June 11th, 2018
Research report

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ANALYST AWARDS
2017 WINNER

CytoTools AG

Breakthrough in sight after a long development time

Rating: Speculative Buy (first valuation) | **Price:** 8.38 Euro | **Price target:** 28.00 Euro

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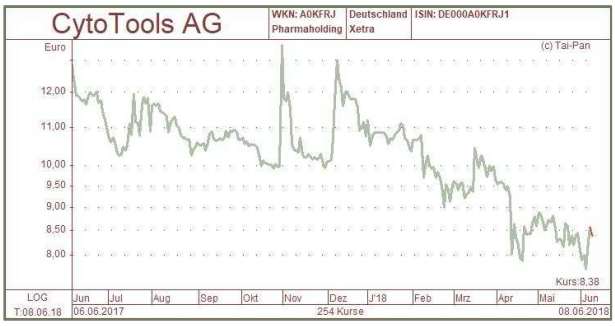
Snapshot



Basic data

Based in:	Darmstadt
Sector:	Biotechnology
Headcount:	3 (AG)
Accounting:	HGB
ISIN:	DE000A0KFRJ1
Price:	8.38 Euro
Market segment:	Basic Board
Number of shares:	2.1 m
Market-Cap:	17.6 m Euro
Enterprise Value:	16.7 m Euro
Free float:	approx. 62 %
Price high/low (12M):	13.50 / 7.70 Euro
Ø turnover (Xetra, 12 M):	29,800 Euro / day

Short profile

In March 2017, the biotechnology company CytoTools made important progress: After a long development period and a successful Indian phase III study with a cure rate of over 90 percent, the drug DermaPro for the treatment of diabetic foot syndrome (DFS) has received approval in India. Surprisingly, this result could not be confirmed in a European phase III study in 2015, which the company attributes to a significantly too low drug dosage for which the contract manufacturer was responsible.

CytoTools will therefore repeat the European phase III study for DFS, but will also carry out a phase II study (for drug dosage) beforehand. In addition, a phase III study on ulcus cruris (ulcerated leg) is planned. In India, however, sales could start before the end of this year if the authorities will swiftly accept the capacities set up for the production of active ingredients. As an intermediate step in the European market, the marketing of a medical product based on the DermaPro active ingredient could start at the end of next year, for which a suitable marketing partner is still being sought.

As-If Group (FY: 31.12.)	**2018e**	**2019e**	**2020e**	**2021e**	**2022e**	**2023e**
Sales (m Euro)	0.0	2.1	9.6	19.5	52.3	105.2
EBIT (m Euro)	-5.0	-7.8	-3.9	-1.4	16.9	43.0
Net profit	-3.0	-4.7	-2.3	-0.9	6.4	16.7
EpS	-0.84	-1.29	-0.64	-0.24	1.78	4.65
Dividend per share	0.00	0.00	0.00	0.00	0.00	0.00
Sales growth	-	-	361.8%	103.0%	168.8%	101.2%
Profit growth	-	-	-	-	-	160.8%
PSR	-	14.54	3.15	1.55	0.58	0.29
PER	-	-	-	-	4.7	1.8
PCR	-	-	-	-	3.4	1.2
EV / EBIT	-	-	-	-	1.0	0.4
Dividend yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Executive Summary

- **Market approval after a long development period:** After a development period of almost two decades, the biotechnology company CytoTools received Indian approval in March 2017 for the drug DermaPro (marketed in India under the name Woxheal), whose uses include the treatment of diabetic foot syndrome. The basis of the approval was a cure rate of 91 percent (parameter: wound closure > 50 percent) in an Indian phase III study. Subsequently, production capacities were built up together with the partner Centaur, which now have to be released by the authorities. If this is done soon, the sale could start before the end of this year.

- **Setback in 2015:** A European phase III study of DermaPro in 2015 surprisingly did not confirm the previously very good clinical results. Afterwards, too low a dosage of active ingredient for which a contract manufacturer was responsible was identified as a source of error. The study will now be repeated. In the meantime, CytoTools has also started the development of a medical product with the DermaPro active ingredient, which could be launched in 2019.

- **Attractive market:** The number of diabetes patients is increasing considerably worldwide, diabetic foot syndrome is a frequent and serious secondary disease. Other chronic wounds present also a major problem, because the cure rates with the available treatment options are still unsatisfactory. No treatment has been as successful in clinical trials (apart from the European phase III study) as DermaPro. The potential demand for the product should therefore be very high.

