

Greiner Bio-One International AG

Basic Company Information

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The **Challenge**

Regardless of cultural differences throughout the world, good health is the most precious human asset.

The safeguarding of this asset defines all Greiner Bio-One's business activities.

As an innovative, quality-minded and responsible partner in clinical diagnostics, pharmaceutical research and biotechnology, Greiner Bio-One makes a valuable contribution to ensuring good and medical progress.

The Company

Greiner Bio-One International AG, an independent corporate group owned by the Greiner family, has its headquarters in the town of Kremsmuenster, Austria. It was established in 2001 when its laboratory technology division separated from Greiner Holding AG. As an innovative system partner in the field of clinical diagnostics, biotechnology and the pharmaceutical industry, Greiner Bio-One International AG successfully operates in more than 100 countries throughout the world, employing around 1150 people.

Greiner Bio-One International AG incorporates two divisions: Preanalytics (Greiner Bio-One Austria) and BioScience (Greiner Bio-One Germany). It is one of the world's leading manufacturers and suppliers of sample collection systems as well as products for pharmaceutical drug screening. The company has locations in Austria, Germany, Hungary, USA and Brazil as well as a worldwide distribution network with branches in Austria, Germany, Hungary, the USA, Japan, Egypt, Brazil, France, The Netherlands, Great Britain, Belgium, Switzerland and China.

Greiner Bio-One operates in both business fields, Preanalytics and BioScience, in markets around the world, which are growing by approximately 8 to 10% per annum. The continuous growth in this business area is due not only to the opening up of new markets, but most of all a result of more stringent safety requirements in laboratories and hospitals and the continuously increasing life-expectancy in industrialised nations. Another key factor is the growing demand (as the result of the continuous progress in medical research) for innovative products, which ensure fast and economical methods of analysis.

During the financial year 2005 Greiner Bio-One increased its turnover to €203.5 million. This equates to an increase of 10% compared with the previous year. In relation to the growth rate of the global market, this denotes a clear out performance and an increase of market shares in both business divisions of Greiner Bio-One. The Preanalytics division was able to achieve an increase in turnover of 18% in 2005. The BioScience division has not only been established as a successful technology partner in the fast-growing Life Science sector, but in some fields it has already become global market leader.

The **Strategy**

In order to create a unique and distinctive brand, Greiner Bio-One is adopting a strategy, which will clearly distinguish it from the competition. Currently supplying sampling devices and laboratory technology systems, Greiner Bio-One intends to become a provider of innovative system and safety solutions while acting as a technological development and research partner to the pharmaceutical, diagnostic and biotechnological industries.

Based on this strategy, the expansion of Greiner Bio-One's share of the global market will continue to be priority. In addition to extending production in emerging markets, Greiner Bio-One will particularly focus on the fast-growing US-market, whose future market development promises to be particularly dynamic.

The **Business Divisions**

Greiner Bio-One International AG comprises of two business divisions.

The **Preamalytics** division is the world's leading supplier in the field of sample collection systems. It offers innovative solutions to hospitals and laboratories that want to increase their efficiency and safety. Preamanalytical products are manufactured in Kremsmuenster (Austria) as well as Monroe (USA) and Americana (Brazil) and are distributed under the brand name VACUETTE®.

The term *preamalytics* refers to all processes that take place before the actual laboratory analysis – from taking samples to transport and storage, right through to reliable identification. With its VACUETTE® products, Greiner Bio-One has been setting new safety and hygiene standards in the preanalytics sector for the past 20 years. Numerous technological developments are proof of the company's innovative strength.

Based on customer and market demands, Greiner Bio-One Preamalytics develops system solutions that make routine procedures in hospitals, laboratories and surgeries both easier and safer and, as a result, ensure the health and safety of medical personnel.

By developing new and innovative system solutions for sample collecting and laboratory organisation, for example, new safety products for avoiding needlestick injuries.

In the **BioScience** division Greiner Bio-One employs experts from the fields of biology, chemistry, and physics who work together to develop innovative and intelligent solutions for clinical diagnostics, pharmaceutical research and biotechnology. Particular emphasis is put on the development of micro- and nano-structure technology for future fields of application. The objective is to ensure the highest grade of efficiency in medicine and research by extending the range of miniaturised system solutions such as biochip technology.

As the leading supplier of HTS (High Throughput Screening) products for pharmaceutical drug screening, Greiner Bio-One BioScience manufactures the largest variety of microplates. Under the brand name of CELLSTAR®, Greiner Bio-One offers a wide range of cell culture bottles, roller bottles, and petri dishes. CELLSTAR® products are used for cultivating micro organisms, cells, or viruses and are specially designed for medical and pharmaceutical research. CELLSTAR® has become one of the world's leading technological solutions in this sector, where it is used in cancer research, virus diagnosis, genetic research, vaccine production, and pharmaceutical research.

