



Bioanalytics Biology Internship at Grifols Therapeutics

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GRIFOLS

Agenda

Company Background

Internship Aims

Technical Experience Gained

Accomplishments

Networking Events

Overall Internship Experience and Advice



Grifols Company Background

1909/1940

Hematologist Josep Antoni Grifols i Roig founds a clinical analysis laboratory in Barcelona.

Laboratorios Grifols founded in 1940 by Grifols i Roig and sons.



2022

Acquisition of German Company Biotest

This is who I worked with!

2006

Grifols goes public on the Spanish Stock Exchange.

Talecris
BIOTHERAPEUTICS

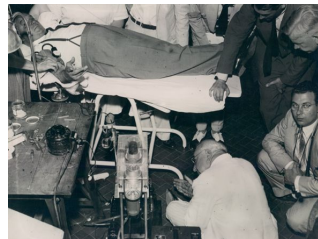
2011

Grifols acquires Talecris Biotherapeutics, adding to their global network of research sites and manufacturing centers.

Biotest
From Nature for Life

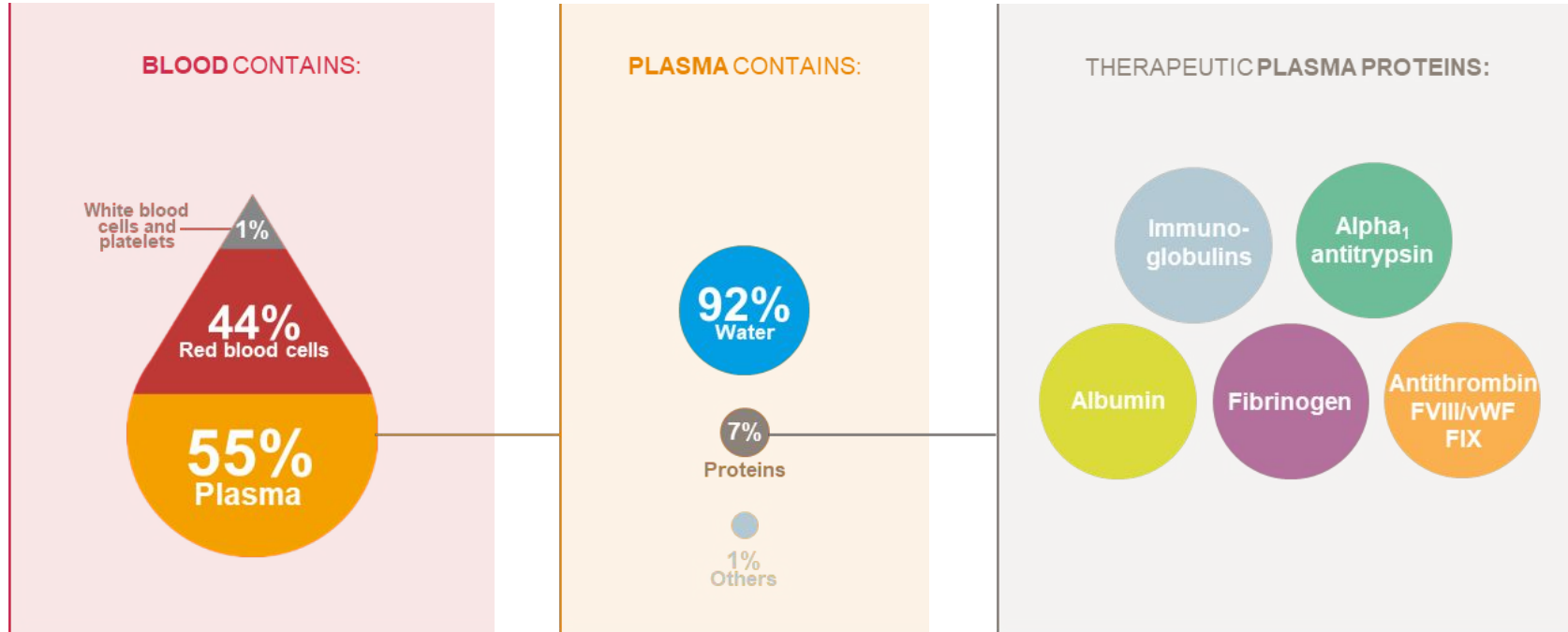
1951

Plasmapheresis, a new method of obtaining plasma from donors.



What is Plasma?

The liquid part of blood, containing invaluable proteins.



Grifols Products



Gamunex is one of Grifol's most profitable products. This is a 10% immune globulin injection drug (IGIV), indicated for use in CDIP and improvement of neuromuscular disabilities.



Albutein is a 5% or 25% human albumin drug, indicated for use in hypovolemia, cardiopulmonary bypass procedures, and others.



Xembify is another large product for Grifols. It is a 20% subcutaneous immune globulin treatment. Indicated for patients with primary immunodeficiency disorders.

Specific Aims of the Internship

Cell Culture

The project I was working on was intended to mimic an assay from Biotest. This assay involved cell culture and cell-based testing.

My team unfortunately did not have adequate lab space to perform this, so I instead evaluated the assay function itself.

Experimental Design

I wanted to learn how to optimize experiments to save the company time, while also evaluating the necessary parameters.

Data Analysis

I wanted to learn efficient data analysis, and how to present experimental data in a way that someone unfamiliar with the experiment could understand.

I got significant practice with this!!

The Complement System

Part of the Innate Immune System, often a first line of defense from infections.

