GLOBAL PLASMA SUPPLY AND PRODUCT DEMAND

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The data used to develop the charts and tables shown in this presentation have been compiled from surveys conducted by the Marketing Research Bureau in some fifty countries, and published in various syndicated reports.

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THE WORLDWIDE PLASMA PROTEINS MARKET BY PRODUCT - 2012

WITHOUT RECOMBINANT FACTORS

Total Market $15,222 Million

Polyvalent IVIG/SCIG 47.6%
Factor VIII (Plasma Derived) 10.6%
Factor IX (Plasma Derived) 2.5%
Albumin 13.3%
Hyperimmunes (IM & IV) 3.8%
All Others 22.2%
THE WORLDWIDE PLASMA PROTEINS MARKET BY COMPANY - 2012

WITHOUT RECOMBINANT FACTORS

Total Market 15,222.4 Million

- CSL Behring: 22.6%
- Baxter: 22.3%
- Grifols: 19.6%
- Octapharma: 7.1%
- Non-Profit Organizations: 11.0%
- Kedrion: 3.8%
- Mitsubishi/Benesis: 1.4%
- All Others: 9.2%
- Biotest: 3.0%
THE WORLDWIDE PLASMA PROTEINS MARKET BY REGION - 2012

WITHOUT RECOMBINANT FACTORS

Total Market $15,222 Million

- North America: 43.2%
- Europe: 30.8%
- Asia & Pacific: 14.2%
- Africa: 1.1%
- Middle-East: 3.3%
- South America: 5.5%
- Oceania: 1.9%
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CAGR
+10.2% per year since 1984
+7.9% per year since 2000
GLOBAL DEMAND FOR POLYVALENT INTRAVENOUS/SUBCUTANEOUS IMMUNE GLOBULIN (IVIG/SCIG)
(Metric Tons) 2008 - 2020

Global annual growth 2012-20: 7.7%
Global annual growth 2012-20: 7.7%
THE IV/SCIG MARKET BY MEDICAL SPECIALTY IN THE UNITED STATES
2012 AND 2017 (Percentages)
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WORLDWIDE ALBUMIN DEMAND 1984 - 2014

Metric Tons

CAGR
+3.6% per year since 1984
+4.8% per year since 2000
THE GLOBAL ALBUMIN MARKET
FROM 1986 TO 2020
(Metric Tons)

Global annual growth 2012-20: 5.3%
Annual Growth Rates Assumptions

- Asia & Pacific + 7%
- South America + 6%
- North America + 4%
- Europe 3%
- Middle East & North Africa 5%
- Oceania 4%

The Albumin Market by Region from 1986 to 2020 (Kilograms)
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WORLDWIDE DEMAND FOR FACTOR VIII 1984 - 2014
Plasma-derived, Million International Units

CAGR
+3.7% per year since 1984
+4.5% per year since 2000
WORLDWIDE DEMAND FOR FACTOR VIII 1984 - 2014
Plasma-derived & Recombinant - Million International Units

CAGR
+6.9% per year since 1984
+7.2% per year since 2000
THE WORLDWIDE FACTOR VIII MARKET
FROM 2008 TO 2020 Est.
(International Units x Million)

Global annual growth 2012-20: 2.1%
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PLASMA REQUIREMENTS FOR ALBUMIN, FACTOR & IVIG
1974 - 2014 - Million Liters

WORLDWIDE ALBUMIN DEMAND 1974 - 2014
Metric Tons
PLASMA REQUIREMENTS FOR ALBUMIN, FACTOR & IVIG
1974 - 2014 - Million Liters

- Plasma for Albumin
- Plasma for Factor VIII
- Plasma for IVIG

[Graph showing trends from 1974 to 2014 for plasma requirements for albumin, factor VIII, and IVIG]
Market Drivers

- **From 1974 to 1980, albumin** drove the plasma market because neither factor VIII nor IVIG were available in large quantities. One liter of plasma generated 28 grams of albumin.

- **In 1980, plasma-derived factor VIII became the market driver:** its global needs determined the quantity of plasma to fractionate. Its production yield was 150-180 international units per liter of plasma.

- **IVIG took over as the market driver in 2000,** and will keep this role in the foreseeable future. Its production yield is about 4.5 grams per liter of plasma.
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CAPACITY AND THROUGHPUT OF THE LARGEST FRACTIONATORS 2013 - 2020
(Thousand Liters)
PLASMA FRACTIONATION CAPACITY
BY REGION FROM 2002 TO 2012
(THOUSAND LITERS)
PLASMA FRACTIONATION THROUGHPUT
BY REGION FROM 2002 TO 2012
(THOUSAND LITERS)
"Others" are LFB and BPL
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• Plasma Proteins Market Overview
• Plasma Products Demand
• Plasma Products Supply
• Plasma Supply
Apheresis plasma is increasingly fractionated in all regions.
TYPE OF PLASMA PROCESSED IN ASIA FROM 1996 TO 2012
NON-PROFIT ORGANIZATIONS
(Thousand Liters)

Source Plasma
Recovered Plasma *


- 500 1,000 1,500 2,000 2,500 3,000 3,500

733 613 400 398 502 409 863 738

1,739 1,310 1,375 2,903 1,276 863 738
TYPE OF PLASMA FRACTIONATED IN NORTH AMERICA FROM 1996 TO 2012 COMMERICAL COMPANIES & NON-PROFIT ORGANIZATIONS (Thousand Liters)

Chart 14

Source Plasma
Recovered Plasma
Plasma Supply - Conclusion

• In 2012, a total of about 36.8 million liters of source and recovered plasma were fractionated worldwide - 27.9 million liters of source and 8.9 million liters of recovered.

• Between 1996 and 2012, on an annual basis (CAGR), the global plasma supply for fractionation has increased by:
  
  Source plasma: 4% per year  
  Recovered plasma: 1.2%  
  Overall plasma for fractionation: 3.2%

• Approximately 40% to 50% more plasma will be needed in 2020 than in 2013 (50 million liters vs. 36 million)
Thank you!