The most significant reductions occur in women with high blood cholesterol (over 240mg/dL), with total cholesterol levels falling by up to 45mg/dL over the following 2 to 4 days.

**Plasmapheresis reduces blood cholesterol levels according to a study by Grifols**

- Analysis of over 9,000 samples of plasma donations from the 663 individuals who participated in the study suggest that plasmapheresis reduces levels of low density lipoprotein (LDL) or “bad cholesterol”

- This process also raises the levels of high density lipoprotein (HDL) or “good cholesterol” in individuals with low baseline levels of HDL cholesterol

- Plasmapheresis is the most widely used technique for obtaining plasma because it allows plasma to be separated from the remaining blood components, which are then immediately injected back into the donor, enabling rapid recovery

- This discovery, whose clinical impact remains to be assessed, could bring significant benefits to millions of people with high blood cholesterol levels

**Barcelona, March 14, 2012:** Grifols, (MCE:GRF, MCE:GRF.P and NASDAQ:GRFS) the world’s third largest plasma product manufacturer and a pioneer in the research and development of therapeutic alternatives designed to contribute to both scientific and social development, has performed a study of the impact of plasmapheresis on blood cholesterol levels in 663 patients, involving 9,153 samples of plasma. Plasmapheresis is the most widely used technique for obtaining plasma because it allows plasma to be separated from the remaining blood components, which are then immediately injected back into the donor, enabling rapid recovery.

The results of this study suggest that plasmapheresis reduces cholesterol levels in the days following the procedure, although the magnitude of the effect observed depends on the reference cholesterol levels and the time between each plasmapheresis procedure. Although there is a need for additional studies to evaluate the possible clinical impact of these findings, in principle they suggest that the non-invasise technique of plasmapheresis:

1. Reduces levels of low density lipoproteins (LDL) or “bad cholesterol” in individuals with high cholesterol (> 200 mg/dL) or higher than desirable (>130
mg/dL) by over 30mg/dL, with the greatest impact in women, where it may fall by up to 35mg/dL).

2. It raises the levels of high density lipoprotein (HDL) or “good cholesterol” in individuals with low baseline levels of HDL cholesterol.

3. In people with normal cholesterol levels, there is no reduction, and baseline levels are maintained.

The recovery of cholesterol levels prior to plasmapheresis in individuals undergoing this technique over very long time periods suggests that there are no long-term effects after suspending treatment with plasmapheresis, and nor have any significant adverse effects been observed.

Plasmapheresis is currently the most widely used plasma collection method, as it allows the separation of plasma from the other blood components (such as red blood cells, platelets and other cells) which are injected back into the donor during the donation process, thus enabling the donor to make a fuller and more rapid recovery.

This technique is used by Grifols in its 147 plasma collection centers in the United States, where thousands of registered donors make over 6.6 million plasma donations a year, equivalent to 24,000 donations per day. All donations, even though they come from registered donors, are analyzed to ensure the maximum quality and safety of the plasma as a raw material for the manufacture of plasma products, and it is also permitted to obtain and report clinical and biochemical data for study purposes if the donors grant their consent.

In this case, the Grifols study involved 9,153 samples from plasma donations from 663 individuals aged between 18 and 69 and who were registered “plasma donors”. In all cases, they were repeat donors who had gone at least 6 months without donating plasma or first-time donors, as the purpose of the study was to evaluate the effect of plasmapheresis on blood cholesterol levels. Statistical analysis of the data was performed using a multivariate regression model using a GEE (General Estimating Equation) approach to estimate the effect of plasmapheresis on the different levels of cholesterol in donors, taking into account the different baseline cholesterol levels.

The study variables were age, sex, weight, ethnic group, baseline cholesterol levels recommended by the American Heart Association (total, LDL and HDL), the time interval between donations, the number of donations by each donor, whether the donor was receiving any sort of pharmacological treatment, and possible changes in lifestyle (reviewed at each donation by questionnaire).

**Study design:**

- Longitudinal, multi-center study
  - Performed at 9 plasma donor centers in the United States
Collection of plasma donations by plasmapheresis for 16 weeks (4 months)
9,153 plasma samples analyzed

- Study approved by the IRB (Institute for Research in Biomedicine - Instituto de Investigación Biomédica) with prior informed consent of all participants.