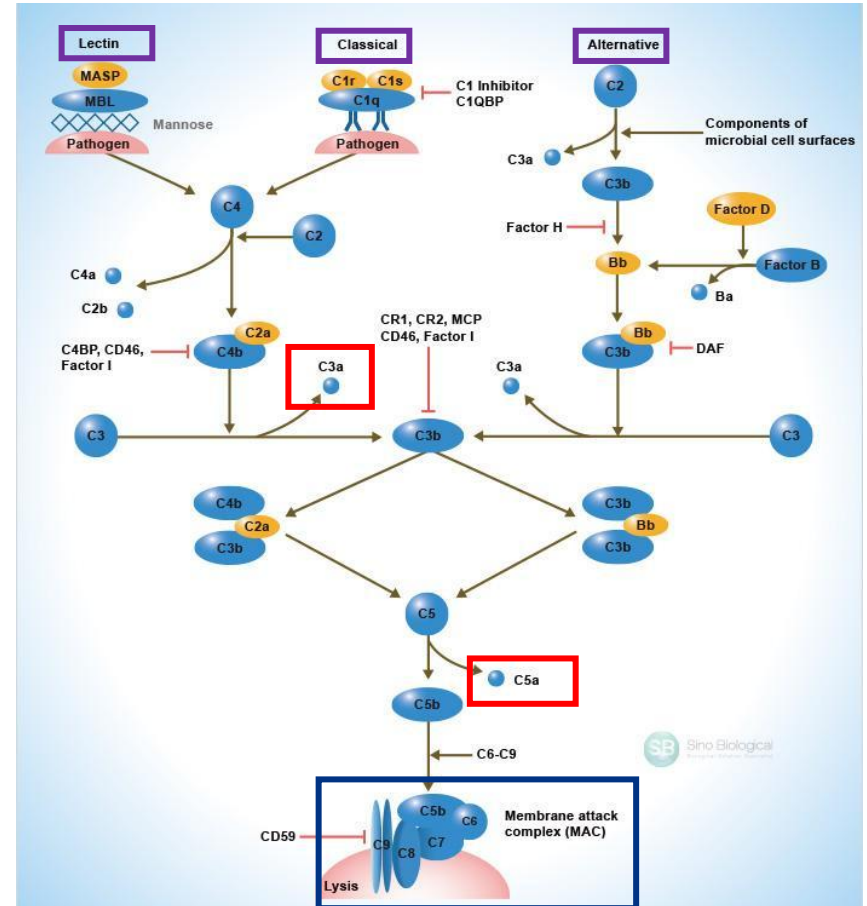
Promotes inflammation, destroys pathogens, and helps clear cell debris.

- 3 Pathways for Activation:
 - Classical
 - Lectin
 - Alternative

Activation of complement will lead to the formation of the **membrane attack complex (MAC)**, which causes cell **lysis**

C3a and **C5a** are **anaphylatoxins**, which can cause severe **inflammation**

- These can be measured with relatively simple assays



Outcomes of the Internship

What did I accomplish?

Assay Understanding

My project pivoted to evaluation of the assay specificity (or what was actually being measured by Biotest's assay).

I used ELISAs, a new technique to me, to evaluate this. I got to tweak the assay according to my own interpretations of the data throughout the summer.

Experimental Design

I learned the GLP standard for development of SOPs, and have begun writing my own experimental procedures.

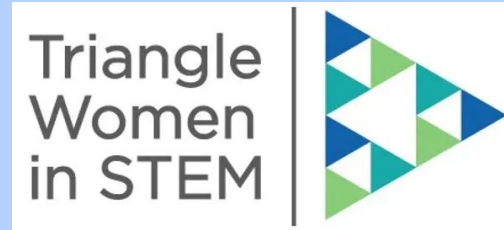
Data Presentation

I was able to present my intermediate findings, as well as a culmination of my work over the summer, to a variety of audiences, including international partners and high level individuals at Grifols.

Networking Events

Triangle Women In STEM Intern Event

SUPER cool event with a speaker and breakout rooms on how to make the most of your summer internship!



Triangle Biotech Tuesday

Connected with new, recently graduated PhDs, and reconnected with some old labmates.



Grifols Networking Opportunities

These included intern events such as tours of manufacturing facilities, talks with the director of SIO and the head of Sales/Marketing, and a cornhole tournament.



Note: Networking is what you make of it! Take every opportunity to connect with your coworkers, even if it is just sitting with someone new at lunch!

Interview with Jeff Price

Prin. Research Scientist I

- “Success at Grifols is making a difference in patients lives, helping to get drugs approved and move them to clinical trials.”
- “Always try to go to someone’s desk when you are able and need to communicate with them. What you put in it is what you can get out of it, try to keep it informal and ask some personal things too.”



Overall Internship Experience

Key Takeaways

Lab techniques such as ELISA, Cell Culture, etc.

Collaboration, even between departments, is always useful when addressing issues with assays or methods.

Gained soft skills for how to communicate in a corporate work environment. Collaboration across borders with Biotest.

Industry is a fast-paced environment, and people get to work on many different projects at once.

Solidified my desire to work in R&D in Biopharma long-term.



I continued my internship with Grifols, and am working with them part-time while finishing the MMB program. I have been able to work on other projects such as a hypersensitivity investigation since August, in addition to my original internship project.

Advice for 1st Years Seeking Internships

Start Early, Apply Often

Many companies will post positions in January, but larger companies already have openings.

Apply to the NCBC Internship Application

I got 6 interviews out of a single application with this tool/application!

Apply to Positions, Then Talk to Career Fair Recruiters

Start off by making a good impression and being prepared by having already applied to positions.

You've got this!

Know what you bring to the table and how to market yourself.



Acknowledgements

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Sr. Research Scientist I



**Fellow R&D Interns
Bioanalytics Team**

Thank you!

Questions?

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