

# Investors' & Analysts' Meeting in Austin

Thursday 30<sup>th</sup> and Friday 31<sup>st</sup>  
May 2013

## Thursday, May 30<sup>th</sup>, 2013 – San Marcos (TX)

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<u>Time</u>	<u>Topic</u>
8:00	Hotel pick up in Austin
8:45	Reception of participants at San Marcos Laboratory
9:00	<b>Welcome and Introduction: R &amp; D &amp; i</b>
9:30	<b>Grifols: Innovative Research &amp; Development</b> <ul style="list-style-type: none"><li>✓ Main therapy lines and research projects. Including neurology, autoimmune diseases, liver, pulmonary ...</li></ul>
10:45	Coffee break
11:15	<b>Grifols: Innovative Research &amp; Development (cont'ed)</b>
12:30	Lunch
14:00	<b>Plasma procurement: safety and logistics</b>
14:30	<b>Site visit: San Marcos Laboratory</b>
15:30	<b>Q&amp;A</b>  Transfer to Austin
18:30	<b>Reception &amp; Informal dinner</b>

## Friday, May 31<sup>st</sup>, 2013 – San Marcos (TX)

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<u>Time</u>	<u>Topic</u>
8:00	Hotel pick up in Austin
8:45	Reception of participants at San Marcos Laboratory
	<b>Sales &amp; Marketing</b>
9:00	▶ Global Markets
	▶ Growth Opportunities
9:30	▶ North American Markets
10:00	Coffee break
10:30	<b>Manufacturing update</b>
11:00	<b>Financials</b>
11:45	<b>Wrap up</b>
12:00	Transfer to Austin / airport

# Disclaimer

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This document contains forward-looking information and statements about GRIFOLS based on current assumptions and forecast made by GRIFOLS management, including proforma figures, estimates and their underlying assumptions, statements regarding plans, objectives and expectations with respect to capital expenditures, synergies, products and services, and statements regarding future performance. Forward-looking statements are statements that are not historical facts and are generally identified by the words “expected”, “potential”, “estimates” and similar expressions.

Although GRIFOLS believes that the expectations reflected in such forward-looking statements are reasonable, various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the Company and the estimates given here. These factors include those discussed in our public reports filed with the Comisión Nacional del Mercado de Valores and the Securities and Exchange Commission, which are accessible to the public. The Company assumes no liability whatsoever to update these forward-looking statements or conform them to future events or developments. Forward-looking statements are not guarantees of future performance. They have not been reviewed by the auditors of GRIFOLS.

Analysts and Investors meeting. Austin. May 30-31, 2013






# Welcome and Introduction: R&D&i

RESEARCH, DEVELOPEMENT & INNOVATION	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING	TOTAL
NEUROLOGY	6	1	1	1	9
PULMONOLOGY	2	1	0	2	5
LIVER	3	0	1	2	6
IMMUNOHEMATOLOGY	2	5	1	0	8
COAGULATION	5	1	0	0	6
LIFE CYCLE MANAGEMENT	3	0	2	0	5
SAFETY	6	0	0	2	8
AUTOIMMUNE	3	0	0	0	3
BIOSURGERY	4	0	0	0	4
ADVANCED THERAPIES	4	0	0	0	4
VETERINARY	1	0	0	0	1
<b>TOTAL</b>	39	8	5	7	59

	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
NEUROLOGY	6	1	1	1
ALZHEIMER	<ul style="list-style-type: none"> <li>- Albumin Binding capacity study</li> <li>- "AMBAR" Phase IIb clinical trial</li> <li>- ARACLON vaccine Phase I clinical trial</li> </ul>	- ARACLON test (AB 40/42) clinical study	- Plastic bag for Albumin & IVIG	- Hemopheresis centrifuge
L.GEHRIG DISEASE (ALS)	<ul style="list-style-type: none"> <li>- Compassionate use</li> <li>- POC plasma exchange with albumin</li> </ul>			
POSTPOLIO SYNDROME	<ul style="list-style-type: none"> <li>- IVIG efficacy phase II – III clinical trial</li> </ul>			
MYASTENIA GRAVIS	<ul style="list-style-type: none"> <li>- IVIG efficacy phase III clinical trial</li> </ul>			
GUILLAIN BARRE	<ul style="list-style-type: none"> <li>- Postauthorization efficacy study</li> </ul>			
PARKINSON	<ul style="list-style-type: none"> <li>- S14 preclinical study</li> </ul>			

	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
<b>PULMONOLOGY</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>
<b>A1Pi DEFICIENCY</b>	<ul style="list-style-type: none"> <li>- Efficacy clinical trial</li> <li>- Recombinant A1Pi</li> <li>- Liquid formulation</li> </ul>	- Diagnostic kit (ZZ Top)		- Adoption of Prolastin® in BCN
<b>A1 Pi IN CYSTIC FIBROSIS</b>	<ul style="list-style-type: none"> <li>- ALPHA-1 PI for inhalation</li> <li>- POC clinical trial</li> </ul>			- Inhalation devices

	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
LIVER	3	0	1	2
<b>ALBUMIN IN CIRRHOSIS</b> 	<ul style="list-style-type: none"> <li>- Albumin binding capacity</li> <li>- Phase IV clinical trial</li> </ul>		- Albumin Plastic Bag	- Bag Filling Machine
<b>ALBUMIN IN AcLF</b> 	<ul style="list-style-type: none"> <li>- Albumin binding capacity</li> <li>- POC plasma exchange clinical trial</li> </ul>			
<b>LIVER TRANSPORT / TRANSPLANT</b>				- Equipment design
<b>NIULIVA® (IVIG anti Hep. B)</b>	<ul style="list-style-type: none"> <li>- Liver transplant phase III clinical trial</li> </ul>			

	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
<b>IMMUNOHEMATOLOGY</b> 	<b>2</b>	<b>5</b>	<b>1</b>	<b>0</b>
<b>ERYTRA®</b>		- USA FDA license		
<b>WADIANA®</b>		- USA FDA license - Next generation instrument		
<b>DG GEL®</b>	- BIOMAT red cells - BIOMAT rare plasmas	- USA FDA license		
<b>BLOOD CHIP®</b>	- San Marcos Ref. Lab.	- PROGENIKA new genetic technology (World Licensing)		
<b>MULTICARD®</b>		- USA FDA license - Multicard reader		
<b>CORD BLOOD</b>			- New cord blood extraction bag	



	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
<b>COAGULATION</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>FACTOR VIII</b>	<ul style="list-style-type: none"> <li>- Higher potency (2000 u/vial)</li> <li>- New FVIII high concentration &amp; optimized performance</li> <li>- Haemophilia A inhibitors</li> <li>- Koate® yield increase</li> </ul>			
<b>PROTHROMBIN COMPLEX</b>	<ul style="list-style-type: none"> <li>- Profilnine® nanofiltration (NF)</li> <li>- 4-Factor PTC for Warfarin reversal</li> <li>- Profilnine® to reverse the effects of anticoagulant new drugs</li> </ul>			
<b>FIBRINOGEN</b>	<ul style="list-style-type: none"> <li>- Fibrinogen primary deficiency</li> <li>- Fibrinogen secondary deficiencies</li> </ul>			
<b>ANTITHROMBIN III</b>	<ul style="list-style-type: none"> <li>- AT - III primary deficiency</li> <li>- AT - III secondary deficiencies</li> </ul>			
<b>VON WILLEBRAND</b>	<ul style="list-style-type: none"> <li>- Von Willebrand disease</li> </ul>			
<b>TESTING</b>		<ul style="list-style-type: none"> <li>- New coagulation instrument</li> <li>- New reagents</li> </ul>		

	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
LIFE CYCLE MANAGEMENT	3	0	2	0
ALBUMIN	- New formulation. Process validation			
IVIG	- Formulation development - Process validation			
IMGG	- Formulation development - Process validation			
LARGE VOLUME PAREN.			- New solvents (FDA approved) - Third party formulations	

	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
<b>SAFETY</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>PLASMA HANDLING IMPROVEMENT</b> →	-Grifols donor management system (GDS) - San Marcos start up			-Automatic sampling machine development - RDFI bottle identification
<b>DONOR HEALTH TRIALS</b> →	-Cholesterol study -Hypertension study			
<b>PEDI-GRI®</b> →	-Implementation in GTI - Plasma library in San Marcos			
<b>VIAL LASER ETCHING</b>				- Equipment for Clayton plant
<b>IVIG</b>	-Postauthorization Safety Study - Gamunex® Nanofiltration			
<b>PATHOGEN SAFETY</b>	- Life Cycle management			
<b>IMIG</b>	- Harmonization to Gamunex® process			

	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
<b>AUTOIMMUNE</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>A1Pi</b>	- Diabetes type 1 clinical study			
<b>IVIG FLEBOGAMMA DIF®</b>	- ITP phase III clinical trial			
<b>ALBUMIN</b>	- POC in kidney transplant			

	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
<b>BIOSURGERY</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>FIBRIN SEALANT</b>	- Fibrin sealant efficacy clinical trials - Biosurgery devices			
<b>TOPICAL THROMBIN</b>	- Topical thrombin efficacy clinical trials			
<b>pd PLASMIN</b>	- PAO Plasmin phase II clinical trial			
<b>r PLASMIN</b>	- Recombinant plasmin development			

	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
<b>ADVANCED THERAPIES</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>CELL CULTURE</b>	-Cell Culture new formulation -Stem Cell studies			
<b>ALBUMIN</b>	- Stem Cell culture media			
<b>ONCOLYTIC VIRUSES</b>	- Preclinical development			
<b>CELL NANOTHERAPY</b>	- Basic Research			



	BIOSCIENCE	DIAGNOSTIC	HOSPITAL	ENGINEERING
VETERINARY	1	0	0	0
AB 42 VACCINE	- Efficacy trial in canine cognitive dysfunction			

# Grifols: Innovative Research & Development

# Albutein® & Cirrhosis

# Human Serum Albumin

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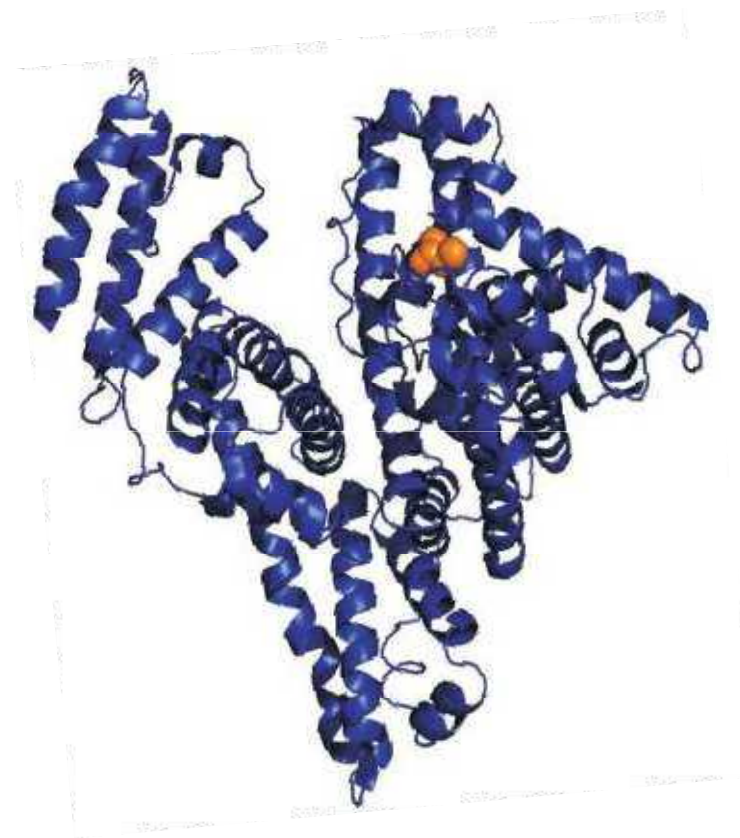
Most abundant plasma protein: 50-60% (30-50 g/L)

Synthesized almost exclusively in the liver: 10-15 g/day (10% of total protein synthesis)

Modern use of albumin established during 2nd World War: plasma substitute

First documented clinical uses occurred in 1941 (including Pearl Harbor bombing victims)

First reported administration to patients with cirrhosis: *Janeway et al. J Clin Invest 1944; 23:465-491*



# Human Serum Albumin: not just a plasma volume expander

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“ ...It is well known that the oxidation or binding of HSA to endogenous ligands produced or accumulated under pathological conditions such as sepsis, diabetes, chronic renal failure, and cancer is associated with significant structural and functional modifications of the molecule of albumin that markedly affect its biological activity

The article by Jalan et al. in this issue of Hepatology adds liver cirrhosis to this list of diseases with profound structural and functional modifications of HSA.”

*V. Arroyo (Editorial). Hepatology 50: 355, 2009*



Alterations in the functional capacity of albumin in patients with decompensated cirrhosis is associated with increased mortality

“...In conclusion, the results of this study clearly indicate that the functional ability of albumin in cirrhosis is severely compromised, which further worsens in liver failure. In addition to these functional disturbances, the albumin concentration was markedly reduced, which most likely further compounds the overall functional capacity of albumin. This loss of albumin function... was associated with poor survival...

...Furthermore these findings argue for further studies of albumin biology in cirrhosis, giving consideration to the use of albumin infusion not for fluid replacement, but as an agent to increase detoxification capacity.”

*R. Jalan et al. Hepatology 50: 555 – 564, 2009*

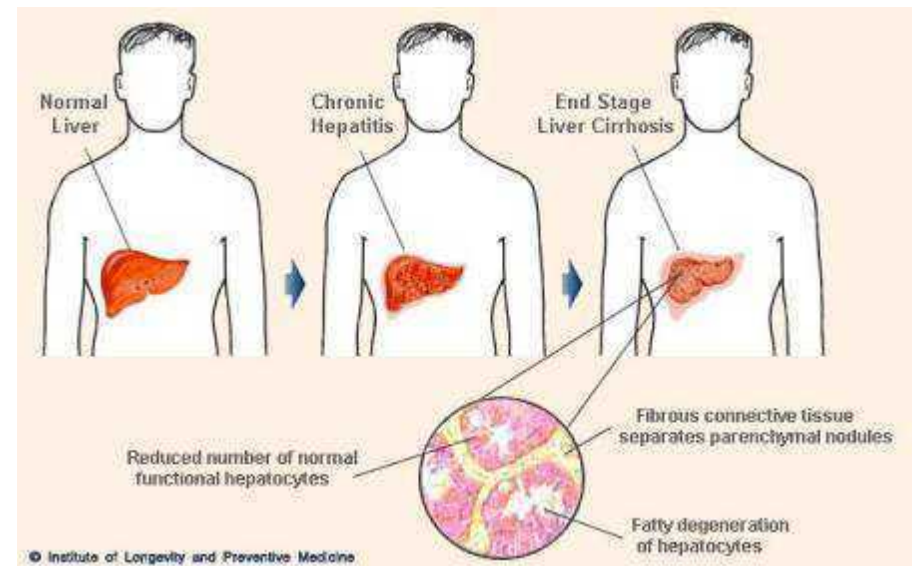


# Cirrhosis

Most advanced phase of the majority of chronic liver diseases. Liver tissue is replaced by fibrosis (mostly collagen, leading to chronic liver inflammation), scar tissue and regenerative nodules. The liver consistency increases, raising the portal vein blood pressure (portal hypertension).

Hardly reversible, may lead to severe complications (liquid retention –edema, ascitis–, renal dysfunction, bacterial infections, encephalopathy, cancer...) which may require liver transplant.

Albumin (and other proteins) synthesis, detoxification capacity, metabolism and other physiological liver functions are impaired.



# Cirrhosis: etiology and prevalence

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Main causes are chronic alcoholism, chronic viral hepatitis (C & B types), fatty liver disease, metabolic syndrome (obesity, diabetes, hypercholesterolemia)...

The worldwide prevalence is not well established but chronic liver disease and cirrhosis result in about 35,000 deaths each year in the United States.

Cirrhosis is the ninth leading cause of death in the United States and is responsible for 1.2% of all US deaths. Many patients die from the disease in their fifth or sixth decade of life. Approximately from 1/3 to 2/3 of the patients with established cirrhosis will die within 10 years of diagnosis.

The current prevalence is already high but the link with alcohol consumption and the metabolic syndrome suggests this problem may increase in the future.



<http://emedicine.medscape.com/article/185856-overview#aw2aab6b3>

# Cirrhosis: complications

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## Ascites

Accumulation of fluid within the peritoneal cavity. The kidneys cannot eliminate the water and the salt present in the diet. The patients must be evaluated for liver transplant

Most commonly occurring complication: 50-60% of patients within 10 years

Upon appearance 30-50% of patients will die within 1 year and 60-80% within 5 years

## Hepatorenal Syndrome

Functional renal failure without renal pathology occurring in about 10% of patients with cirrhosis (>50% mortality)

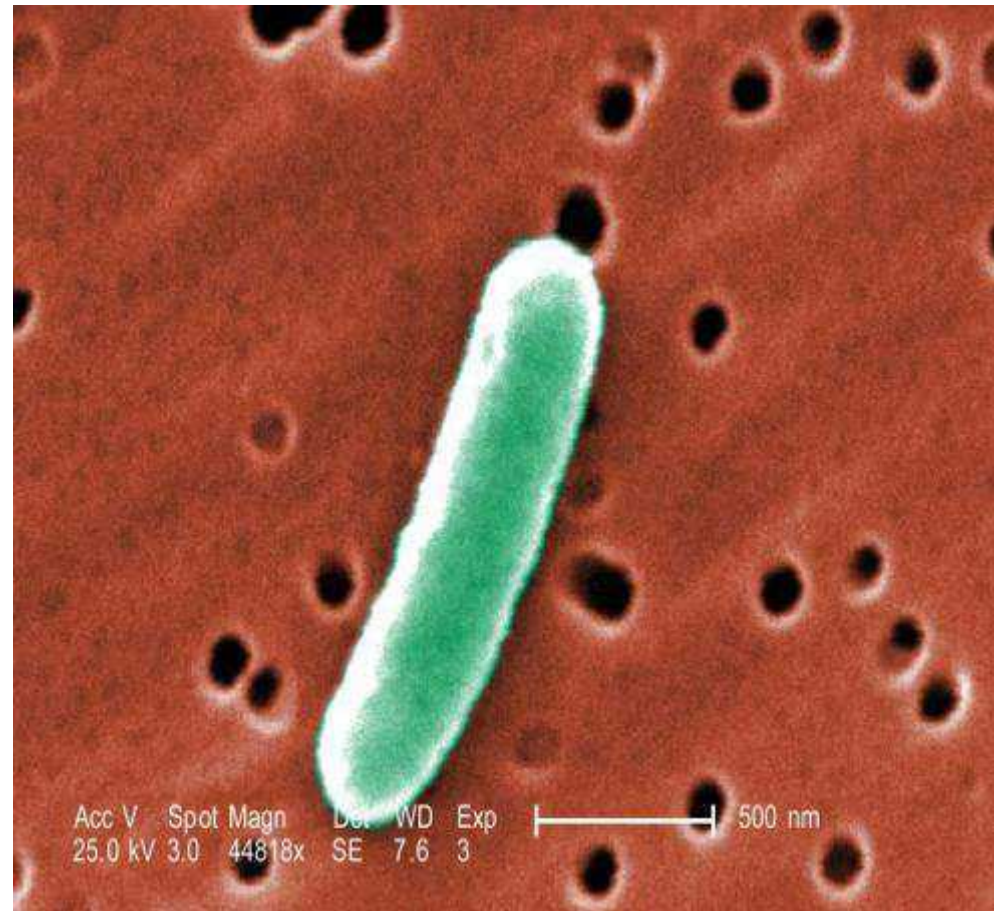
# Cirrhosis: complications

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## Spontaneous bacterial peritonitis

Spontaneous infection of the ascitic fluid

SBP can occur in up to 30% of individuals and can have a 25% in-hospital mortality rate



# Use of Albumin in cirrhosis

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## Paracentesis-induced circulatory dysfunction

- 6-8 g albumin per L of ascitic fluid for paracentesis >5-6 L
- Superior to saline, dextran-70 and polygeline

## Spontaneous bacterial peritonitis

- 1.5 g/kg bw on day 1 and 1g/kg bw on day 3 (max. 150 and 100 g)
- Superior to antibiotics and HES

## Hepatorenal syndrome

- Loading dose: 1g/kg bw followed by 20-40 g
- In combination with terlipressin: Superior to Vasopressin analogues

# Albumin and advanced cirrhosis and ascites

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Clinical investigation evaluating the effects of the long term administration of albumin 20% on cardiocirculatory and renal function and hepatic haemodynamics in patients with advanced cirrhosis and ascites

Goals: Increased survival rate, linked to slower disease progress and more opportunities to reach liver transplant

Principal Investigator: Vicente Arroyo, MD

Phase IV : Prospective, open, non-controlled, multi-centric pilot study

Study sites: H. Clínic, Barcelona  
H. Santa Creu i Sant Pau, Barcelona  
H. del Mar, Barcelona  
H. Germans Trias i Pujol, Badalona  
H. Ramón y Cajal, Madrid  
H. Gregorio Marañón, Madrid

Enrolment finished  
32 patients recruited:  
▪ 29 finished  
▪ 3 ongoing



# Albumin and “acute-on-chronic liver failure”

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Effects of plasma exchange on the functional capacity of serum albumin, circulatory disfunction, renal and cerebral function, in cirrhotic patients with “acute-on-chronic liver failure”

Principal Investigator: Vicente Arroyo, MD

Phase IV Prospective, open, non-controlled, single-center pilot study

Study site: H. Clínic, Barcelona

Enrolment

12 patients recruited:

- 8 completed

Intermediate data from the 8 patients recruited suggest potential survival improvement versus historical controls

## Different perception of Albumin for cirrhosis in Europe versus USA

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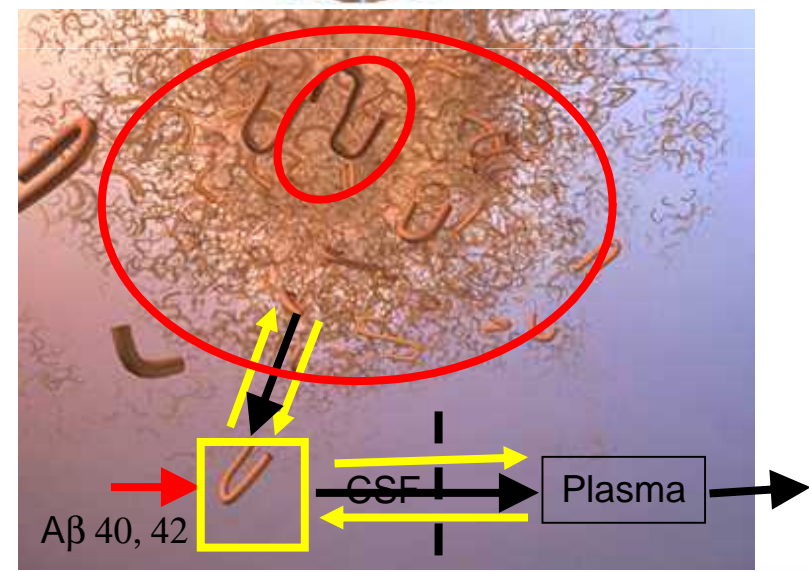
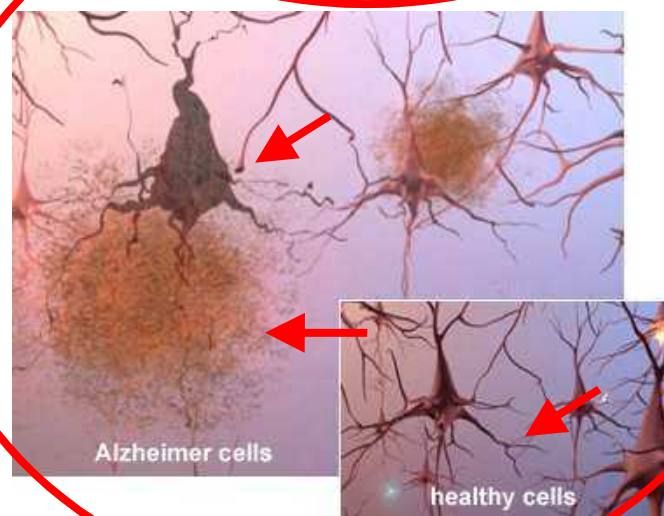
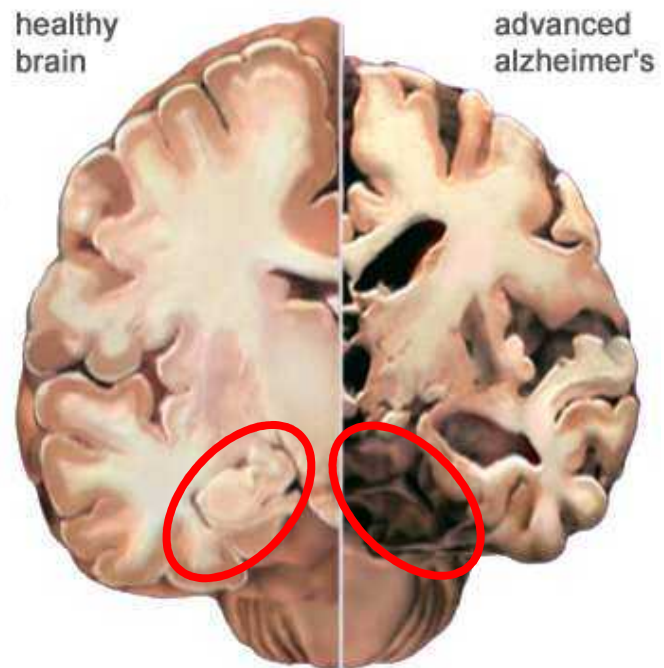
Albumin effectiveness is well accepted in Europe, but in USA Albumin is mostly considered just as a plasma volume replacement solution

However, Albumin is licensed in USA for Cirrhosis related conditions (e.g.: Prevention of central volume depletion after paracentesis due to cirrhotic ascites, Acute liver failure,...)

The goal of Grifols research programs in relation with liver disease is to generate new data to emphasize the effectiveness of Albumin



# AMBAR Project (Alzheimer's Management by Albumin Replacement)





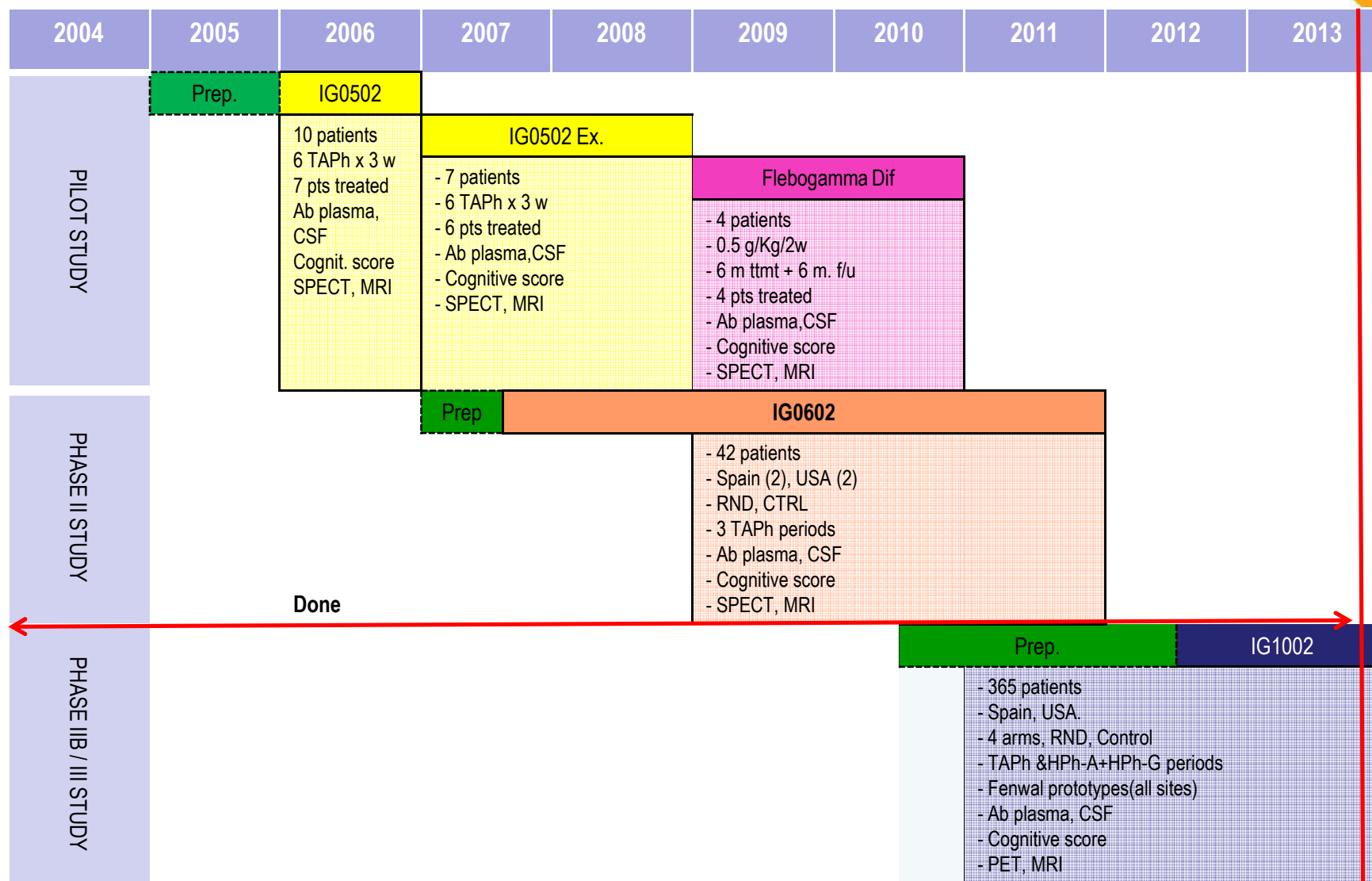
## Therapeutic Apheresis (TAPh):

- Removal of 2.5-3 L of plasma from a patient and replacement with the same volume of FFP and/or Albumin. Separation of plasma from blood is done by centrifugation or filtration

## Hemopheresis (HPh):

- Removal of 650-800 mL of plasma from a patient with replacement of the Albumin or Immunoglobulin contained in the extracted plasma. Red cells are reinjected to the patient. Once completed, a volume of Albumin or IVIG containing the required grams is injected. Separation of plasma from blood is done by centrifugation

# Grifols AMBAR Project Overview

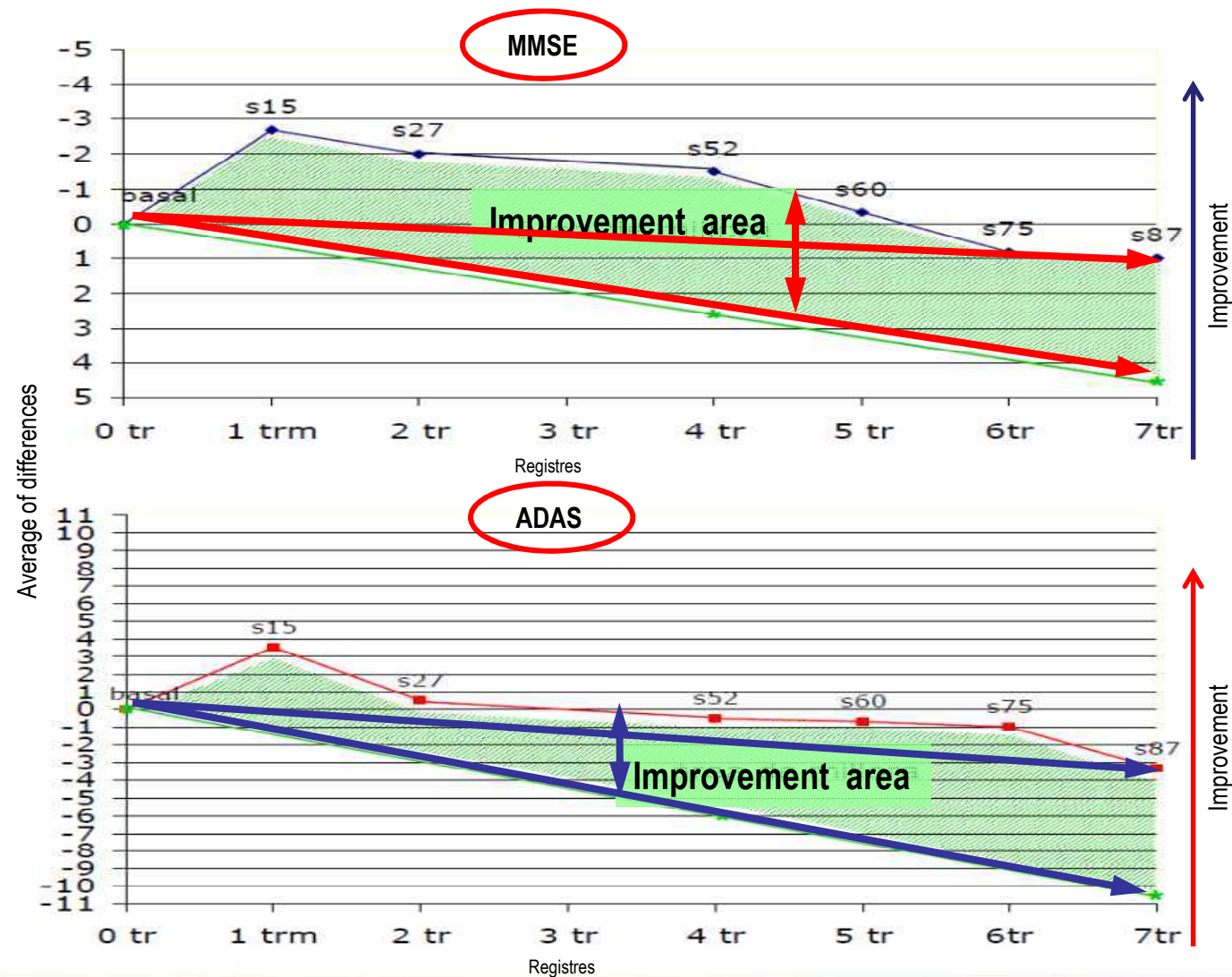




- PE with Albumin is feasible in AD patients
- Plasma Ab40 and 42 are consistently mobilized during plasmapheresis period
- Cognition (MMSE and Adas-Cog) better than expected after 2 years of follow-up

Main objectives considered to be achieved and a Phase II randomized, controlled study was planned