The Products

I. Preanalytics

The Preanalytics division manufactures preanalytical products under the brand name VACUETTE® for the collection and further processing of human specimens for analysis purposes.

VACUETTE® Blood Collection System

Greiner Bio-One was the first supplier in the world to introduce a complete blood collection system made entirely of plastic. The system consists of sampling tubes for various analytic parameters, a tube holder and a blood collection needle. The sampling tubes made of PET plastic are virtually unbreakable and are supplied with a safety cap. Each year several hundred million tubes are manufactured and distributed all over the world.

VACUETTE® Urine Collection Systems

The VACUETTE® Urine Collection System comprises of sampling tubes and various accessories such as transfer devices and urine collection containers. For many conditions, the analysis of urine samples is the most effective method of diagnosis. As a future supplier of complete human sample collection systems, Greiner Bio-One is constantly working on the further development of its urine sample collection systems.

VACUETTE® Safety Products

With the VACUETTE® Safety Product line, which was introduced in 2003, Greiner Bio-One offers new, innovative solutions that provide a maximum amount of safety and consequently protect the health of personnel and patients during blood collection.

MiniCollect® Blood Collection System for Neonates and Infants

The MiniCollect® Blood Collection System for Neonates and Infants has developed impressively since its launch. It has a specially designed rubber cap, which allows blood collection without de-capping the tube.

Saliva Collection System and Saliva Quantification Kit

The existing product range was expanded at the end of 2005, with the addition of a new Saliva Collection and Quantification System. This is the first system in the world based on a liquid collection medium, and can be used for a broad range of applications, which can be modified, depending on the specific analytes.

II. BioScience

As the leading supplier of HTS (High-Throughput Screening) products for pharmaceutical drug screening, Greiner Bio-One's **BioScience** division offers a large variety of microplates for application in biotechnology and pharmaceutical research.

The number of substances that are tested in laboratories has risen dramatically since the 1980s. 20 years ago, a mere 10,000 substances were tested per year in laboratories across the world. Today the same number of substances is tested every hour. Greiner Bio-One's microplates with the standard spacing of 96, 384, 1536, or 3456 wells allow efficient and economical drug screening and can be integrated into fully automated systems. For more complex analysis, Greiner Bio-One has developed platforms with microfluidic components.

Micro-system technology for clinical diagnostics and pharmaceutical drug screening

In order to save cost and time during high volume experimentation, industry and research use the minimum amounts of test substances while highly parallelising analysis and testing processes. This is made possible by sophisticated microchannel structures, which allow the processing of extremely small quantities of reagents. Together with the Karlsruhe Research Centre, Greiner Bio-One has developed a microplate with 96 identical plastic microchannels, which is used for DNA analysis, protein analysis, and pharmaceutical drug screening.

DNA-chips for gene analysis

Greiner Bio-One BioScience is currently working on the development of DNA-chips for genotyping. Possible future applications for these chips include the identification of infectious agents, quick-tests for blood typing, and the screening for genetic defects. To date DNA chips have been developed for use in dentistry, gynaecology, and food analysis.

The **People**

Currently Greiner Bio-One has around 1150 employees throughout the world.

The team at Greiner Bio-One consists of experts in microbiology, chemistry, medical engineering, biotechnology, computer science, physics, and plastic engineering. They are constantly working on the development of new and ideal solutions and innovative products. Greiner Bio-One's global and dynamic distribution network with its highly-qualified product managers supplies customers around the world with sample collection systems and products for pharmaceutical drug screening. Greiner Bio-One offers all of its employees a wide range of courses within the scope of the Greiner Academy or Greiner Industrial Training (**git**). It has a training centre for both employees and customers in Kremsmuenster, Austria.

Research & Development

By devoting 3% of its turnover to research and development, Greiner Bio-One intends to maintain its technological head start for the future. Advances in medicine would not be possible without the development of new technological methods. This is the reason why Greiner Bio-One continually works on the development of new products. The key to the success of these products is active and coordinated innovation management, strategic alliances, ongoing market research, and customer-orientation.

In addition, Greiner Bio-One has built up a **network** to integrate expertise and competence from different areas. Its experts develop innovative solutions in the framework of shareholding with associated companies and development partnerships.

Experts in the **Preanalytics** division are responsible for developing preanalytical systems for the standardised stabilisation of molecules from bodily fluids for in-vitro diagnosis. Further research emphases are on expanding the product range with new safety products as well as further development of the existing MiniCollect capillary blood collection system.