- Blood test prior to plasma donation to measure initial total cholesterol levels, direct HDL (high density lipoprotein) and LDL (low density lipoproteins).

Demographic details of sample: 663 participants

- 61.4% men / 38.6% women
- Aged between 18 and 65
- 45.9% Caucasian, 17.9% Hispanic, 13.3% African American and 22.9% other groups
- 64% weighing below 90 kg, 24.7% weighing between 90 and 113 kg, 10.9% weighing more than 113 kg.

Based on total plasma cholesterol levels (total cholesterol present in all types of lipoproteins) clinically defined and recommended by the American Heart Association (AHA), the classification of study participants is as follows:

- **Blood cholesterol levels above 240 mg/dL (milligrams per deciliter): 5.7% of individuals.**
  - This may determine a high level of cardiovascular risk, and a change in lifestyle is recommended, above all with regard to diet and physical exercise.

- **Blood cholesterol between 200 and 239 mg/dL: 19.9% of participants.**
  - Represents an intermediate risk (greater than desirable) in the general population, and a high risk in people with other risk factors such as diabetes mellitus.

- **Blood cholesterol below 200 mg/dL: 74.4%**
  - This is the desired concentration for the general population, which is generally correlated with a low risk of cardiovascular disease.

**About plasmapheresis**

Plasmapheresis is a method by which plasma is separated from the other blood components such as red blood cells, platelets and other cells which are injected back into the donor suspended in saline solution during the donation process. This enables the donor to make a fuller and more rapid recovery.

The generalized use of the technique of plasmapheresis as a plasma collection method is due to the research of Dr. J. A. Grifols Lucas during the 1940s, and published by him at the International Transfusion Congress held in Lisbon in 1951.
About Grifols
Grifols, with a presence in more than 100 countries, is a global pharmaceutical company specializing in the Hemotherapy sector, the medical discipline that treats disease using blood components. The company's class A shares have been listed on the Spanish Stock Exchange (MCE:GRF) since 2006 and have been part of the Ibex-35 since 2008. In 2011, the company listed non-voting class B shares on the Mercado Continuo (MCE:GRF.P) and in NASDAQ-United States via ADRs (NASDAQ: GRFS).

Grifols is the third company worldwide in plasma protein therapies, in terms of capacity, as well as the first company in the European plasma derivatives sector, with a balanced and diversified range of products. In upcoming years, the company will strengthen its leadership in the industry as a vertically integrated company, as a result of ongoing investment plans. Grifols is the world leader in plasma collection with 147 plasma donor centers in the United States to ensure a continued and reliable supply of human plasma for the production of plasma therapies. In terms of production capacity (fractionation), Grifols owns and operates several plants in Spain and the United States that allow it to respond to the growing market demand.

Geographic diversification is one of the key elements of the group’s strategy for growth, and it has a major presence in the United States, Canada and Europe, together with a strong commitment to R&D, to which it allocates approximate 5% of sales revenue. Grifols holds a large number of patents and has a range of research projects under way, of which over a doze have passed the preclinical development stage.

DISCLAIMER
The facts and figures contained in this report which do not refer to historical data are “projections and forward-looking statements”. The words and expressions like “believe”, “hope”, “anticipate”, “predict”, “expect”, “intend”, “should”, “try to achieve”, “estimate”, “future” and similar expressions, insofar as they are related to Grifols Group, are used to identify projections and forward-looking statements. These expressions reflect the assumptions, hypothesis, expectations and anticipations of the management team at the date of preparation of this report, which are subject to a number of factors that could make the real results differ considerably. The future results of Grifols Group could be affected by events related to its own activity, such as shortages of raw materials for the manufacture of its products, the launch of competitive products or changes in the regulations of markets in which it operates, among others. At the date of preparation of this report Grifols Group has adopted the measures it considers necessary to offset the possible effects of these events. Grifols, S.A. does not assume any obligation to publicly inform, review or update any projections and forward-looking statements to adapt them to facts or circumstances following the preparation of this report, except as specifically required by law.

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