# AMBAR Pilot Study: Cognitive results





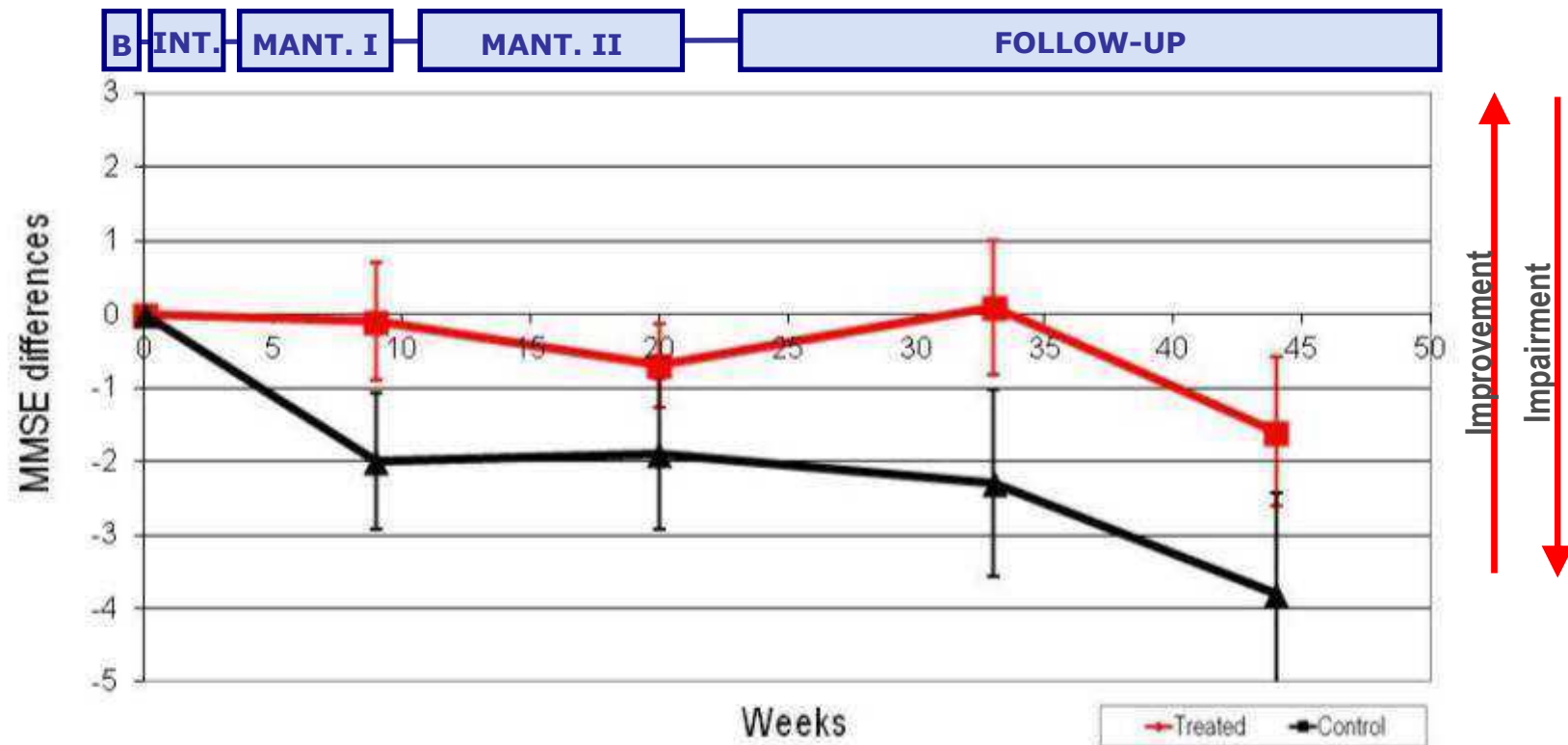


- PE is feasible in AD patients
- Plasma Ab is consistently mobilized during plasmapheresis periods
- No differences in CSF Ab levels
- Cognitive scores better in the treated patients compared to control patients
- Trend to be confirmed in a larger trial

# AMBAR Phase II Study: Cognitive results



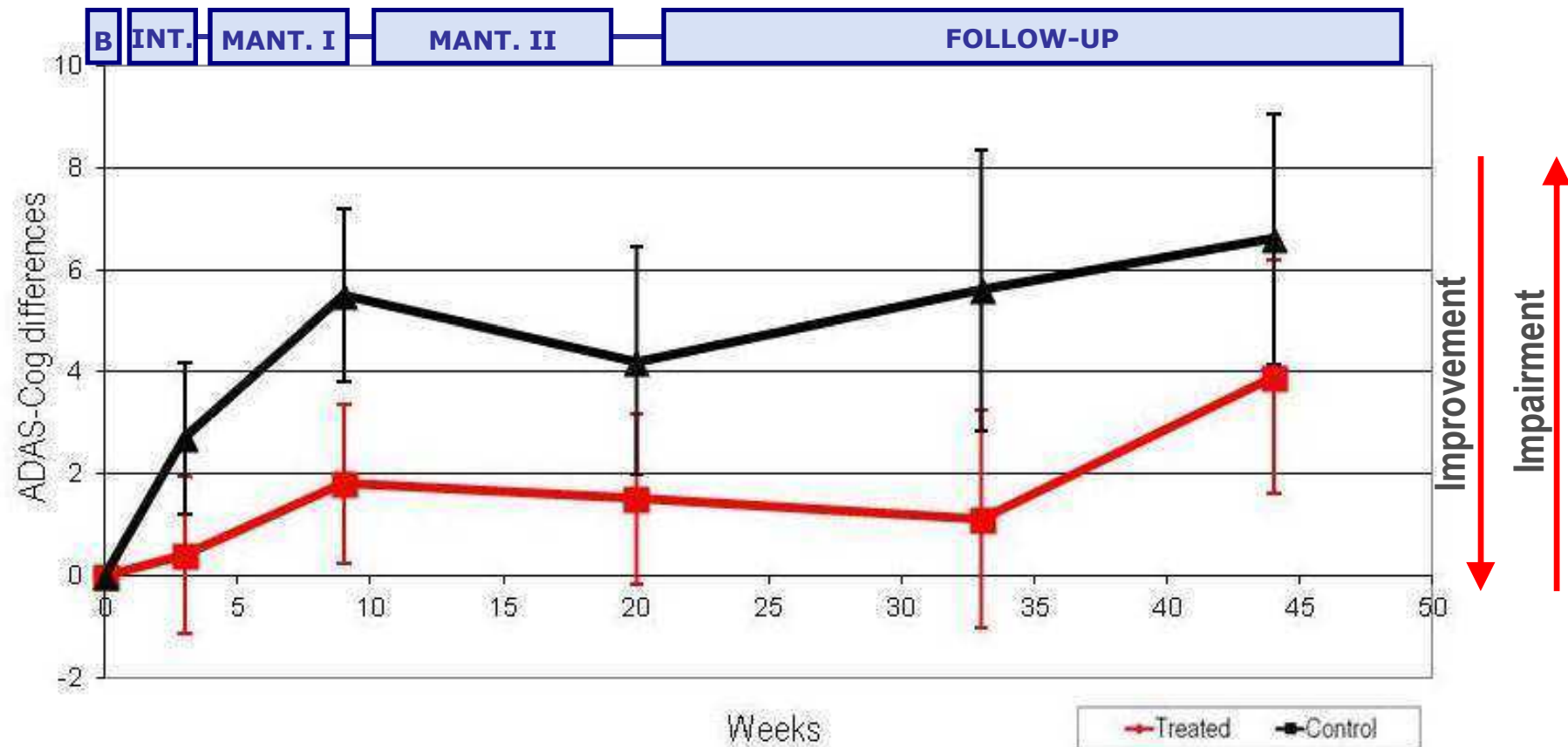
MMSE differences from baseline  
(average  $\pm$  standard error)



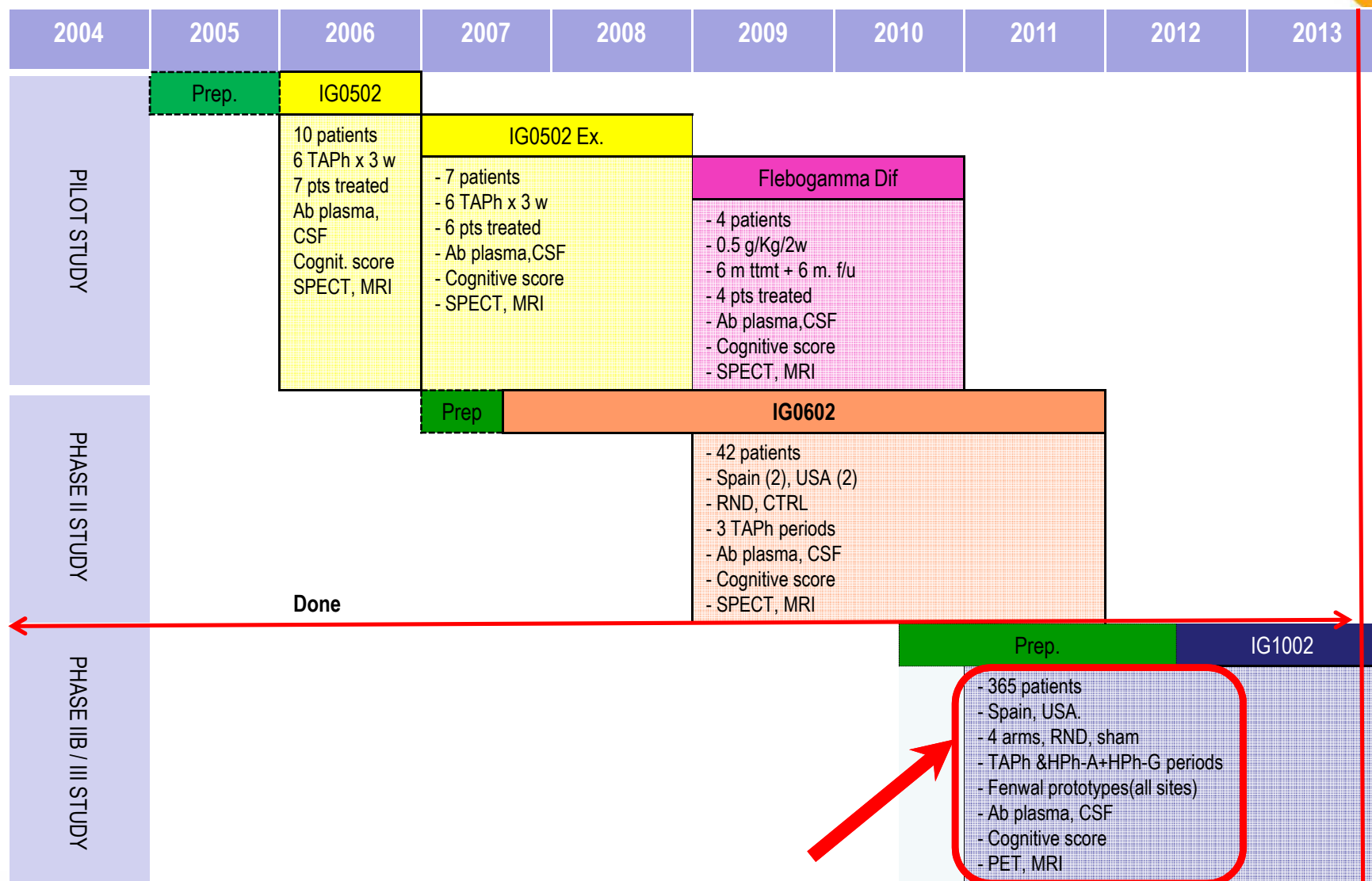
# AMBAR Phase II Study: Cognitive results



ADAS-Cog differences from baseline  
(average  $\pm$  standard error)



# Grifols AMBAR Project Overview



## Plasmapheresis:

- Remove plasma albumin with bound A $\beta$
- Remove other proteins which also bound A $\beta$  (IG)

## Replacement with Albutein®:

- Restore plasma albumin capacity to continue binding A $\beta$

**PERIPHERAL  
ABETA  
SEQUESTRATION  
BY  
HEMOPHERESIS**

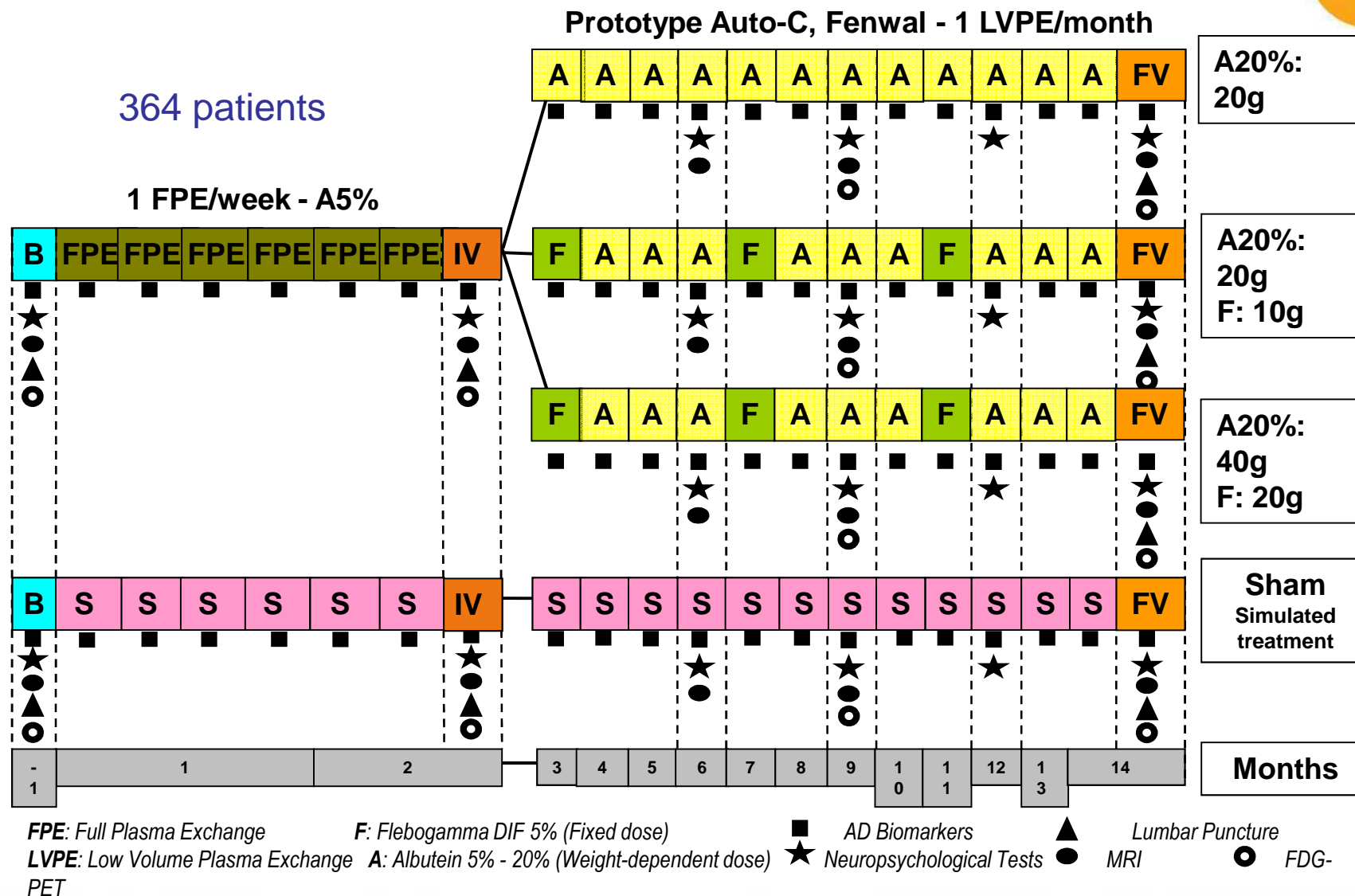


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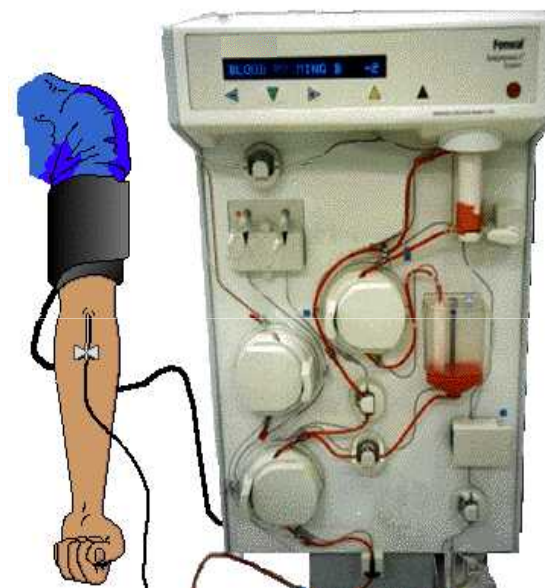




## Therapeutic Apheresis (TAPh) Standard device



## Hemopheresis (HPh) Grifols device (Fenwal)



		Spain	US
Number of planned recruiting sites		15	15
Study Approval	Health Authorities	Spanish Agency	FDA
	Ethics Committee / IRB	H.U. Vall d'Hebrón Ethics Committee	Shulman Associates IRB
Active recruiting sites		1 site (18 randomized subjects with no relevant safety issues)	-
New amendment	Health Authorities	Accepted by Spanish Agency	Submitted to FDA
	Ethics Committee / IRB	Accepted by H.U. Vall d'Hebrón Ethics Committee	Submitted to Shulman Associates IRB



Approved  
Protocol

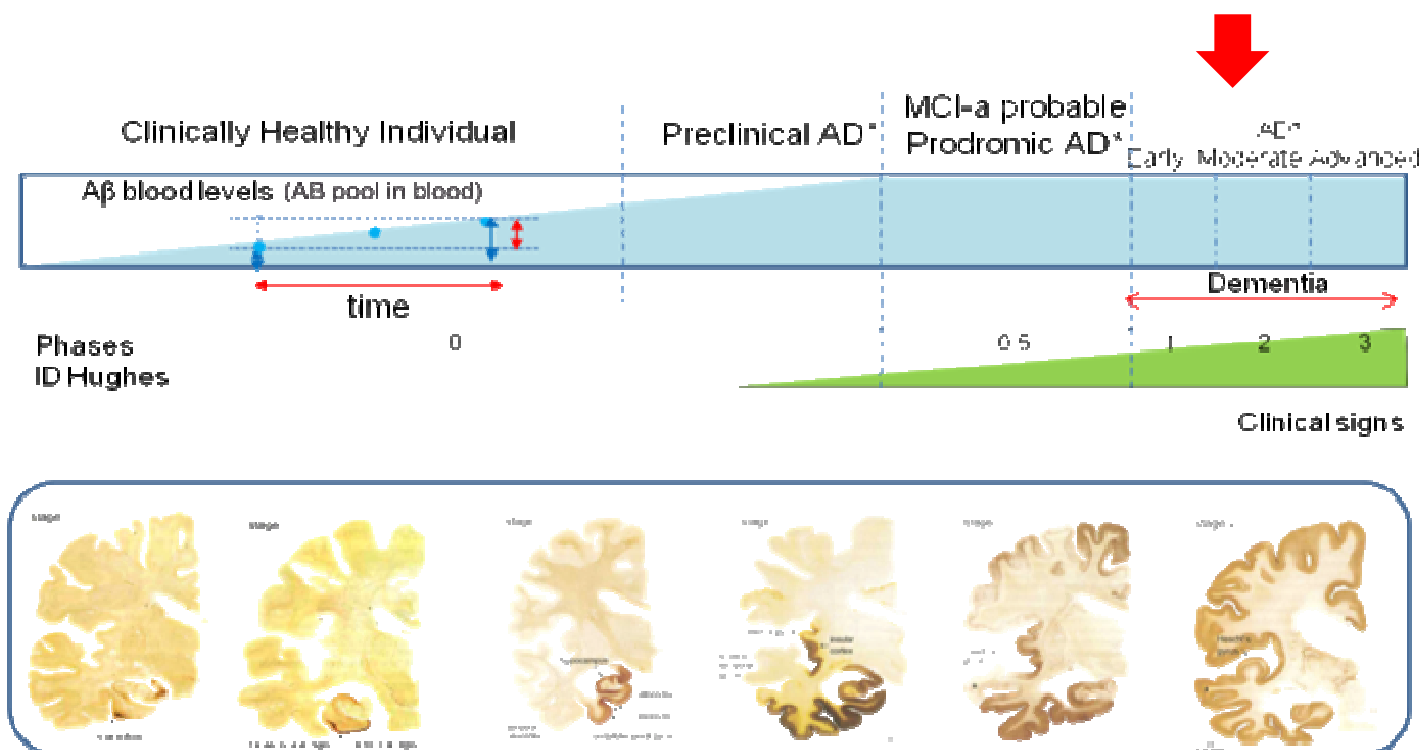
Amendment  
Protocol



- First-patient-in (Europe): Q2 2012
- First-Patient-in (U.S.): Q3 2013
- Interim results (180 out of 365 patients): Q2 2015
- Preliminary results (total): mid 2016

# Alzheimer's disease therapy: immunotherapy

Now  
Diagnosis and treatment

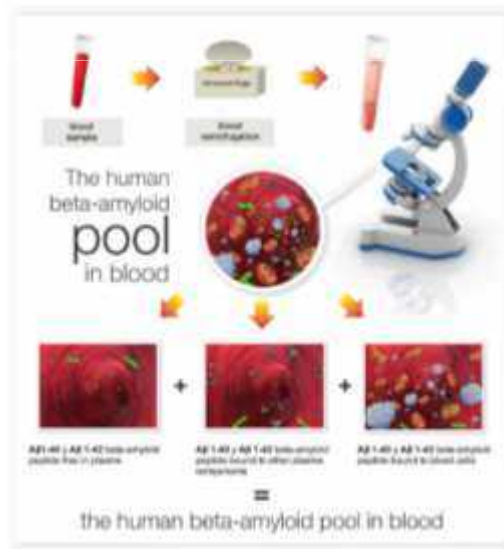


AD: Alzheimer's Disease

MCI-a probable (Mild Cognitive Impairment amnesic probable) = prodromic AD:

Patients whose clinical picture is consistent with Alzheimer's disease but who

# Grifols Global Strategy against AD



# Grifols –Alzheimer's Franchise



# Alzheimer's disease

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Current treatment options are limited, no new drugs in sight in the mid term

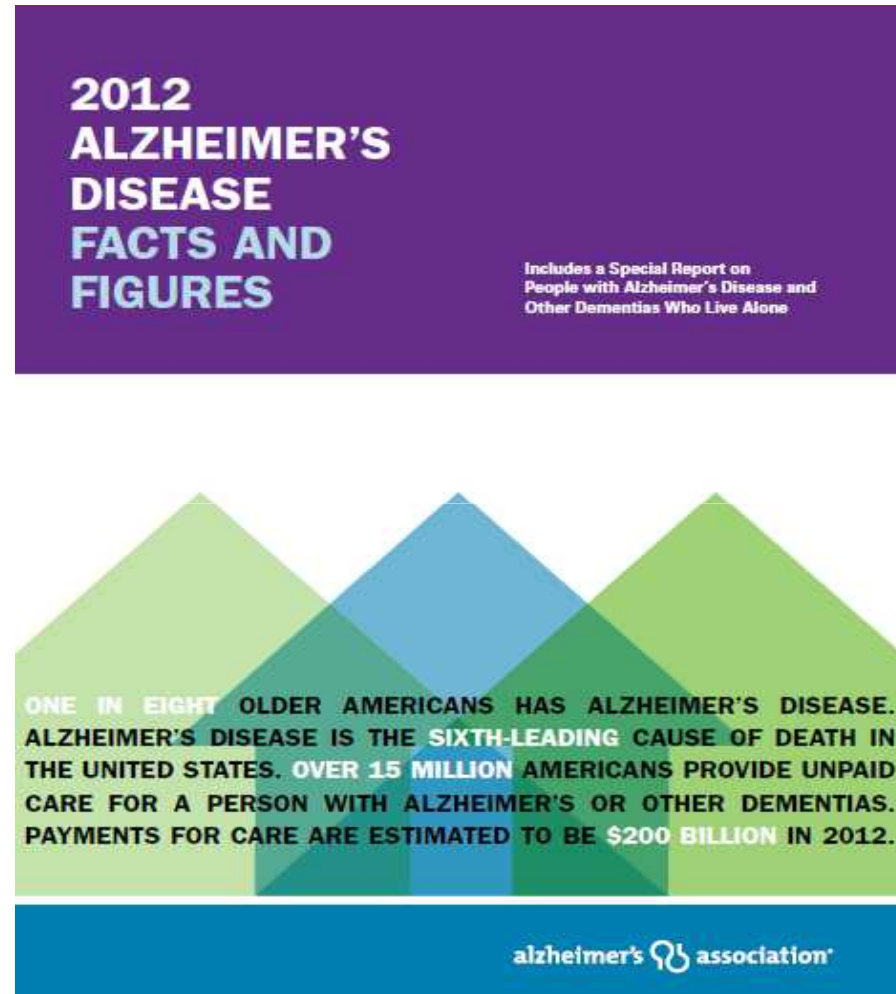
- No new drugs approved in the last 9 years in the US and some major markets
- A strong desire to find new treatment options among all customer groups, constrained by the complexity
- New Mab trials – one failed, another very mild efficacy, one failed Gamma secretase inhibitor trial
- Drugs in development unlikely to get approval anytime in the near 3-5 years



# Our challenge is urgent

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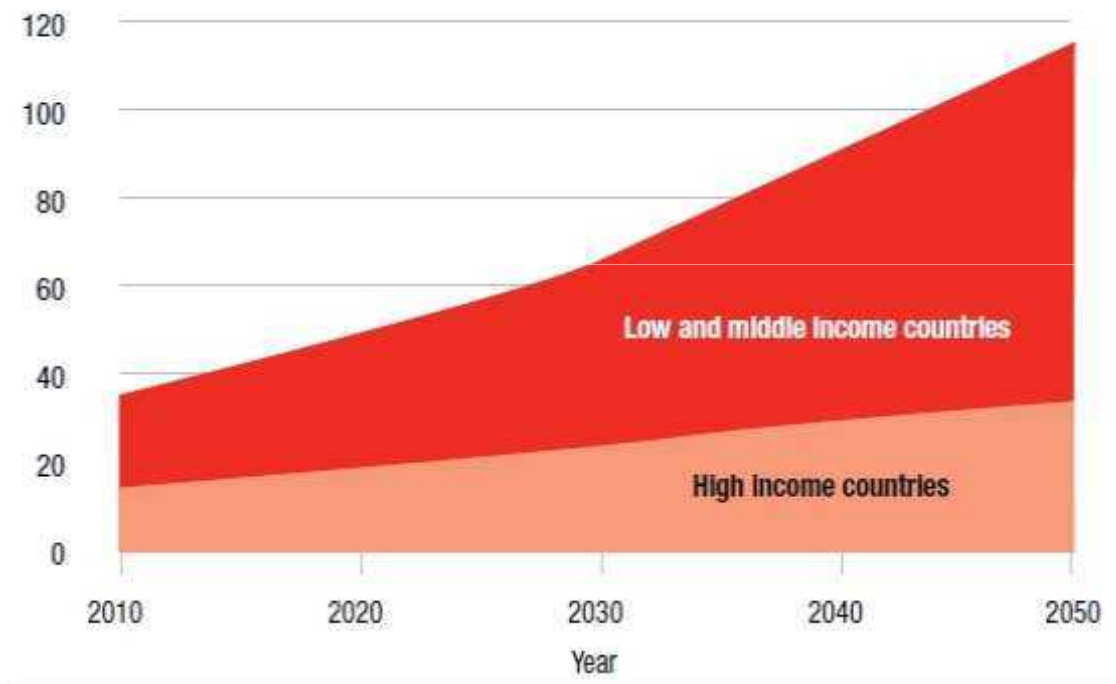
- 5.4 MM with disease in US (50% undiagnosed)
- Projected to increase to 13.2 MM by 2050



# Alzheimer's, a global epidemic

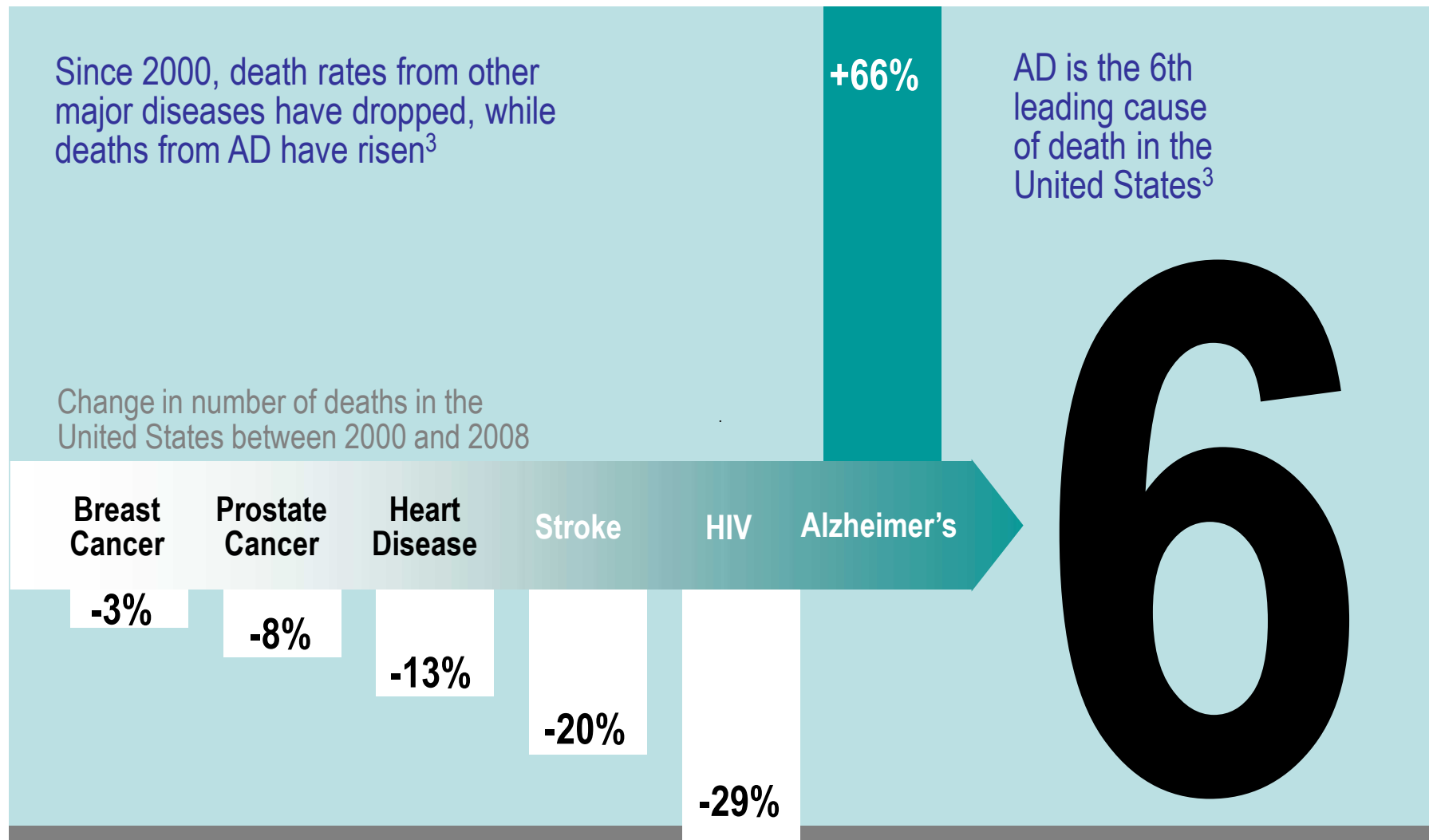
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The growth in numbers of people with dementia (in millions) in high income countries, and low and middle income countries



Global Alzheimer's Research Council, UK

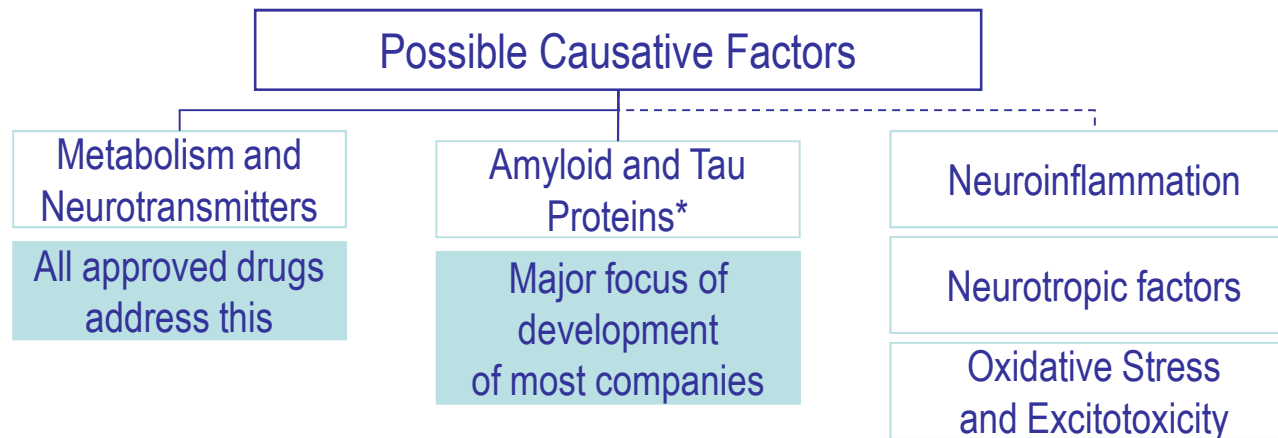
# Alzheimer's epidemic: deaths rise as other causes decline



<sup>3</sup> Alzheimer's Association. 2012 Alzheimer's Disease Facts and Figures, Volume 8, Issue 2.

