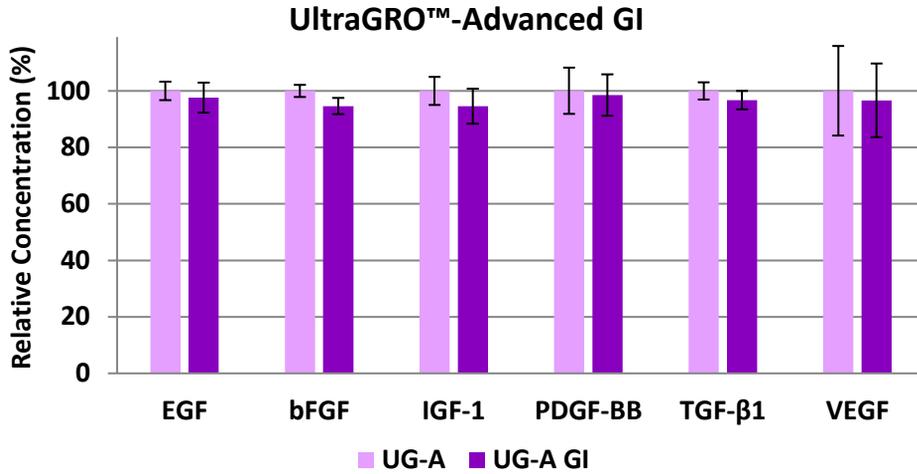


Fig. 2: Growth factors retained comparable cytokine levels after receiving gamma irradiation.

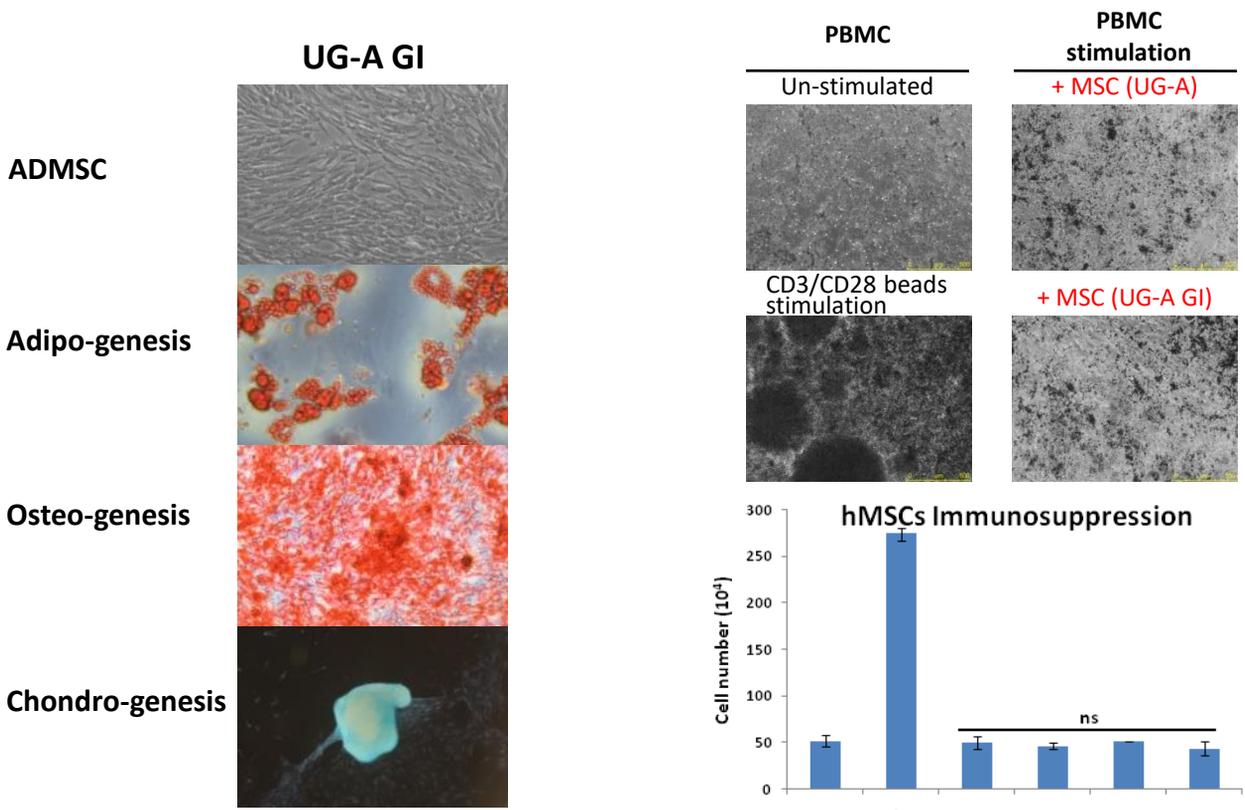


Fig.3: Human adipose tissue derived MSCs retain tri-lineage differentiation capability after cultured in UltraGRO™-Advanced GI supplemented medium for three passages.

Fig.4: MSCs retained immunomodulation potency