- **First revenues:** CytoTools has not yet generated any current revenues, which is why the income statement has been dominated by the expenses for R&D. Accordingly, since its foundation, the high investments in product development have led to an accumulated loss of the AG and its subsidiary DermaTools Biotech GmbH amounting to more than EUR 25 m. Following the market launch in India by its partner Centaur, however, the company will generate its first license revenues from the sale.

- **High potential:** The potential of DermaPro is far from being exhausted with the market launch in India. The Indian approval could also be used for marketing in China, for which CytoTools is already looking for a suitable partner. In addition, if two upcoming studies in Europe (phase II on drug dosage and phase III) show similarly good results as the final study in India, approval is expected in Europe and, in the future, also in the USA. Moreover, DermaPro can also be used for other chronic wounds. At first, this market is to be addressed in the near future with a medical product. Furthermore, the Company's pipeline consists of another medical product for the treatment of urinary tract infections and promising preclinical candidates.

- **Strongly undervalued:** We have based our model exclusively on the marketing of the drug DermaPro in India, China, Europe and the USA and on the marketing of the first medical product in Europe. Although we have thus ignored various revenue potentials, a fair value of EUR 28.00 is calculated for the share. In our opinion, CytoTools is strongly undervalued for a company with an approved product, our rating is "Speculative Buy".

SWOT Analysis

Strengths

- Patented active ingredient with approval in India
- No comparably effective treatment options available worldwide for the core indications
- Indications with high market potential are addressed
- Strong marketing partner in India
- Company financed without traditional loans; the equity ratio was at 98.7 percent in mid-2017
- Further financing secured with US investor via convertible bonds

Weaknesses

- CytoTools still does not generate any revenues and is operating at a loss due to high R&D expenditures
- A large phase III study has failed and has to be repeated due to incorrect dosage of the drug caused by a contract manufacturer
- The company needs therefore first to regain confidence on the capital market with new study data and sales figures
- Approval of the core product outside India is still pending

Opportunities

- Following approval, sales in India should start this year and generate initial revenues
- In the future, approval in Europe (and possibly also in the USA) offers even greater potential
- With the introduction of medical products, the company is embarking on a second, lower-risk path to market development
- Market capitalization is very low for a biotech company with an approved product
- If the new phase III data in Europe are in line with expectations, the subsidiary DermaTools could also be sold in its entirety and generate revenues in the three-digit million range

Threats

- Should the phase III study of DermaPro again fail to produce the desired results in Europe, the damage to the company's image would be considerable
- The use of the US investor's financing offer results in a high dilution and potentially a price burden
- The pace of market penetration could disappoint expectations
- The development of the preclinical pipeline is very complex and time-consuming and involves a high risk of failure
- Alternative therapies to DermaPro could prove to be even more effective (but are currently not foreseeable)

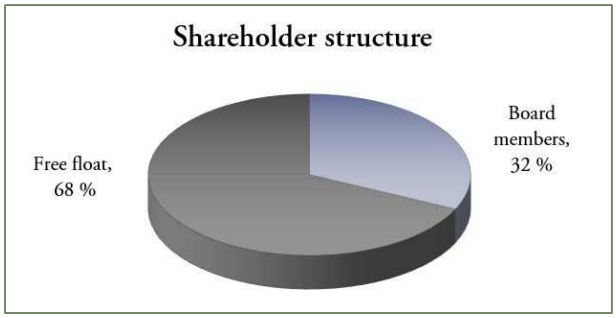
Profile

Core product already approved in India

CytoTools AG, based in Darmstadt, was initially founded as a limited liability company (GmbH) in 2000. Six years later, the company was converted into a stock corporation, which carried out an IPO on the Frankfurt Stock Exchange in the same period. The company is a spin-off of the Technical University of Darmstadt, where the two co-founders and current board members Dr. Mark-Andre Freyberg and Dr. Dirk Kaiser had previously worked. The basic research conducted there in the areas of cell growth and programmed cell death resulted in various drug candidates and therapeutic approaches, which the company has further developed in clinical studies. The core product DermaPro, which can be used in particular for the treatment of chronic wounds that are difficult to treat (including diabetic foot syndrome, ulcus cruris), received its first approval in India in March 2017. The company is also pursuing further development activities, some of which are still at a much earlier stage, particularly in the fields of urology, cardiology and oncology.