# AD Pathogenesis and strategies for treatment

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Emerging view that treatments should go beyond addressing Amyloid, to include other inflammatory markers, oxidative stress markers, known and unknown and start earlier in the disease process

*\*B amyloid proteins are outside the neuron, Tau proteins are inside the neuron that cause tangles and neurodegeneration*

# Alzheimer's treatment paradigm

Emerging consensus among leading thinkers in AD

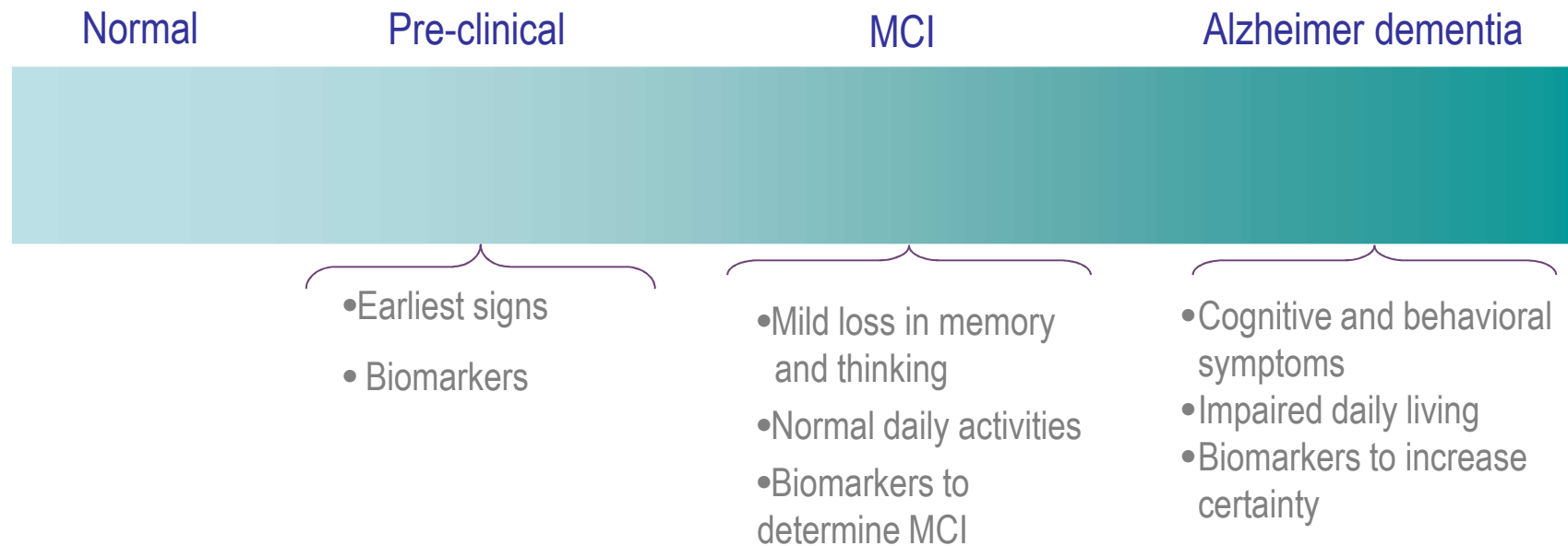
	From	To	Alignment of Grifols Strategy
Stage of Intervention	Mild-Moderate, Severe	Early dementia due to AD	Mild to moderate stages with Mini Mental score of 18-26
Biomarker	Amyloid only	Amyloid and other potential inflammatory markers, tau in severe cases	Plasmapheresis + Albumin and IG as a supplement or plasmapheresis + Albumin, addresses amyloid and possibly other markers
Central/Peripheral	Target CNS by developing drugs that cross BBB at sufficient levels	Peripheral sink hypothesis on which Mono clonal antibodies are based	Fits right in with peripheral 'sink' hypothesis

Grifols AD strategy integrates the multi-year work done, all of the recent learning from other trials and advances in understanding of AD – mechanistically very sound

# Modernizing the diagnosis of AD based on a continuum

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Grifols Treatment strategy



# Grifols' Alzheimer's Franchise: The 3 Pillars

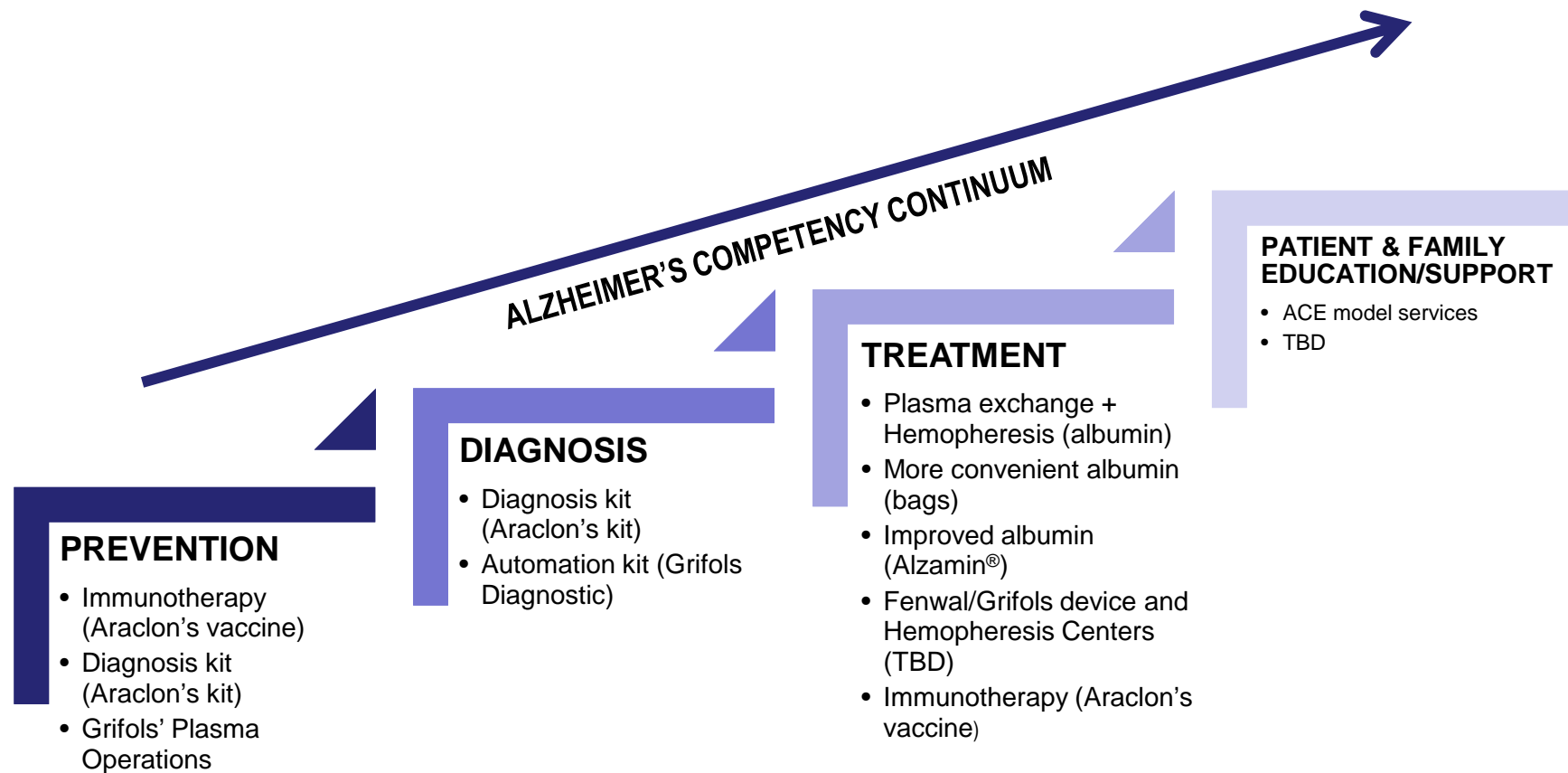
	Albumin	Assay* and Genotyping**	Vaccine*
Pillars	Enabled by plasma exchange	Simple whole blood test and gene allele tests	Primary/Active immunotherapy Prevention
Patient benefits	A procedure that does away with periodic infusions and monitoring	Cascading of diagnosis and tracking outcomes	A true preventive
Differentiator	Simplicity of adherence	Comprehensive care from one company	Comprehensive care from one company

\*From Araclon

\*\*Progenika -Potential to offer Genotyping tests for APoE 4 and PS1, 2 tests



# Strategic approach to multi-business build



# Grifols Alzheimer's franchise

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- Is truly innovative, differentiated and builds on emerging science in AD
- Early proof of concept is compelling and phase 2B-US/3 EU would determine the dose of plasma proteins for efficacy
- Diagnostic assay will be the point of entry into this space
- Vaccine will round out the franchise
- Scale changing and therefore will benefit large patient population

# PediGri<sup>®</sup> and Grifols Academy

- PediGri®
- Grifols Academy
- Unique innovative concepts on traceability and education



# Grifols competitive advantages

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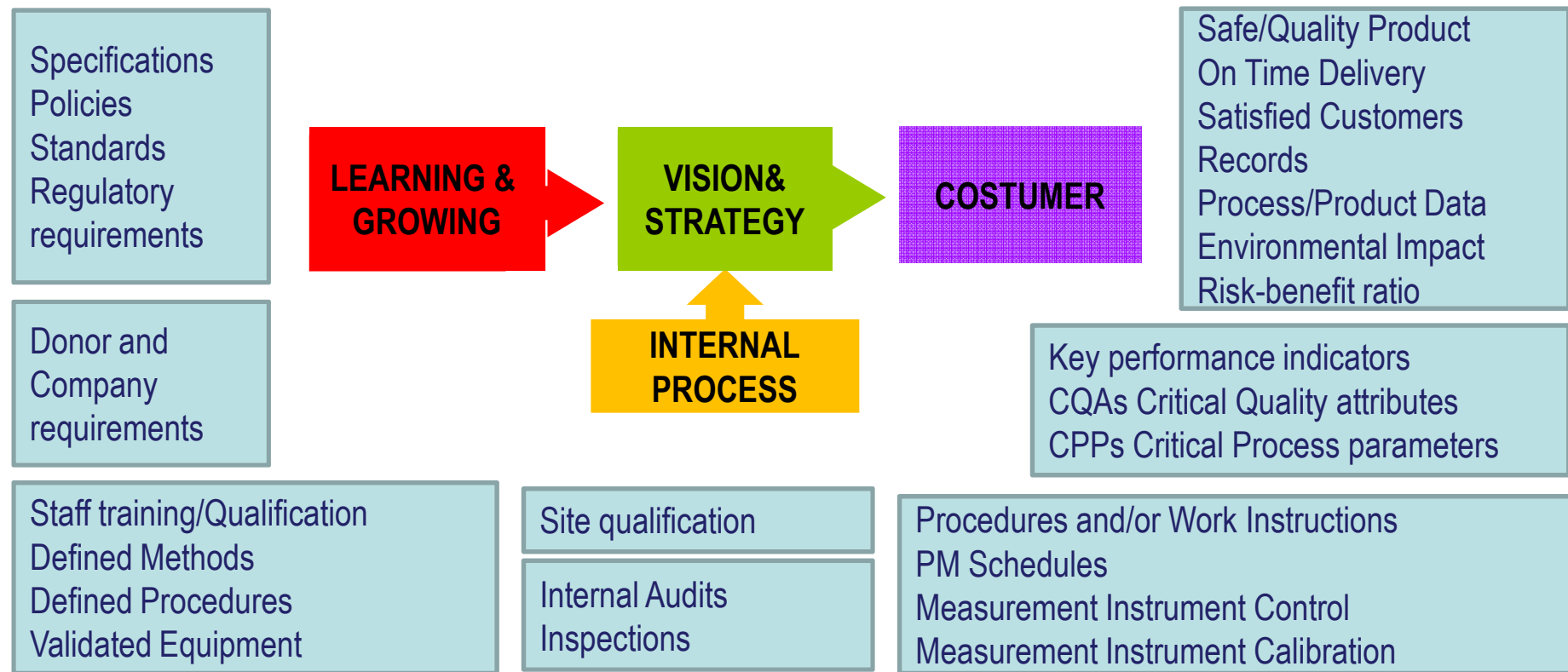
## What we all do?

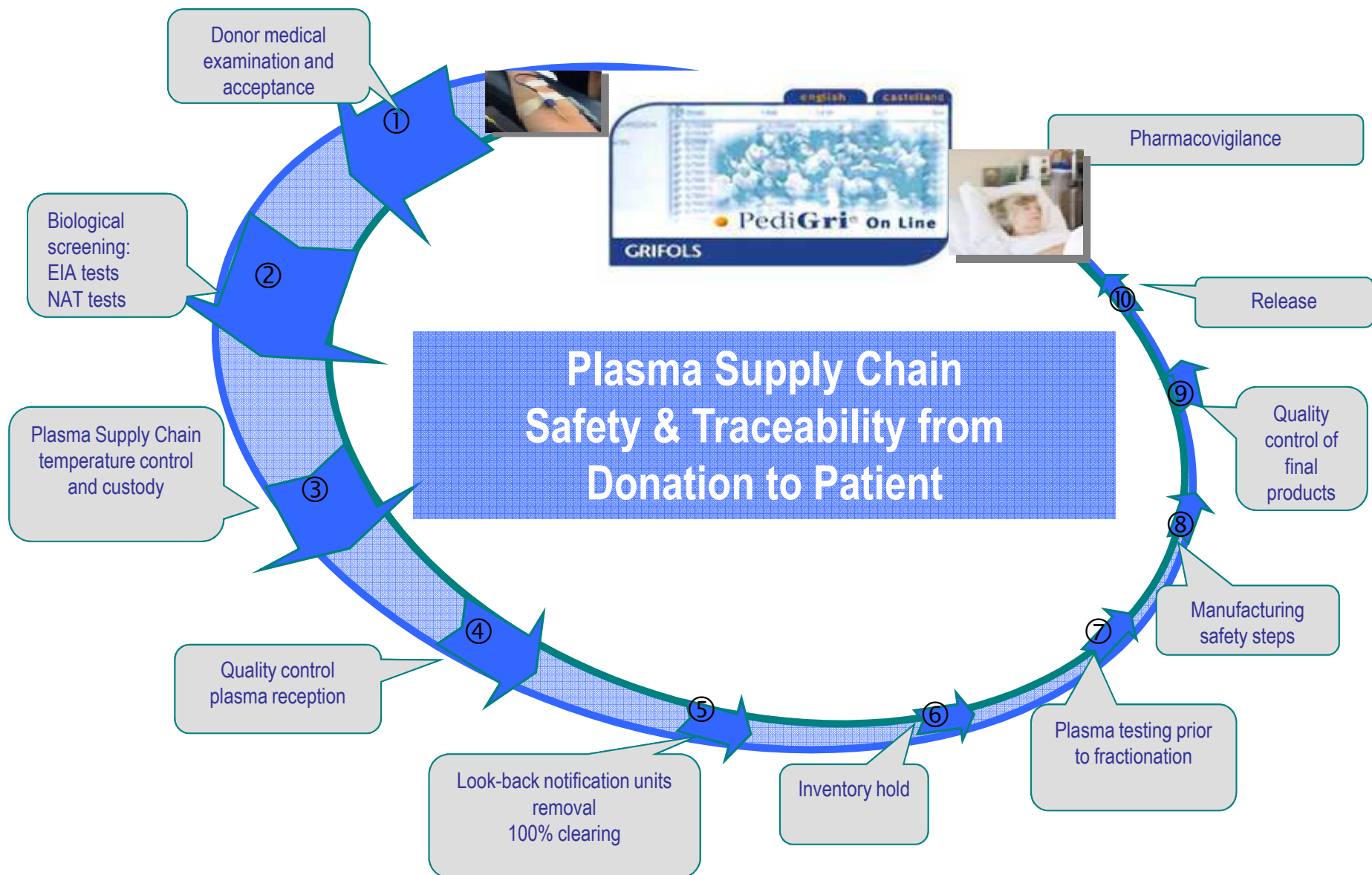
- Manufacture drugs sourced from a human tissue (PLASMA) as starting material
- Work in highly regulated environment, fulfilling GMP regulations (US, EU, WHO)
- We all use quality systems to ensure product safety, efficacy and potency
- We need employees well trained, qualified and developed

## What we do different from others?

- Equipment and facilities designed by Grifols Engineering, S.A. with new concepts on product safety and risk minimization management (ie fractionation and aseptic filling)
- Biomat ,S.A. created 20 years ago as new concept on Plasma Supplier Certification:
  - 48 MM units managed
  - Inventory system SGP 510k
  - In-house NAT techniques since 1994
  - Sample library 1986

## Strategic knowledge & learning → traceability critical factor







## PediGri® (systems integration)

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- DMS/BECS: plasma collection centers/blood banks network
  - Assigns unique #ID per unit, barcode print labeling
  - Plasma type, donor history, alerts/flags and release status
- SGP: Central Logistics Platforms managing all units and plasma lots
  - Inventories, plasma types, alerts and lookbacks through barcode ID
- SAP: manufacturing
  - Traceability from plasma manufacturing pool, intermediates and final product.
  - Final customer distribution

# PediGri® concepts

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## Traceability

PediGri®, provides healthcare professionals with transparent information

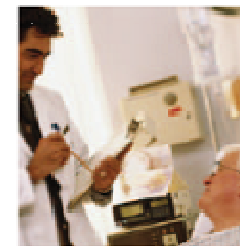
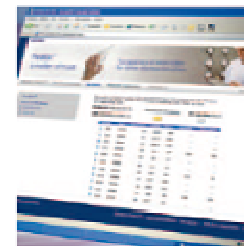


Grifols manufacturing process has a comprehensive system enabling us to ensure full traceability from every donation

Each plasma unit is coded and computer-traced from collection till final product

During manufacturing each vial is laser etched enhancing traceability

## Traceability from every donation



# Laser identification

Each vial is laser etched at the filling line and given an ID number

This laser identification process offers a number of advantages intended to increase safety :

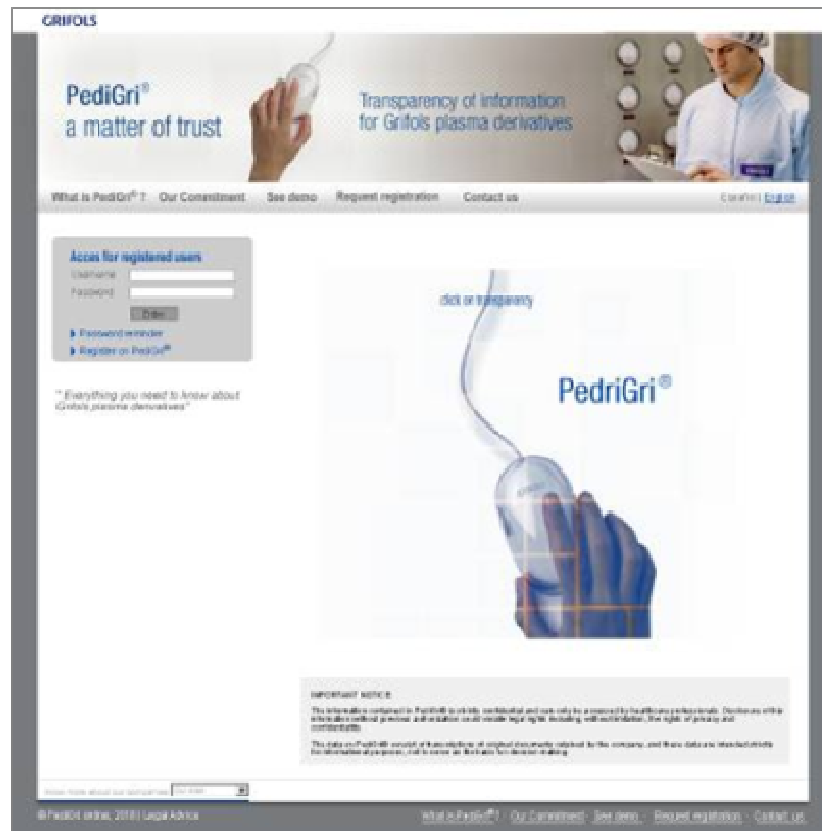
1. Close monitoring of sterile filling process
2. Avoid product counterfeiting
3. Ensure product traceability

Differences between two consecutive bottles in the filling line

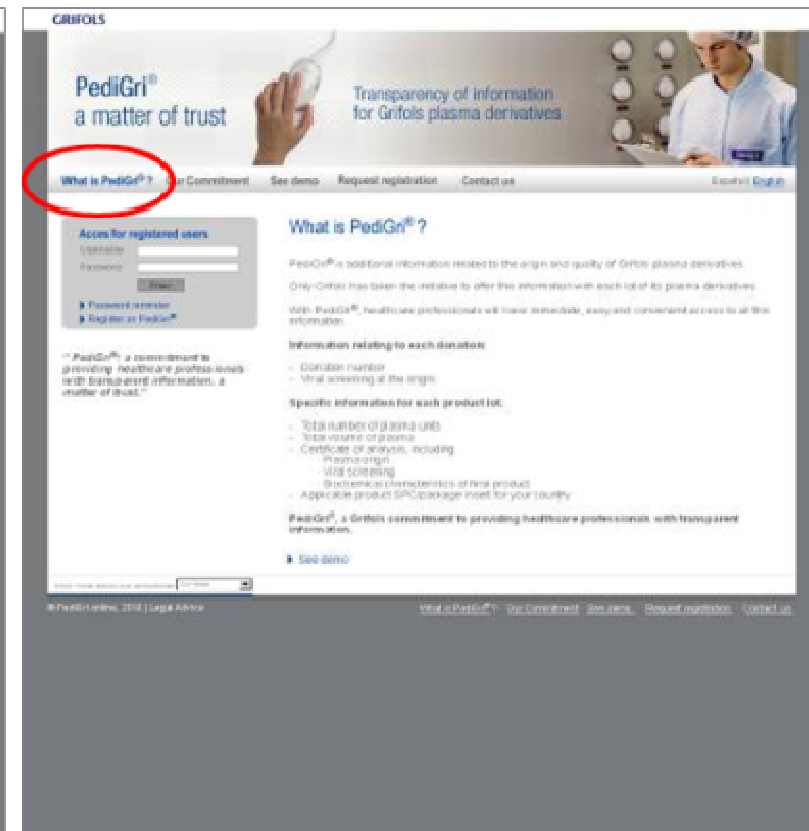


PediGri® is the tangible expression of full traceability from every donation

## Home



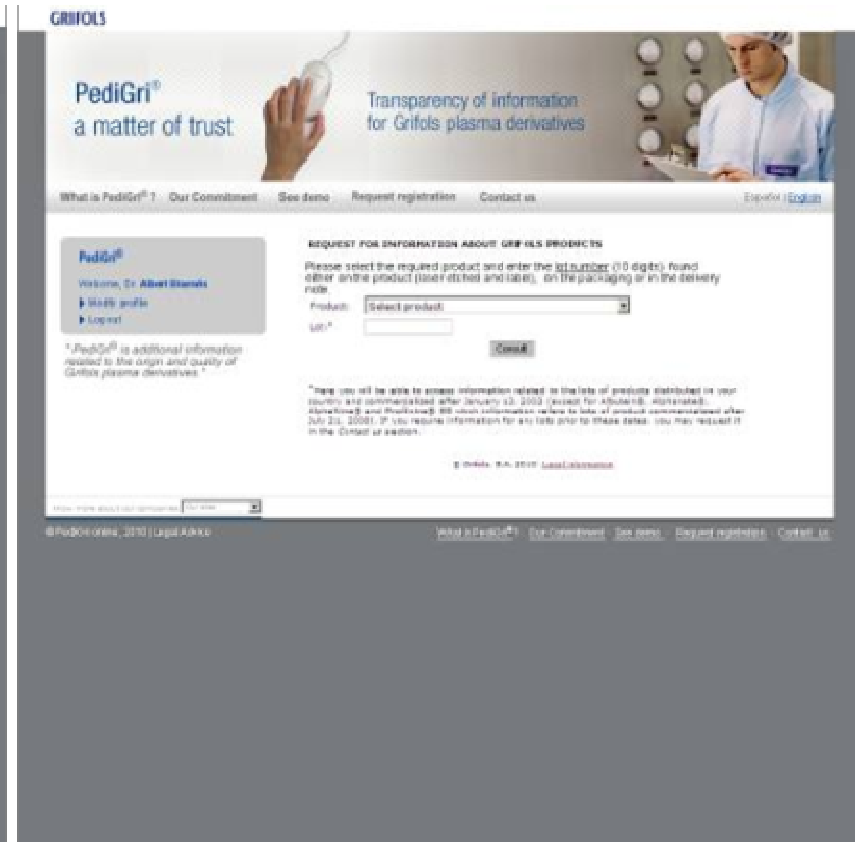
## What is PediGri®



## Our Commitment



## To consult a product lot



All users just need the product lot number to consult all the information generated by PediGri, from plasma collection to the final product:

Lot number can be found either on the product (laser etched and label), on the packaging or in the delivery note

Information relating to each donation	Specific information for each product lot:
<p>Donation number</p> <p>Viral screening at the origin</p>	<p>Total number of plasma units</p> <p>Total volume of plasma</p> <p>Certificate of analysis of the product lot:</p> <ul style="list-style-type: none"><li>▪ Plasma origin</li><li>▪ Viral screening</li><li>▪ Biochemical characteristics of final product</li></ul> <p>Product package insert/SPC</p>





## Request for information

Please select the required product and enter the lot number (10 digits) found either on the product (laser etched and label), on the packaging or in the delivery note.

Product:  ▼

Lot:\*

[Consult](#)



# Request for information

## Available countries

USA

The units of plasma used in the manufacturing of this product can be found in the following table. To see the analytical results by unit, "click" on the corresponding icon.

### PRODUCT:

Flebogamma® 5% DIF

LOT: GBGI701451

### Certificate of Analysis



### SPC/Package insert



Center	Year	Shipment	Units	Liters	TotUnits	TotLiters
A006	2006	135	470	389	470	389
A007	2006	132	126	104	126	104
A043	2006	164	418	344	---	---
A043	2006	165	223	185	---	---
A043	2006	166	356	291	997	820
A147	2006	90	201	163	201	163
A189	2006	125	1,240	1,009	---	---
A189	2006	126	676	549	---	---
A189	2006	127	712	573	2,628	2,131
S005	2006	117	191	154	---	---
S005	2006	118	416	342	607	496
S007	2006	234	1,026	827	---	---
S007	2006	236	215	176	---	---

# Certificate of Analysis- Flebogamma 5% DIF

## CERTIFICATE OF ANALYSIS

### IMMUNE GLOBULIN INTRAVENOUS (HUMAN) 5% (IGIV 3I) 2.5 g (FLEBOGAMMA DIF)

LOT NUMBER : GBGI701451

MANUFACTURING DATE : 19/01/2007

FILE NUMBER : A-77492

EXPIRY DATE : 17/01/2009

<i>TESTS</i>	<i>SPECIFICATIONS</i>	<i>RESULTS</i>
VOLUME	$\geq 50.25$ ml	51.04 ml
STERILITY	No microbiological growth	No microbiological growth.
IDENTIFICATION	Abnormal precipitation lines are not observed	Abnormal precipitation lines are not observed.
Ig PURITY	$\geq 97$ % Ig	99.6 % Ig
PKA (3% w/V Ig)	$\leq 10$ IU/ml	$< 2$ IU/ml
ANTICOMPLEMENTARY ACTIVITY	$\leq 1$ CH50/mg Ig	0.53 CH50/mg Ig
ANTI-HBsAg	$\geq 2.5$ IU/g Ig	28 IU/g Ig
ANTI-A HAEMAGGLUTININS (3% w/V Ig solution)	1/64 dil. do not show agglutination	1/16 dil. do not show agglutination.
ANTI-B HAEMAGGLUTININS (3% w/V Ig solution)	1/64 dil. do not show agglutination	1/16 dil. do not show agglutination.
APPEARANCE	Clear or slightly opalescent, colourless or pale yellow sol. Pract. free part.	Clear or slightly opalescent, colourless or pale yellow sol. Pract. free part.
OSMOLALITY	240 - 370 mOsm/Kg	329 mOsm/Kg
pH	5 - 6 ,	5.6 ,
TOTAL PROTEIN	45 - 55 mg/ml	49 mg/ml
MOLECULAR DISTRIBUTION Monomer+Dimer	$\geq 95\%$	100 %

## Grifols, offering PediGri® - since 1995

- 18 years since we first introduced PediGri® for Grifols plasma derivatives



1995



1996



2003

- PediGri® was first available for products manufactured in the Spanish facilities
  - On-line access for lots of product launched after January 13, 2003 is available
- In September 2008 it was extended to Los Angeles products
- We expect to have it available mid term for Grifols Therapeutics products

# Innovating in education & training: a unique concept

Annual Report 2012 18



## Curriculum

The 2012 curriculum featured a total of 263 different on-site class offerings.

The Academy Board meets throughout the year to develop the syllabus and approve the curriculum for the upcoming year. Each academic year features newly developed syllabi in addition to course materials from previous years' curricula.

The 2012 curriculum included established courses from the 2009 – 2011 academic years, as well as, newly integrated professional development, machine repair courses, and newly developed quality and leadership courses.

Two additional eLearning classes were developed for the 2012 online training format.

### Grifols Academy 2012 Onsite Curriculum

Newly Integrated Classes	Care Courses
Achieving your Highest Priorities	3 Medical Courses
ASQ Quality Improvement Associate	3 Operations Courses
Building High-Performing Teams	2 Quality Courses
Crucial Conversations	1 Trainer Course
Interaction Skills and Feedback	<b>Seminars</b>
Intermediate IPCS2	Advanced IPCS2
Presentation Delivery	Biostatistics
Situational Leadership	Intermediate Excel
Supervisory Leadership II	Introduction to Grifols
Targeted Selection	Quality Auditing
Virtual/Long Distance Team Building	Technical Writing

"Targeted applying the techniques discussed to the case scenarios. Examining the videos and applying the investigative techniques of cases not related to plasma provided the insight that comes with alternate perspectives." – Quality Course Participant

### Curriculum Representation by Instruction Hours



Annual Report 2012 19

## Academic Affiliations

### University of Phoenix

The Grifols Academy continues to maintain an articulation agreement with the University of Phoenix. This agreement allows participants that are students through the University of Phoenix to articulate coursework completed through the Academy into college credits through their Prior Learning Assessment program.



University of Phoenix affiliates and GRIFOLS are eligible for articulation.

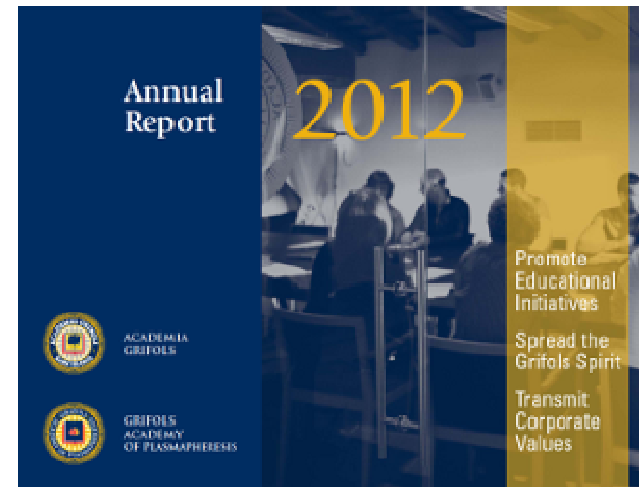


### Continuing Education Hours for Nurses

The Academy has also maintained a Continuing Education (CE) provider license through the California Board of Registered Nursing since 2008. This license allows the Academy to issue CE certificates to nurses that complete eligible coursework on-site and online. The Continuing Education Hours that nurses receive through the Academy can then be used to fulfill their license renewal requirements.



Continuing Education for Nurses Since October of 2009 a total of 4,187 Continuing Education Hours have been earned by eligible participants. By 2012, all Continuing Education certificates were issued for over 1,275 hours completed on-site and on-line.



Annual Report 2012 9

## Facilities

Between the three facilities, there is over 35,000 sq ft dedicated to academic learning, not including the satellite locations that are frequently utilized for Academy offerings.



Academia Grifols - Parets del Valles



Grifols Academy of Plasmapheresis - Indianapolis



Grifols Academy of Plasmapheresis - Glendale

### Parets del Valles

Total Space: 15,000 sq ft

#### Capacity Figures

1 Conference Room:  
60 people  
6 Training Rooms:  
15-50 people  
Cafeteria:  
20 people

Equipment:  
Audio Conferencing  
Departmental Equipment

### Indianapolis

Total Space: 11,000 sq ft

#### Capacity Figures

3 Classrooms:  
30-40 people each  
Computer Classroom:  
20 people  
Conference Room:  
7 people

4 Travel Office/Kiosk:  
1-7 people  
Cafeteria:  
40 people

Equipment:  
Audio & Video Conferencing  
Departmental Equipment

### Glendale

Total Space: 8,500 sq ft

#### Capacity Figures

2 Classrooms:  
30 people each  
2 Conference Room:  
10-20 people  
Cafeteria:  
40 people

Outdoor Patio:  
24 people  
Hands-on Training Laboratory

Equipment:  
Audio & Video Conferencing  
Departmental Equipment

Satellite Locations: Atlanta, GA; Cincinnati, OH; Colorado Springs, CO; Los Angeles, CA; Raleigh, NC; San Marcos, TX; Seattle, WA

"Great experience, the environment is very conducive to learning." – Trainer Course Participant

Investors' & Analysts' Meeting, Austin, 2013

75

**GRIFOLS**  
pioneering spirit

# Grifols Academy



*"To draw on the Company's rich history and experience to enhance the educational and professional development opportunities for all employees"*

Chaired by an **Academy Board** which designs, proposes and approves master programs and activities (Quality, Medical, Training, Technology & Operations)

Collaboration with professional colleges/universities

Alignment in education with differential perspective and values, as platform of opportunities and development

A campus of **8 sites with 2 main locations in USA** (Glendale, Phoenix, AZ and Indianapolis, IN) and one in **Barcelona**

The facilities provide technically advanced conference rooms with video conferencing, networked broadcasted facilities to make multi-site training, training rooms, computer rooms, DMS training lab, conference rooms

Since Jan 2007: **1,366** courses, **300 instructors**, **8,285** participants and visits and **155,000** hours of training



## In summary

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- **Differentiation and innovation** are values that cannot be unforeseen. Requires planning, strategical thinking and be part of the company spirit
- **Transparency and trust:** confidence on the information systems and traceability are key factors in a business that manages at real time, donors, test results, materials inventories and product distribution
- **Career building and talent retention:** invest in education and development of the employees is pivotal for continuous improvement and adapt to future dynamic scenarios. Only those who think differently will be prepared for challenges in 21<sup>st</sup> century
- Investment on **innovation** in systems and process, as well as, on **education** perhaps has no immediate ROI but our past and present with products of high efficacy and safety, our history of no recalls and no compliance problems are the best demonstration that we were and are in the correct path

Safety is a must !!!!  
Transparency is the way



# Immunohematology - Diagnostic Projects

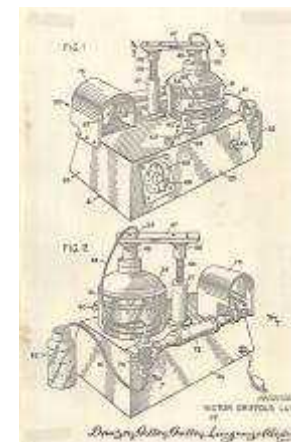
# Tradition of innovation in Transfusion / Immunohematology

- Grifols has been involved for more than 80 years in the development and innovation of Transfusional Medicine and Immunohematology

- Device for direct transfusion  
(invented by Dr. José Antonio Grifols Roig, 1928)



- Coombs washing centrifuge  
(patented in 1964 by Dr. Victor Grifols Lucas)



# Grifols involvement with Transfusion / Immunohematology

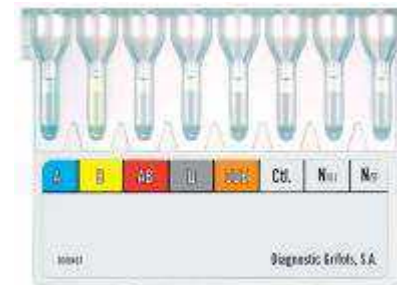
- Clinical analysis lab in Barcelona (Spain) in 1940



- Dade reagents distribution in Spain (1960-1987)



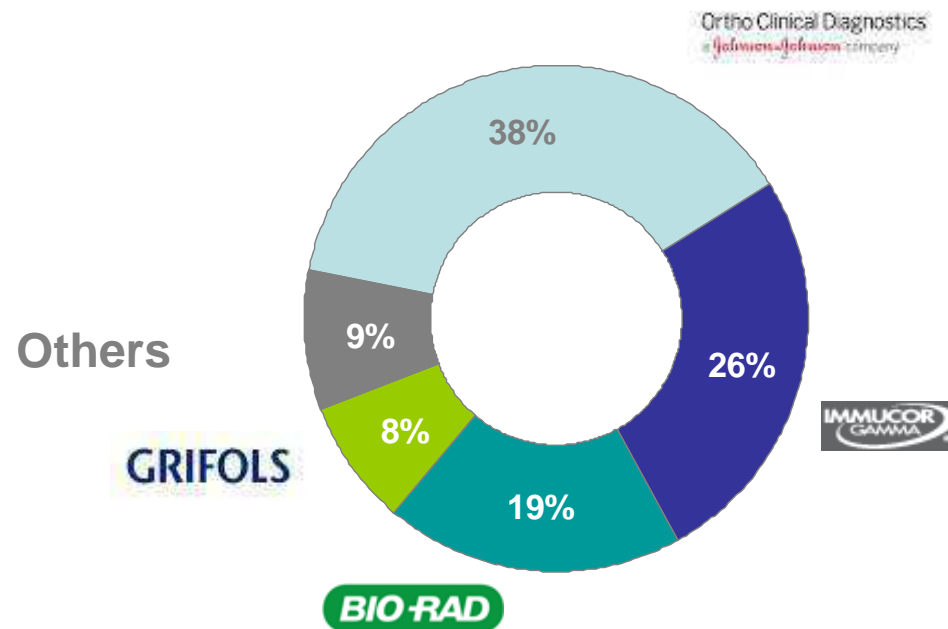
- Manufacturing of reagents (1987 → onwards)



