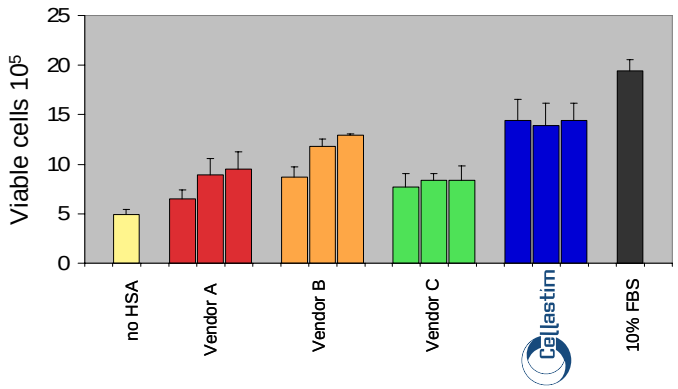
Cellastim

Recombinant Human Serum Albumin

Completely Animal-Free for Cell Culture

Promotes Cell Growth

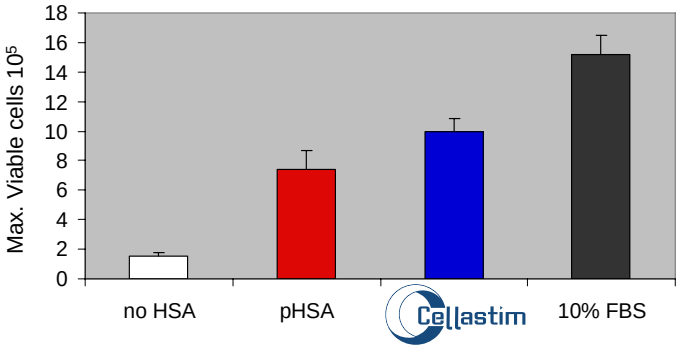
Outperforms Competitors' Plasma-derived HSA



Cellastim™ outperforms competitor's plasma-derived HSA in serum-free media. Cellastim's™ performance was compared with plasma derived HSA in stimulating growth of AE1 Hydbridoma in shake culture. Cells were seeded at 1 x 10^5 cells/ ml in serum-free DMEM/F12 media containing either no HSA (yellow), plasma derived HSA from three vendors (Red, Orange, Green), Cellastim™ (Blue) or 10% fetal bovine serum (Black). Each HSA was tested at 0.1 g/L(Left bar), 1 g/L(Middle bar), or 3 g/L (Right Bar). Shown are viable cells on day 3 of culture. Cellastim ™ outperformed plasma derived HSA from all three vendors.

Source: InVitria

Improves Cell Growth



Cellastim™ improves cell growth in reduced serum media. Maximum cell density of AE1 hybridoma cells in DMEM +0.5% Fetal Bovine Serum (FBS). Cellastim™ performed equal to or better than plasma-derived Human Serum Albumin.

Source: InVitria

Safe

Cellastim™ is derived from plants using an animal-free proprietary recombinant protein production platform, which has an excellent safety profile, eliminating the risk of contamination from Adventitious Viral Agents (AVAs) or Transmissible Spongiform Encephalopathies (TSEs including BSE). The platform utilizes a GRAS ("Generally Recognized as Safe") host and products from this platform have been determined GRAS as medical food ingredients.

Regulatory Friendly

Cellastim™ is a completely animal-free product produced in a completely animal free system. The production process does not use any animal derived materials in any direct or indirect expression or purification steps, thus simplifying and expediting the FDA review process.

Consistent Performance

Cellastim™ has greater product definition and is well suited for chemically-defined media since it has less genetic variation than native Human Serum Albumin.

InVitria

Ph. 1-800-916-8311 www.InVitria.com

Cellastim

Recombinant
Human Serum Albumin

Replace Plasma Derived Albumin

Cellastim™ is identical to plasma-derived Human Serum Albumin based on several biochemical and biophysical tests:

Property	Plasma Derived HSA	Cellastim™
Amino acid sequence	Based on DNA sequence	Identical based on DNA sequence
N-terminal sequence	DAHKSE	DAHKSE
Glycosylation	None	None
SDS-PAGE/Western	~66 kDa	~66 kDa
Molecular mass (MALDI) (66.5kD)	66.9-68.1 kDa	66.8-67.9 kDa
Isoelectric focusing point	pI 5.3	pI 5.3
Ligand binding	Yes	Yes, not statistically different from native HSA
Thermal stability	Midpoint 65°C	Midpoint 65°C
Esterase activity	Yes	Yes
Protease sensitivity	Same as each other	Same as each other

Opportunities:

Reduce Serum to 1% or less

Remove Serum as Part of a Serum-free Media Formulation

Supplement Defined Media

Cellastim™ will be commercially available in Q4 2006

Please email us at info@InVitria.com to be put on our mailing list for Cellastim™ updates.