Board members with a high proportion of shares

Dr. Mark-Andre Freyberg, Chairman of the Management Board, is responsible for financing and marketing. Since the founding of the AG, one of the core tasks of the biologist holding a PhD in biochemistry and biotechnology has been to raise the necessary funds for product development. He was - among other things - able to secure several grants from the German Federal Ministry of Education and Research for CytoTools. The second board member, Dr. Dirk Kaiser, who also holds a PhD in chemistry, coordinates the research and development activities of the company and deals with the development and management of patent rights. Together with members of the Supervisory Board and close advisors, the Management Board currently holds a double-digit percentage of the outstanding shares. The Supervisory Board consists of six members with extensive expertise in the fields of pharmaceuticals, patent law and finance. The Chairman, Dr Manfred May, advises pharmaceutical groups worldwide with his consulting firm and has previously held management positions at Celesio and Merck KGaA. The topic of production, on the other hand, is covered by his deputy Heiner Hoppmann, who has more than 30 years of experience in the industry.



Source: company

Active ingredient with patent protection

CytoTools reached an important milestone last year with the approval of the product DermaPro in India. The company has accompanied the entire process, from the discovery of the active substance based on dichloric acid (DPOCL 05, abbreviated DPOCL below), through clinical development to regulatory approval, and is thus one of the pioneers among German biotechnology companies. Of particular importance for further business development is the fact that the active ingredient, as a New Chemical Entity, was partially protected by patents for the most important markets - Europe, Japan, the USA and India - as early as 2009, the protection including also use and elements of production. In Europe, there was still an appeal pending from a pharmaceutical company, which was withdrawn last spring. Thus, in the event of a successful market launch, European patent protection will now run until 2029 and at least until 2024 in the other markets. In addition, approval in Europe and

the USA is linked to exclusive marketing rights for a period of ten years.

Market development with partner

Approval in India was based on excellent results from a Phase III study published in 2013 with more than 300 patients suffering from diabetic foot syndrome, i.e. open chronic wounds at the foot as a secondary condition of diabetes, in whom a cure rate of 91 percent was achieved (see section Product portfolio and pipeline). The study results and the approval are important successes of the cooperation with the large Indian pharmaceutical group Centaur Pharmaceuticals, with which a license agreement for DermaPro was already concluded in 2007. The product is now to be launched on the market under the name Woxheal, initially only for the indication of diabetic foot, with Centaur having access to a sales team of more than 1,400 people. For the Indian group, it would be the first newly patented active ingredient that can be marketed exclusively, which promises a correspondingly high level of commitment in distribution.

On-site production

The German manufacturer originally intended to supply the active ingredient had to be replaced due to production problems (see next paragraph); CytoTools and Centaur have therefore decided to set up a production facility in India according to GMP standards (Good Manufacturing Practices). The requirements for plant operation are comparatively high, production must take place in clean rooms and safe handling of the explosive chlorine dioxide must be guaranteed. Furthermore, local suppliers are needed, as well as procedures for analysis, quality assurance and documentation. Ultimately, the production was located in Centaur premises, but the control of the systems is accompanied by specialists from CytoTools. In 2017, several batches were already produced, which are used, for instance, by the authorities for the necessary testing processes. It must be demonstrated that the products comply with the required specifications. Currently, the stability data of the first batches still have to be evaluated, after which production could obtain the authorities' clearance. In addition to the active substance solution that can then be produced, the therapy set also includes a neutralisation solution and dressings whose production has already been prepared by Centaur. If the clearance takes place within the next few weeks, sales are expected to start before the end of this year.

European study has to be repeated

However, marketing in Europe will only be possible at a much later date because a phase III clinical study in 2015 did not confirm the previously very good cure rates. Subsequently, an error in the active ingredient production of the external contract manufacturer was identified, which had led to a significantly too low active ingredient concentration (see section Product Portfolio and Pipeline). The study is now being repeated, for which a new manufacturer was found in Germany in spring 2016 to take over the production of DPOCL. If larger quantities are required in the future, the capacities in India can also be used, which will meet all the requirements for export once production has been released.