# Immunohematology

Market size: 1,200 M.USD aprox.\*

Main market shares



\* Source: Internal data, 2012

# Gel test invention

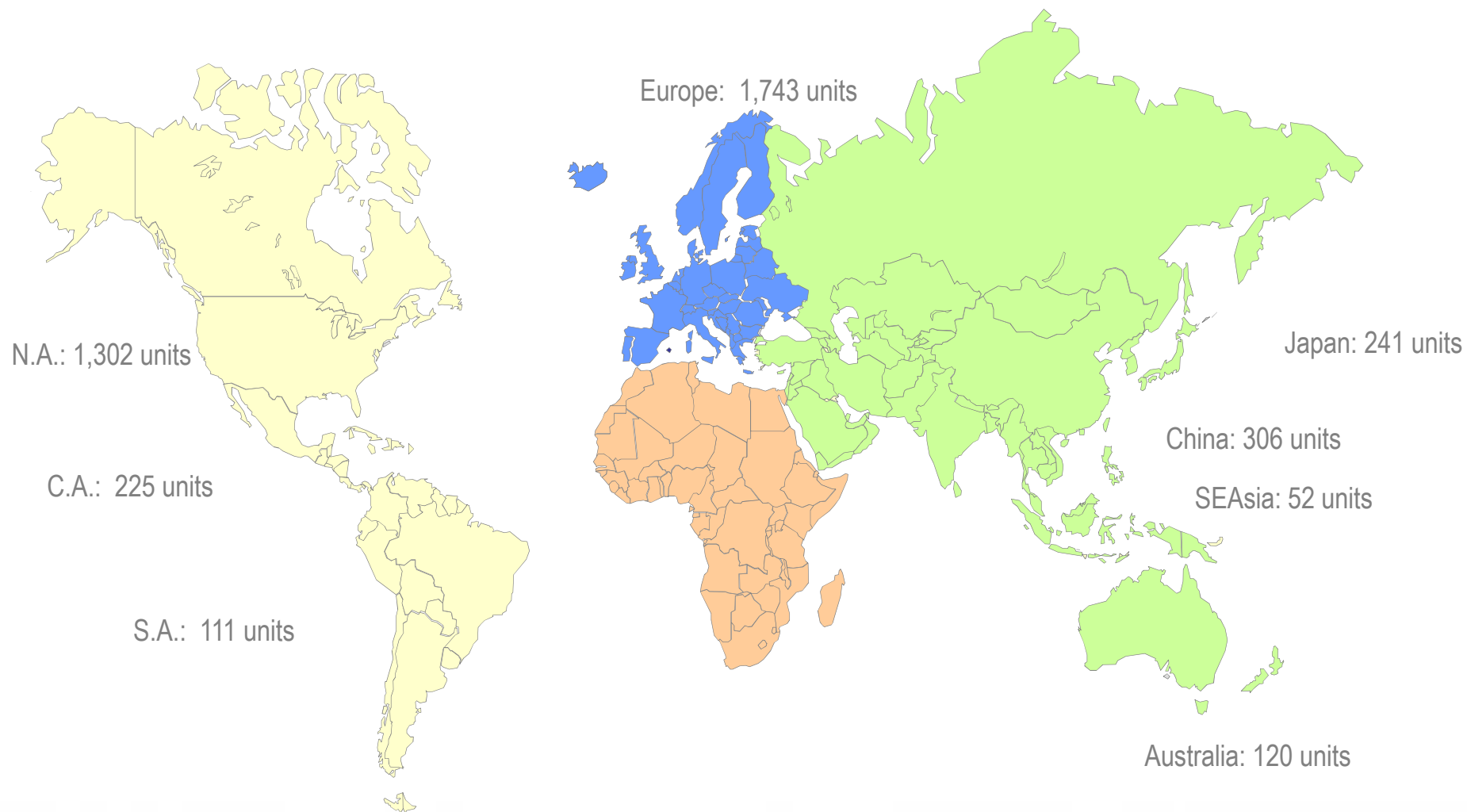
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- Invented by Dr. Lapierre in 1985. Technological discontinuity
- European patents owned by DiaMed (Patent expired in 2008)
- USA patent owned by DiaMed → rights to Ortho (patent expired 2012)
- In exchange of rights to Grifols in certain territories (Spain, Portugal, etc.) Grifols sold WADiana® instruments to automate gel test to DiaMed & Ortho (3,000 units approx)
- Agreements with DiaMed finished in 2008 when patent expired in Europe
- Agreement with Ortho in USA finished end of 2012 (1,300 units) when patent expired in USA

## Worldwide installed base of WADiana®

Total units approx: 4,100





# Grifols automation solutions for Immunohematology

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**Diana Sampler®**

**WADiana®**

**Erytra®**

**F-40**

Launched 1993

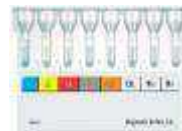
Launched 1998

Launched 2010

To be launched 2015



# Technology innovation by Grifols in Immunohematology



**Liquid  
reagents and  
microplates**

**Dianagel®**

**DG-Gel®**

**Multicard®**

**Genotyping**

1996  
1<sup>st</sup>. Generation  
Grifols Gel Test

2003  
2<sup>nd</sup>. Generation  
Grifols Gel Test

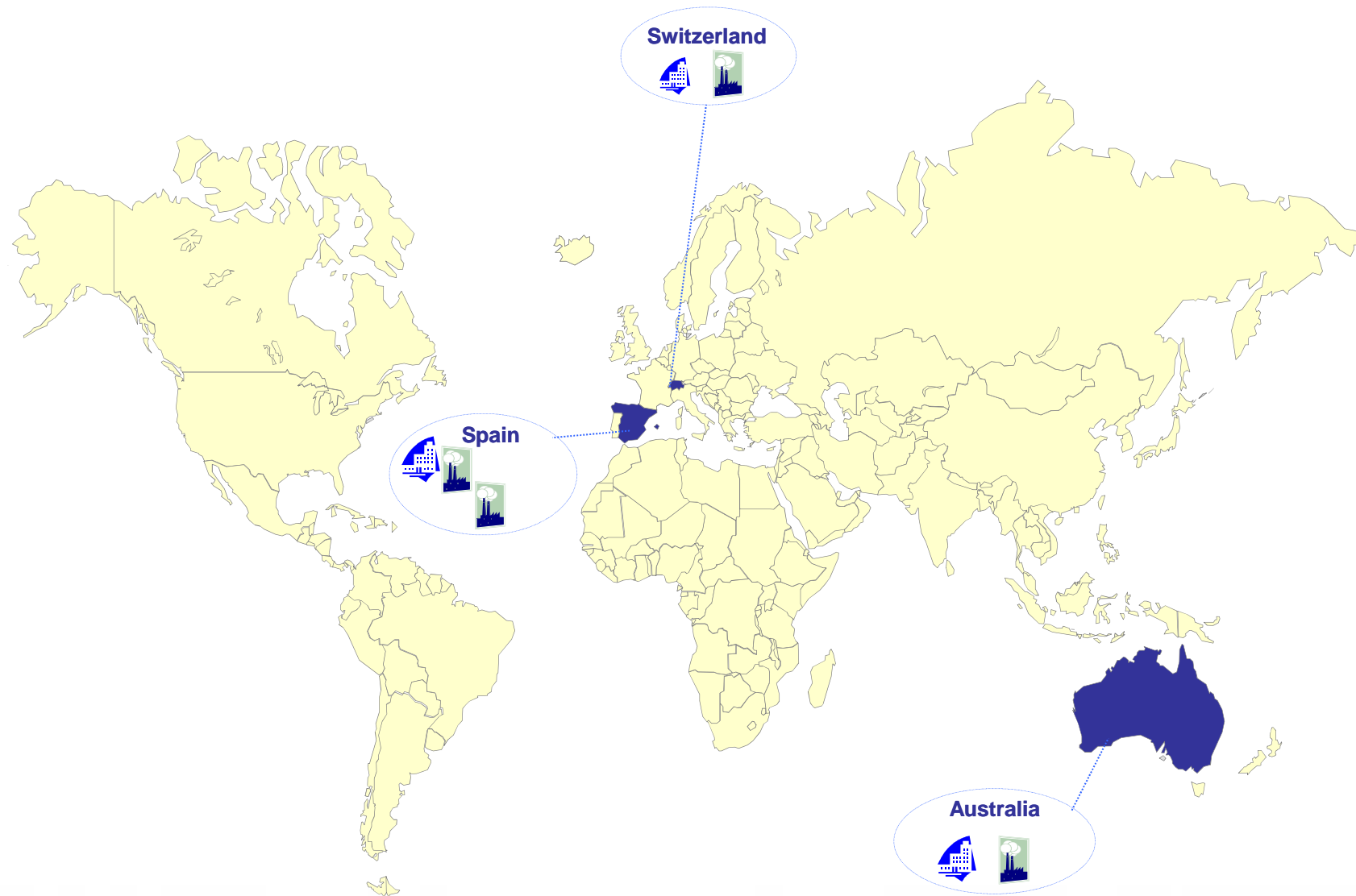
2009  
Multiplex testing

2013  
Progenika acquisition

We can say without doubt that:

Grifols has now the most comprehensive line of reagents, instruments and technologies for immunohematology typing and blood transfusion

## Grifols Diagnostic: manufacturing sites



# Progenika, a leader in personalized medicine



## Mission

Progenika's mission is to improve healthcare through the generation of In Vitro Diagnostic tests for:

- Prevention
- Diagnosis and prognosis
- Therapy response

Incorporation of cutting-edge technologies



Acquisition in 2013

## Key facts

Established in 2001, in Bilbao (Spain)

Workforce of circa 100 worldwide

Strong commitment to Innovation:

- Team highly qualified (46% PhDs)
- Investment in R&D
- Strong commitment to quality (CE, ISO13485, CLIA, CAP)

# Main products

Classified by technological platform



Complexity	Technology	Product	Description
	Next Generation Sequencing	SeqPro Lipo	Genetic diagnosis of Familial Hypercholesterolemia
	DNA-Chips	BloodChip Reference Pharmacip	Blood Group Genotyping Pharmacogenomic tool for drug metabolism genotyping
	Beads	IDCore XT ID HPA	Blood Group Genotyping (extensive phenotype) Platelet Genotyping
	ELISA	Promonitor	Monitoring of biological drugs (Infliximab, Adalimumab, Ethanercept, Rituximab)

Progenika is a powerful resource to develop new diagnostic products based on these state-of-the-art technological platforms

# What Progenika acquisition brings to Grifols - I

---

- Gives us access to a new technology (genotyping). (Several competitors still struggling to get hold of it)
- Genotyping can bring additional information that serology sometimes can not (politransfused patients, lack of available commercial antibodies)
- Genotyping allows multiplex testing (one sample, several results)
- Products already exist and generate income

## What Progenika acquisition brings to Grifols - II

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- Strengthens Grifols' image in the in-vitro diagnostic market as a technology advanced company
- Significantly increases our R&D capacity (circa 100 employees, basically a research company)
- Leverage with blood derivatives business (genetic test for alpha-1 deficiency)
- Other genetic testing (for instance, Familial Hypercholesterolemia, genotyping for Alzheimer, HLA genotype for organ transplantation)
- Brings exciting test menu in the field of biological pharmaceuticals monitoring running on one of our platforms (Triturus®)



## Two different technologies

### DNA-chip



### xMAP®



Menu

Single test – BloodChip®  
Reference

Different antigens panels –  
IDCORE, IDHPA

Workflow

5 steps

3 steps

Throughput

24 samples/10 hours

96 samples/5 hours

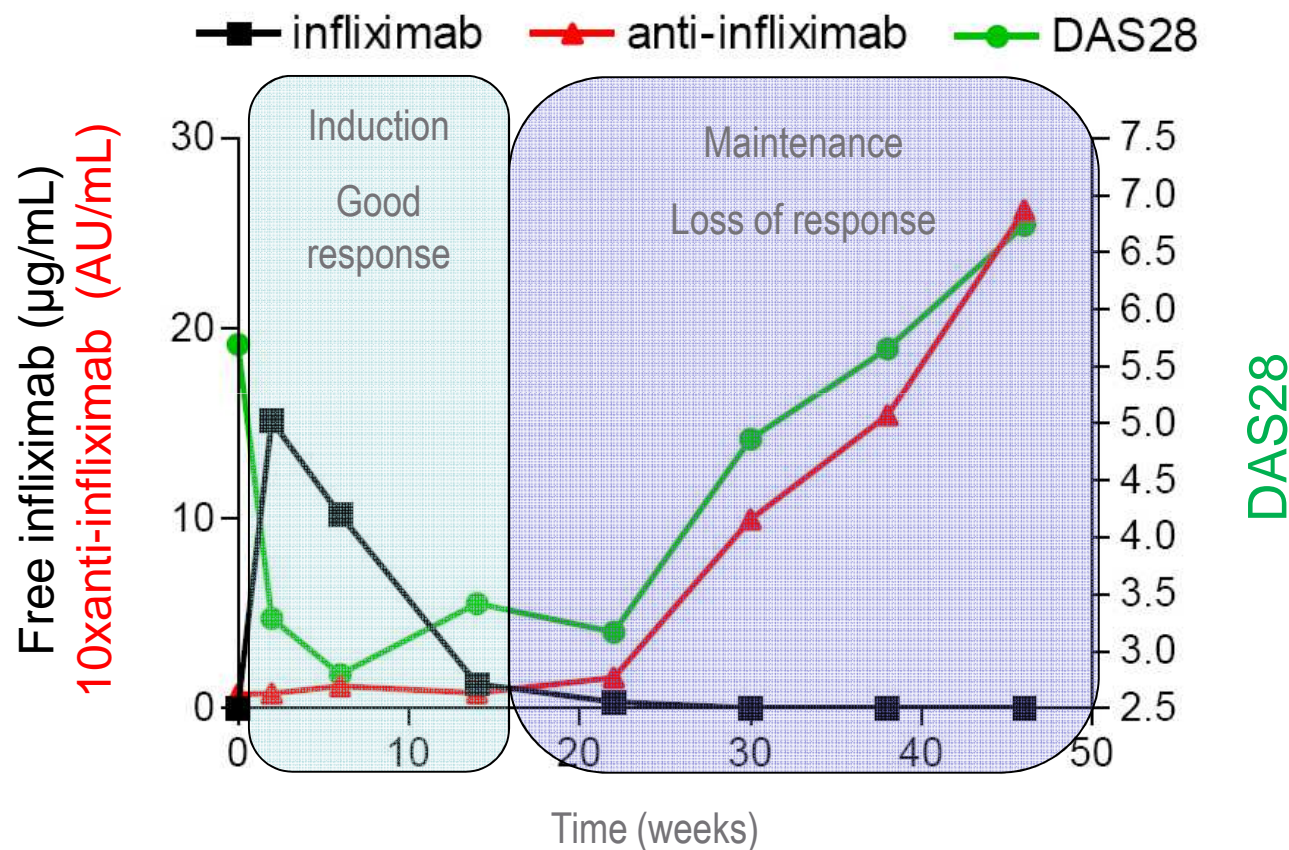
Hands on time

2 hours & 30 minutes

1 hour

# Neutralizing Antibodies

Immunogenicity is a dynamic process



RA patient treated with 3 mg/Kg IFX – Data obtained in collaboration with Pascual-Salcedo and Balsa - HULP clinical study

# Biologicals drug monitoring

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- Current portfolio of kits:
  - Infliximab (Remicade®) - MSD (ROW) - J&J (USA)
  - Adalimumab (Humira®) - Abbott
  - Etanercept (Enbrel®) - Pfizer (ROW) - Amgen (USA)
  - Rituximab (Mabthera®) - Roche
  
- An ambitious R&D program to increase the Promonitor family is being developed:
  - Golimumab (Simponi®) - J&J
  - Tocilizumab (Actemra®) - Roche
  - Ustekinumab (Stelara®) - J&J
  - Certolizumab (Cimzia®) – UCB
  - ...

All these tests can be automated in our TRITURUS® platform

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TRITURUS®



New TRITURUS®  
to be launched during 2H2013

## Take home messages

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- Grifols is expanding its Diagnostics business globally at an accelerated pace
- Diagnostic Innovations have a long and successful history at Grifols
- Grifols is well positioned in Immunohematology with an existing portfolio and new product launches
- The acquisition of Progenika will allow Grifols to establish itself as an innovative leader in Immunohematology and also opens up the high potential Therapeutic drug monitoring market for the company
- A strategic sales and marketing alliance with Novartis in the US, with product sales expected end 2013, positions Grifols well for the future in the biggest global immunohematology market

## Plasma Procurement: safety and logistics



# Plasma Donors and Plasmapheresis



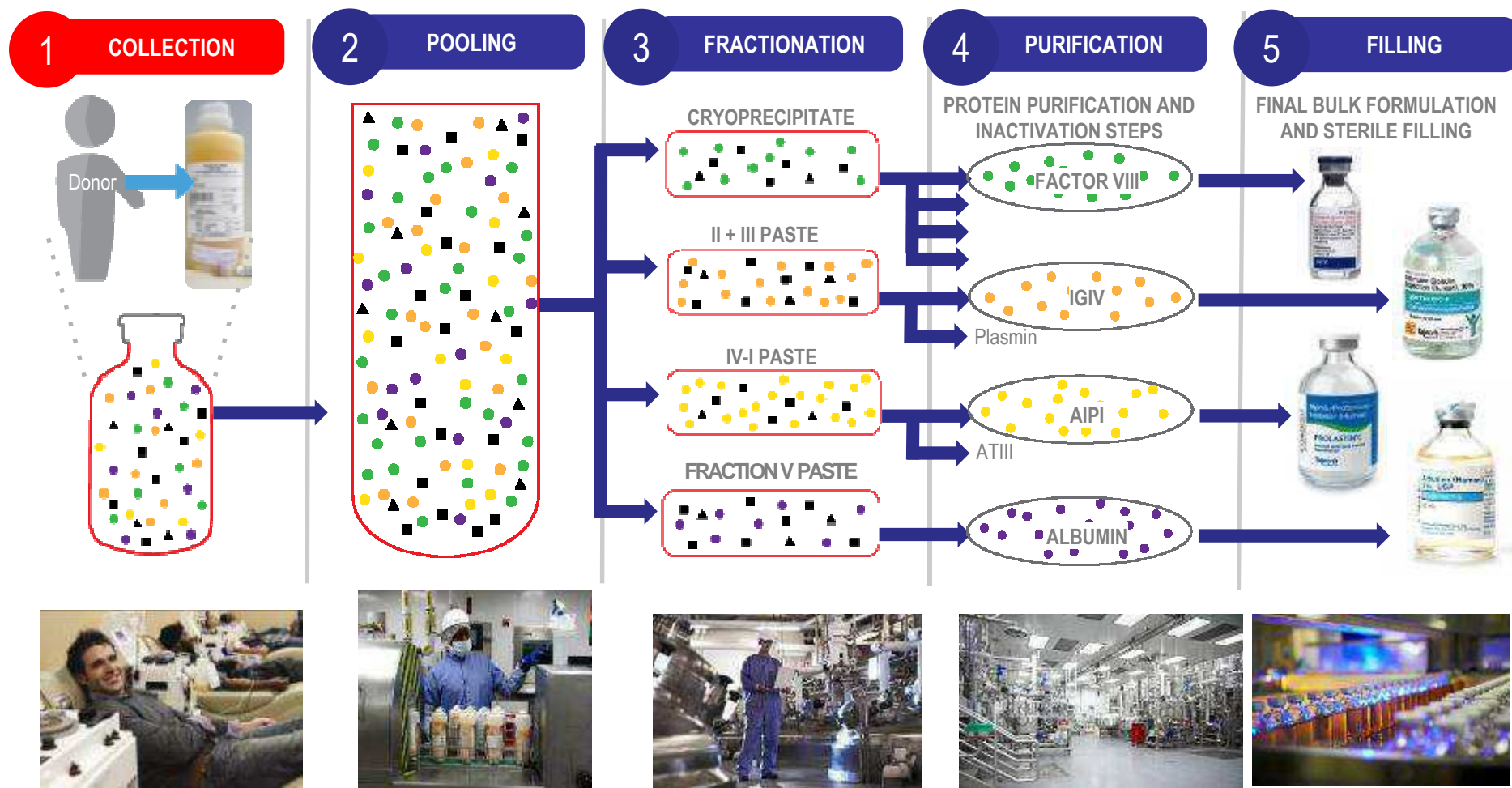
# Grifols : the pioneer of Plasmapheresis

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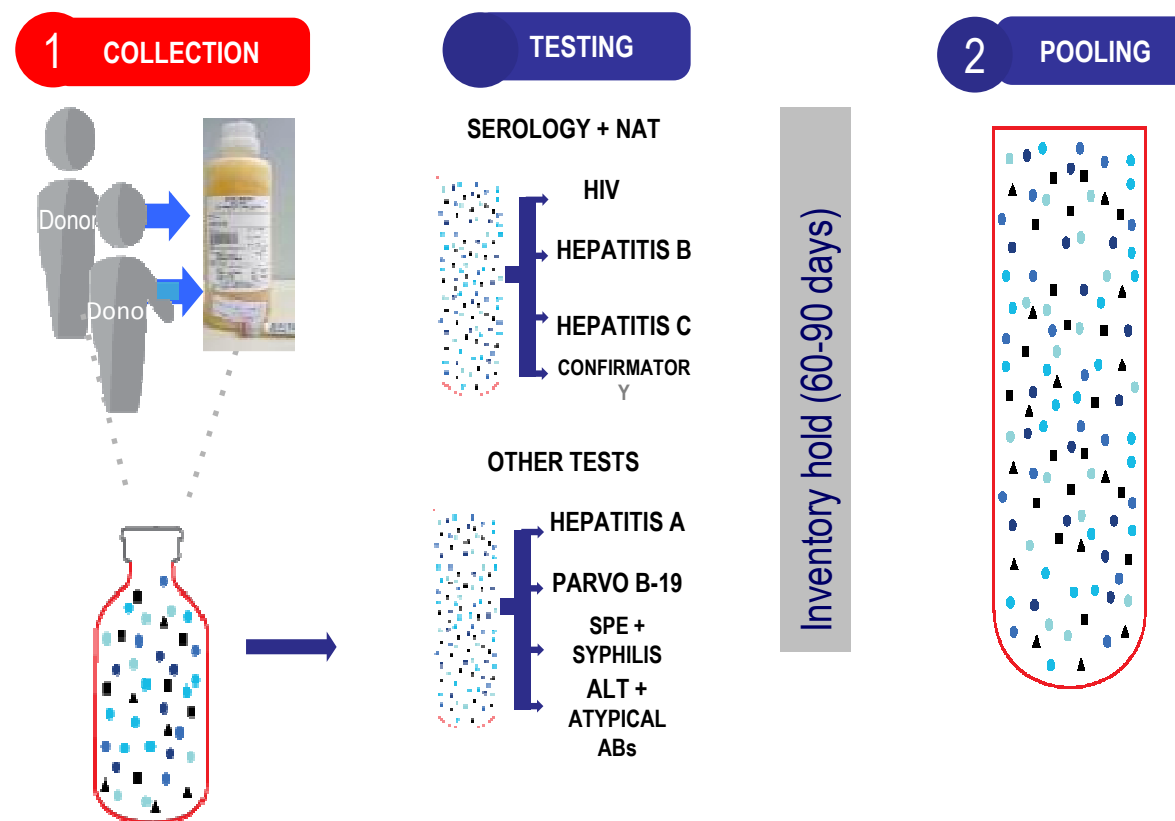
Grifols leads the industry in enhancing the safety of source plasma and health of donors

- Grifols exclusively uses US Source Plasma as the raw material for all commercial plasma therapies for global patient communities
  - High level of medical and quality oversights/enforcement of Grifols standard
  - Pools of repeat donors enable continuous monitoring of health of donors and safety of donated plasma including post donation information
- Grifols respects the significant value of plasma donors and strives for the best care of health and wellbeing of plasma donors through unique and robust medical oversight for donor center operation
- Grifols business starts with the selection of healthy plasma donors....

# Fractionation / Product Manufacturing Process



# Fractionation / Product Manufacturing Process



## Plasma vs. Blood Donation: Different processes

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	Blood Donors	Plasma Donors
<b>Donation time frequency</b>	20-30 minutes, every 8 weeks (plasma + cell donation)	45-70 minutes, twice in a 7 day period (plasma only)
<b>Donation to next step</b>	After single set of negative laboratory test results of single donation → hospital for patient use	After two or more sets of negative test results from independent donations → to logistics center for 60-90 day inventory hold
<b>Patient use</b>	<p>Direct transfusion.</p> <ul style="list-style-type: none"> <li>• One donation = one treatment</li> <li>• National medical guidelines: many centers ≠ single protocol</li> <li>• Everything on bag to patient</li> </ul>	<p>Material used for further manufacturing.</p> <ul style="list-style-type: none"> <li>• One donation ≠ one treatment</li> <li>• National, harmonized medical network: many centers = single protocol</li> <li>• Plasma with multiple sets of negative test sets, is then processed, purified to retain the single protein of interest</li> </ul>

# Quality and Safety: Standard Medical Protocols

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~25,000 donations per day

- Grifols' 150 donor center network has harmonized selection and deferral protocols controlled with strong medical network that maintains consistent quality of the product and safety of the donor
- Less than 0.0015% donations have medical incidents, mostly minor in nature
- Donation centers are audited and certified by FDA, European Health Authorities, CLIA and the PPTA
  - Corporate Quality systems in place
  - Additional Corporate compliance audits





# Selection of safe and healthy donors

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- Members of the local community:
  - Government issued photo ID and social security/visa card
  - Evidence of permanent address
- National Donor Deferral Registry (NDDR)
  - Inter-company national database of all plasma donors with a positive screening test for HIV, Hepatitis B and Hepatitis C
- Detailed Medical Evaluation by licensed healthcare professionals
- Routine Health Screen prior to each donation



# Laboratory testing

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Samples are collected from each donation for testing. Each donor has a minimum of 10 tests for each donation:

- Serological HIV, Hep B, Hep C
- NAT HIV, Hepatitis A, B & C
- Serum Protein Electrophoresis
- Liver tests (ALT)
- Syphilis
- NAT for Parvovirus B19
- Blood cell antibodies





# The Effect of Plasmapheresis in Blood Cholesterol Levels of Plasma Donors\*

*\* accepted for publication in Vox Sanguinis. Electronic pre-release available*

# Grifols commitment for the health of donors and the safety of Plasmapheresis

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- Grifols 1<sup>st</sup> priority is the health of donors and the safety of Plasmapheresis procedure
- From the time of the invention of Plasmapheresis in '50s, Grifols has been observing good health of repeat plasma donors
- Grifols established non-profit foundation named “Jose-Antonio Grifols Foundation” to support science and medical research of plasma donors and their health
- The “Donor Cholesterol Study” is the first project supported by the Foundation to investigate possible positive effects of Plasmapheresis on Plasma donors and their health

## Objective and study design

---

- Therapeutic LDL apheresis is known to decrease LDL levels in patients with familial hypercholesterolemia
- The effect of the plasmapheresis process used during donation (smaller volume, shorter time) in cholesterol levels has not been evaluated thoroughly
- Multicenter longitudinal cohort study with applicant plasma donors
  - 663 participants with diverse demography
  - Nine sites in the United States
  - Total cholesterol, HDL, direct LDL
- Prior to each donation participants also completed a short questionnaire on lifestyle factors that could affect cholesterol levels

## Baseline Information

	Group	Number of Donors	Percent (%)
<b>Total Cholesterol*</b> (mg/dL)	High ( $\geq 240$ )	38	5.7
	Higher than desired (200-239)	132	19.9
	Acceptable ( $< 200$ )	493	74.4
<b>LDL*</b> (mg/dL)	High ( $\geq 160$ )	41	6.2
	Higher than desired (130-159)	112	16.9
	Acceptable ( $<130$ )	510	76.9
<b>HDL*</b> (mg/dL)	Low ( $< 40$ , males; $<50$ , females)	228	34.4
	Average (40-60, males; 50-60, females)	341	51.4
	Optimal ( $>60$ )	94	14.2
<b>Total Study Donations</b>	2-10	296	44.6
	11-20	168	25.3
	21-32	199	30.0

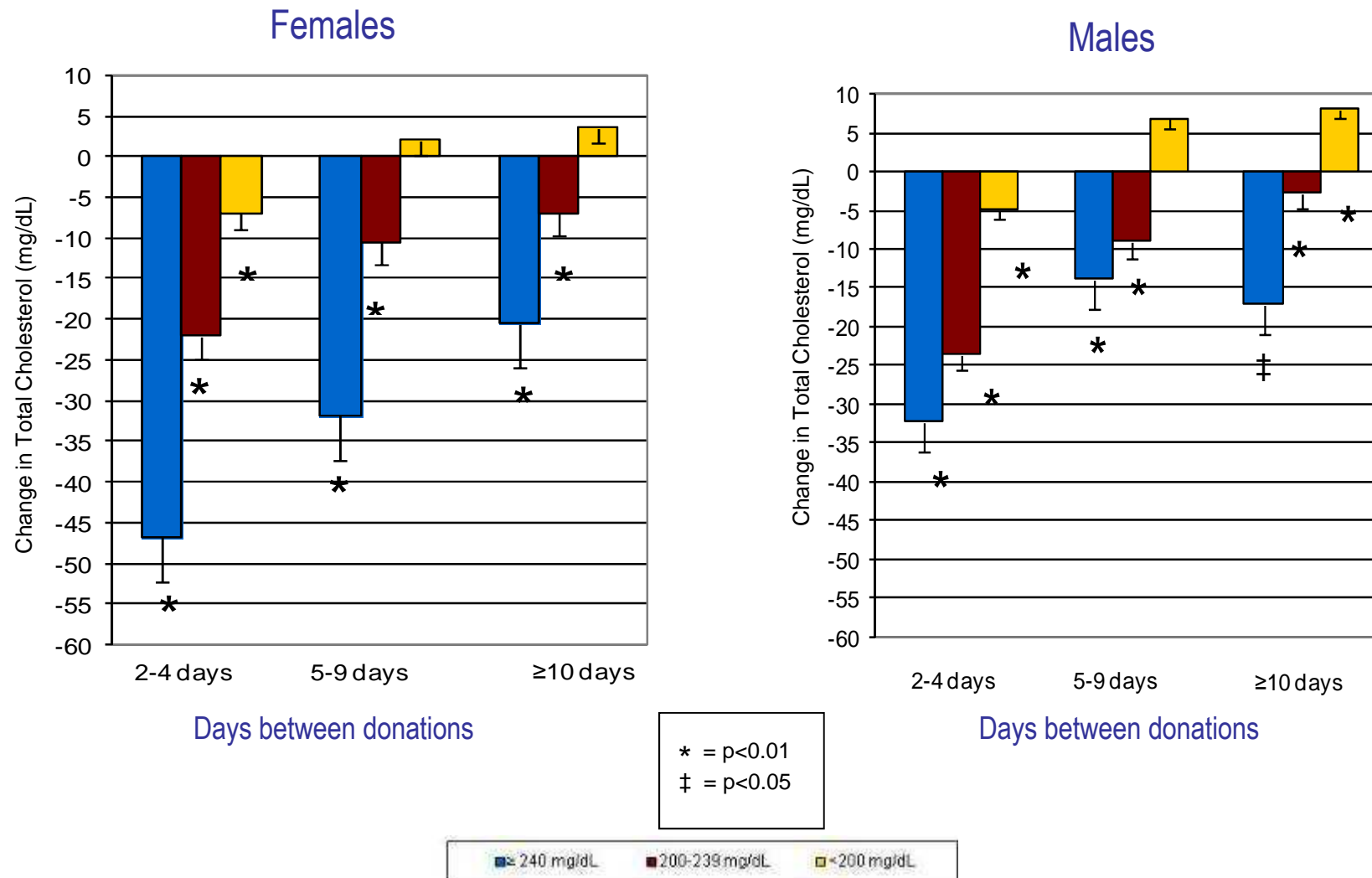
\* AHA/NHLBI-NCEP classification

## Data Analysis: GEE statistical model

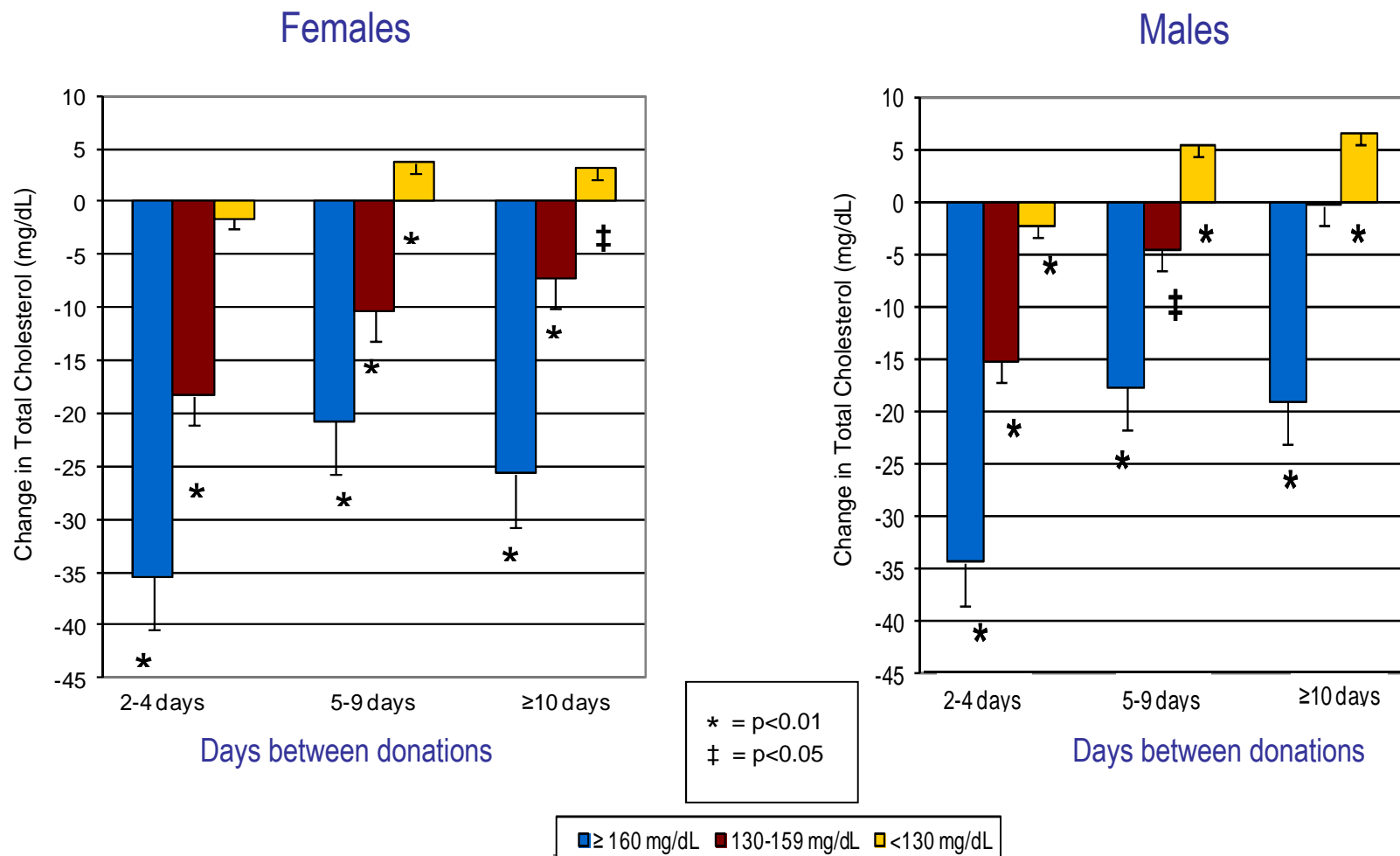
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- A multivariable repeated measures regression model using the General Estimating Equation (GEE) approach was used to analyze the data as it has the capability to use information for each donation, control for unequal contribution and allows to estimate the independent contribution of each variable
- Potential variables of interest: gender, age, weight, race, baseline total cholesterol, LDL, and HDL, time between donations, number of donations, lifestyle changes
- All variables of interest were evaluated using the model to determine which variable had significant effects
  - Donor age, race, weight, and number of prior donations had little effect on the change observed in cholesterol levels
  - Responses on the lifestyle questionnaire did not show an independent effect on cholesterol change
- The validity of the model was checked by comparing the estimated results of the GEE-model to those actually observed in the dataset

