DigiBio

34, avenue des Champs-Elysées - 75008 Paris
Tél. +33.(0)1.46.01.58.40 - Fax +33.(0)1.46.31.02.77

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Web : www.digibio.com

Dear Colleagues and Friends, not forgetting Foes ;-),

Please find below the new issue of our long-awaited newsletter.

Truly yours,

Jacques Benveniste
Didier Guillonnet

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Newsletter 2001.1

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NB : The newsletters are available at <http://www.digibio.com/cgi-bin/node.pl?nd=n11>
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I - Introduction

It is an appropriate time to inform you about recent developments in the DigiBio laboratory. As you will see, this last year of dedicated work has not been wasted since we have now mastered many elusive aspects of our research. As a result, our first objective, which is to “export” a simple technique to be replicated in external laboratories, appears to be within reach.

II - Research advances

a) Our present protocol

Since approximately two years ago, we have at our disposal a new method for assessing the effect of biological signals. In short, coagulation of plasma is delayed when the latter is mixed with water pre-exposed to the signal of the anticoagulant heparin, recorded either at high concentration or at high dilution. The test is summarized as follows:

1) Calcium (Ca2+)-containing water is exposed to the computer recording of heparin (or of either the mixture heparin/protamine or water as controls).

2) The exposed water-Ca2+ is mixed with decalcified plasma and distributed in 96-well plates.

3) Coagulation is assessed by spectrophotometry and expressed as Optical Density.

Note: besides using computer recording, the same effect is observed with the heparin signal presented as a high dilution of the original molecule (at least 10 log below the limit indicated by Avogadro's number) or even as homeopathic granules (Heparinum 30 CH)dissolved in water.

In the first experiments of January 99, coagulation was assessed by visual inspection of the tubes. The coagulation rate is now precisely measured by spectrophotometry. The experiment has been performed hundreds of times in our laboratory and has been reproduced 18 times out of 20 experiments in an external laboratory (six successful experiments out of seven performed blind).

b) Automatization of the method

However, our attempts to replicate these data in four other laboratories yielded mixed results. We then realized the difficulty in "exporting" a method which is very far from conventional biology. Also, individual variations of the operator's performance and unexpected modifications to "improve" the method could explain these erratic results. We then decided to automatize this method in order to eliminate the distorting effects of human intervention. The automatic analyzer was operational early October 2000. "Operational" means that the operator, after having centrifuged the thawed decalcified sheep plasma stored at -20°C, simply place it in a rack alongside with water-Ca2+ to be "informed" and set plastic tubes in another rack. After clicking on "start", data are displayed on the computer screen about 90 minutes later. Three experiments of four signals each can be conducted before a new human intervention, essentially to set up new empty tubes in the rack.

It took a few weeks more to built missing devices, tune up the machine and understand the conditions for it to function in a consistent manner. Since then, it has yielded positive results in about 90% of the experiments.

As an example, from Nov 15 to Nov 24, 2000, we have identified blind 104 heparin from 104 control signals. Twelve heparin signals were negative, some failures being due to a faulty mechanical part of the machine and some to non-reactive plasmas.

We have built a second machine (thanks to two generous donators) which is now in an external laboratory where independent researchers will perform the experiment in the coming weeks. We can reasonably expect to bring one of the two machines (and, if we find the funds, about $40,000, a third one) to a foreign laboratory, in the UK and in the USA.

III - Communication

In order to lighten this mail, you will find the list of communication events at this page of our web site http://www.digibio.com/cgi-bin/node.pl?nd=n14

IV - Comments and acknowledgements

This story, which has taken nearly 15 years to unfold, exemplifies the fact that most if not all researchers, nowadays and in the past, were misguided to apply existing reasoning and methods to a completely new domain of research. Established processes cannot, by definition, tackle the unforeseen traps and uncertainties to be expected in unexplored territories. More difficulties are most probably in front of us. This is why we expected (and still do expect) help instead of contempt from our colleagues.

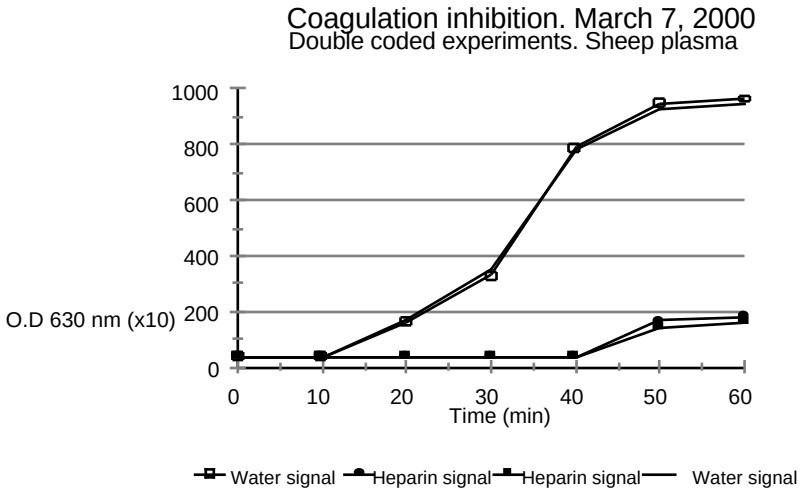
We are all the more deeply grateful to our few yet dedicated staff, supporters and financial investors who have enabled us to carry on our work thus far. With their help and support, we have since the very beginning of this project placed a great deal of emphasis on carrying out our work under the highest standards of methodology and professionalism. Our final aim is to lay a solid scientific foundation for a technology which we feel could drastically change in very positive ways the rather broad areas of medication distribution and diagnostic services.

V - Short term objectives

It remains that our present objective is to see our results replicated. Through the current phase of methodical replication of the technology and process by independent laboratories, we are confident that the veracity and consistency of our results will be sufficient to convince even the most adamant skeptics. Publication in a peer-reviewed journal should follow, ensuring acceptance of our results by the scientific and medical communities, or at the very least a willingness to remain open-minded about such a significant advance.

We look forward to keeping you informed of our progress in this regard.

One typical experiment: Effect of heparin signal on coagulation of sheep plasma



The above graph illustrates the difference between the coagulation rate (shown by an increase in Optical Density (O.D.) of sheep plasma subjected to signals of heparin vs water.