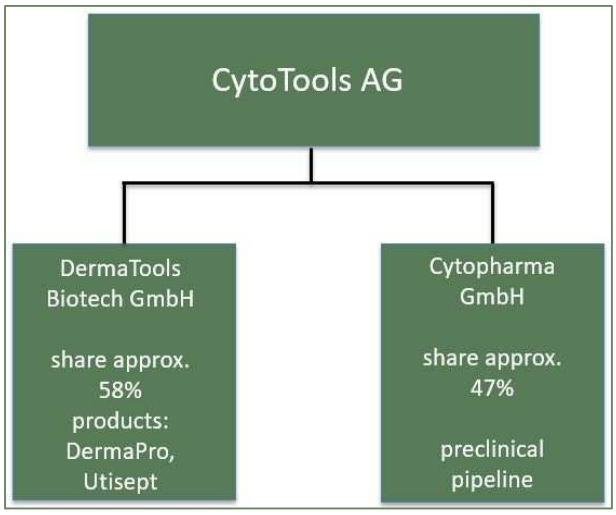
Lean structures

In the run-up to approval in Europe, CytoTools will again be looking for a partner for marketing. In this way, the company remains true to its strategy of concentrating on its core competencies with lean structures. One focus here is research and development activities, which ideally lead to patented, marketable products that can then be marketed by pharmaceutical companies with existing sales structures. In Germany, outsourcing is used in production as well, while the hybrid Indian model is rather an exception.

Holding with two subsidiaries

The public company itself acts as a holding company, which controls and in part finances the activities. The operating R&D business, however, is located with two subsidiaries: the DermaTools Biotech GmbH, founded in 2004 (CytoTools share about 58 percent) and the CytoPharma GmbH, founded in 2006 (share: about 47 percent). With a book value of the shares of more than EUR 8 m (as of the end of 2016), the majority holding DermaTools is currently of central importance for CytoTools. This subsidiary is responsible

for the development of DermaPro and the medical product Utisept (see section Product portfolio and pipeline). In August 2017, Dr. Henri Kool van Langenberghe, a manager with extensive expertise in the conduct of clinical studies, was appointed to the management board in order to provide optimal support for the new Phase III study for DermaPro. The shareholders have also appointed Dr. Patrik Scholler to the management board. Dr. Scholler is a former manager of GE Healthcare and Drägerwerk, who, in addition to strategic issues, is to drive forward the further development of medical products (whose approval hurdles are significantly lower than those of drugs). While DermaTools Biotech GmbH thus has a portfolio of products close to the market, the product candidates of the minority holding CytoPharma GmbH are still at a considerably earlier development stage, which is why the book value of the shares was correspondingly lower at EUR 0.36 m at the end of 2016. The company's R&D focus is currently on active ingredients for the therapy of vascular occlusive diseases (carotid stenosis, restenosis and arteriosclerosis) and for the selective destruction of cancer cells.



Source: company

Easier integration of partners

The organization of the company with two subsidiaries, each responsible for different development focuses, offers a decisive strategic advantage for CytoTools. In this way, partners can be specifically involved for individual indications, facilitating also a possible sale of individual products or product candidates. On the other hand, the way is also open for further new developments that can be transferred to independent companies via spin-off.

Product portfolio and pipeline

Several positive test results...

For CytoTools' core product, DermaPro, extensive study results are already available which prove the outstanding efficacy of the active ingredient DPOCL (see figure). It is applied as a moist wound dressing to wounds that are difficult to heal as part of a treatment lasting several weeks. The active ingredient stimulates skin growth locally for wound closure and at the same time has a disinfecting defect. The effectiveness of this therapeutic solution has been tested in several clinical studies, particularly with regard to diabetic foot syndrome. In five different test series, the cure rate was over 90 percent, which means that the wounds had closed by more than 50 percent from the start of treatment to the time of observation. This is interpreted as a signal for an ongoing healing process. The phase III study in India also included the criterion of complete wound closure, in which DPOCL achieved a rate of 76 percent, while the standard therapy achieved only 56 percent. The very good results were the basis for the approval for the Indian market.

...and a negative outlier

Contrary to expectations, the results of a phase III study for the European market (also on diabetic foot syndrome), started in 2013 and completed two years later, could not be confirmed. Compared to a treatment with a physiological saline solution, there was no advantage in the use of DPOCL either in terms of wound healing of more than 50 percent or in terms of complete closure. Due to the large discrepancy with the previous research results, management conducted an intensive review of the results and found an error in the concentration of the active ingredient thanks to the varying effectiveness of different production batches of the contract manufacturer. The entry of a foreign substance (carbon dioxide) in the production process, which was also incorrectly identified as DPOCL in the analysis used, resulted in the concentration of the active ingredient in the first and second batch reaching only around 50 percent of the target