## Effect of Plasmapheresis in total cholesterol (mg/dL) - Female & Male donors

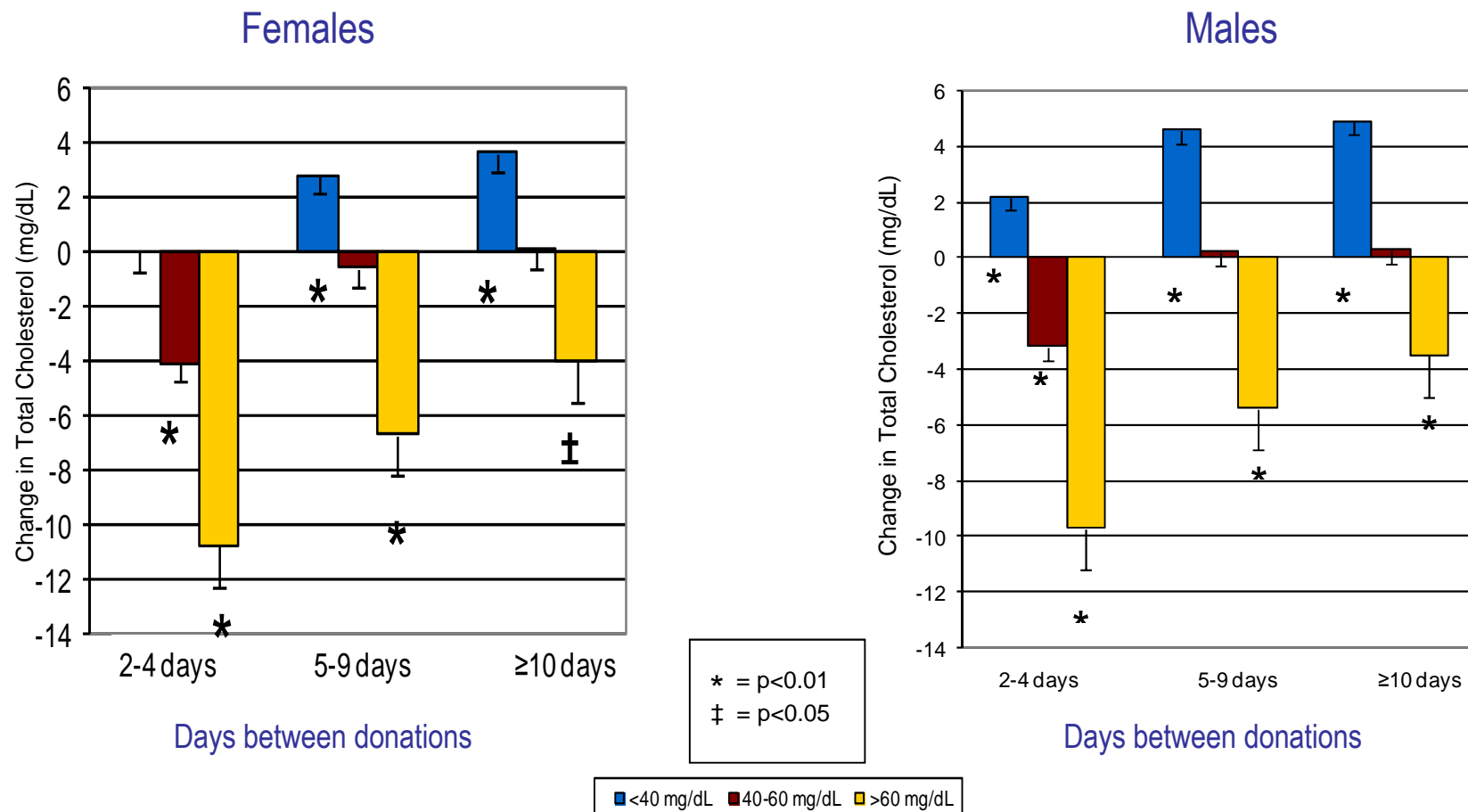


## Effect of Plasmapheresis in LDL (mg/dL) - Female & Male donors





## Effect of Plasmapheresis in HDL (mg/dL) - Female & Male donors



## Conclusions of the cholesterol study

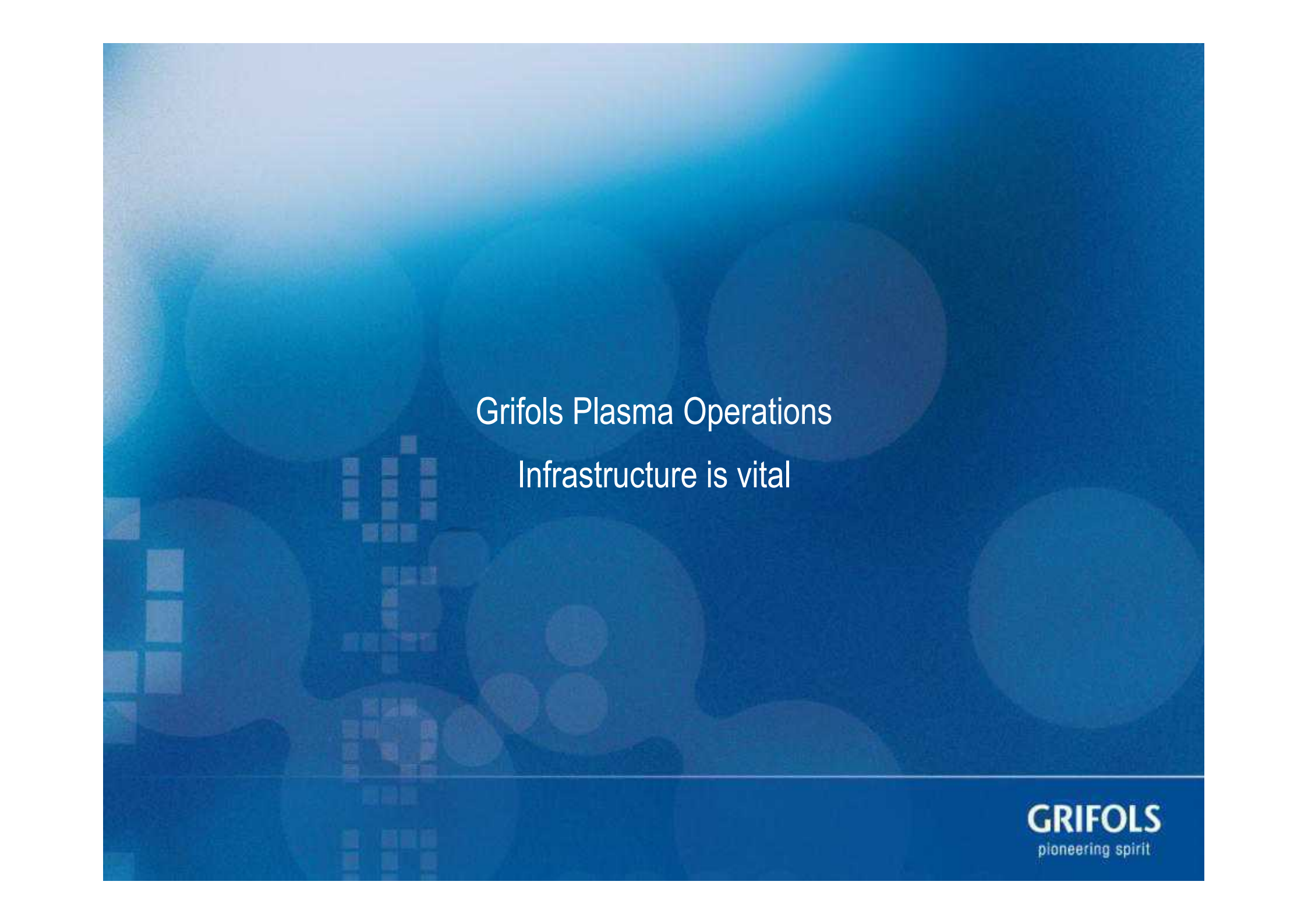
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- The results of this study suggest that plasma donation may affect cholesterol levels in the days following plasmapheresis
- Baseline cholesterol level and interval between donations are the key factors, not total number of donations
  - Donors with high baseline total cholesterol or LDL, show a significant decrease
  - Donors with normal baseline total cholesterol or LDL, have minimal decrease
  - Donors with low baseline HDL, showed a slight increase
- Only 14 out of 9,135 donations had a mild or moderate event. No severe or serious events

# Summary

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- Grifols has solid and reliable quality systems in place supporting the largest donor center network in the world
- The Grifols' model for medical oversight toward its donor center operations is unique in the industry, which supports the company's commitment to the safety of plasma donors and the final plasma products
- The cholesterol study has been the first project to assess the impact of plasma donation in the health of donors
- Grifols will continue its medical and scientific efforts in order to assure the health of donors and gain medical community's knowledge and appreciation of the plasmapheresis and contribution of plasma donors

The background is a solid blue gradient with various semi-transparent geometric shapes. There are several large circles of different shades of blue scattered across the frame. On the left side, there are vertical columns of small squares, some of which are slightly offset from each other, creating a sense of depth and movement.

# Grifols Plasma Operations

## Infrastructure is vital



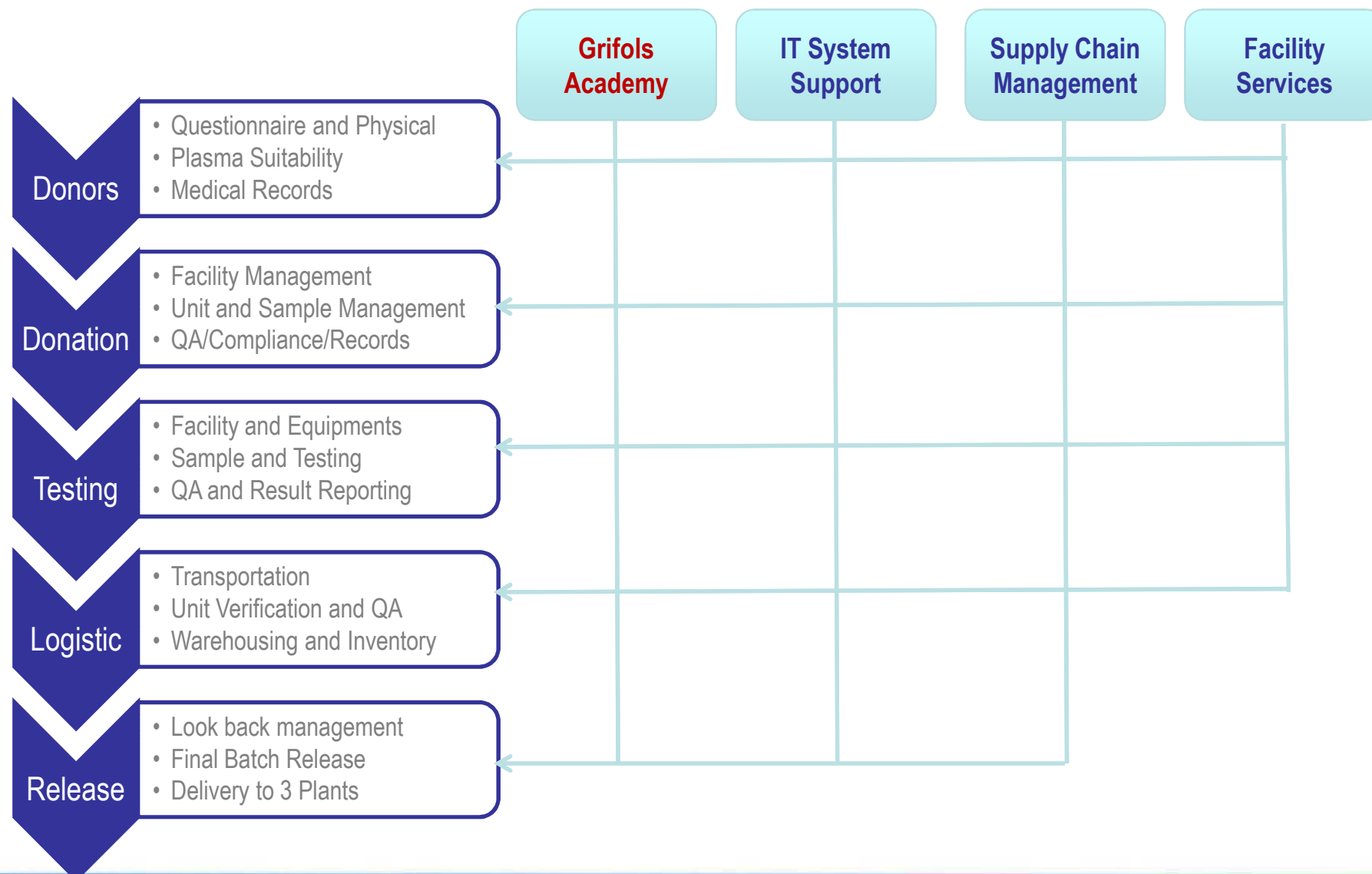
# Significant role of Grifols Plasma infrastructure

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The infrastructure is the basis for plasma product safety and operational efficiency

- Assure integrity and robustness of Grifols Safety and Traceability concept from the plasma collection to the final release for fractionation (PediGri®)
- High level of quality and regulatory compliance
- Optimize inventory management of high-valued Sauce Plasma
- Better plasma utilization (loss prevention and preservation of proteins)
- Reduce the operational challenges at donor centers
- Reduction of overall plasma cost

# Robust In-House infrastructure support





# Plasma IT system support

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## Ideal IT Infrastructures for Robust Data Management

To assure high level of plasma traceability, donor center quality and high efficiency operation, Grifols elected **100% In-House IT solutions**

- 100% In-House IT network management and data hosting for donor center management and enterprise IT systems
- Development of In-House software to meet specific demand of Plasma Operations
- Robust redundancy for all communication network and data management
- Specific hardware resources for donor centers



# Plasma Supply Chain Management

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Right type of plasma, right volume to right location on time

Due to the critical quality requirements, volume and financial value of source plasma, Plasma Supply Chain Management group provides high standard logistic solutions

- Two plasma logistics centers; in California and North Carolina
- Ground breaking for new fully automated Plasma Logistic Center in North Carolina
- Cold-storage and plasma inventory management
- Final clearing and quality release of source plasma to three plants
- Domestic and International cold-chain distribution management



# Donor center facility services

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## Spirit of Grifols Engineering

Capitalizing significant expertise and know-how of Grifols Engineering, GPO Facility Services team provides high standard, cost effective and timely services to 150 donor centers, testing laboratories and warehouses

- Identifying New Center Locations
- Real Estate Management
- Facility Design, Layout
- Construction Management
- Facility Maintenance
- Donor Center Process Automation



In 2012, six new state-of-the-art donor centers were opened and twenty one major center expansion/renovation projects were completed

## Grifols plasma infrastructure summary

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- Grifols has been aggressively investing into Grifols Plasma Infrastructure to materialize the Company's concept of plasma safety and traceability
- The industry-leading Grifols Plasma Infrastructure offers significant advantages to capitalize the economy of scale for plasma cost reduction
- Grifols manages all critical Plasma Infrastructure In-House to meet specific criteria of the Company, timely adaptation of various technological advancements and capitalize the know-how accumulated
- The current Grifols Plasma Infrastructure is capable of handling the long term plasma needs of the Company



# Grifols Plasma Operations Testing Operations Review

# Grifols Plasma Testing Operation

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- Plasma Testing is the life-line of any plasma collection organization
  - Assure the health status of plasma donors
  - Assure the safety of plasma collected and released for fractionation
  - Assure the quick turnaround of test results for quick actions by donor center
  - Manage massive test results database for Quality and Regulatory Compliance
- Plasma Testing Operation needs to manage various risk, challenges and opportunities to maintain sustainable plasma collection operation
  - Business Interruption/Disaster Recovery strategies
  - Adaptation / acceptance of new technologies
  - Cost optimization
- Like fractionation capacity, increasing significant testing capacity requires substantial investment and time

# Grifols Plasma Testing Laboratories



## Why Austin and San Marcos, Texas?

- Secure access to two major airports (San Antonio and Austin) for redundant sample logistic
- Access to qualified and educated labor pool for testing operators with 100,000 students at 15+ universities and colleges

## Why two laboratories in close proximity?

- Redundant testing capacity
- Located in separate electric power grids
- Located in the area of different weather pattern
- Share management resources
- Mobility of staff between laboratories



# Grifols Plasma Operations - plasma testing laboratories

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## Austin Testing Laboratory

- 25,000 sq ft
- 81 employees



## San Marcos Testing Laboratory

- 75,000 sq ft
- 85 employees
- Designed and built by Grifols Engineering

# Grifols Plasma Operations - plasma testing laboratories

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Laboratory processes are designed for controlled high volume testing

- Capacity: up to 15 million annual donations
  - 32 million annual samples
  - 127 million annual reportable results
- On a monthly basis, this equates to.....
  - Processing 1.25 million donations
  - Processing 2.6 million samples
  - Reporting over 10 million test results

Testing capacity and capabilities provide the flexibility to meet current and future production demands

# Grifols Plasma Operations - plasma testing laboratories

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Sample organization and processes are complex

- Receive up to 5 different samples per donation depending on the testing requirements
- Each sample has own unique process flow
- Each test has own unique sample suitability requirements:
  - Storage – temperature, freeze/thaw cycles
  - Hemolysis
  - Lipemia
  - Volume
- Multiple quality checks throughout the processes to ensure all critical steps and requirements are met
- Complete traceability is maintained of each sample and testing performed from the moment of receipt through result release

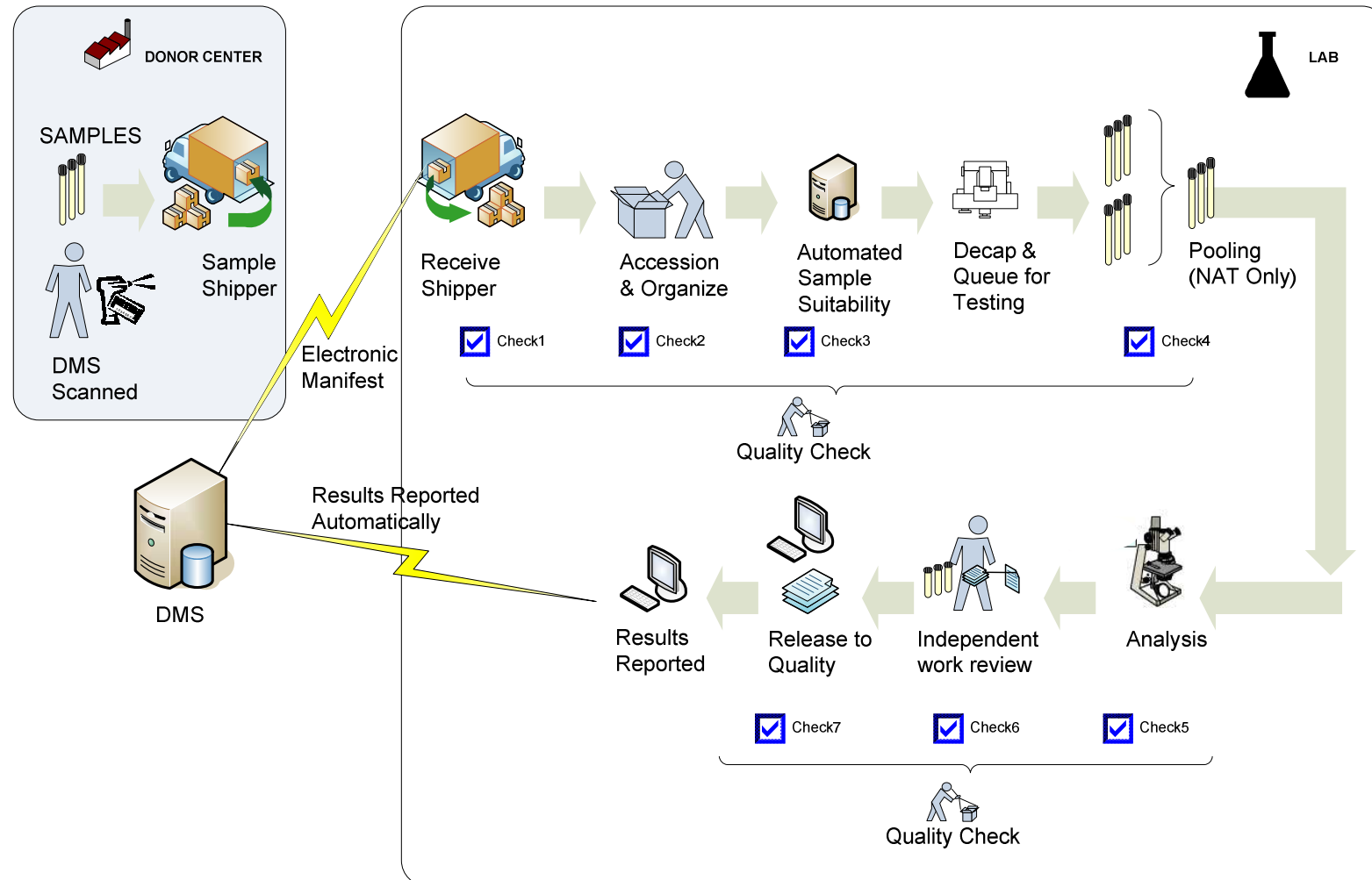
# Grifols Plasma Operations - plasma testing laboratories

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On a daily basis, the laboratories perform 18 different tests

- Core Testing
  - Viral Marker Serology: anti-HCV, anti-HIV 1,2, HBsAg
  - HCV, HBV, HIV, Parvo B19, HAV by NAT
  - ALT
  - Viral marker serology confirmatory testing
- Ancillary Testing
  - Screen for antibodies to RBCs
  - Serum Protein Electrophoresis
  - Total Protein
  - Syphilis screen
  - Anti-Tetanus Titer
  - Anti-HBs Titer

# Plasma testing process flow



## Grifols Plasma Operations - plasma testing laboratories

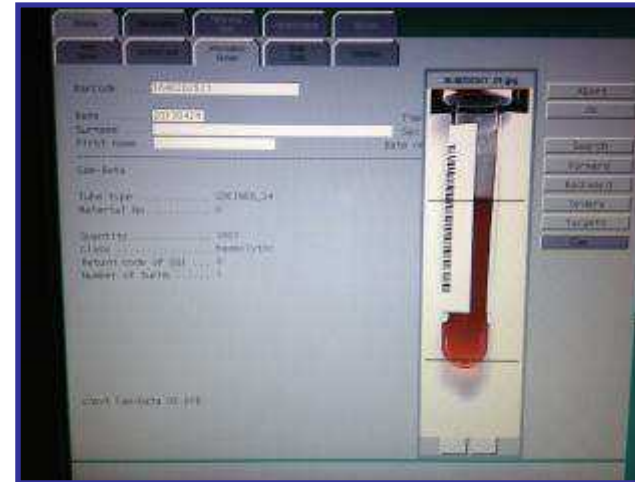
## Automated sample handlers:

Automates test specific sample quality checks: volume, hemolysis and lipemia

- Provides standardization of process quality control checks

Automates sample de-capping and sorting directly into analyzer specific sample racks

- Increases process efficiency and control



# Grifols Plasma Operations - plasma testing laboratories

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## Nucleic Acid Technology:

Self contained integrated NAT analyzer that fully automates all steps from sample processing (extraction), amplification, detection and data reduction

- Significant improvement in process control
- 75% labor reduction in comparison to previous manual processing
- Ability to increase production at minimal labor cost





# Grifols Plasma Operations - testing laboratories, leading the way

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## Strong scientific and technical expertise and experience

The laboratories' Scientific & Technical Team provides a level of expertise and experience that surpasses any other US Plasma Testing (Screening) Laboratory

- Clinical Trials
- Research studies
- Evaluation and development of new testing techniques
- Informatics – data mining

## Expanding horizon of plasma and blood testing to accommodate future demands and innovations

- Immunohematology Reference Laboratory
- Genetic testing opportunities with Progenika technologies

# Global Commercial Strategy Bioscience

The background is a solid blue gradient with various semi-transparent geometric shapes. There are several large circles of different shades of blue scattered across the page. In the lower-left quadrant, there is a cluster of smaller squares arranged in a grid-like pattern, also in varying shades of blue.

# Global Markets

## 2012 Sales Analysis

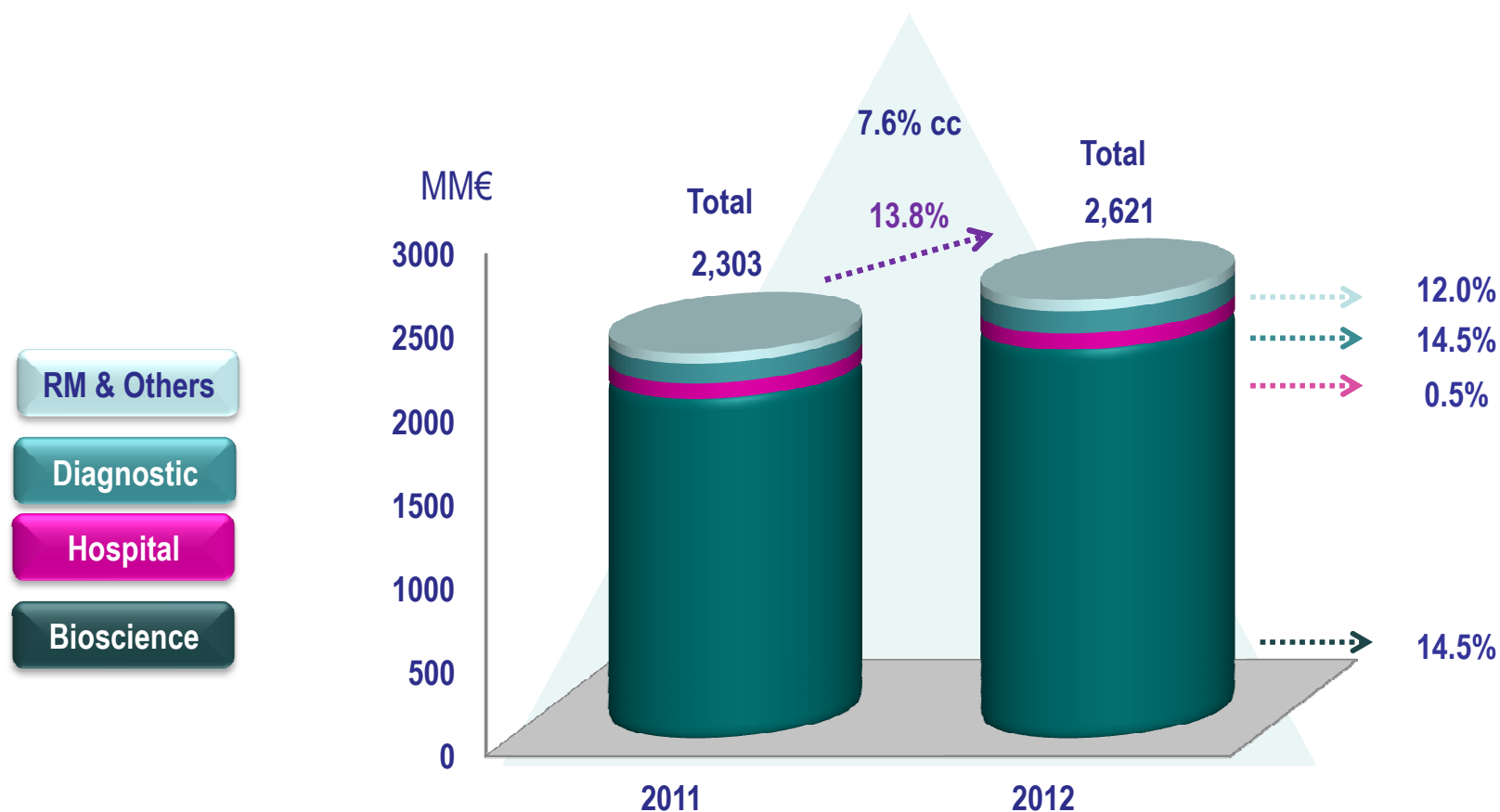
## Executive summary

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- Strong sales growth and leadership position in key products
- Commercial model providing a sustained future sales growth
- Geographical expansion opportunities
- Expansion opportunities with existing portfolio
- New products and projects to support the present growth model

# General sales evolution by Division 2012

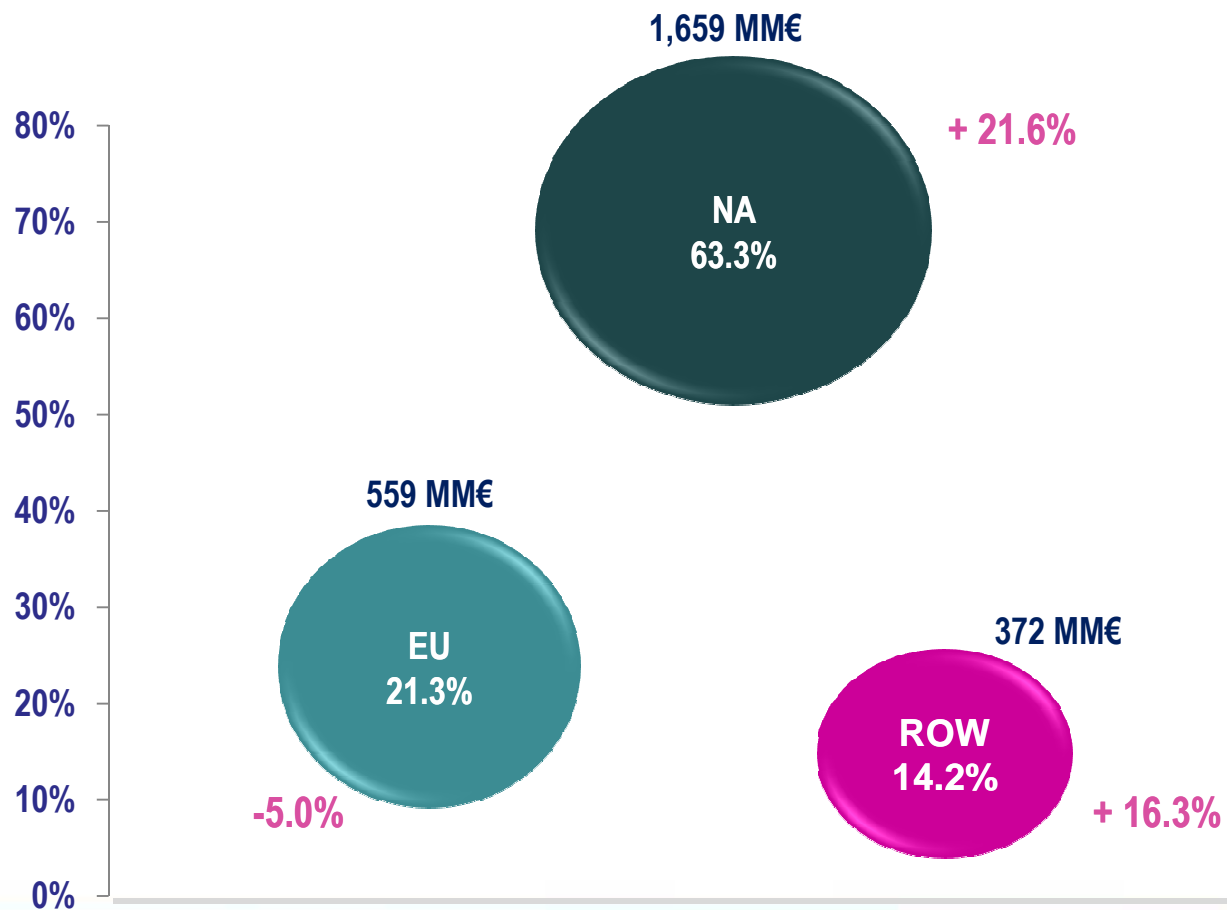
Strong and balanced sales growth



2011 Proforma

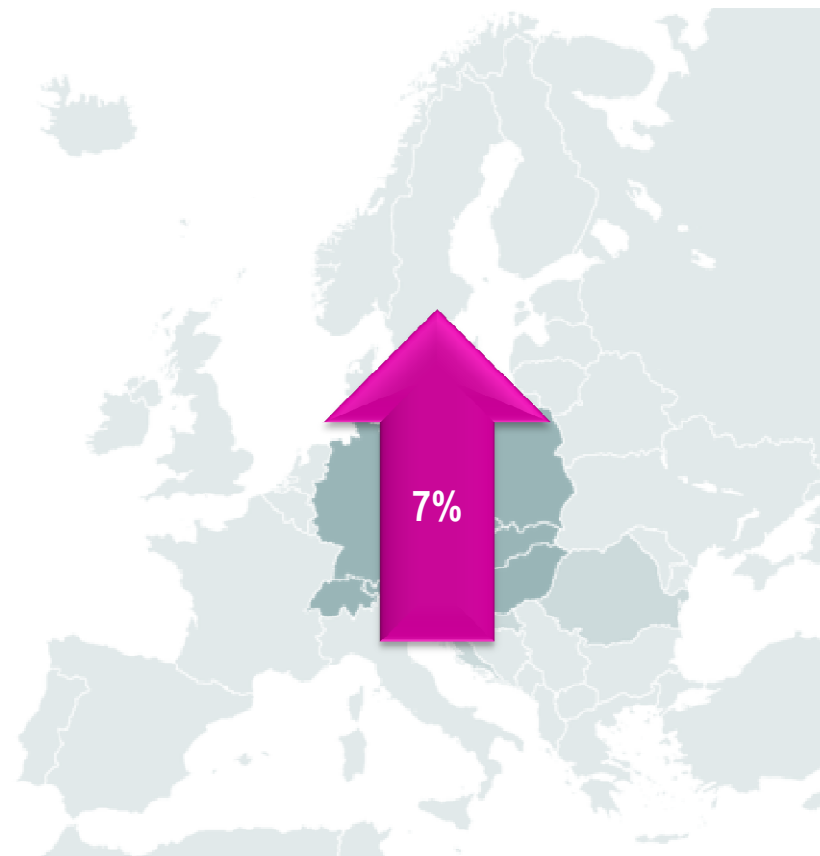
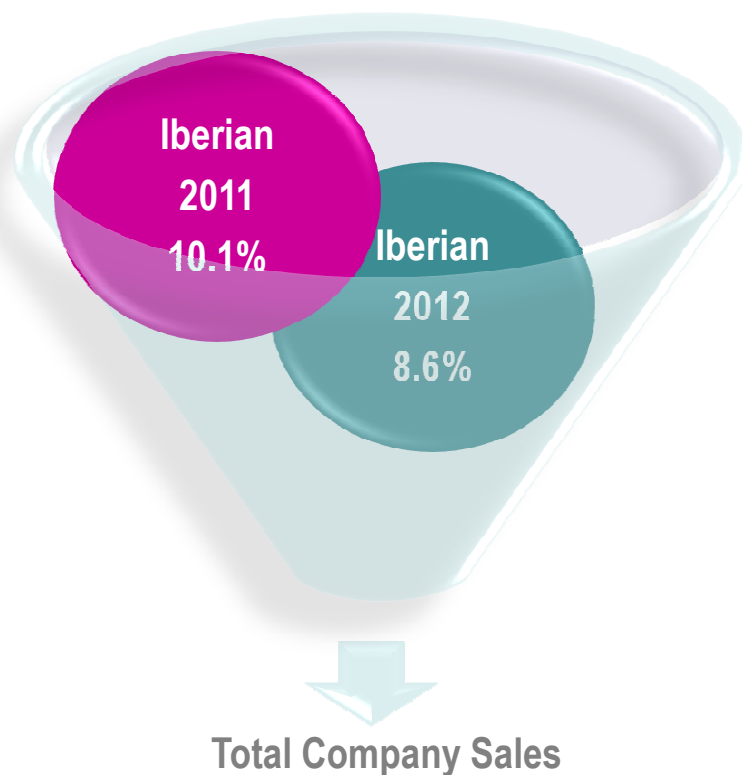
## Sales by geographic area 2012

Strong performance in NA accounting for 63,3% of the total sales.  
NA and ROW have been the growth drivers during the year 2012