The product managers in the **BioScience** division consistently work in new and promising areas, such as biochip production and nano-structure technology. In the future, they will also be concerned with tissue engineering. So far, Greiner Bio-One BioScience has developed biochips for application in dentistry, gynaecology, and food analysis. Particular effort is put into the development of new DNA-chips. Greiner Bio-One has the advantage of being able to apply its years of experience in injection moulding techniques to micro-structure technology. The term “lab-on-a-chip” stands for one of the most promising fields for new developments in the Life Sciences sector. Manufacturing such a chip requires a great amount of specialised knowledge, from the fields of biology, molecular biology, physics, engineering, and surface chemistry, all of which are brought together at Greiner Bio-One BioScience.

Past – Present – Future

Company History at a Glance

Founded in 1868 in Germany and in 1899 in Austria, the 100% family-owned corporate group Greiner Holding AG is now operating on a global scale.

1868 – First activities in the cork sector

Accumulating cork waste was ground to cork powder and processed into pressed cork used for seals and insoles, for instance. Polyurethane was used as one of the adhesive agents.

1958 – First injection moulding parts made of plastic

In 1952 a foam machine for the manufacturing of soft foam material was acquired, as the company already had experience with plastic engineering. In 1958 injection moulding machines for the production of plastic packaging were purchased.

1963 – The first Petri dishes – The birth of Greiner Bio-One

Development of the first Petri dishes made of plastic. Before then Petri dishes had been made of glass and had to be cleaned because they were multipurpose products. Today, Greiner Bio-One produces 120 million pieces a year and is therefore Europe's biggest manufacturer.

1985 – Development of the VACUETTE® blood specimen collection system

In 1985 Greiner Bio-One developed the first complete blood specimen collection system made of PET plastic. With the introduction of this new system, Greiner Bio-One set new standards in safety and hygiene, as collection systems made of glass pose an increased risk of infection and mix-ups.

1996 – Introduction of active agent screening products – HTS

The 96 well microplate was further developed into the 384 well microplate used to screen substances for the manufacture of medical drugs. The introduction of the 384 well plate meant that an increasing number of samples could be screened on increasingly smaller areas, thus making the whole process more efficient and cost-effective.

2001 – Founding of Greiner Bio-One International AG

The separation of the laboratory technology division from Greiner Holding AG led to the establishment of Greiner Bio-One International AG with its two business divisions, Preanalytics and BioScience.

2003 – Safety Product for Venous Blood Collection

A large proportion of all infectious diseases occurring at work in the healthcare sector are due to needlestick injuries. Needlestick injuries are very high risk. By using VACUETTE® safety products, this danger can be virtually eliminated.

2004 – VACUETTE® PREMIUM Tube

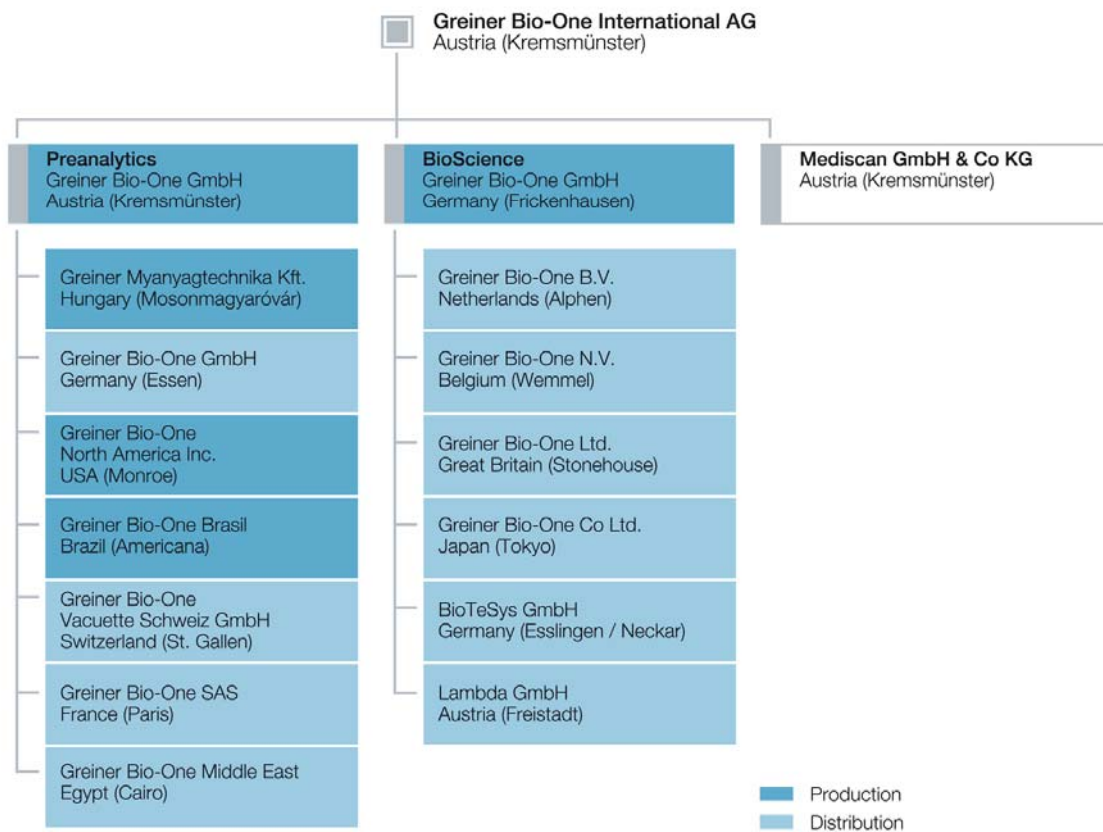
Greiner Bio-One became the first manufacturer to offer an evacuated blood collection tube with safety twist cap. Due to the perfect combination of screw cap and thread, the PREMIUM tube is easy to open manually, requiring minimal effort. The controlled opening movement means that there is no jerking when opening by hand. The potential danger of blood splashes is prevented this way. Furthermore, the consistent movement when unscrewing the cap reduces the aerosol effect to an absolute minimum.