Study	Indication	Number of Patients	Time	Security	Results
Individual Case Basis (Germany)	Diabetic foot, venous and arterial ulcers, severe acute wounds	30	16 weeks	++	96% healing
Phase II (India)	Diabetic foot	80	10 weeks	++	92% healing (over 50%) p< 0.0001
Phase IIa (Germany)	Diabetic foot, venous ulcer	32	4 weeks	++	Excellent safety, no adverse effects, wound healing >90%
Phase IIb (Europe)	Diabetic foot	87	12 weeks	++	91% healing p<0,001
Phase III (India)	Diabetic foot	280	10 weeks	++	92% healing, 76% comp. Closure p<0.015
Phase II (Germany)	Ulcus Cruris (Open leg)	106	16 weeks	++	Very good results, just concentration problems. Phase III projected

The cure rate in India (phase III) was adjusted in recalculations to 91 percent; Source: company

value. In the third batch, the reduction amounted even to around 90 percent.

First study on ulcus cruris

A faulty batch has also been used in a phase II clinical study, which was the first specific test for the treatment of ulcus cruris ("ulcerated leg"). This is a substance defect in the tissue of the outer lower leg area which leads to the formation of open, usually weeping and poorly healing wounds. During the study, treatment was only carried out with a DPOCL active substance concentration of about 50 percent of the target value. Despite this deficiency, the results were promising in the first 110 patients (out of 260 originally planned). Although, in contrast to numerous previous studies, very large and long-standing wounds (>2.5 years) were treated, complete wound healing was achieved in 50 percent of cases. According to the company, the comparative figure for particularly severe cases documented in the past was only around 20 percent, and the achieved results were better than those in the comparison group. Nevertheless, following these results, the study was discontinued for part of the planned number of patients in order to repeat it with the originally targeted drug concentration. CytoTools has sued the supplier for damages due to the high damage caused by the unexploited potential in the clinical studies on ulcus cruris and diabetic foot syndrome. The proceedings are still ongoing, but a first-instance decision could be taken in the summer.

New European study

For the relaunch of the studies, the subsidiary DermaTools will use not only a new contract manufacturer but also a new determination method for the concentration of active ingredients within the scope of the approval test, with which - according to the company - a comparable error can be ruled out in the future. On this basis, a new phase II clinical study for the treatment of diabetic foot syndrome was launched at the end of last year to determine the optimal dosage of the active substance first of all. Since the incorrect concentrations have shown that the success of the therapy depends largely on the active substance content, the study will investigate in particular whether an additional increase in the concentration (2-fold and 5-fold) produces even better results without causing major side effects. Patient recruitment is to start in June, so that an initial interim evaluation for 120 patients is expected to be available before the end of this year. The last treatment is then scheduled to be completed in the first quarter of 2019 and will lead to the preparation of a results report in the following quarter.

Start of Phase III in 2019

If the outcome is positive, two final phase III studies for diabetic foot syndrome and ulcus cruris will follow next year. If the interim evaluation indicates that a higher dose is more effective, the starting signal could already be given in the first quarter. In this case, it would be possible to work with a reduced number of patients (180 instead of 320), which would shorten the duration of the study to one to one and a half years and reduce costs. However, a phase III study with the current dose and a larger group would not start until Q3 2019 and then take about two years. If the results of the trials meet expectations, the search for a partner should be stepped up as early as 2020, with management currently favouring a complete sale of the subsidiary DermaTools over a licensing agreement. In parallel with the former European Phase III study, the sales process that was at the time supported by Morgan Stanley was already well advanced, but was then discontinued due to the disappointing results.

Development of DPOCL medical product

Although the study for the treatment of ulcus cruris was discontinued due to the dosage error, the company was nevertheless able to draw from the interim results the important conclusion that a significant healing effect was also achieved with a concentration of only 50 percent. This was the starting point for the development of a DPOCL-based medical product in the form of a wound dressing soaked with the active substance in a lower dose. Last year, the subsidiary DermaTools Biotech had already filed a patent on two-chamber systems for the active ingredient solution and the skin or wound dressing with which the

product is to be marketed. The main difference between such a medical product and a drug with the already outlined elaborate approval process is the mode of action, which is usually based on local physical or physicochemical processes and not on pharmacological, immunological or metabolic reactions. For this reason, the approval hurdles are significantly lower, the main prerequisite being a CE certification process with an external test centre. Currently, a dossier is being prepared from the data material in order to start a preliminary inquiry with the health authorities as to whether approval as a medical device is possible in principle.

