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Services and support



When a lab studying rare cancers had difficulty with their NGS workflow, a Thermo Fisher Scientific TAS solved the problem

Dr. Gabriella Gamberi faced a challenge. Some sample runs had resulted in a high number of low-quality reads. She wondered whether there might be something wrong with one of the instruments in her molecular diagnostics lab.

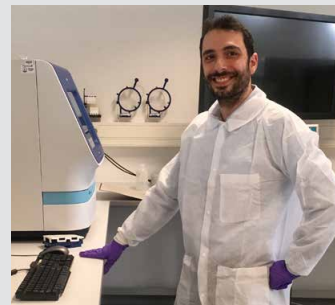
The stakes were high because her work in the pathology department at the Istituto Ortopedico Rizzoli (IOR) at the Alma Mater Studiorum Università di Bologna centers on researching the diagnosis of sarcoma, a type of malignant cancer that is rare in adults but relatively more common in children.

Fortunately, the lab had been a customer of Thermo Fisher Scientific for over two decades, and Dr. Gamberi had developed a strong working relationship with Thermo Fisher Scientific technical application specialist (TAS) Gian Marco Baranzoni. As part of Thermo Fisher's team of dedicated TAS professionals providing remote support for instruments and consumables via phone, email, and on-demand digital support tools—helping resolve 70% of cases in minutes, not days—Gian Marco specializes in providing remote informatics assistance to scientists in the EMEA region. To figure out why the results were problematic, Dr. Gamberi reached out to Gian Marco by phone.

"I had assisted Gabriella on multiple occasions for things like initialization issues and analysis failures," Gian Marco explains. "And this was a case where I know she really appreciated my help." He knows because Dr. Gamberi took the time to report her satisfaction with Gian Marco's help to her Thermo Fisher sales representative.

For his effort, which is exemplary of his consistent support of Dr. Gamberi and overall expertise and dedication to serving customers, Gian Marco is being honored with this month's Guardian of Your Science Award.

Highlighting the hard work and dedication of Thermo Fisher's service heroes, the Guardians of Your Science program leverages feedback from our customers about Global Services and Support team members who go above and beyond in providing world-class support for their customers' important projects. The program honors and rewards these outstanding individuals around the world for their tireless effort to advance science. To find out more about his efforts and learn what makes him a true Guardian of Your Science, we spoke with Gian Marco, and with Dr. Gamberi.



Gian Marco Baranzoni
Technical Application Specialist

Biography:

Gian Marco is an experienced professional in next-generation sequencing (NGS) applications and genomic bioinformatics, with a PhD in veterinary science from the University of Bologna (Italy) and a postgraduate diploma in bioinformatics from Birmingham University (UK). In his doctoral studies and as a postdoctoral fellow in the Molecular Characterization of Foodborne Pathogens Research Unit at the US Department of Agriculture (USDA), Gian Marco's work focused on the development of new and faster detection and typing methods and technologies to characterize emerging foodborne pathogens.

He joined Thermo Fisher Scientific in May 2018. His main role is to provide customers with professional technical support by phone and email in NGS, capillary electrophoresis (CE), and fragment analysis. He also has advanced skill in vertical workflows for forensic and reproductive health applications and is part of Thermo Fisher's reproductive health support team. As part of the help desk activity of the EMEA field bioinformatic team, he also provides customers with IT and bioinformatics support.

“His explanation of the changes that needed to be made helped us to obtain better results.”

Can you tell us a bit about the work of your lab?

Dr. Gamberi: We perform analysis of chromosomal translocations on sarcomas using molecular biology techniques including real-time PCR and NGS. We have partnered with Thermo Fisher for over 20 years, and for our current sample runs, we use an Ion GeneStudio™ S5 System for NGS and an Ion Chef™ System for automated library preparation.

What were the specific issues you were having?

Dr. Gamberi: In this case, we were experiencing low-performing runs and having difficulty loading the Ion 510™ and Ion 520™ Chips correctly into the Ion Chef™ instrument. Furthermore, because we study sarcomas, we are obligated to use Archer™ FusionPlex™ Sarcoma Assay libraries, which are not optimized specifically for use with the Ion Torrent™ instruments like libraries offered by Thermo Fisher.

We sought guidance from Gian Marco because molecular biology techniques, particularly NGS, can present difficulties that at times only a specialist can solve.

Gian Marco: Gabriella experienced a couple of underperforming runs on the Ion GeneStudio S5 and Ion Chef systems using a third-party library kit. She then contacted Thermo Fisher technical support for guidance.

Gian Marco, what did you determine?

Gian Marco: First, I collected the run logs and found sufficient information to exclude instrument and reagent issues. Gabriella was skeptical, so I spent quite some time on the phone with her reviewing the run reports and showing her that the system was working well and that the issue had to be on the library side.

What did you do to help solve the problem?

Gian Marco: Gabriella was reluctant to ask for assistance from the library kit manufacturer, and at the same time had limited reagents and could not afford repeating multiple test runs. I proposed performing a quick test that didn't require the consumption of new library reagents. She agreed, so I guided her on how to reanalyze the data, removing the quality filtering. In this way, all the reads that were excluded for low quality were included in the report, showing the presence of fragments that were longer than expected, which was causing the underperformance.



Gabriella Gamberi, PhD
Department of Pathology
Section of Molecular Biology
Istituto Ortopedico Rizzoli

“Thanks to the numerous tips from Gian Marco, our NGS experiments with the Ion Chef and Ion GeneStudio S5 systems are going very well.”

Considering this information, I recommended modifying the planned runs to include longer libraries and suggested changes in the thermal cycler protocol for library quantification by real-time PCR to compensate for the longer libraries. With these modifications, she was able to continue her activity.

Dr. Gamberi: Gian Marco helped us by phone and email, and we also shared experiments virtually using a Thermo Fisher shared folder. He explained how to change the parameters in the sample preparation for better chip loading. His explanation of the changes that needed to be made helped us to obtain better results and enabled us to effectively use the Ion Chef and Ion GeneStudio S5 systems with the Archer libraries, allowing us to obtain results suitable for our research of sarcomas. The solution also saved us money and increased lab productivity by decreasing response times and saving on reagent use.

“The solution also saved us money and increased lab productivity by decreasing response times and saving on reagent use.”

Do you plan to continue using this solution in the future?

Dr. Gamberi: Yes, thanks to the numerous tips from Gian Marco, our NGS experiments with the Ion Chef and Ion GeneStudio S5 systems are going very well, so we will continue to use them with the changes we have implemented.

What would you say makes Gian Marco worthy of being honored as this month's Guardian of Your Science?

Dr. Gamberi: When we need help, Gian Marco is always available to study the problem and to provide us with a solution right away. He has a lot of knowledge about the subjects he supports, and a lot of practical experience. Furthermore, Gian Marco is open to dialogue and the exchange of ideas—and he is a very friendly person.

Would you recommend Thermo Fisher services and support solutions in the future?

Dr. Gamberi: Yes, Thermo Fisher services and support is very effective.

Gian Marco, do you have a guiding philosophy about customer support that helps you enable the success and confidence of customers like Dr. Gamberi?

Gian Marco: I believe that providing technical support includes delivering effective troubleshooting assistance by carefully listening to the customer's inquiries, understanding their needs, looking through their data, and offering rapid and effective solutions that have the minimal possible impact on their day-to-day productivity. Additionally, during the process of troubleshooting, I seek to provide the customer with the knowledge needed to achieve the best experience with our products, so we can help them achieve the highest efficiency.

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