

Chair Introduction

Welcome to the 4th Informa Cell Therapy Manufacturing Conference

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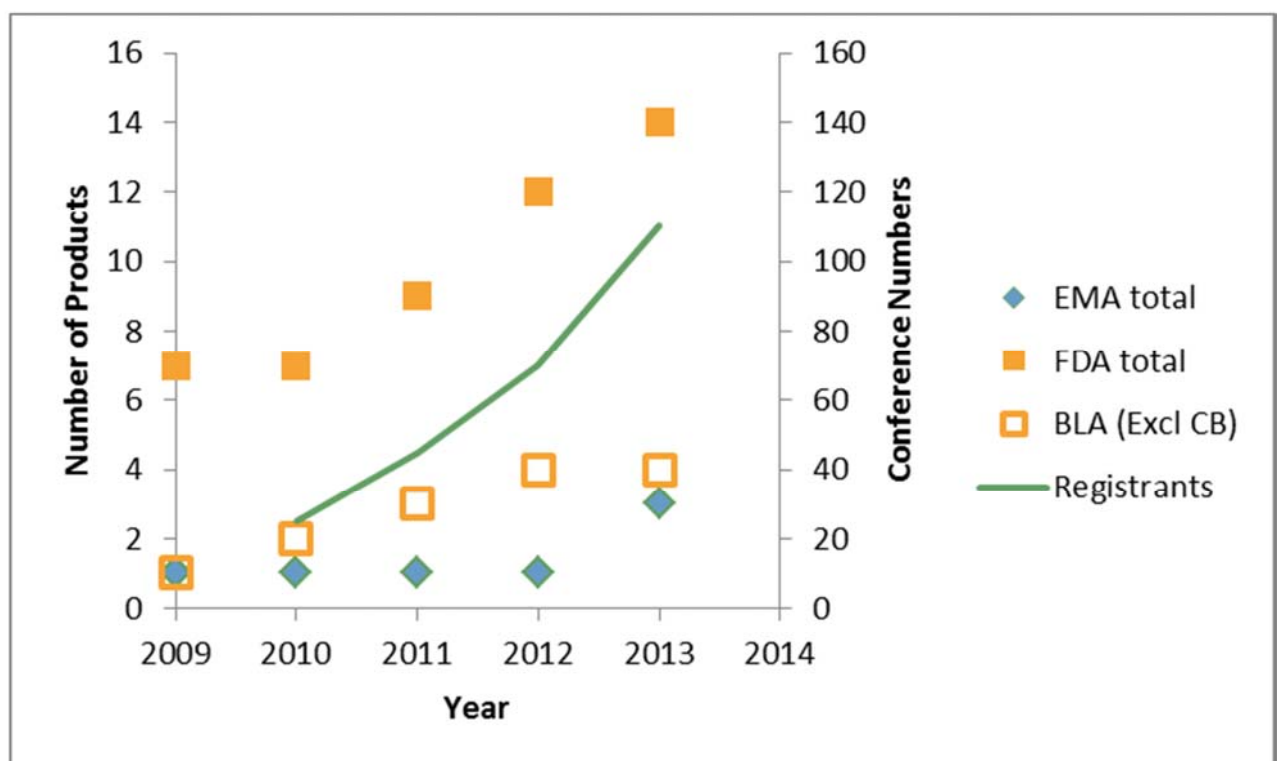
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EMA/FDA Approved Cell-based Products since we started in 2010