Additional market potential

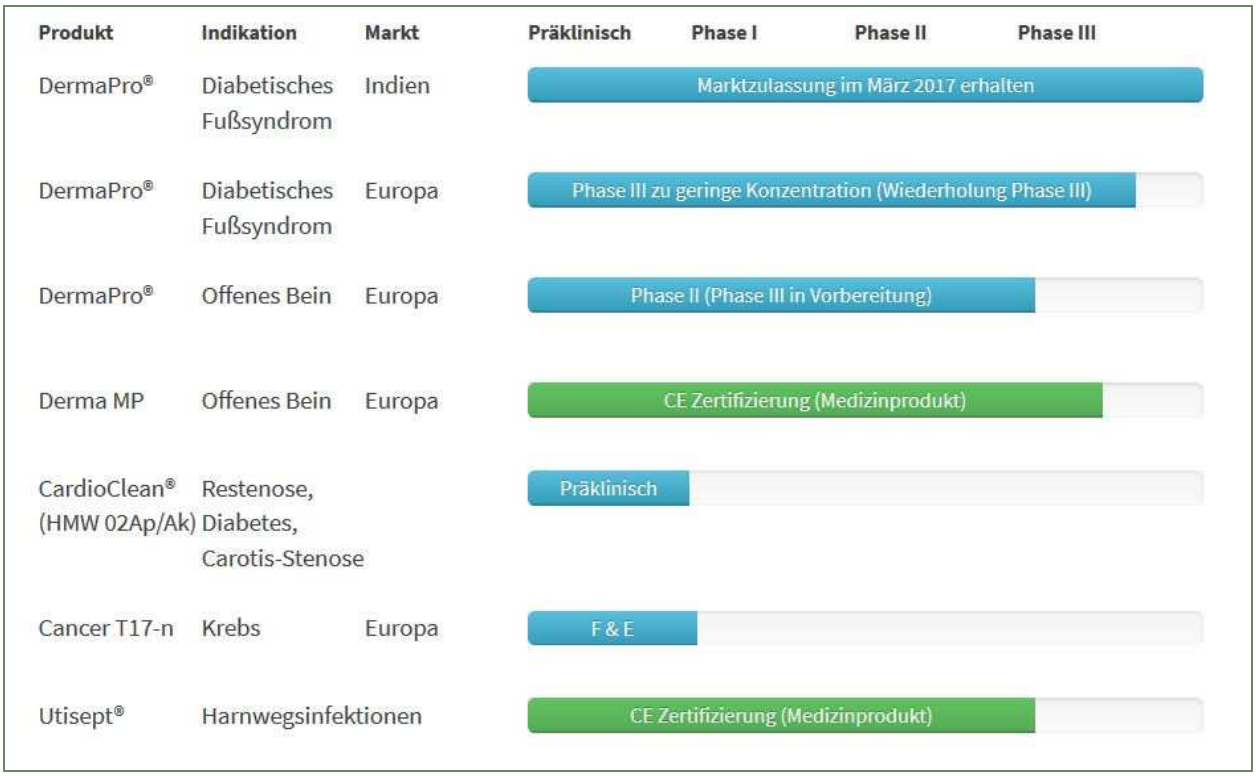
The medical device could be used to address potentially chronic wounds at a relatively early stage of development. This would open up an additional market segment for the company. Talks are currently being held with potential partners, in particular manufacturers of dressings and other medtech companies. The goal of the search is again the conclusion of a license agreement, on the basis of which the partner would take over the distribution. Since the entire end product must be certified with all its components, this step is of great importance for the further process. It could take about a year until the certificate is granted.

US market as a further option

At the same time, management is also reviewing its own product solution without components from partners. Certification of the medical product in the USA is also being investigated. As the world's largest pharmaceutical market, the United States offer particularly high marketing potential, which naturally also applies to drugs. For this reason, initial preliminary talks have already been held for a possible approval process for DermaPro in the USA, but for now, the company is concentrating on Europe.

Another medical product in the pipeline

DermaPro/Woxheal, which is already approved in India for the treatment of diabetic foot syndrome, and the DPOCL medical product are of particular importance for CytoTools, but they are not the only



Source: company

products. The subsidiary DermaTools Biotech has another potential medical product in the pipeline (for pipeline overview, see illustration on this page) with Utisept, which can be used for the treatment of urinary tract infections. It is an applicator with a rin-sing solution, the use of which is intended to significantly reduce germs in the bladder. The test results to date have been promising in terms of tolerability and efficacy. A further clinical study is still required before the approval process can be initiated. It also needs to be clarified whether the product still belongs to this category under the new EU Medical Products Regulation of 2017. The testing of the active substance Pep 04, a peptide (certain amino acid compounds, in principle small proteins), which can also be used for poorly healing wounds in order to prevent the programmed cell death of fibroblasts, is still at a much earlier stage. Due to its rapid healing effect, Pep 04 is suitable for instance for large burns, for which initial successful tests have already been carried out. Since DermaPro addresses a similar but much larger market and is also easier to produce, the further development of the peptide was postponed.

