

A story of success

AxiChrom chromatography columns around the world



Voices from our industry

With AxiChrom™ chromatography columns, a new era in biopharmaceutical manufacturing was introduced. Since the launch in 2006, AxiChrom have set the standard in large-scale chromatography of biomolecules.

With a purposeful design and proven performance, AxiChrom makes protein purification easy, reliable and more consistent — offering reproducible column packing at the touch of a button.

Our customers' stories, in their own words

AxiChrom has proved its performance through the only meaningful test: practical application in the field.

We wanted to find out how AxiChrom installations had benefited industry leaders and their operations worldwide. So we asked them. Find out what they told us in the following pages.



New Jersey, US

Helping a *global* healthcare company meet their business plan

An interview with a Principal Process Specialist, manufacturing a prescription medication for chronic conditions.





Within a month or two of bringing the new columns in, we were able to qualify everything, pack them and get them into service. That was a huge advantage to us.

Our customer chose AxiChrom because they had been using Cytiva's chromatography columns since the early days and already had a strong working relationship with us.

They were particularly impressed by the automated packing technology of AxiChrom. Previous experiences had shown how tricky it can be to pack a column.

Once the company started using AxiChrom it became clear how reliable the platform was and how quickly new columns could be put into service.

Benefits to the business

The cost of the platform was never a primary factor in their choice of AxiChrom — performance and reliability were far more important. After all, any failure in the process costs a lot more than the equipment.

Aside from reducing downtime, the other major improvement has been the turnaround time for packing columns. Our customer said that they now get at least six months out of a packed column — a huge improvement over what they had before.



If we had not brought these columns in we probably would have missed our business plan. We would have been short of batches and it would have been a pretty serious issue.

The US market

2007 Date of first installation
of AxiChrom in the US

> 170 Biotechnology companies
with marketed products



Beijing, China

A welcome upgrade for a biopharmaceutical company

An interview with the Lead of Purification,
on large-scale downstream purification
of protein.



When Cytiva introduced AxiChrom with its enhanced functionality, this customer decided it was time to change to the new equipment. It was a decision that they have been very happy with. In fact when we asked them, on a scale of 1 to 5, how satisfied they were with the column's performance to date they replied:



**I'd give it 5 out of 5.
Compared with
previous technology,
AxiChrom has many
more operational
advantages.**



Today, they can pack and unpack columns much easier than before; the exhausting procedures to clear air from the column are greatly simplified; column efficiency analysis is very stable; the repeatability of the column packing is high; and the asymmetry of the peaks is very good. The customer is also happy with how easy the platform is to use.



Because AxiChrom is so intelligent, users don't have to have much experience. Even a new user, after some basic training, can use the column easily.

Faster time to market

Our customer mentioned that features like stable column efficiency and high repeatability have made a major difference to their time to market. For the same kind of production they can work on different AxiChrom systems at the same time and benefit from economies of scale.

They gave us an example of how this works with their three AxiChrom systems:



With the previous technology, if three people pack the columns on different systems, there will be a variation between each column packed by a different person, for example volume size and column efficiency. For AxiChrom, three people can pack the columns on three different systems and get virtually identical column efficiency and volume size.

This has given our customer high production efficiency and enabled them to greatly reduce both time and cost.

The Chinese market

2008 Date of first installation
of AxiChrom in China

~ 40 Biotechnology companies
with marketed products



Wuhan, China

*Peace of mind for a **biotechnology** company*

An interview with the Lead of Production at a biotechnology company, on assuring high purification quality and consistency in protein manufacturing.





With five AxiChrom systems we have now gone through 50 cycles and it has been very reliable so far, which is key for our production department.

For this customer the choice was pretty straightforward. They knew Cytiva well and were confident that AxiChrom could deliver what the company needed. Specifically, there were three features that convinced them to choose the platform: high automation; high column efficiency; and the reputation of the Cytiva brand.

A great improvement

Now that they have been using AxiChrom for a while they have had a chance to make comparisons with their previous system. They are particularly impressed with the automatic column packing, which produces stable performance and high efficiency. Additionally, the ease with which they can clean the tube and valve significantly reduces cross-contamination.

AxiChrom has helped them achieve the high purification performance that they need. They told us that when they inspected the standard of cleaning over the 50 cycles it has been very good. AxiChrom has also given them high column efficiency reproducibly, which has meant their production is very consistent.



Better for business

When asked whether they felt AxiChrom had helped improve their competitiveness, they felt AxiChrom had been a major factor in applying for new medicines.



We invited several industry experts to come to our factory. When they saw us using Cytiva's AxiChrom systems it gave them confidence. This has a lot to do with Cytiva's brand and reputation for stability and efficiency, as well as the fact that by using such good technology we will produce a high quality product.



The way we worked before, if the packing was not good enough we had to unpack it, which is a waste of time and money. The complete automation and high intelligence of AxiChrom improves our efficiency and reduces our operational risks greatly.

Our customer told us that this confidence is justified in a number of ways. First, AxiChrom helps them produce according to their time schedule and improve their time to market. Second, the column helped them improve their efficiency. And third, it improves their operational efficiency.



Process *development* for a *global* *biopharmaceutical* *company*

An interview with an Engineer, responsible for the pilot plant at a biopharmaceutical company, on the discovery and development of innovative medicines and solutions



Our customer runs a mid-scale manufacturing plant and uses AxiChrom for process development. They were already using the platform in their other labs and knew that the easiest way to integrate a variety of different scales was to use the same equipment.

We asked them what they found most attractive about using AxiChrom now that it had been running for several years. Our customer replied:



In my experience over the last three years, it's been the robustness. We have had no issues and it is really consistent from batch to batch and product to product. There have been no surprising malfunctions or anything.