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FDA Approvals – Pre 2002

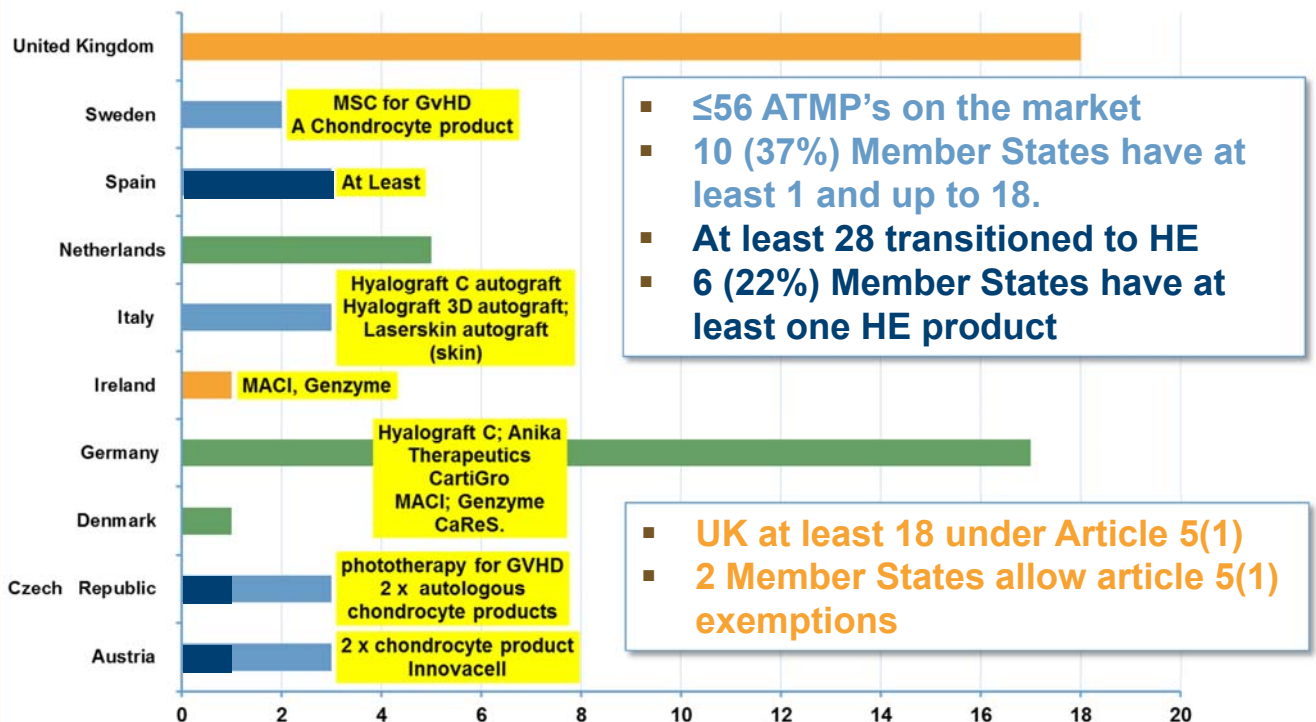
Product	INN/Description	Type	Indication/s	Company	Type	Approved
Integra Artificial Skin	Artificial Skin Burn Wound Covering	Allogeneic - Engineered Skin	Dressing, Wound And Burn, Interactive	Integra Lifesciences Corp.	PMA	Mar 96
Carticel	Autologous Cultured Chondrocytes	Autologous - Chondrocyte	Repair of symptomatic cartilaginous defects of the femoral condyle	Genzyme	BLA	Aug 97
Dermagraft	Bioengineered Temporary Covering	Allogeneic - Engineered Skin	partial thickness burns (mid-dermal to indeterminate depth)	ATS/S&N (now Shire)	PMA	Oct 97
Apligraf	Graftskin	Allogeneic - Engineered Skin	venous leg and diabetic ulcers	Organogenesis	PMA	May 98
Epicel	Cultured epidermal autografts	Allogeneic - Engineered Skin	Deep dermal or full thickness burns (≥30%)	BioSurface Technology (now Genzyme)	HDE	Nov 98
TransCyte	Human fibroblast-derived temporary skin substitute	Allogeneic - Engineered Skin	Dressing, Wound And Burn, Interactive	ATS/S&N (now Shire)	PMA	Dec 98
OrCel	Interactive Wound And Burn Dressing	Allogeneic - Engineered Skin	Dressing, Wound And Burn, Interactive	Ortec Internation (now Forticell)	PMA	Aug 01

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EU Pre-2009 EU Commission Survey results Oct 2012



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FDA Approvals – Post 2001

Product	INN/Description	Type	Indication/s	Company	Type	Approved
Provenge	Sipuleucel-T	Autologous - Immunotherapy	asymptomatic or minimally symptomatic metastatic castrate resistant (hormone refractory) prostate cancer.	Dendreon Corporation	BLA	Apr 10
LaViv	Azficel-T	Autologous - Skin rejuvenation	For the improvement of the appearance of moderate to severe nasolabial fold wrinkles in adults.	Fibrocell Technologies, Inc.	BLA	Jun 11
Hemacord	Hematopoietic Progenitor Cells, Cord	Allogeneic - Cord blood	unrelated donor hematopoietic progenitor cell transplantation	New York Blood Center	BLA	Nov 11
Gintuit	Allogeneic Cultured Keratinocytes and Fibroblasts in Bovine Collagen	Allogeneic - Engineered Skin	treatment of mucogingival conditions in adults	Organogenesis	BLA	Mar 12
DuCord	Hematopoietic Progenitor Cells, Cord	Allogeneic - Cord blood	unrelated donor hematopoietic progenitor cell transplantation	Duke University	BLA	Apr 12
HPC, Cord Blood	Hematopoietic Progenitor Cells, Cord	Allogeneic - Cord blood	unrelated donor hematopoietic progenitor cell transplantation	Clinimmune Labs	BLA	May 12
Allocord	HPC, Cord Blood	Allogeneic - Cord blood	unrelated donor hematopoietic progenitor cell transplantation	SSM Cardinal Glennon Children's Medical Center	BLA	May 13
None	HPC, Cord Blood	Allogeneic - Cord blood	unrelated donor hematopoietic progenitor cell transplantation	LifeSouth Community Blood Centers, Inc	BLA	Jun 13