2005 – Saliva Collection and Quantification System

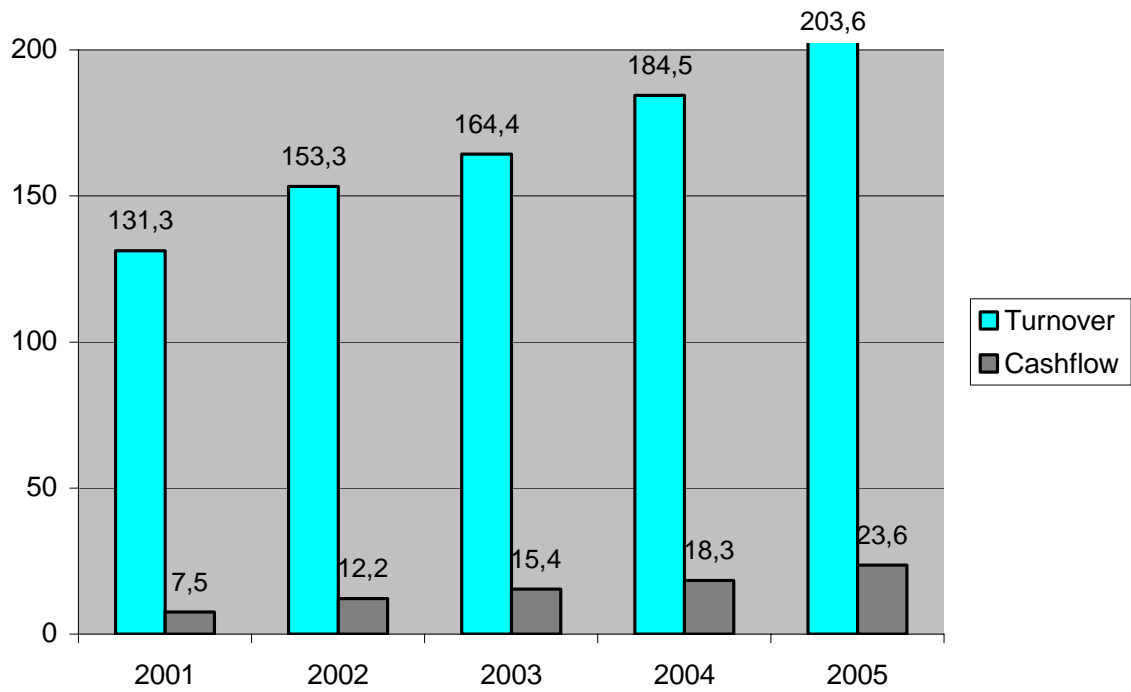
The simple method of collection and permanent availability, make saliva an interesting alternative to other specimen material, like blood or urine. The new saliva collection and quantification system from Greiner Bio-One Preanalytics makes standardised saliva preanalytics possible for the first time ever.

Facts & Figures

Greiner Bio-One International AG



Turnover 2000 – 2005



Total employees in business divisions and countries

	Total	Preanalytics	BioScience
Austria	353	360	11
Germany	297	9	279
Belgium	6		6
Brasil	76	87	
France	53	51	
U.K.	41		42
Japan	19		20
Netherlands	22		22
Switzerland	3	3	
Hungary	81	85	
USA	166	105	74
Employees worldwide	1154	700	454

Status September 06

Contact Details

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