## EU Sales

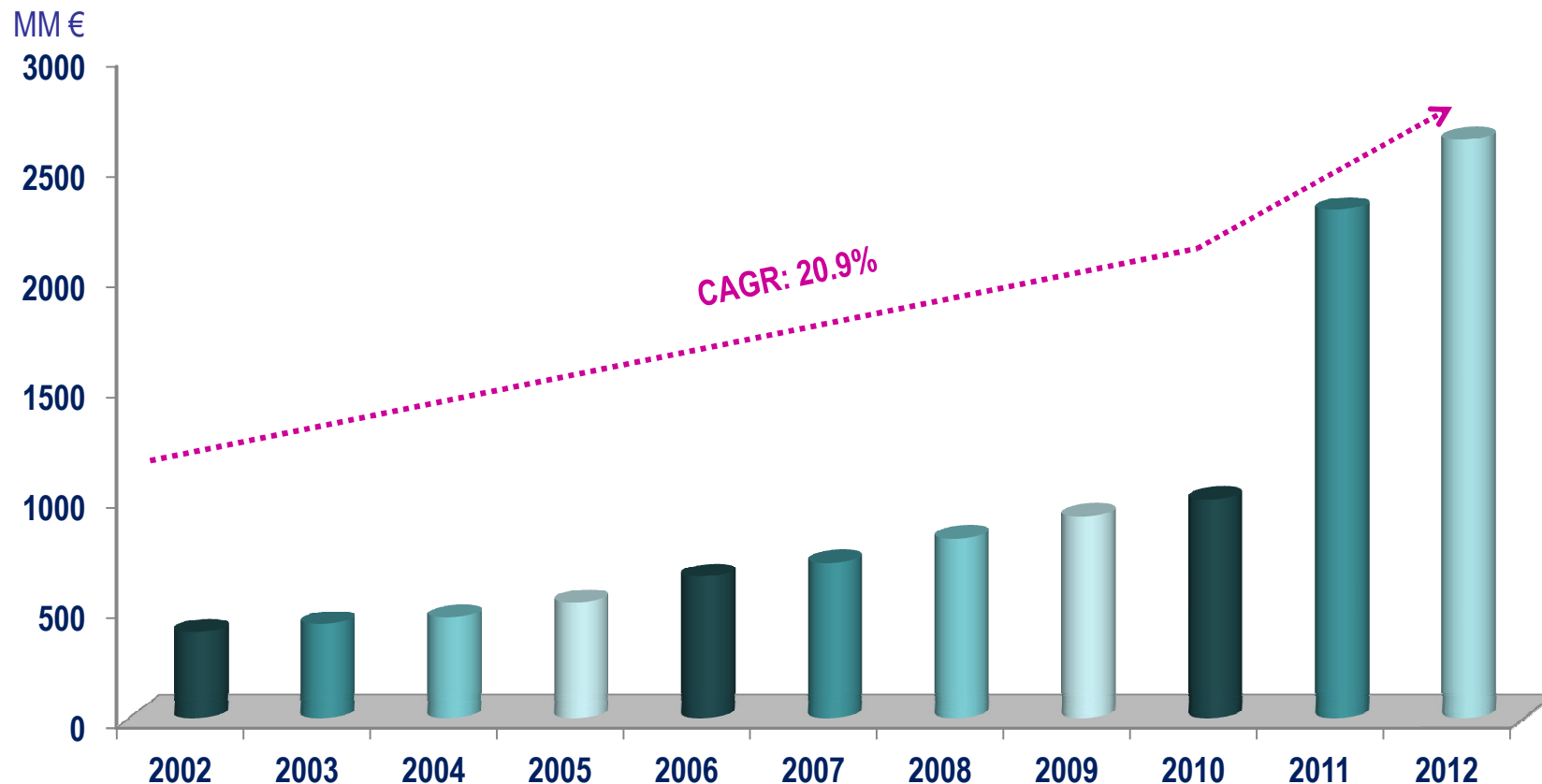
Iberian sales represents 8.6% of the total company sales versus last year's 10.1%  
Central Europe sales have increased by a 7.0%





## Sales evolution over the last 10 years

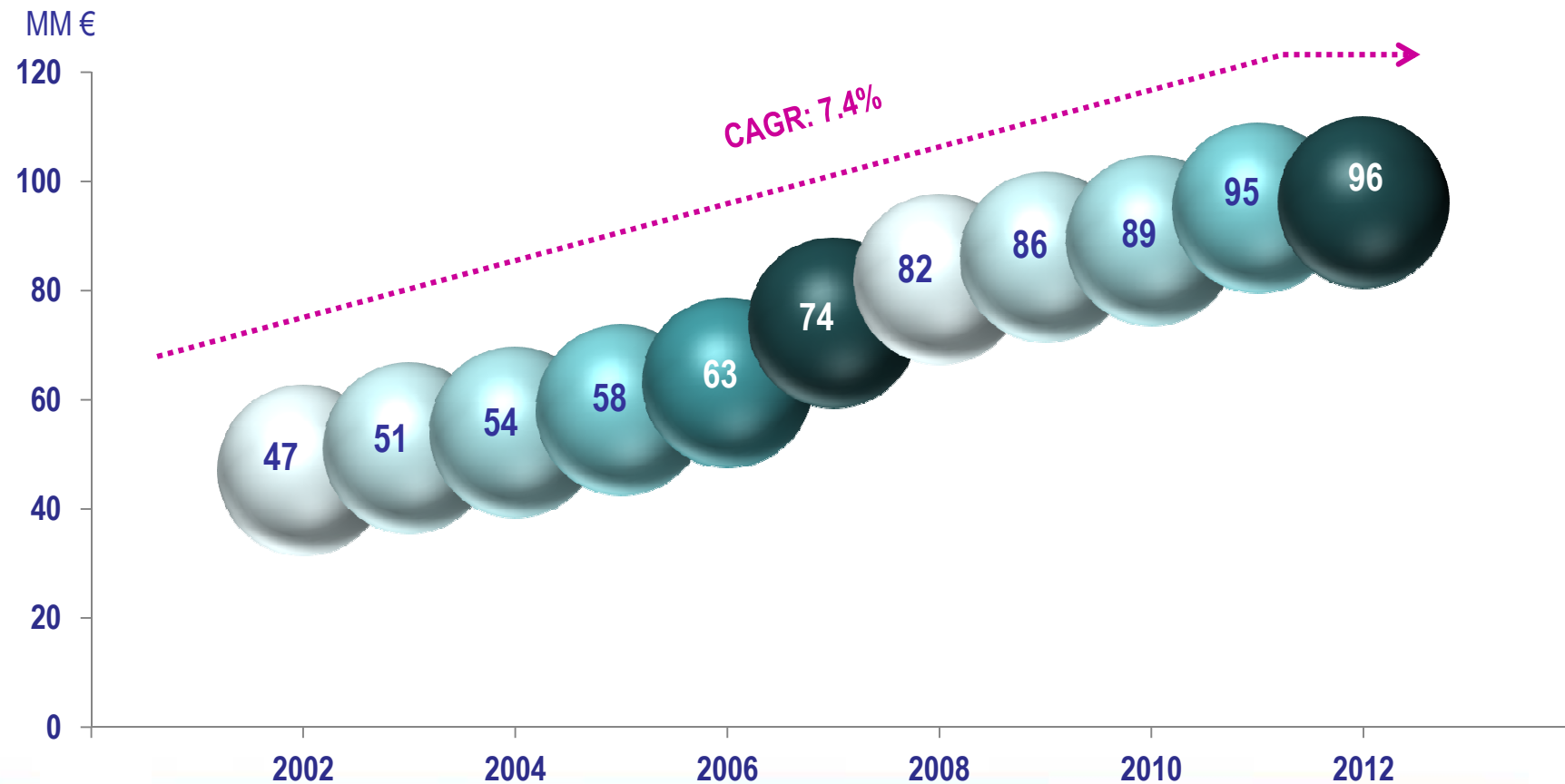
The Group's new dimension is consolidated after the Talecris acquisition.  
Bioscience division represents 88.7% of total Company sales in 2012



2011 Proforma

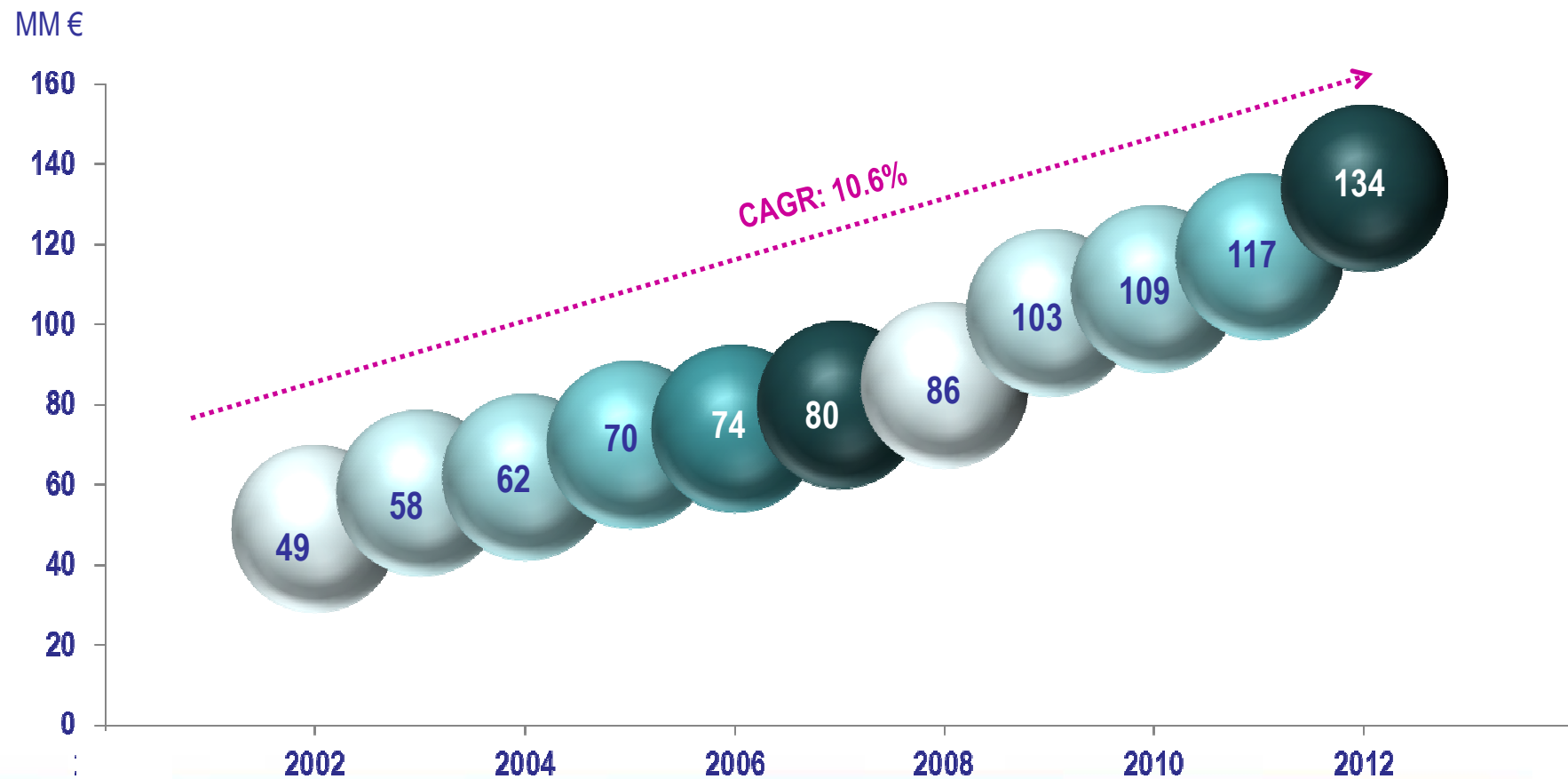
## Hospital Division: Total sales period 2002 - 2012

Hospital division achieves a slight positive growth in 2012 and establishes a 7.4% CAGR in a period of 10 years. It is important to consider that this division is currently concentrated in the Spanish market



## Diagnostic Division: Total sales period 2002-2012

Blood typing products helped to increase sales up to 134MM € which means a growth of 14.5% in 2012, maintaining for the last 10 years a CAGR of 10.6%

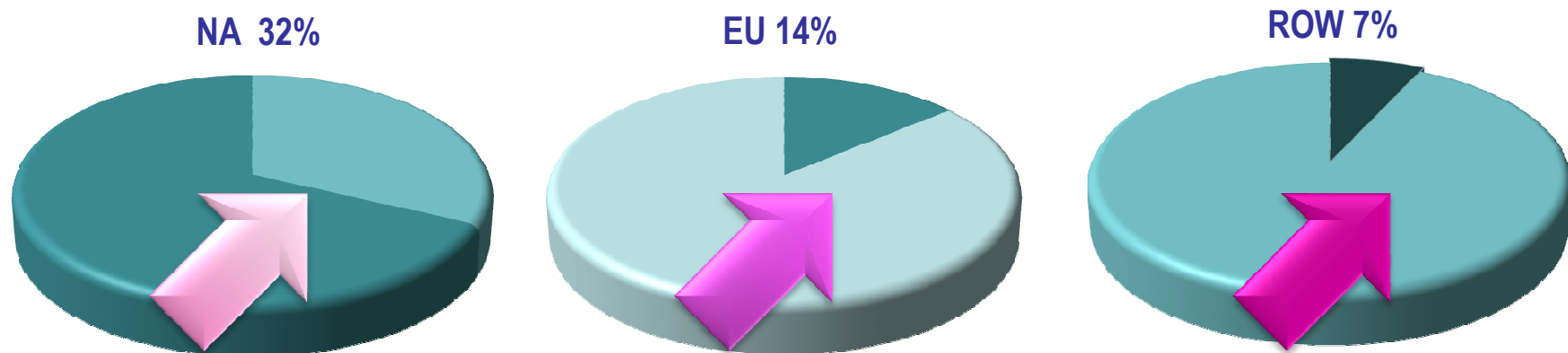


# Geographical Expansion Opportunities

## Emerging markets growth opportunities - 2011

### MRB Grifols market share plasma proteins 2011

Grifols market penetration is much higher in NA compared with other geographies. The focus in regions such as LATAM, Asia and Middle East should provide opportunities for growth



Highest level of Growth opportunities

2011 Proforma

## Emerging markets growth opportunities: ROW

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Grifols has a strong direct commercial presence in the Emerging Markets.  
The 12<sup>th</sup> unit in the region has recently been established in Dubai 2013





# Emerging markets growth opportunities: China



We are changing the status of our presence in China from a **RO** (*Representation Office*) to a **WFOE** (*Wholly Foreign Owned Enterprise*). This will allow us to enlarge the scope of our activities



# Emerging markets growth opportunities: Brazil

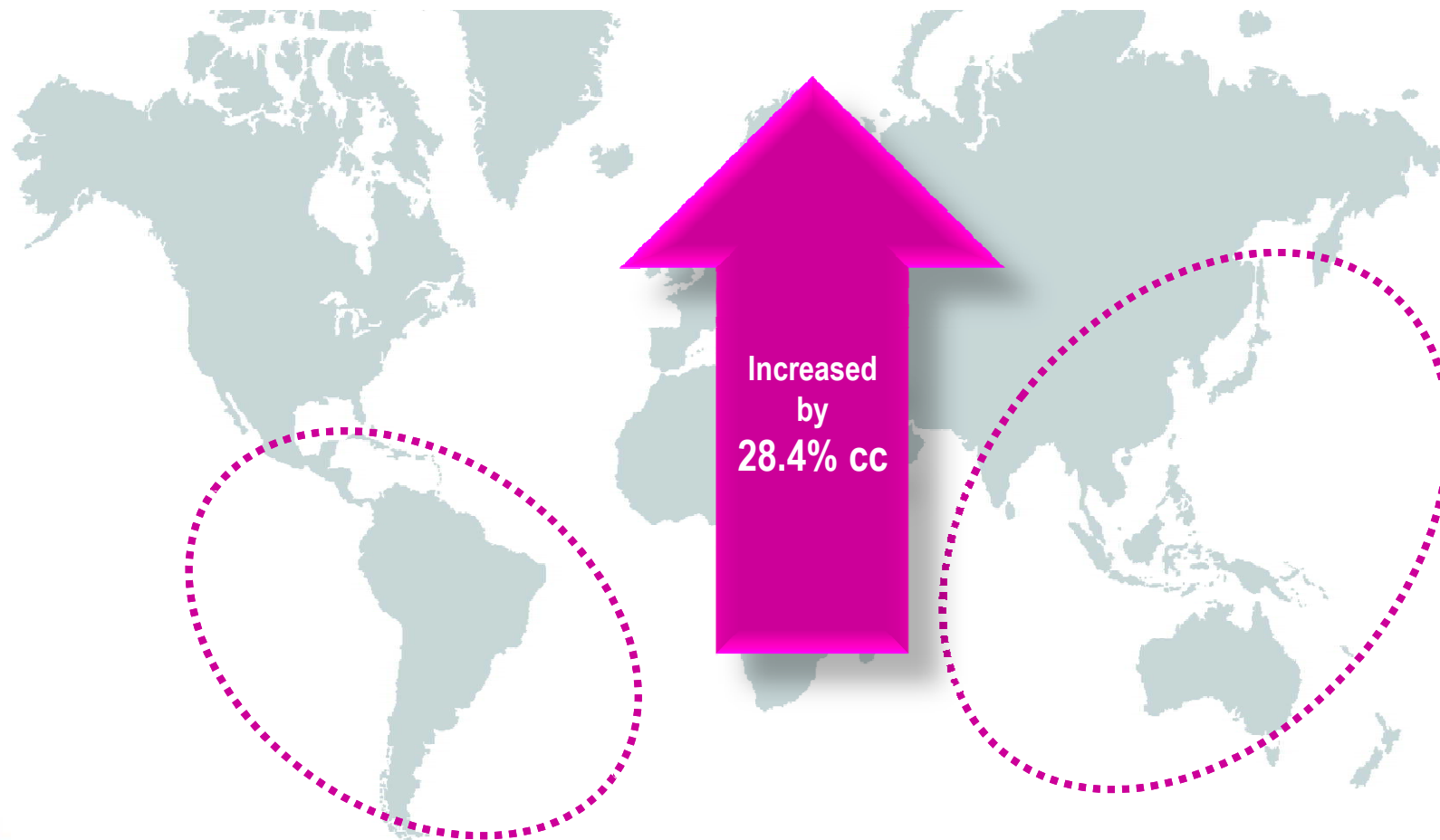


Constitution of **GRICEI** with a minority local shareholder, in order to build manufacturing facilities, start the productive activity and reinforce Grifols presence in the region

## ROW sales: Q1 2013 vs Q1 2012

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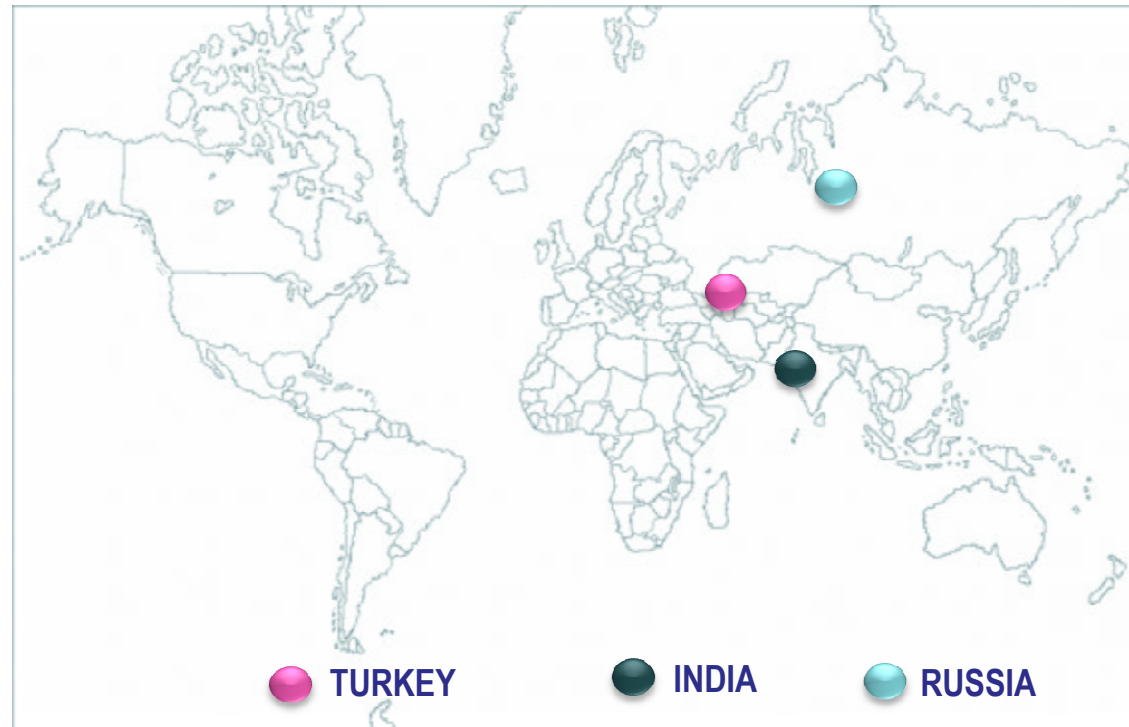
In Q1 2013 Grifols sales in ROW have increased up to 28.4% cc versus Q1 2012



# Opportunities in emerging markets

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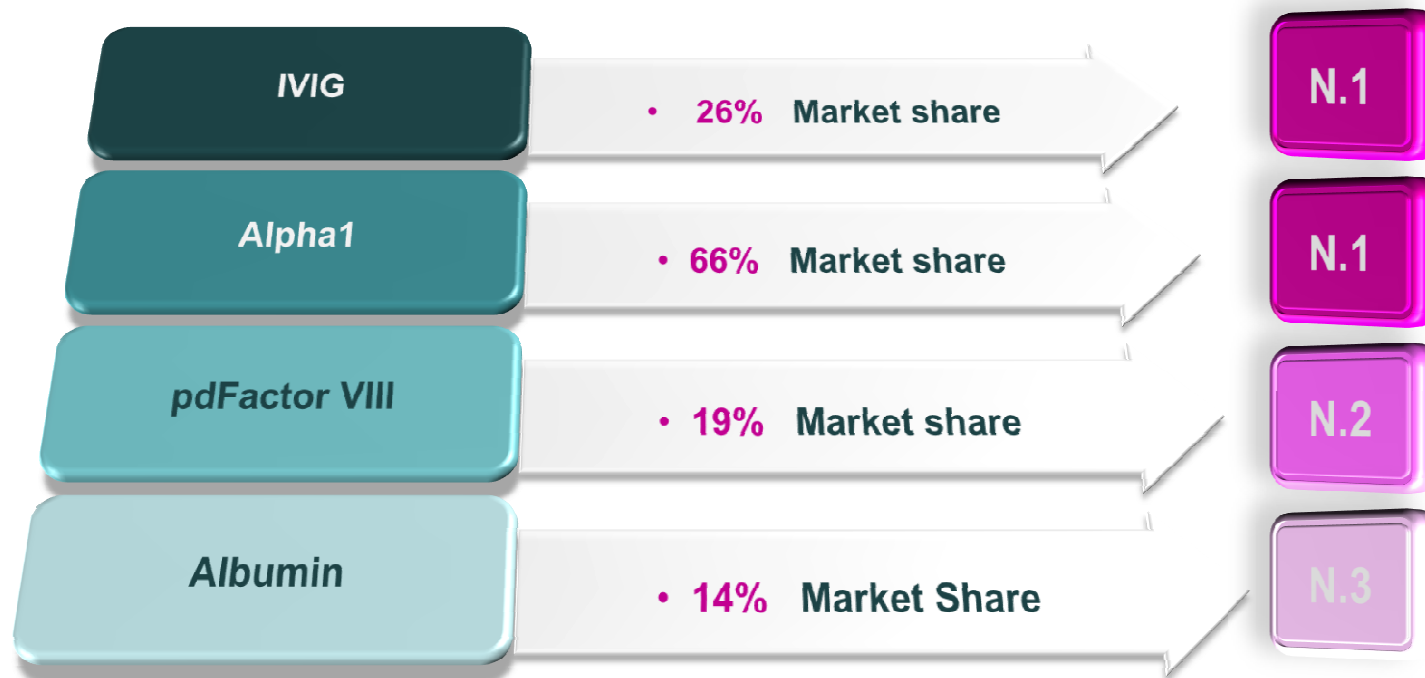
Grifols next priorities among the group of emerging markets will be:



During 2013 the company will consider its position in the referred countries and will develop long term strategies to secure an appropriate market penetration

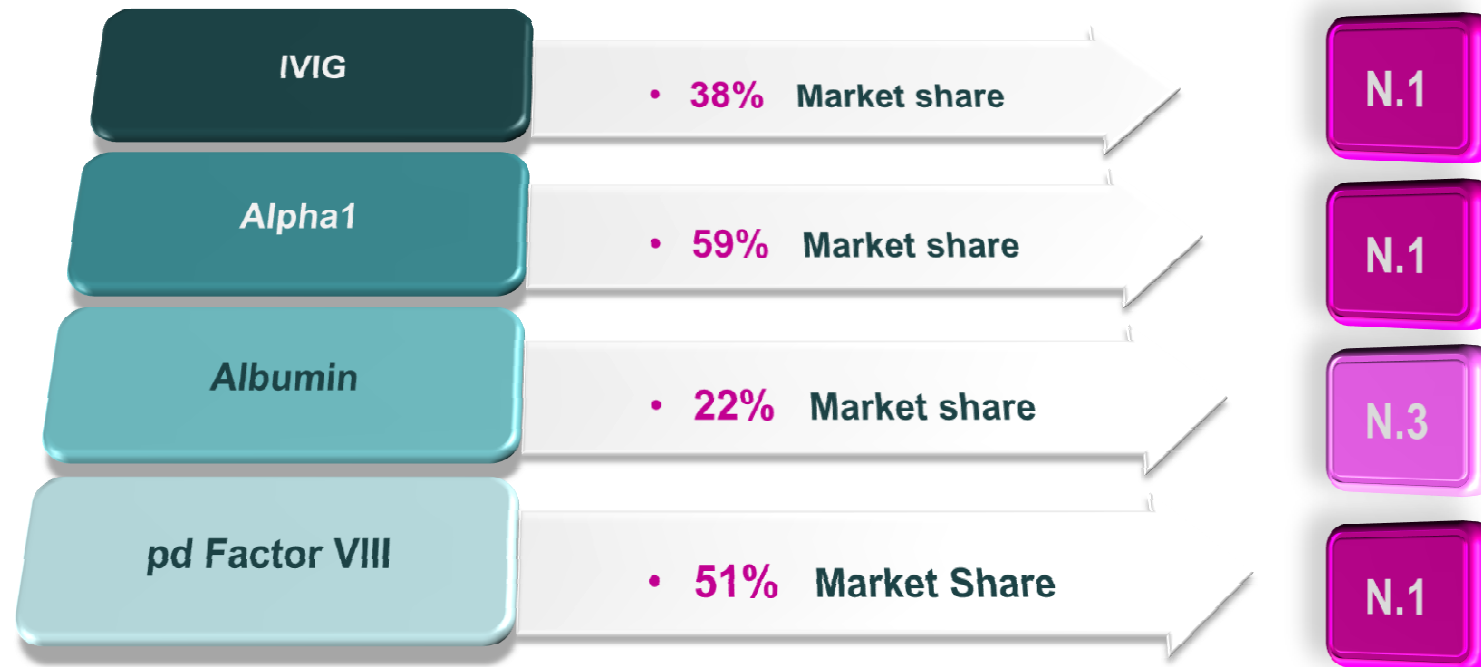
# Global Commercial Strategy Bioscience

## Grifols main products hold leading positions - Worldwide



Source MRB : The Worldwide Plasma Proteins Market - 2011

## Grifols main products hold leading positions – North America



Source MRB : The Worldwide Plasma Proteins Market - 2011

# Grifols Commercial Model - Bioscience

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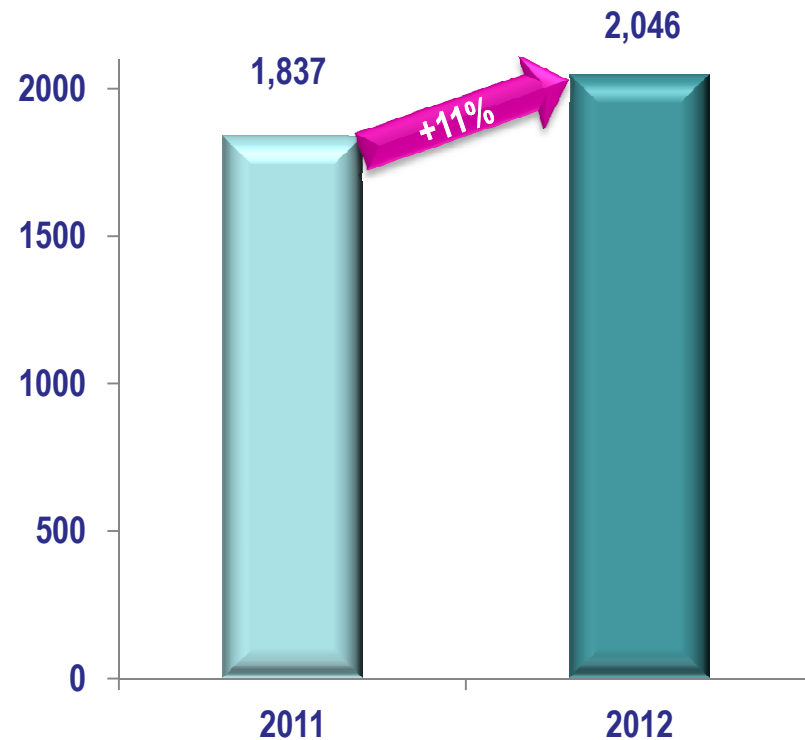
- Plasma fractionation throughput defined based on the achievement of balance among several proteins
- Allocation of products to the different markets prioritizing:
  - Warranty of stable supply
  - Good price returns
  - Fast collection of receivables
  - Strategic value
- Optimization of the “income per liter of plasma”
- Improvement of the operational efficiency



# 2012 Sales Analysis North America

## 2012 North America results

### North American Sales (MM\$)



2011 Proforma

### 2012 vs 2011

NA sales increased \$209M (+11.4%)

- U.S sales increased 11.3%
- All US Business units achieved double-digit growth
- Canada sales increased 11.7% (Final year of contract)
- NA Q1-2012 growth vs. Q4-2011 +12.8%
- Q1-2012 vs. Q1-2011 growth was \$87.4M or +20% (on pro-forma basis)

# 2012 North America – Business unit results

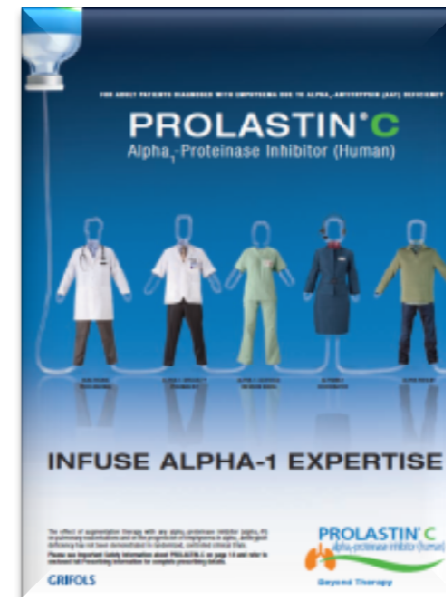
## Immunology 2012 Achievements

- IG, Albumin and HyperRAB sales all increased significantly
- New Gamunex® brand campaign developed
- Albumin sales increase key to balancing the liter
- HyperRAB delivered record sales as Grifols' market leading product addressed abnormally high incidence of rabies



## Pulmonary 2012 Achievements

- New patient starts increased 11%
- Test kit returns increased 94%, demonstrating a willingness to test by physicians
- Sales force expansions in 2012 and 2013 are driving increased diagnosis and treatment



# 2012 North America – Business unit results

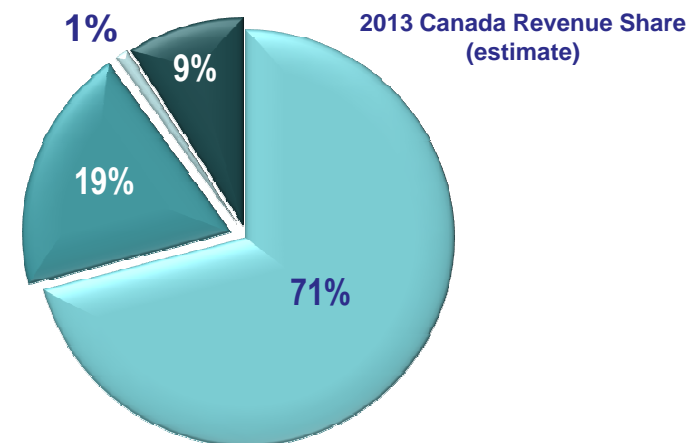
## Hematology 2012 Achievements

- Alphanate® sales growth significantly above market
- Launched new Alphanate® “Natural Protection” campaign
- Thrombate® sales increased significantly, expanded SF in 2013

## Canada 2012 Achievements/Contracts Status

- Sales increased 11.7%
- 90% of business split between Canadian Blood Services (71%) and Hema-Quebec (19%) contracts

Grifols selected as primary supplier to CBS (+60%) for new 5yr contract: Commercial IGIV Contract fractionation and Secondary supplier to Hema-Quebec



CBS (Canadian Blood Services); HQ (Héma-Québec)

■ CBS ■ HQ ■ Public Works ■ Prolastin-C

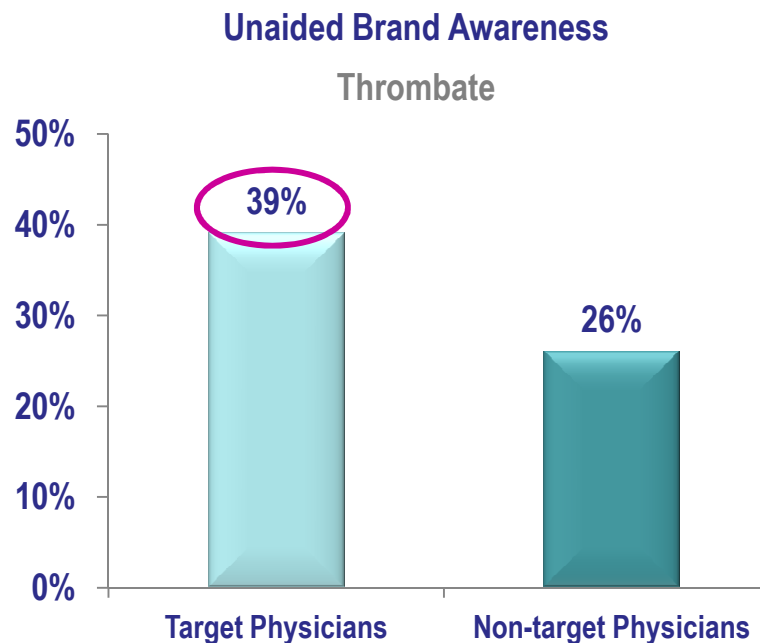
The background is a solid blue gradient with various semi-transparent geometric shapes, including circles and squares, scattered across it.