EMA Submissions and Approvals – Post 2001

Product	INN/description	Indication/s (Therapeutic area)	Company	Submission Date	Opinion	Finalisation Date
<i>Apligraf</i>	<i>Graftskin</i>	<i>Venous leg ulcers</i>	<i>Novartis (Licensing deal with Organogenesis)</i>	<i>Apr 2001</i>	<i>Unknown</i>	<i>Withdrawn 2002</i>
ChondroCelect	characterised viable autologous cartilage cells expanded ex vivo expressing specific marker proteins	cartilage defects of the femoral condyle of the knee	Tigenix	Jun 2007	Positive	Jun 2009
<i>OraNera</i>	<i>Autologous oral mucosal epithelial cells</i>	<i>(Ophthalmologicals)</i>	<i>CellSeed Europe Ltd</i>	<i>Jun 2011</i>	<i>(Negative)</i>	<i>Withdrawn Mar 2013</i>
<i>Hyalograft C</i>	<i>Cultured autologous chondrocytes on hyaluronan based scaffold</i>	<i>(Other medicines for disorders of the musculo-skeletal system)</i>	<i>Anika Therapeutics</i>	<i>Feb 2011</i>	<i>(Negative)</i>	<i>Withdrawn Jan 2013</i>
Provenge	Sipuleucel-T; autologous peripheral blood mononuclear cells activated with PAP-GM-CSF	(Immunostimulants)	Dendreon	Feb 2011	Positive	Jun 2013
MACI	Autologous cultured chondrocytes	(Other medicines for disorders of the musculo-skeletal system)	Genzyme Europe B.V.	Sep 2011	Positive	Apr 2013
Undisclosed	Spheroids of human autologous matrix associated chondrocytes	(Other medicines for disorders of the musculoskeletal system)	Undisclosed (assumed co. don AG)	Jan 2013	TBD	TBD
Holoclar	Ex vivo autologous corneal epithelial cells including stem cells	Ophthalmologicals	Chiesi Farmaceutici S.p.A.	Apr 2013	TBD	TBD

Dendreon Struggling

Dendreon Cuts 150 Jobs, As Prostate Cancer Drug Sales Decline

Luke Timmerman

11/12/13

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Dendreon once had 2,000 employees at its peak, less than three years ago. Its stock was once over \$40 a share. Analysts once predicted its prostate cancer drug would rake in billions in sales every year, with no generic competition in sight.

Today, it's down to 820 employees, its stock is under \$3, and it's doing another mass layoff just to hold onto its diminishing cash reserves.

Dendreon

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Fibrocell – Not mind-blowing

Corporate News

E-MAIL SHARE FONT-SIZE

Fibrocell Science Swings To Loss In Q3

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- Fibrocell Science To Participate In Rodman & Renshaw Conference At 11:15 AM ET

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11/14/2013 9:36 AM ET
Fibrocell Science, Inc. (FCSC: Quote), an autologous cell therapy company, reported loss for the third quarter over profit in the same period last year predominantly due to higher research and development expenses and changes in warrant and derivative revaluation. In addition, the company said that a gain on sale of a discontinued operation was recorded in the previous-year period.
The company posted third quarter loss of \$12.9 million, compared with a profit of \$11.4 million a year ago. Loss per share was \$0.48 for the period, narrower than the loss per share of \$1.27 a year earlier. Warrant income of the company declined to \$188,000 from \$14.54 million a year ago.

With regard to higher R&D costs, the company stated that it had incurred a one-time charge of \$6.4 million for the fair value of common stock issued to Intrexon Corporation related to amended collaboration and stock issuance agreements. The results of the third quarter of 2012 included a gain on sale of a discontinued operation of \$433,000.

Fibrocell registered revenue of \$68,000 for the current period, compared with \$69,000 a year ago.

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Tigenix – Attracting interest - but not for ChondroCelect

Thursday, 21 November 2013 BUSINESS 

Grifols buys 21.3% of biotech company TiGenix for €12 million

CNA

Barcelona (ACN).- Catalan pharmaceutical company Grifols has purchased 21.3% of Belgian biotech company TiGenix for €12 million through the subscription of a capital increase with the exclusion of subscription rights for TiGenix N.V. TiGenix is a leading company in the field of cell therapy, listed at NYSE Euronext Brussels. It has its headquarters in Louvain (Leuven in Flemish), along with centres in Madrid and Sittard-Gelken (The Netherlands). The agreement settled on the appointment of two Grifols Members on TiGenix's Board and a preferential right to negotiate the development and commercialization of all TiGenix owned product, with the only exception of advanced-medicinal product ChondroCelect. Earlier this month, Grifols had already strengthened its therapeutic arsenal by buying part of the Diagnostics unit of Swiss multinational Novartis for \$1,675 million. The Catalan company is a world leader in blood-derivate pharmaceutical products, with a significant presence in the United States and South-East Asia.

ChondroCelect, which is excluded from Grifols' agreement, is an advanced-medicinal therapies product. TiGenix, 100% shareholder of TiGenix SA, obtained the first approval in Europe for this product. TiGenix S.A. - formerly known as Cellerix S.A. - is a company dedicated to researching and developing stem cells derived from adipose tissue.

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Autologous v Allogeneic?

- Does this mean anything?
- Are there reasons why allogeneic products are not yet getting approval?
- Didn't everyone think it was autologous that was the difficult business model?
 - Approval ≠ success

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