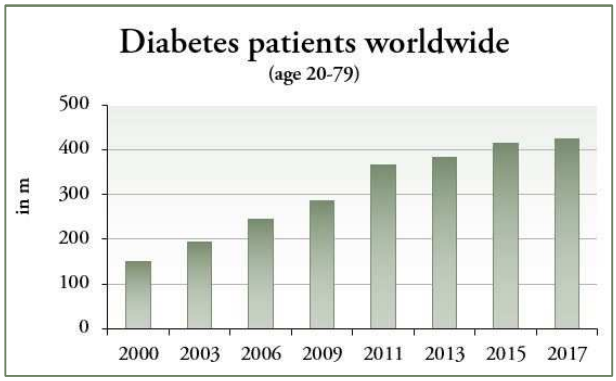
Further candidates at an early stage of development

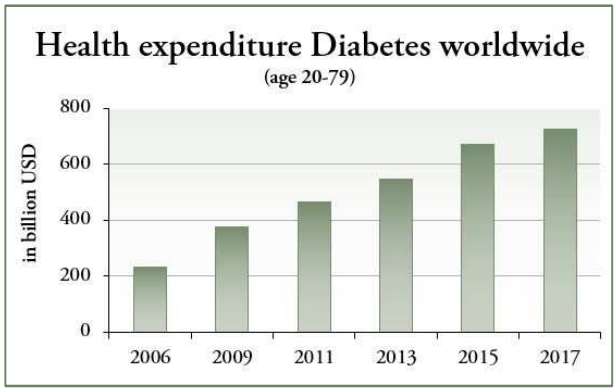
The product candidates from the CytoPharma pipeline are also in a comparably early development stage. The company has a technology platform that enables selective addressing of pathogenic target molecules in living cells in order to develop therapeutics on this basis. The first indications addressed are cancer and vascular occlusive diseases (carotid stenosis, restenosis and arteriosclerosis), although no project has yet reached the clinical test phase. At the end of 2017, however, CytoTools announced that three molecules were selected based on the results of basic research, which are now to be patented. This could allow the clinical trial phase to begin in 2019, with management aiming to involve partners at a relatively early stage.

Market environment

Number of diabetes cases rising sharply

The number of diabetes patients worldwide has risen sharply in the last 15 years. According to figures from the International Diabetes Federation (IDF), the number increased by around 120 percent to 425 million between 2003 and 2017 (source: IDF Diabetes Atlas 2017). The causes have not yet been sufficiently researched. Although dietary habits, obesity, lack of exercise and rising life expectancy play an important role, they cannot fully explain the significant increase (source: German Diabetes Society). Recent research results suggest, for example, that heredity may also be an influencing factor (source: Diabetesinformationsdienst München). The burdens on health systems resulting from the increasing number of cases are already enormous; the IDF estimates the total costs at USD 727 billion in the last year.





Source: IDF Diabetes Atlas 2017

Trend is expected to continue

Slightly more than 50 percent of all cases of disease worldwide are attributable to just three countries: China (approx. 114 million), India (approx. 73 million) and the USA (approx. 30 million). For Europe (including Russia), however, the estimate is around 66 million people. In relation to the population, the problem is highest in the USA with a share of diabetes patients in the group of 20 to 79-year-olds of 13 percent, but in Germany, the share is also 12.2 percent (with a total of 7.5 million cases). India currently has a rate of only 8.8 percent, but the spread of diabetes is increasing particularly rapidly in the country. According to IDF forecasts, this proportion will increase to 11.4 percent by 2045, corresponding to 134.3 million patients in absolute figures. This would make India the most affected country in the world. By contrast, comparatively moderate growth is forecast for China (119.7 million) and the USA (35.6 million); in Germany the number of cases could even fall to 7.3 million. However, the number of diabetes patients worldwide is expected to increase by almost 50 percent to 629 million by 2045 (data source: IDF Diabetes Atlas 2017, IDF Country Reports).