# Underdiagnosed Undertreated Diseases Growth Opportunities

## Promotion is increasing awareness and use of AT concentrate and Thrombate®

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- Targeted physicians report higher unaided brand awareness compared to non-targets
- Among all physicians, unaided awareness of Thrombate® increased from 2011 to 2012
- 23% of targeted physicians expect to increase use of AT concentrate in the next 12 months
- 41% of targeted physicians would like more visits from AT concentrate sales reps

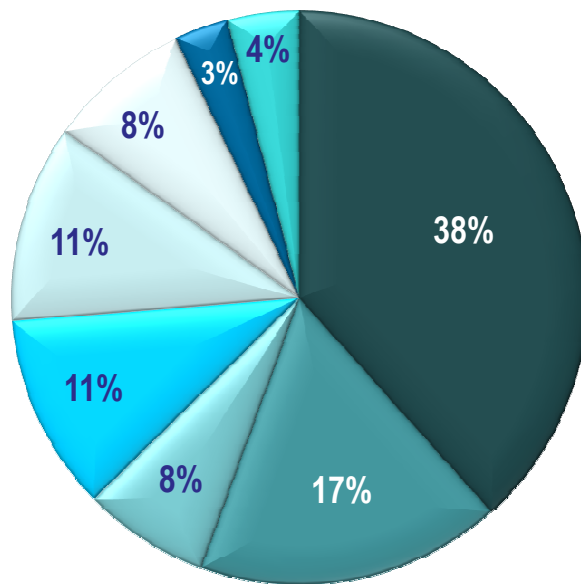


Source: ATU July 2012



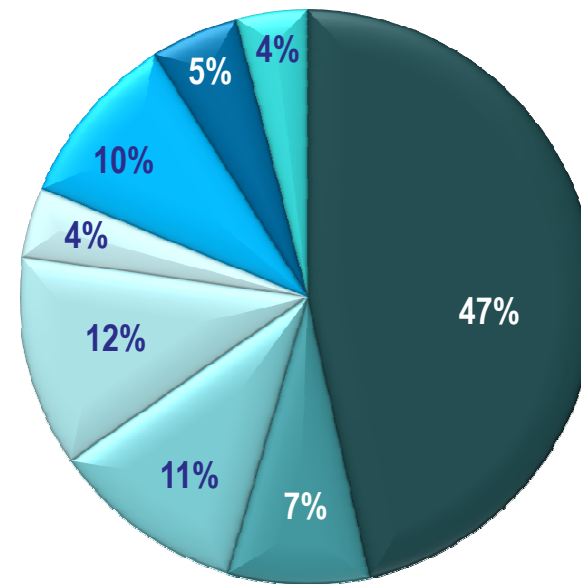
# Antithrombin deficiency

With sales force promotion, hereditary AT deficiency has grown from 38% to 47% of the total uses of Thrombate® and remains the single largest use of the product



Share of Thrombate® / Units by Condition (2007)

- Hereditary AT deficiency 38%
- Cardiac by-pass + high risk CV surgery 17%
- Liver / kidney transplant 7%
- Obstetrical / gynecological surgery 11%



Share of Thrombate® / Units by Condition (2010)

- Other surgical procedures 4%
- Sepsis / DIC 10%
- Acute lymphoblastic leukemia treated with asparaginase 5%
- Renal disease / on chronic hemodialysis 4%



# Antithrombin opportunities - I

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Cardiac Surgery an opportunity to grow with antithrombin (AT) and improve balanced fractionation

## Background

- 700,000 cardiac surgeries with CPB are performed annually in the US and EU (1)
- Pre-op levels of AT are predictors of heparin resistance which occurs in up to 30% of CPB procedures (2)
- Moreover AT consumption during CPB may trigger post operative thromboembolic complications (2)
- Low AT levels at ICU admission post-CPB are associated with a poor outcome and predictive of prolonged ICU stay (3)

(1) *Holsworth Jr et al. Perfusion, 2013 and estimations from primary market research.*

(2) *Ranucci M et al. JThorac Cardiac Surg, 2012*

(3) *Ranucci M et al. Crit Care Med, 2005*

## Antithrombin opportunities - II

### Strategic fit

- Labeling expansion in the US (leading AT product and unique pdAT)
- Consolidation of clinical experience on acquired deficiencies in non US countries
- Significant contribution to increase profitability of liter of plasma and balanced fractionation
- Synergies with albumin (same target group as some albumin users: cardiac anesthesiology)



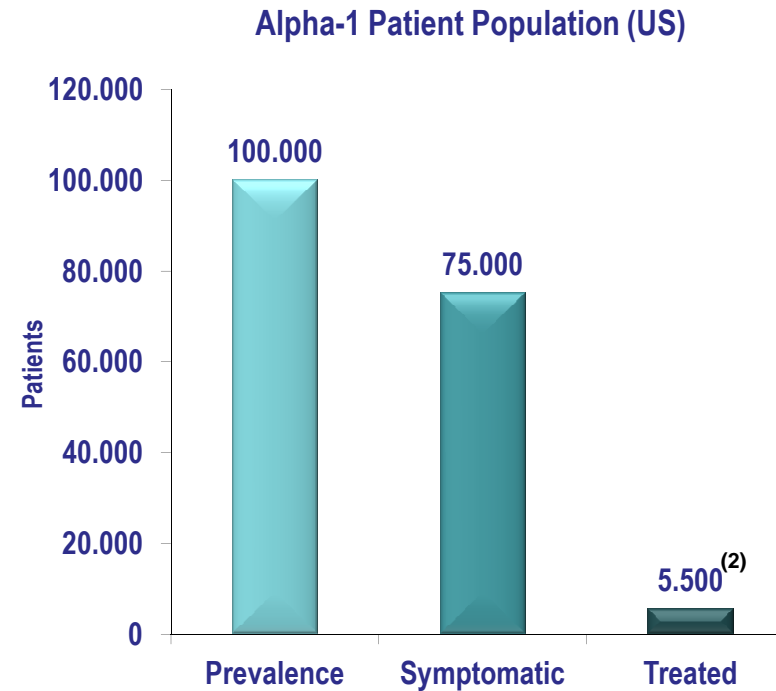
# Alpha-1 continues to represent a significant opportunity - I

## Strong Market Dynamics

- Chronic, life-extending therapy helps ensure certainty of demand
- U.S. A1PI sales have increased at a 17% CAGR since 2001

## Significant Opportunities to Expand the Market

- Patients remain under-identified and under-treated
- 0.5% – 1%<sup>(1)</sup> of the 40 million patients with COPD have A1PI Deficiency
- Many patients are frequently misdiagnosed



1. Sources: Lieberman et al. Chest 1986; 89:370-373, De Serres et al. Journal of COPD 2006; 3:133-139; University of Florida – using Grifols Alpha Kits

2. Reflects MRB data and internal Grifols estimates

## Alpha-1 continues to represent a significant opportunity - II

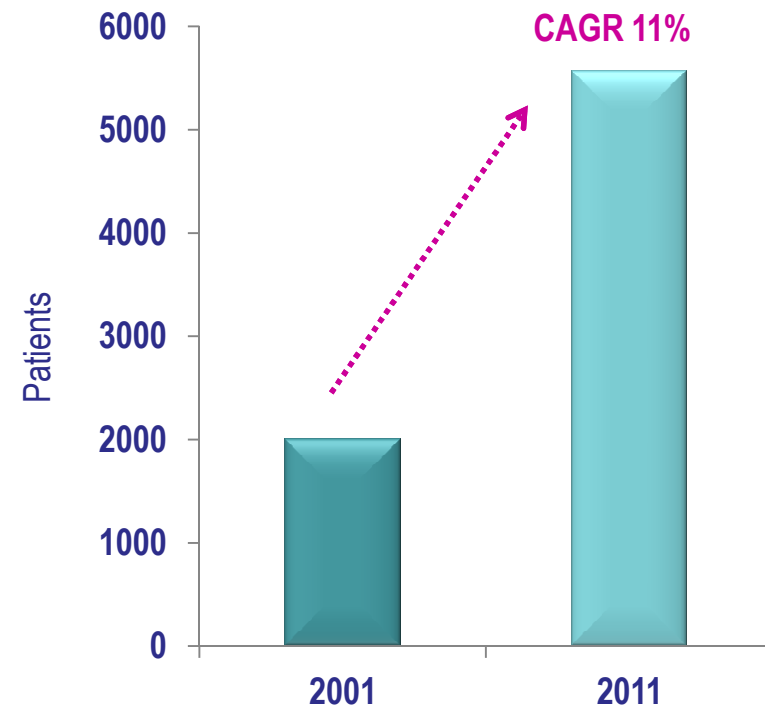
Increased diagnosis and treatment has more than doubled the number of Alpha-1 patients in 10 years

Grifols has lead this market by investing in proven approaches

- Simple blood test for diagnosis
- Dedicated sales and marketing teams
- Prolastin® Direct service model which includes disease management

Opportunities exist to enhance and extend the model

- Extending model to more countries
- Enhancements to testing approach
- Rapid Test
- Genetic (Progenika)



*Sources: Estimates using labeled dose and MRB data*

## Alpha-1 continues to represent a significant opportunity- III

Accelerated identification of new patients with Alpha-1 Antitrypsin Deficiency with point-of-care AlphaKit® QuickScreen

- AATD is currently underdiagnosed
- Grifols provides free test kits to physicians in many countries, but the need still exists for easier screening and diagnosis



- Solution: Novel point-of-care screening test that a physician or nurse can administer in the office rather than sending out to a lab
- Identifies the presence of the Z-protein, responsible for over 95% of severe Alpha-1 deficiency cases
- Patients who test positive undergo a confirmatory lab test to verify genotypes
- Product in development phase – launch to major markets over the next 1-2 years



# Cystic fibrosis represents an opportunity to extend growth of Alpha-1 Antitrypsin

Phase II clinical study is on-going using novel aerosol formulation of Prolastin®

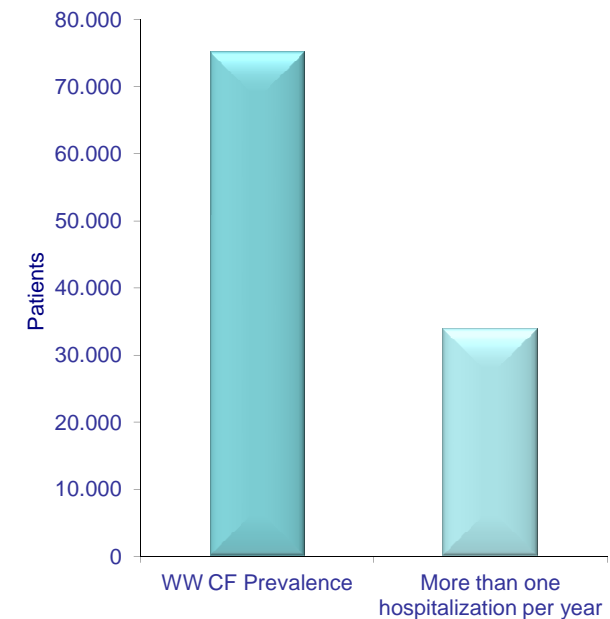
## Background:

Cystic fibrosis (CF) is an inherited chronic disease that affects the lungs and digestive system of about 30,000 children and adults in the United States (70,000 worldwide). A defective gene and its protein product cause the body to produce unusually thick, sticky mucus that:

- clogs the lungs and leads to life-threatening lung infections;
- obstructs the pancreas and stops natural enzymes from helping the body break down and absorb food

Source: CF Foundation

## Estimated CF Prevalence



# Cystic fibrosis represents an opportunity to extend growth of Alpha-1 Antitrypsin

---

## New Prolastin® indication with significant unmet need

- Despite recent advances, significant unmet need remains
- About 45% of CF experience severe exacerbations requiring more than one hospitalization per year
- The frequency of such exacerbations increases with age and disease severity
- Alpha-1 Antitrypsin has a novel mechanism of action with an opportunity to be the 'first and only' anti-inflammatory agent for CF

## Strategic fit

- Extends Grifols leadership in Pulmonology
- Broadens Prolastin® franchise into the aerosol market

*Source: CF Foundation*



# Grifols partners with Aradigm to commercialize Pulmaquin™

## Grifols Aradigm Partnership

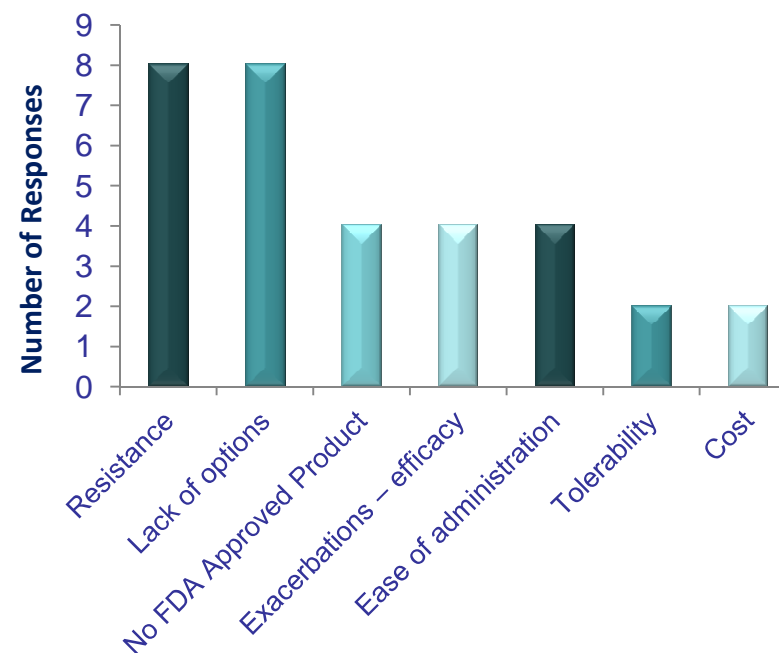
- Exclusive Global commercial rights for Pulmaquin™
- Pulmaquin™ is a liquid mixture of free and liposomal ciprofloxacin to be delivered once daily with a PARI LC™ Sprint Nebulizer
- Phase III Asset being developed for non-Cystic Fibrosis Bronchiectasis by Aradigm

## Complementary customer targets and messages

- Significant overlap with current Prolastin-C® customers
- Sales opportunity: \$300MM in 3<sup>rd</sup> full year
- Leverages existing Prolastin-C® sales force
- Pulmaquin™ has potential in Cystic Fibrosis, Grifols has initiated Alpha-1 CF program

Source: Primary Market Research

## Rationale for High Level of Unmet Need



# No currently available therapies for the treatment of Bronchiectasis

Pulmaquin™ offers a unique product profile that could enable premium pricing and significant market share

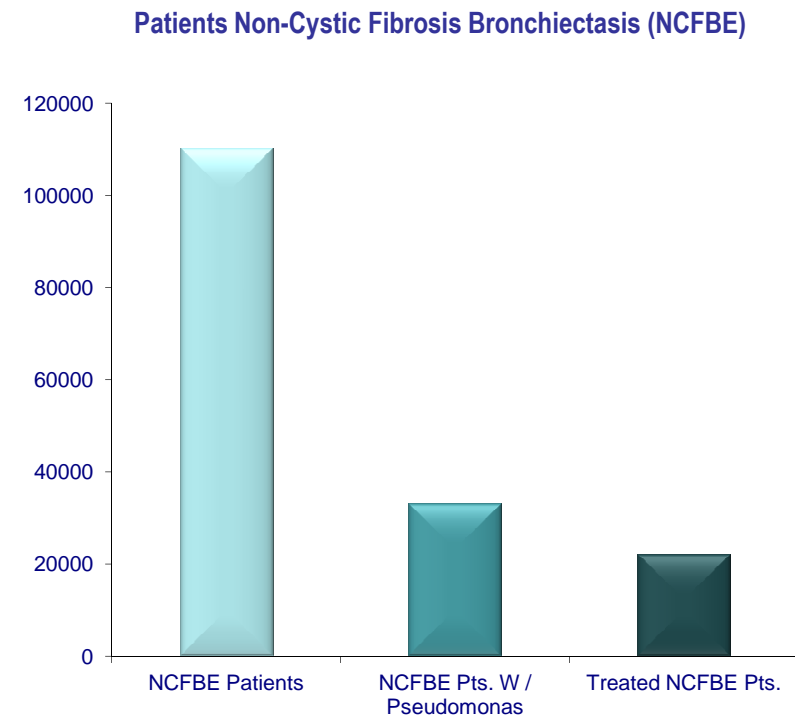
## Target patient population

- No approved treatments for BE and significant unmet need
- Obstructive lung disease leading to downward spiral of lung injury, infection, inflammation, airflow obstruction
- Estimated 110,000 BE patients (US), of which approx. 30% are colonized with *P. aeruginosa*

## Product profile offers clear advantages

- Strong physician reaction based on phase 2 data
- Once a day dosing with lower systemic exposure
- Alternative antibiotic class
- Assumes 7 year orphan exclusivity

## Estimated US Treatment of Bronchiectasis



Source: Primary Market Research 2012

# Albumin opportunities

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Investing in new potential uses of albumin in hepatology to reinforce unique properties of albumin

## Background

- USA and EU accounts for more than 1.5 million cirrhotic patients (1)
- 50% of cirrhotic patients will develop ascites in 5 years (2)
- 23% of cirrhotic patients hospitalized due to a decompensation where diagnosed with Acute on Chronic Liver Failure (ACLF) a life-threatening condition with more than 30% 28-day mortality (3)

## Strategic fit

- New uses will reinforce albumin properties beyond fluid management
- Reinforcing Grifols leadership in hepatology

- (1) [www.mdguidelines.com/cirrhosis-of-the-liver](http://www.mdguidelines.com/cirrhosis-of-the-liver) and estimates from “The burden of liver disease in Europe. A review of epidemiological data” (EASL, 2013)
- (2) D’Amico G et al. *Dig Dis Sci*, 1986
- (3) Moreau R et al. *Gastroenterology*, 2013

# IVIG consumption per capita has continued to grow in the Emerging Markets

Significant Opportunities remain to expand the IVIG Market

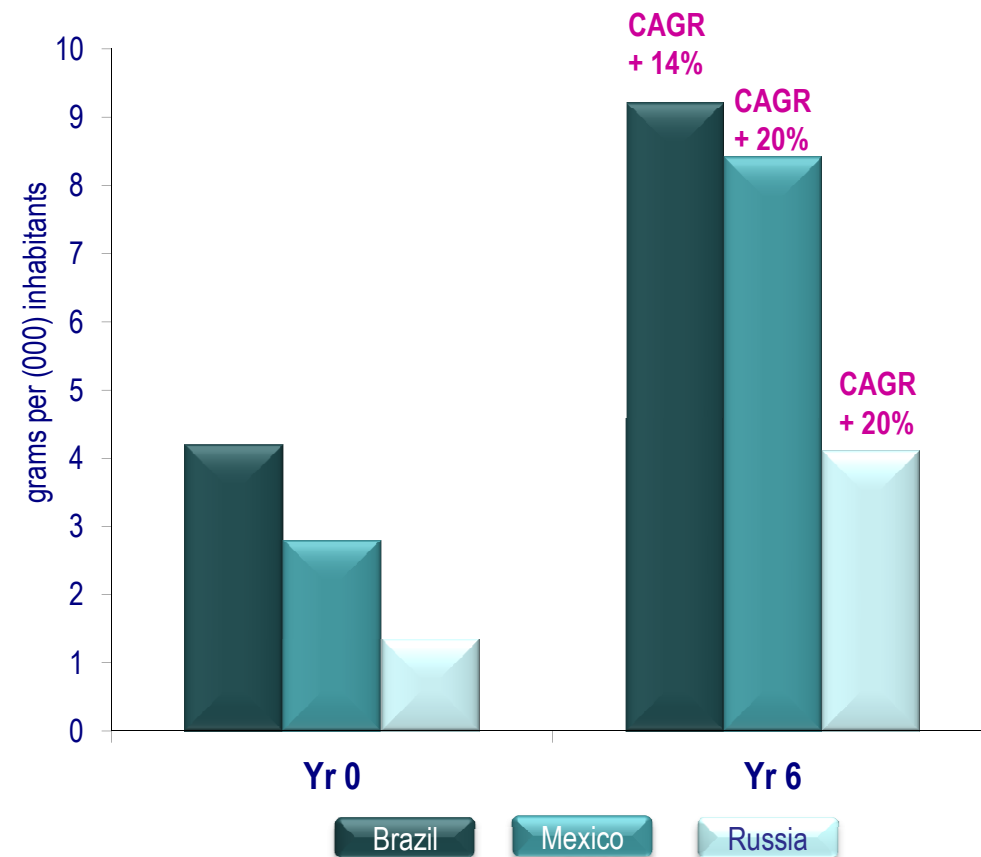
- New Indications
- Improved Diagnosis & Treatment
- Expansion of healthcare in emerging markets

## New Indications

- Post Polio Syndrome
- Myasthenia Gravis

## Improved Diagnosis

- CIDP
- Primary Immune Deficiency



Source: MRB data, grams per (000) population, Brazil 2010, Mexico 2010, Russia 2011

# IVIIG opportunities - I

Grifols is initiating Myasthenia Gravis clinical program as opportunity to extend growth of IVIG

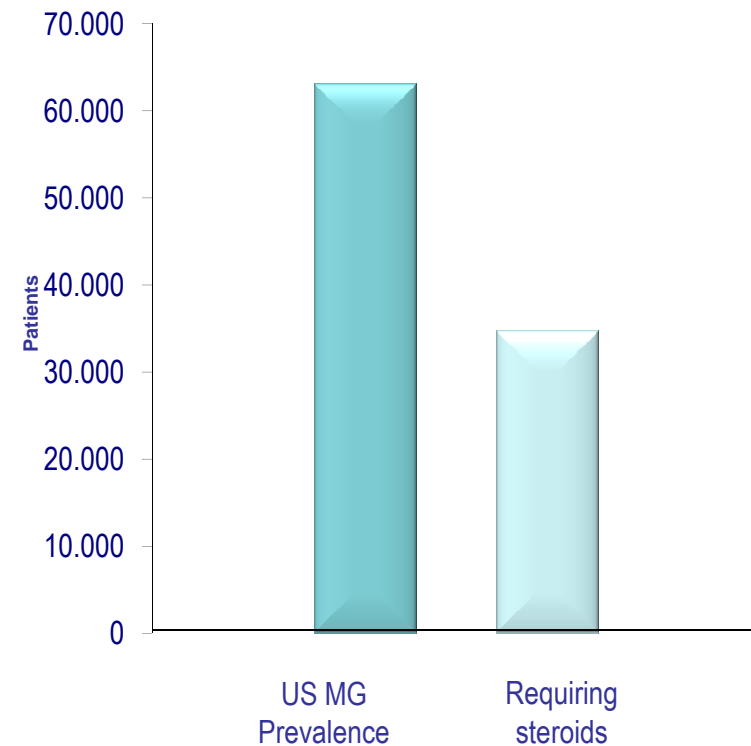
## Background

- Myasthenia Gravis is a neurological autoimmune disorder characterized by fluctuating weakness of voluntary muscle groups

## Substantial patient population

- 45,000 to 55,000 patients (US) → Likely orphan designation

Estimated US Treatment of MG



Source: Myasthenia Gravis Foundation of America, Primary Research

# IVIg opportunities - II

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## New IVIg indication with significant unmet need

- MG patients treated with steroids +/- oral immunosuppressants → suboptimal efficacy, significant side effects
- IVIg use for maintenance is uncommon

## Strategic fit

- Extends Gamunex<sup>®</sup> leadership in Neurology (MG subspecialists = CIDP subspecialists)
- Physicians typically have twice the number of MG patients as CIDP patients

## Probability of success

- IVIg standard of care in acute Myasthenia crisis;
- Published evidence for improvement in worsening



## Objectives:

- Establish a market leader position with a highly differentiated Fibrin Sealant offering to address unmet needs
- Capture significant market share of the stand alone human thrombin market
- Build a Biosurgery sales channel for the sale of additional innovative Biosurgery products beyond fibrin sealant
- Worldwide Fibrin Sealant Market is expected to grow with CAGR of 8.5% through 2016 and market penetration is very low – 2% - 39% depending on region and specialty



# Grifols sales growth opportunities in the short- and mid-term

---

## Diagnostics

- Acquisition of controlling interest in Progenika



- Products in the areas of Blood Genotyping, Drug Monitoring and Personalized Medicine
- Technologies to develop new diagnostic test synergistic with other company activities

- Araclon test for early diagnosis of Alzheimer disease



# Grifols sales growth opportunities in the short- and mid-term

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## Intravenous solutions

Existing signed contracts include products such as:



- PVC empty bags
- Standard large volume parenteral solutions
- Irrigation solutions
- Lipid emulsions
- IV Paracetamol, etc.

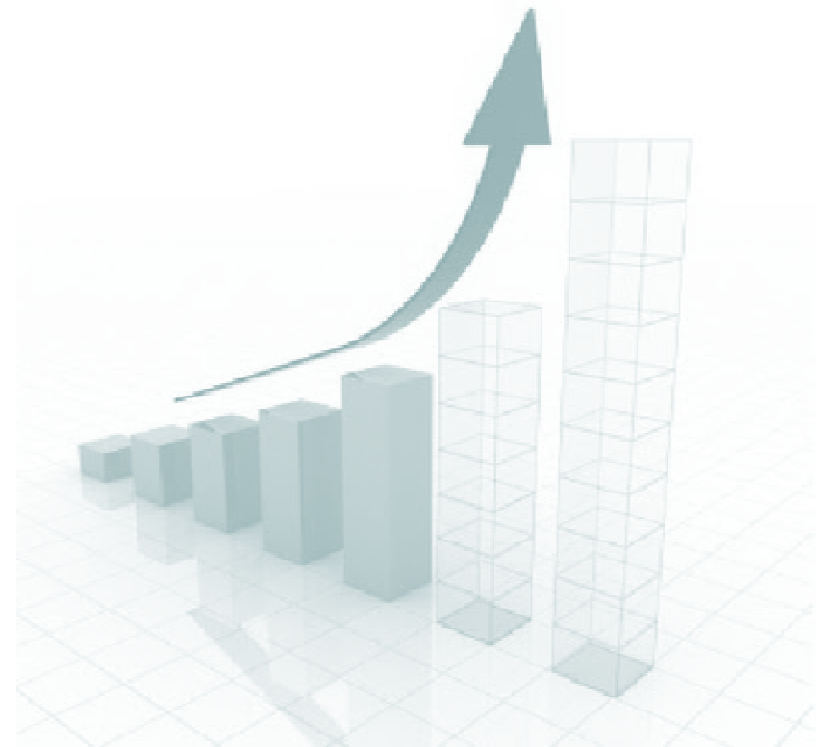


# Grifols sales growth opportunities

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- Third party manufacturing for companies as the following:

- CDM Lavoisier
- Zoetis
- Aguetant
- MacoPharma
- Eurospital
- Formula
- Mylan
- Cadence Pharmaceuticals
- Terumo



- Product destinations are several European markets, the US and Asia
- Multiple agreements are in development stage or even in regulatory phase

## Executive summary

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- Strong sales growth and leadership position in key products
- Commercial model providing a sustained future sales growth
- Geographical expansion opportunities
- Expansion opportunities with existing portfolio
- New products and projects to support the present growth model

# Bioscience Manufacturing Operations Update

## Executive summary

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- Grifols has today three state-of-the-art manufacturing sites offering a reliable and consistent supply to the market
- Facility and paste cross approvals are progressing and on track. New investments for key products and infrastructure are being made
- Successful innovation through Grifols Engineering, S.A. are further improving quality and operational efficiencies



# Grifols Bioscience manufacturing sites

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Barcelona, Spain

Operations Employees: 790



Los Angeles, California

Operations Employees: 524



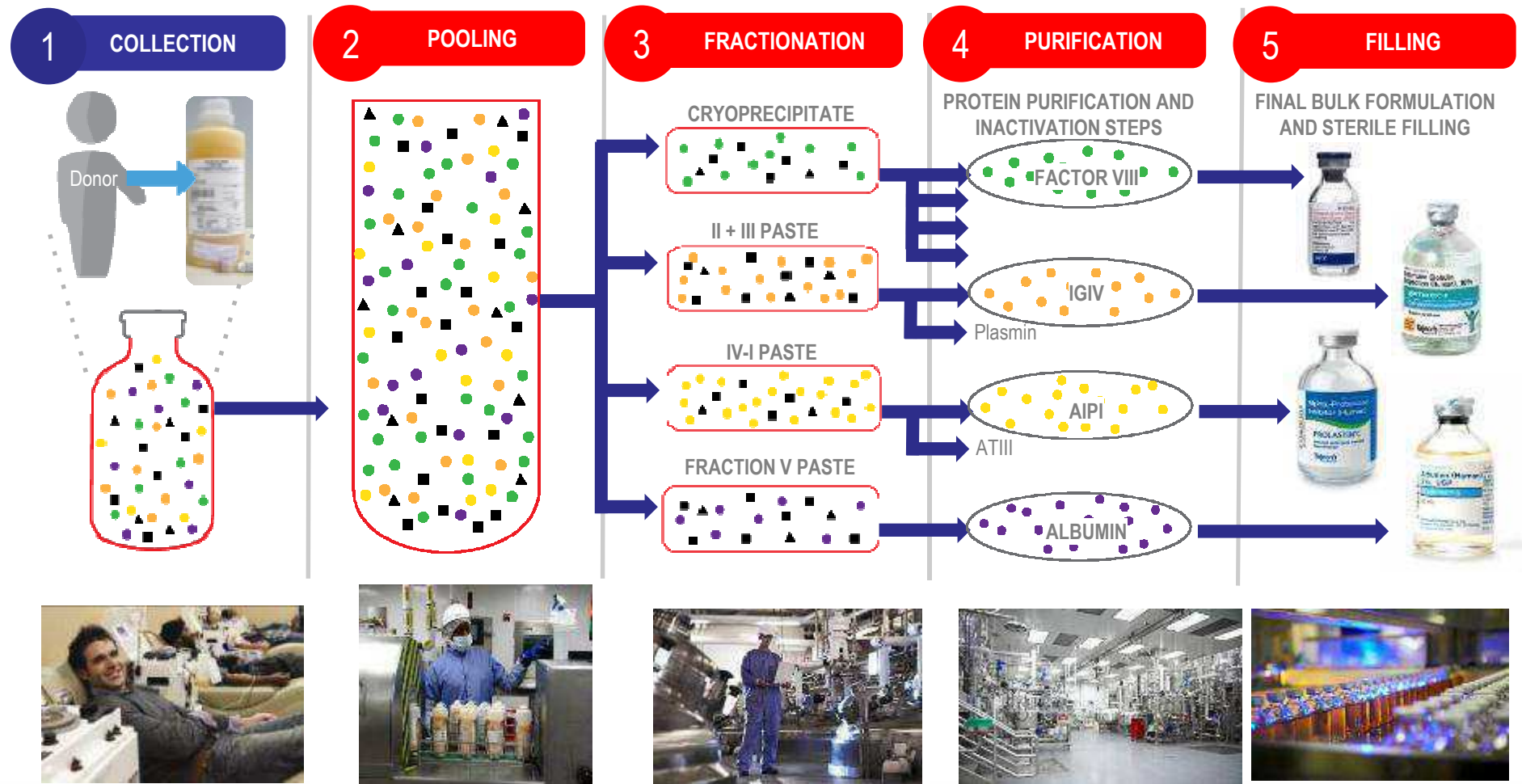
Clayton, North Carolina

Operations Employees: 1,270

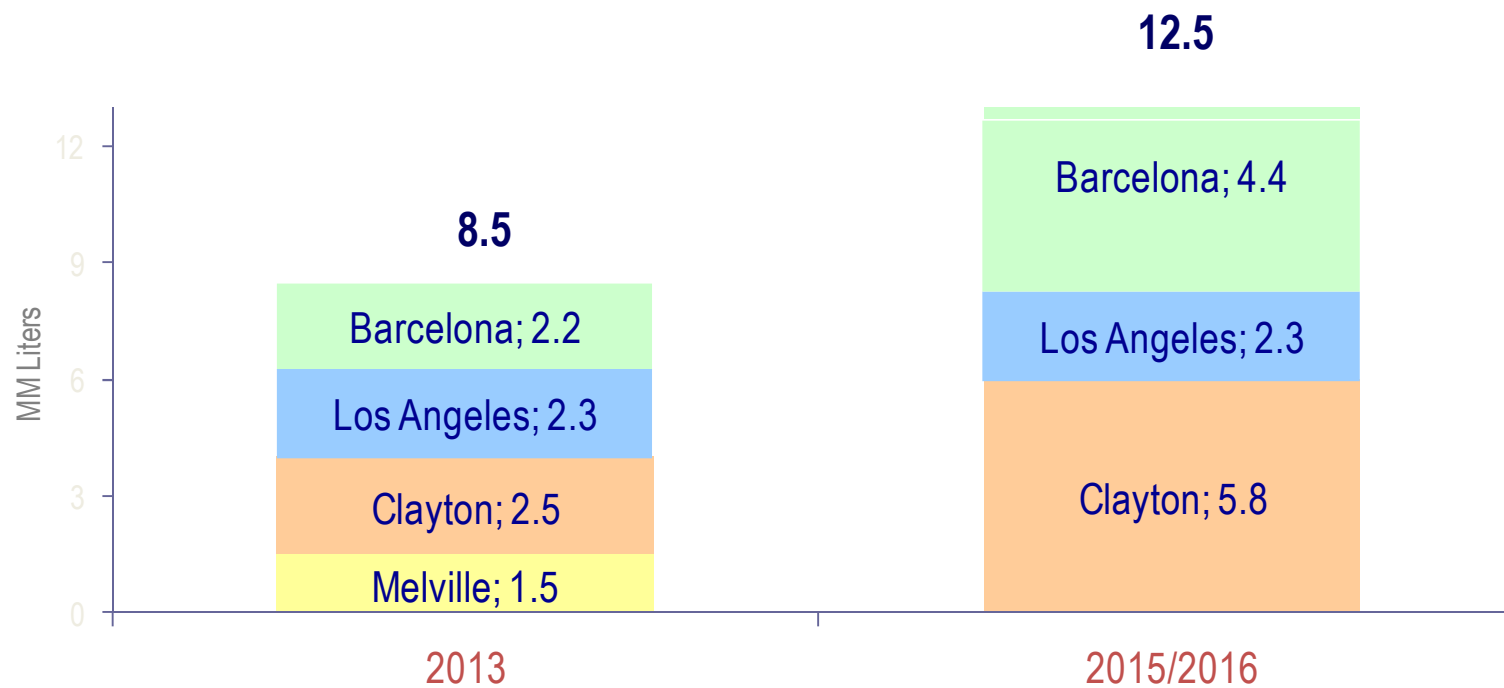
Three State of the art manufacturing sites with excellence in compliance is a warranty for reliable and consistent supply



# Manufacturing process steps



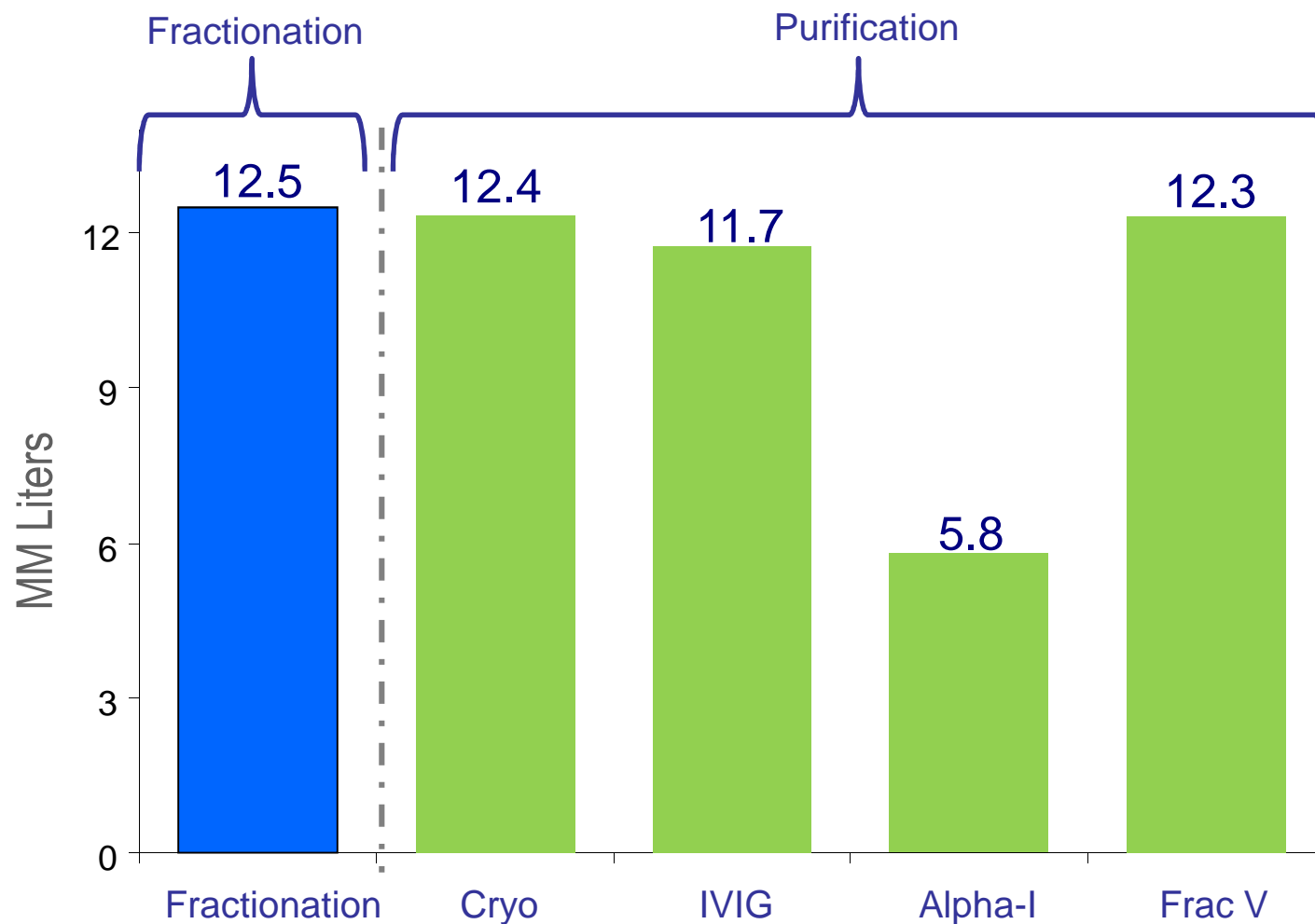
## Fractionation capacity



Fractionation investments pace future growth

*\*Melville sold to Kedrion*

## Purification capacity: 2016 Forecast



*Liters equivalents*

# Manufacturing sites and products

○ Current    ○ 2015

	<u>BCN</u>	<u>LA</u>	<u>NC</u>	<u>NY</u>
➤ Fractionation	○	○	○	○
➤ Purification				
- Factor VIII	○	○	○	
- Factor IX	○	○		
- AT III	○		○	
- IGIV				
▪ Polivalent	○	○	○	
▪ HepB	○			
- IGIM				
▪ Polivalent	○		○	
▪ HepB	○		○	
▪ Rabies			○	
▪ Rho(D)	○		○	
▪ HyperTet	○		○	
- Alpha1 PI	○		○	
- Albumin	○	○	○	
- Fibrin Sealant	○			

## Paste cross approval update

		BCN Site			LA Site			NC Site		
		June 2013			2016			June 2013		
		BCN	LA	NC	BCN	LA	NC	BCN	LA	NC
Cryo	Factor VIII	●	●		●	●	●			●
II + III	IGIV	●	●		●	●	●		●	●
IV-1	Alpha 1	●			●		●		●	●
V	Albumin	●	●		●	●	●		●	●
Specific II+III IGIM <sup>+</sup> s		●			●				●	●

Cross Site approval of pastes requires a considerable investment of time, material and resources...  
However it gives better plasma liter utilization, supply reliability and synergies to the business

# Major investments: Fractionation

---

## BCN: New Fractionation Facility (Fracc 4)

- 2.2 million liters /year capacity
- First conformance lot in September 2013
- Expected approval by mid 2014



## NC: North Fractionation Facility (NFF)

- 5.8 million liters /year capacity
- First conformance lot in August 2013
- Expected approval by beginning 2015



## Major investments: Purification IVIG

---

### LA: Gamunex® Purification and Filling Facility (Bldg 330)

- 10 million grams /year capacity (ready to be doubled it in the future)
- Purification and filling facility: From II+III to final vial
- First conformance lot in November 2013
- Expected approval by mid 2015





# Major investments: Purification Alpha-1 PI

---

## BCN: New Purification Area for Prolastin®

- 180,000 grams/year capacity (future up to 540,000 grams/year)
- Conformance lots done in Q4 2012
- Expected approval by mid 2014



## NC: Capacity expansion for Prolastin-C®

- 1.2 million grams/year capacity increase
- Project in conceptual design phase
- For 2017-2018 approval



# Major investments: Purification Albumin

## BCN: Third Purification line (Bldg P1)

- + 22 million grams/year capacity
- Recently approved



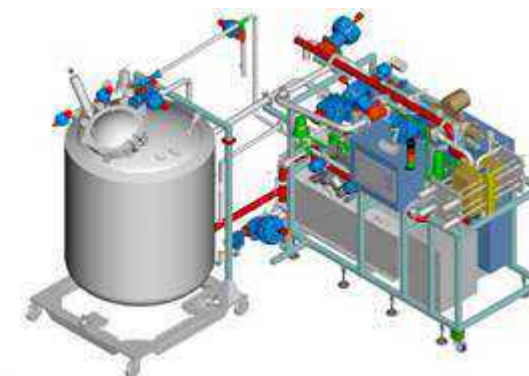
## NC: Albumin process change to the method Grifols (Bldg 300)

- 62 million grams/year capacity (expandable to 124 grams/Year)
- First conformance lot in June 2013
- Expected approval by 3Q 2014



## LA: Albumin capacity expansion (Bldg 314-315)

- + 44 million grams/year capacity (expandable to 88 million grams/year)
- Purification and Filling Facility, including Sterile Filling in Bags
- Mechanical completion by may 2014
- Expected approval by end 2015



# Comments on Albumin Purification investments

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- Final goal is to have all sites with the same Grifols method process
- This process is very efficient and obtains Albumin with low aluminum content (mandatory in Europe)
- The aim of all this Albumin investments is to be able to transform all our Fr V in final product for therapeutic use
- These investments are aligned with the Grifols Strategy to recover the prestige of the Albumin in the markets and be prepared for the R&D developments in the Albumin field



## Major investments: Others

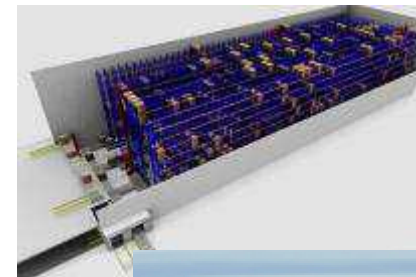
### NC: Filling capacity expansion (SFF Bldg)

- 3 new filling Lines with Grifols Technology
- Driven by capacity and reliability improvements
- Mechanical completion by June 2014
- Expected approval by end 2015



### NC: New plasma logistic center (Clayton site)

- 3.6 million liters (5200 pallet) storage capacity at -30°C.
- Highly automated building and plasma handling for pooling
- Break ground this week and expected approval by mid 2015
- Main Grifols plasma logistic center distributing to the other centers in City of Industry (LA, 1.5 million liters cap.) and Parets (BCN, 1 million liters cap.)