They also explained that ease of use has been a real benefit. As a new facility, all the operators had recently joined the company and had no background in chromatography. Even so, they never failed any batches through omissions or errors. They found the whole process to be seamless, and had no issues with the purification process.



From research to market faster.

Return on investment wasn't really a consideration when our customer chose the AxiChrom platform. They decided they wanted the market leader because they thought it was the best — and they know today that they really did make the right choice.

Our customer commented on how the AxiChrom platform helps them get to market faster:



You know you will have to do less small scale development because you can predict how it will behave at larger scale as you're using the same system.

More reliable, faster start-up

AxiChrom has helped this customer improve their cost of production, because of less batch variation.

Start-up time has been shortened and has had a beneficial knock-on effect on their operational efficiency. They illustrated this with the example of the AxiChrom intelligent packing strategy, which they say makes the process much less painful. The fully automated system makes it so easy to operate that they don't have to rely on experienced staff. This has helped this particular customer to reduce the time needed for the batch packing operation by 50%.

Our customer also emphasized how starting off with the column was completely trouble-free.



With AxiChrom we put in the recipe and it works right the first time. Looking back through the last four years we have never had an issue with it.

The European market

2007 Date of first installation
of AxiChrom in Europe

~ 150 Biotechnology companies
with marketed products



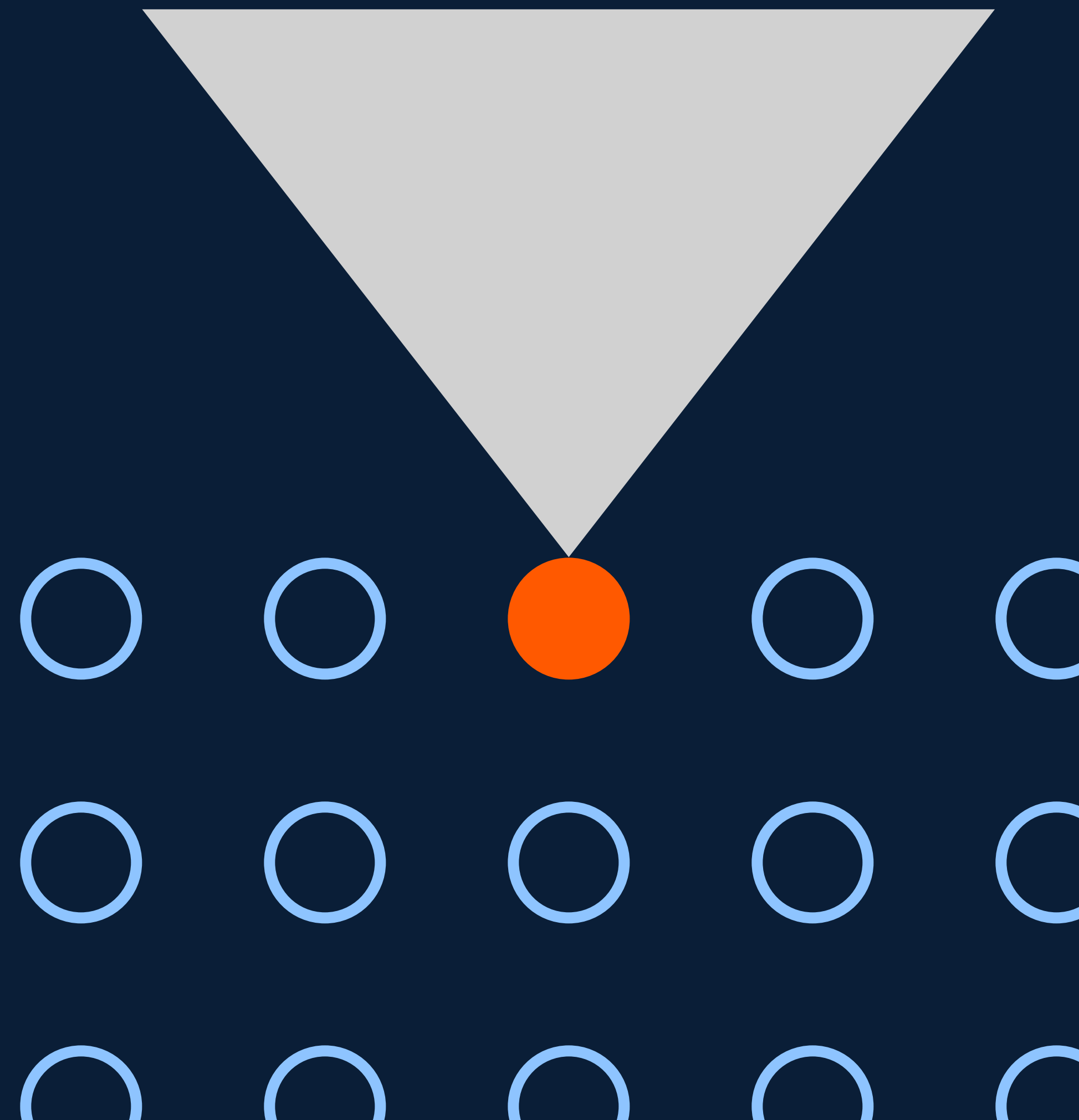
AxiChrom *Reliability* across the globe

Using AxiChrom is a seamless experience from the word 'go' — mainly due to its reliability, ease of use, and consistency of packing.

AxiChrom columns can help you get your biopharmaceutical product to market faster, by simplifying many steps from staff efficiency to column packing consistency.

This is backed up by the reassurance of Cytiva's history in chromatography, which made it simple for our customers to choose AxiChrom.

It is the same story the world over: when you choose AxiChrom you will not look back.



cytiva.com/axichrom

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