# Grifols Bioscience manufacturing technology pioneering approaches

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Thanks to the daily contact of our Grifols Engineering company (Grifols Engineering, S.A.) with our operations and their strong knowledge of our processes we have developed pioneering solutions for our core manufacturing processes

Examples of this are:

- Plasma bottle and more recently plasma bags emptying technology (Patented)
- Purification equipment design and manufactured in-house according to our real needs
- Grifols Sterile Filling Technology and the laser marking applied to our final containers (Patented)

And more recently still under development:

- Radio Frequency Identification (RFID) for the plasma bottles (Patented)
- Plasma bottle sampling machine (Patented)
- Sterile filling in bags technology

# Conclusions

---

- Grifols has today three state-of-the-art manufacturing sites offering a reliable and consistent supply to the market
- Facility and paste cross approvals are progressing and on track. New investments for key products and infrastructure are being made
- Successful innovation through Grifols Engineering, S.A. are further improving quality and operational efficiencies

Grifols continues to be a leader and pioneer in the industry



# Financials



# Key Achievements

## 2012 - 2013 YTD Key Achievements - I

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### **2012** **First Financial year as an integrated entity**

- Robust Revenue growth +7,6% <sup>(1)</sup> cc
- +500 bps EBITDA <sup>(2)</sup> margin expansion
- Net Profit growth x5 vs. 2011
- +€ 600 million unlevered free cash flow generation

### **1Q 2013** **Margin expansion continues**

- Record quarterly sales
- +150 bps EBITDA margin expansion y-o-y
- +320 bps Net Profit margin y-o-y
- +€88 million unlevered free cash flow in 1Q13

### **Significant operating improvements achieved**

- Good progress on production flexibilization:
  - New FDA cross licenses
- Expansion capacity on track (CAPEX)
- Safety is **paramount**: + in house testing capacity:
  - New lab in San Marcos

*(1) Pro-forma growth ; (2) Adjusted for Talecris integration costs*

## 2012 - 2013 YTD Key Achievements - II

### Rating agencies support Grifols' deleveraging path

- Corporate credit ratings up 1 notch:
  - S&P: BB, Moody's: Ba3 (\*)
- Successful term loan restructuring in 2012

### Ongoing Acquisition growth to strengthen R&D

- Largest and diverse R&D portfolio in company history
- 51% acquisition of Araclon Biotech
  - Alzheimer R&D: Early Diagnostic & Vaccine
- 40% acquisition of VCN Bioscience
  - New Therapeutic approach for tumors
- 60% acquisition of Progenika Biopharma
  - New Genetic testings for personalized medicine
- 35% stake in Aradigm along with commercial rights
  - Inhalation for the treatment of severe respiratory disease

### Consent Decree vacated

- Los Angeles consent decree officially vacated by the FDA and DOJ after more than a decade since the acquisition of Alpha Therapeutic's assets

(\*) Grifols' Senior Secured Debt rating is one notch higher: Moody's Ba2, S&P BB+

# Q1 2013 Results

## Q1 2013 – Q1 2012 Sales by Division

€ Million

	Q1 2013	% Sales	Q1 2012	% Sales	% Variance	% Variance c.c.
<b>Bioscience</b>	<b>604.8</b>	88.5%	<b>587.2</b>	88.1%	3.0%	4.0%
<b>Hospital</b>	<b>27.1</b>	4.0%	<b>27.0</b>	4.0%	0.4%	0.3%
<b>Diagnostic</b>	<b>32.6</b>	4.8%	<b>34.8</b>	5.2%	-6.3%	-5.7%
<b>Raw Materials and Others</b>	<b>19.2</b>	2.7%	<b>17.7</b>	2.7%	8.6%	10.0%
<b>TOTAL</b>	<b>683.7</b>	100.0%	<b>666.7</b>	100.0%	2.6%	3.5%

## Q1 2013 – Q1 2012 Sales by Region

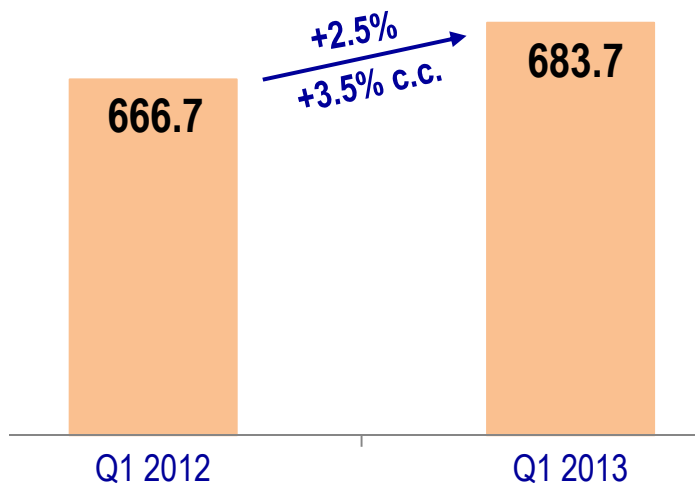
€ Million

	Q1 2013	% Sales	Q1 2012	% Sales	% Variance	% Variance c.c.
EU	149.3	21.8%	151.4	22.7%	-1.4%	-1.5%
US + CANADA	409.9	60.0%	416.8	62.5%	-1.6%	-0.5%
ROW	114.9	16.8%	90.8	13.6%	26.4%	28.4%
<b>Subtotal</b>	<b>674.1</b>	<b>98.6%</b>	<b>659.0</b>	<b>98.8%</b>	<b>2.3%</b>	<b>3.3%</b>
Raw Materials	9.6	1.4%	7.7	1.2%	25.5%	27.4%
<b>TOTAL</b>	<b>683.7</b>	<b>100.0%</b>	<b>666.7</b>	<b>100.0%</b>	<b>2.6%</b>	<b>3.5%</b>

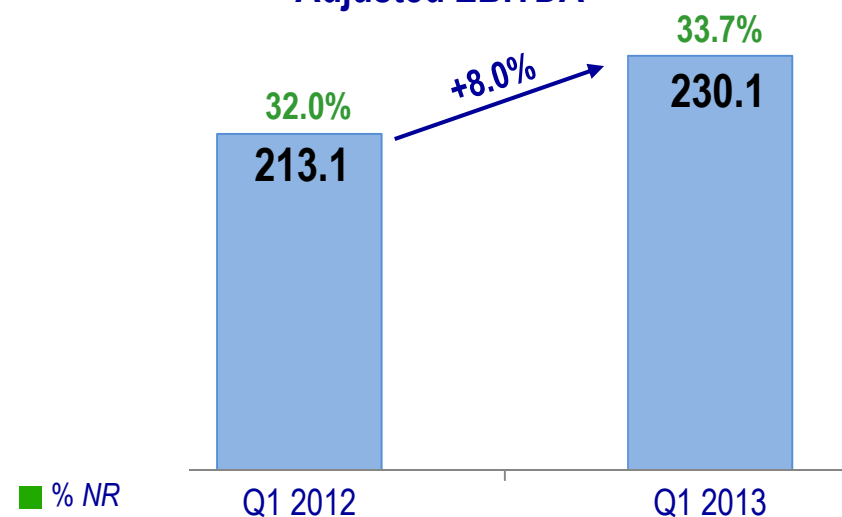
# Q1 2013 – Q1 2012 Performance

€ Million

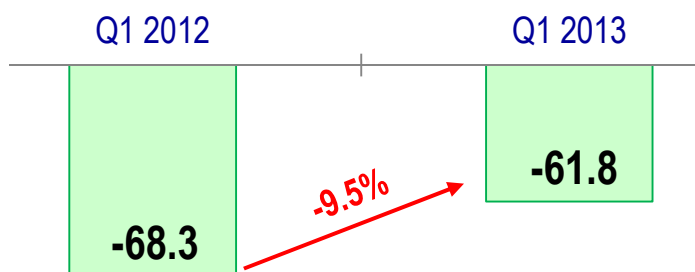
## Net Revenues



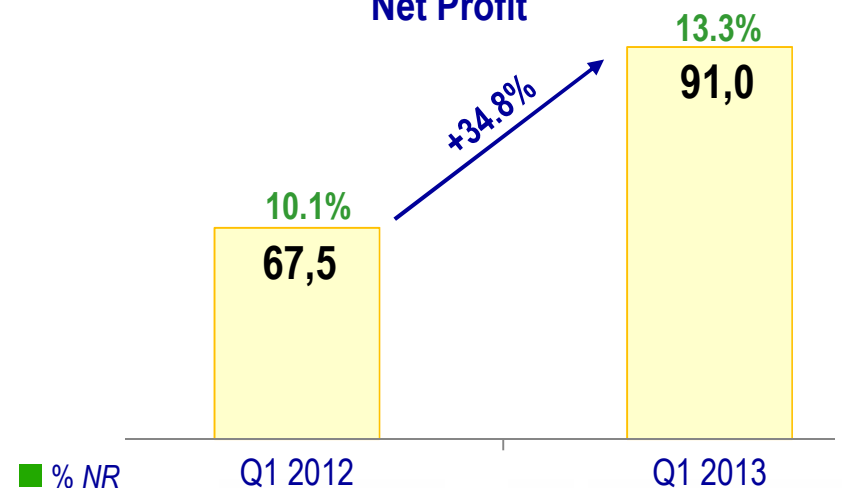
## Adjusted EBITDA



## Financial Result



## Net Profit

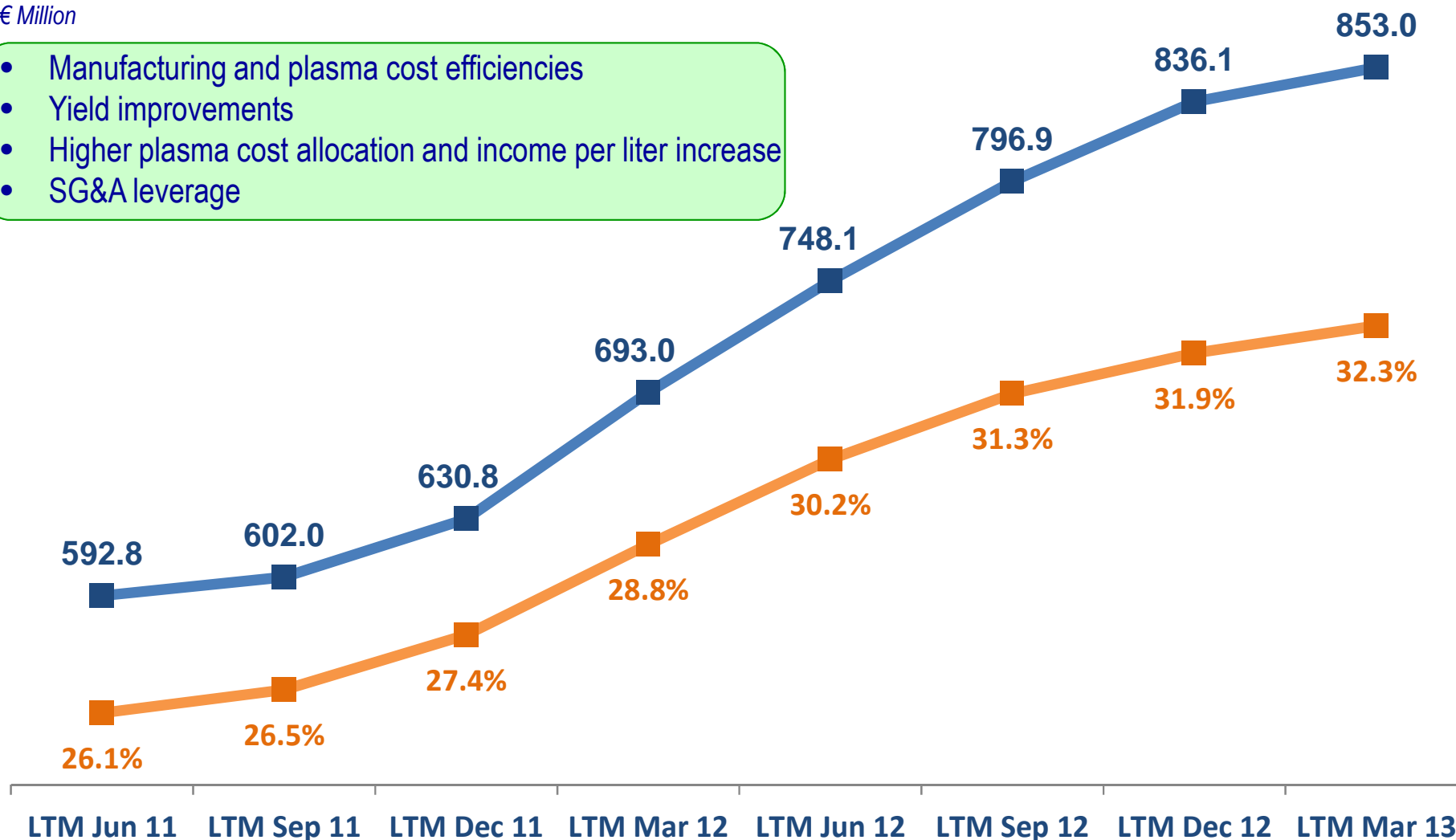




# LTM Adj. <sup>(1)</sup> EBITDA continuous improvement

€ Million

- Manufacturing and plasma cost efficiencies
- Yield improvements
- Higher plasma cost allocation and income per liter increase
- SG&A leverage



<sup>(1)</sup> Adjusted for Talecris integration costs

■ Adjusted EBITDA (€ Million)

■ % NR

# Financial Result Analysis

€ Million

	Q1 2012	Q1 2013	% Variance
Interests	50.2	39.3	-21.5%
Financing deferred cost	25.3	19.7	-22.1%
Other financial expense / income	0.2	-2.1	NM
Derivatives valuation	-6.0	0.1	NM
FX variance	-1.4	4.8	NM
<b>Total Financial Result</b>	<b>68.3</b>	<b>61.8</b>	<b>-9.5%</b>

# Q1 2013 Cash Flow – Sources & Uses

€ Million

SOURCES	
- Net Operating Cash Flow	146.4
- Sale of assets (*)	5.9
- Cash beginning balance	473.3
- Cash ending balance	405.0
- Cash Decrease	68.3
<b>Total</b>	<b>220.6</b>
	=====

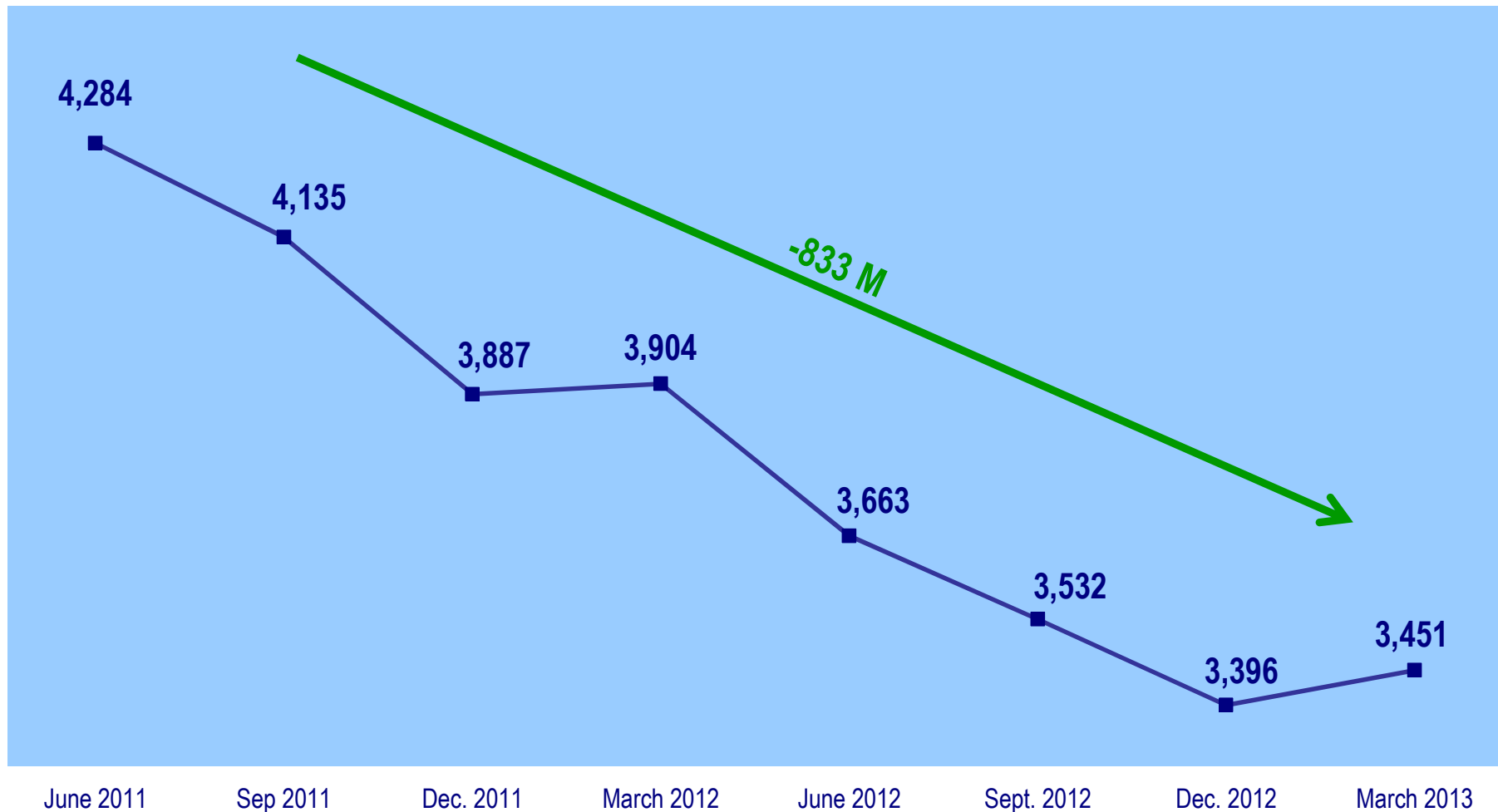


USES	
- CAPEX + Intangible	(34.4)
- Interest	(53.9)
- Gross Debt Decrease	(30.4)
- Progenika (*)	(29.8)
- Treasury Stock (*)	(83.3)
- FX and Others	11.2
<b>Total</b>	<b>(220.6)</b>
	=====

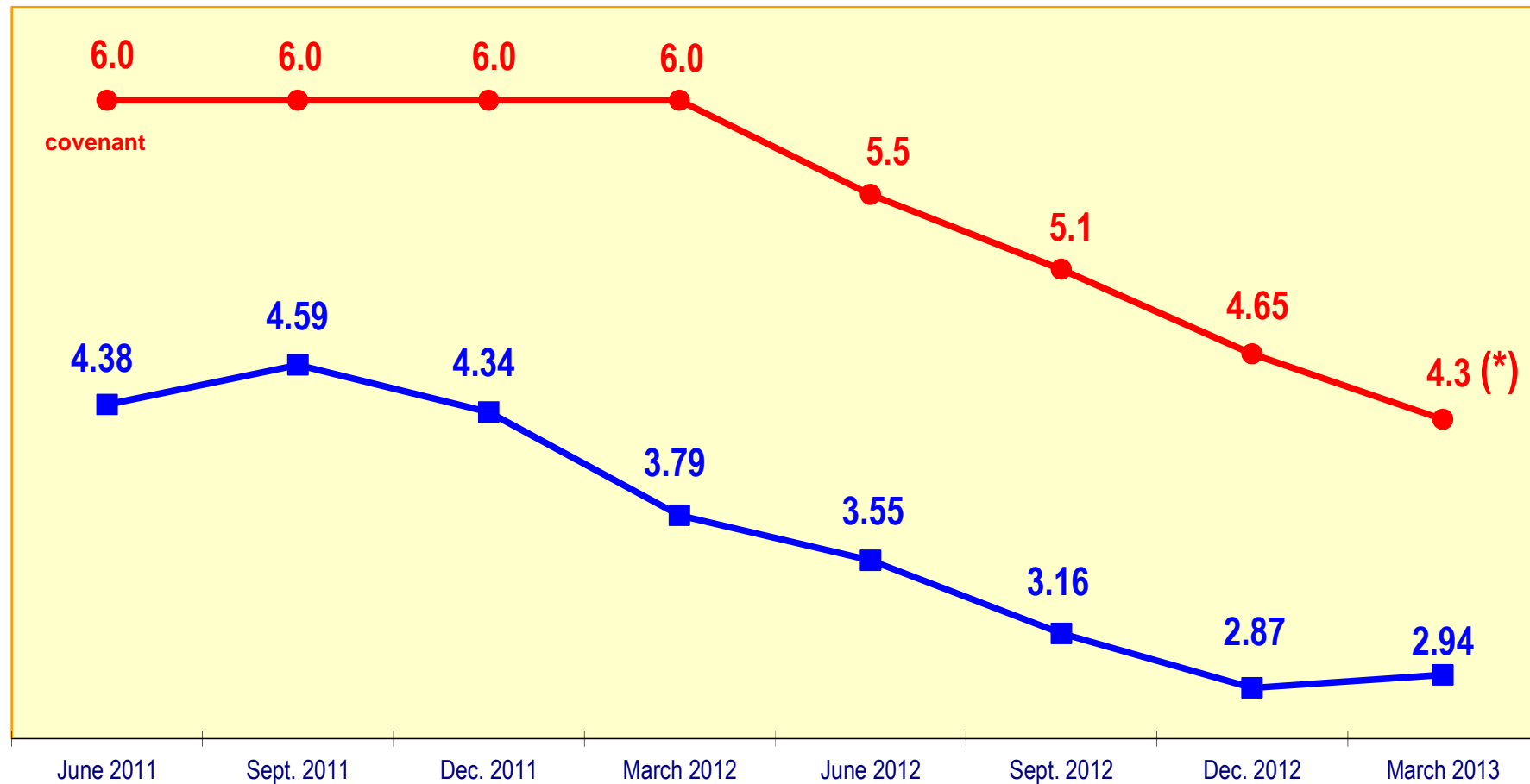
(\*) Extraordinary Items

# Net Bank Debt reduction

USD Million



## Continuous deleverage ahead of commitments



(\*) Minimum level at 3.0 in 2015

# Financing acquisition package – Capital Structure Optimization

As of March 31st, 2013

		(\$ Million)
Source		Amount
Term Loans	Revolving Undrawn	\$203
	TLA	\$772
	TLB	\$1,925
	High Yield Bond	\$1,100
TOTAL		\$3,797

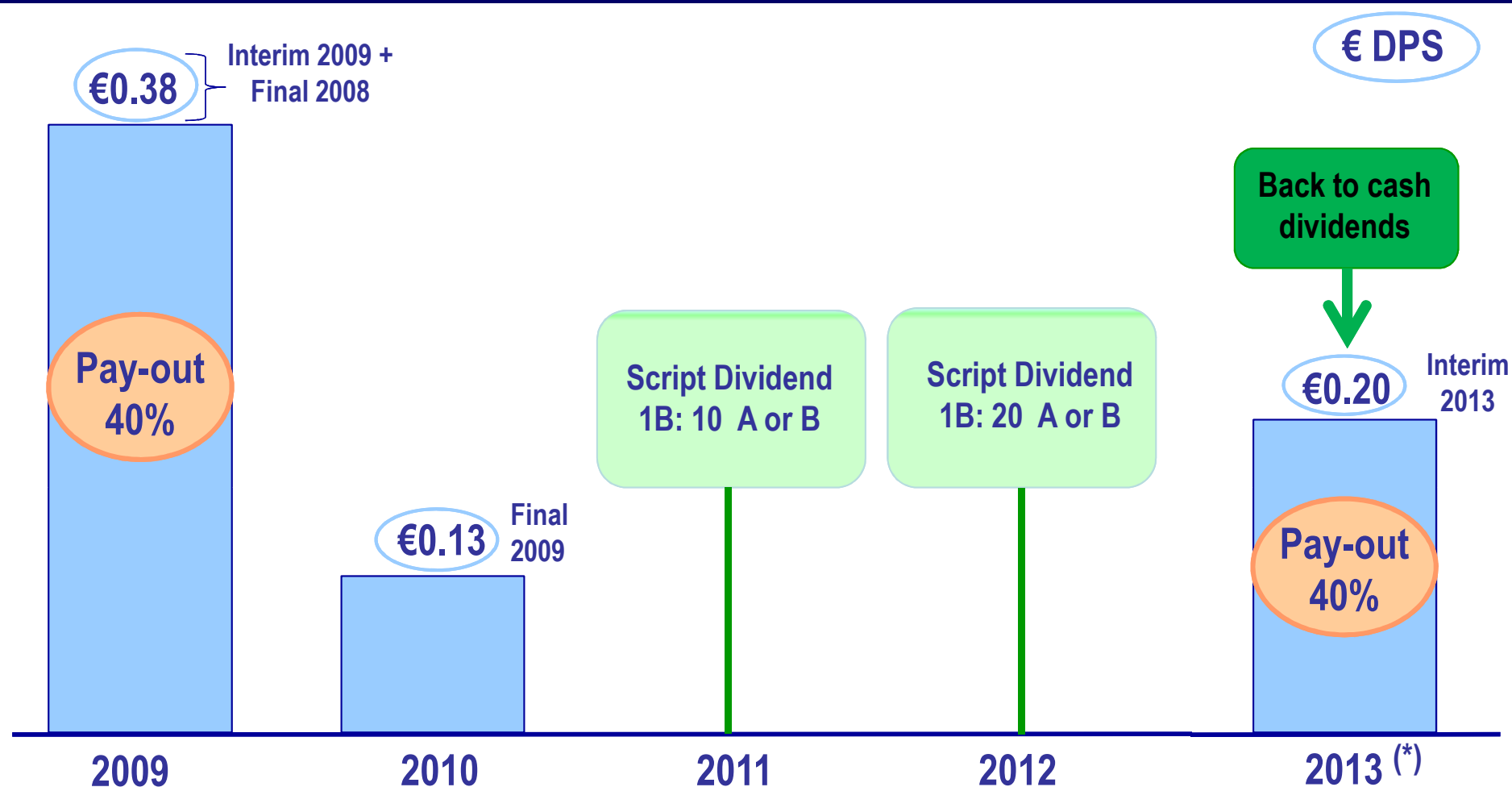
## Repricing & Restructuring Opportunities

- Benefiting from Grifols strong Operating performance and continuous deleverage
- Expected strong US market conditions will support repricing
- Grifols Credit rating already upgraded
- Term loans repricing along with HYB refinancing in early 2014
- Expected improvements in interest cost as well as in tenor extension

# Shareholders Return

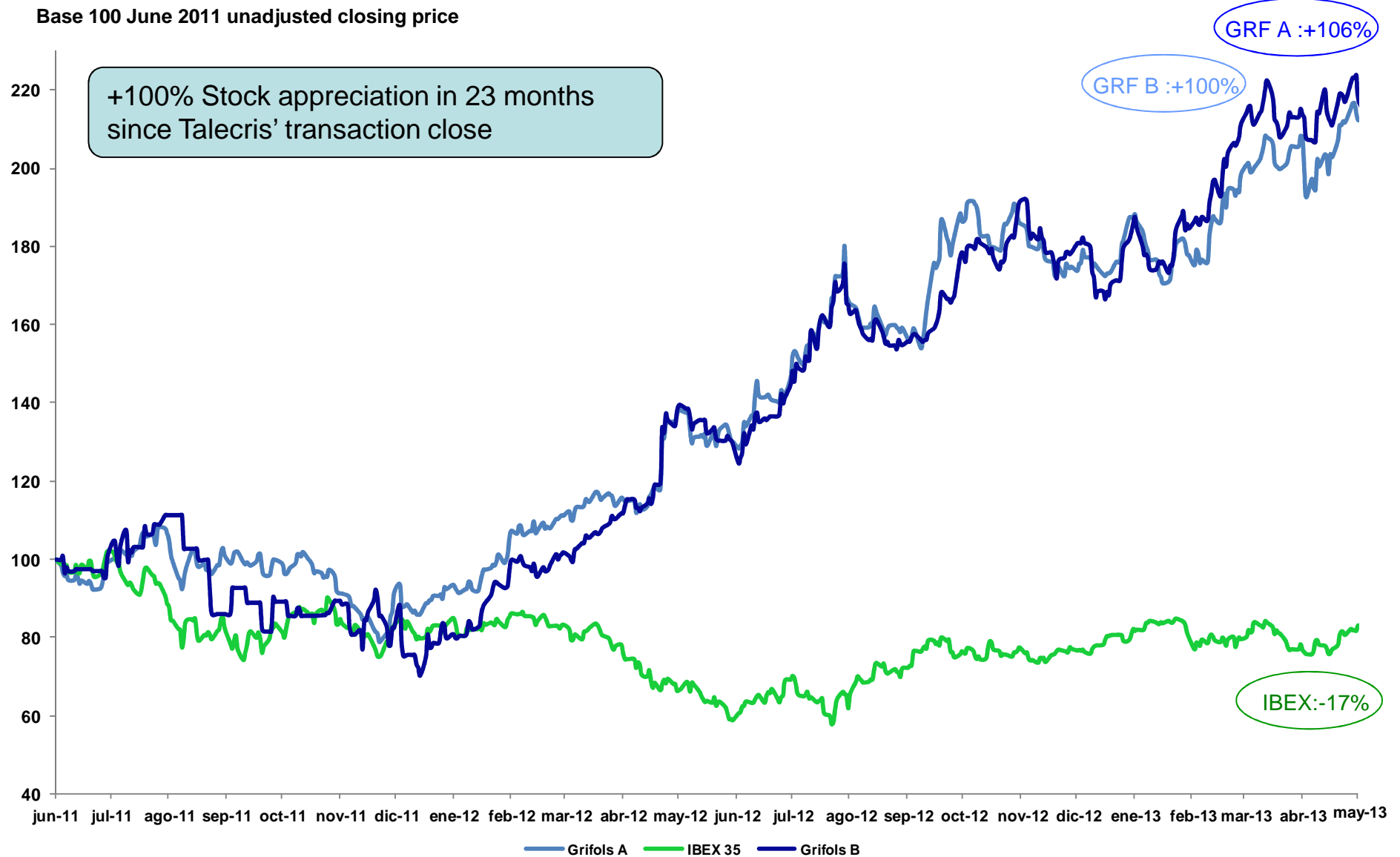


## Dividends distribution – Payment years



(\*) In addition to the 2013 interim dividend, the 2012 preferred dividend (B Shares) of € 0,01 has been paid

# Grifols vs. IBEX 35: Stock price change June 3rd 2011 to May 17th 2013



Source: Infobolsa

Grifols Class A May 17<sup>th</sup>, 2013 (GRF €28.99)  
Grifols Class B May 17<sup>th</sup>, 2013 (GRF €21.00)

# Conclusions

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- Q1 robust performance resulted from operational improvement and lower interest and tax expense
- EBITDA margin continuous improvement from Gross Margin expansion, R&D additional investments and SG&A dilution
- Lower interest cost resulting from refinancing terms and lower leverage
- Solid operating Cash Flow generation
- After two years of script dividends, back to cash dividends ... committed to consistently deliver higher return to shareholders

## Concluding remarks



THE SAME COMMITMENT  
AND INNOVATION  
AS **THE FIRST DAY**

1940s. Dr. J. A. Grifols i Roig, Founder.

**GRIFOLS** pioneering spirit



# Investors' & Analysts' Meeting in Austin

Thursday 30<sup>th</sup> and Friday 31<sup>st</sup>  
May 2013