Diabetic foot syndrome as a serious secondary disease

Diabetic foot syndrome (DFS) is one of the most serious complications of diabetes. It refers to chronic inflammations of injuries to the foot. Metabolic disorders and the associated damage to the blood vessels and nerve cells in the legs and feet of diabetes patients result in these injuries not being noticed quickly enough, which is why they often become inflamed and then heal poorly. According to an older study cited by IDF, the treatment of DFS is responsible for about one third of the total costs in the field of diabetes. The therapy costs for a patient with DFS exceed the cost of a patient without this additional disease by a factor of 5.4 in the first year (source: IDF Diabetes Atlas 2017). And the consequences of the condition

are serious: In about 20 percent of cases, chronic inflammation ultimately leads to an initial amputation of limbs, and the mortality rate within five years of this procedure is above 70 percent for diabetes patients (source: Amstrong, Boulton, Bus: "Diabetic Foot Ulcers and Their Recurrence", 2017).

DFS widely spread

Like diabetes itself, diabetic foot syndrome is a mass disease. According to the latest findings, the risk of developing DFS when afflicted with diabetes is between 19 and 34 per cent (same source). The proportion of diabetes patients with an acute DFS condition is estimated at 6.3 per cent worldwide - with clear regional differences. The highest prevalence was found for North America with a share of 13 percent, while in Asia and Europe 5.5 and 5.1 percent of diabetes patients are affected (source: Zhang, Lu and others: "Global epidemiology of diabetic foot ulceration: a systematic review and meta-analysis, 2016).

Difficult therapy

Treatment of diabetic foot syndrome is complex and protracted, the cure rate needs improvement and the relapse rate is high. According to an older study, 77 percent of patients heal completely within one year, with 40 percent of these cases developing a new disease within one year. After three years, the relapse rate is as high as 60 percent (source: Amstrong, Boulton, Bus: "Diabetic Foot Ulcers and Their Recurrence", 2017). According to the S3 guideline *"Local therapy of chronic wounds"* of the German Society of General Practice and Family Medicine (DEGAM), the standard therapy is an "active periodic wound cleansing" with a "rinsing solution containing no active substance (e.g. NaCl 0.9%)", combined with regular dressing changes. If necessary, decontamination of the wound with antiseptics may be required, as well as surgical intervention to remove tissue (debridement).

Hardly any convincing options

However, DEGAM cannot recommend numerous other treatment options due to a lack of sufficient evidence. Rinsing solutions with chemical additives, passive periodic wound healing using hydrogels or fly larvae as well as wound dressings and topical applications (e.g. wound dressings/gels containing polihexanide, biguanide or octenidine; foam dressings containing ibuprofen; hyaluronic acid; compounds containing silver and iodine) were explicitly listed in this context. The same applies to physical interventions such as light therapy, shock wave therapy or ultrasound therapy. DEGAM does not see sufficient evidence for vacuum sealing either, but at least an application for "wound size reduction" or for "percentage reduction of wound depth or wound volume" is worth considering here. Finally, magnetic field therapy and whole-body pressure chamber therapy can also be used in certain cases (source: DGfW, short version of the S3 guideline for local therapy of chronic wounds).

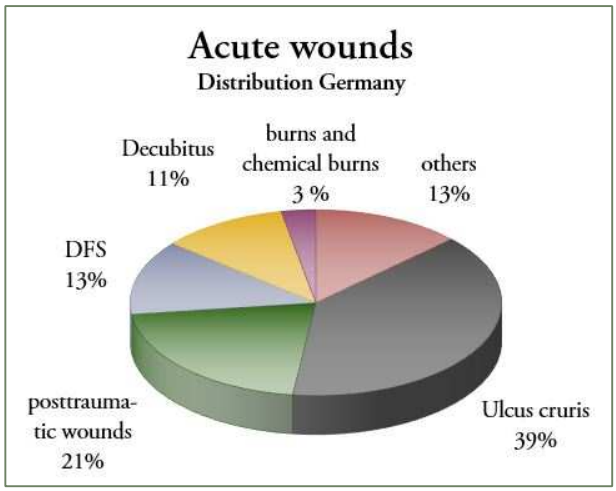
Drug with cancer risk

Most of the products that CytoTools sees as direct competitors for DermaPro are approved as medical products. These include the vacuum therapy V.A.C. Therapy from KCI, a subsidiary of US wound specialist Acelity, which has so far been used to treat more than 8 million patients (source: www.kci-medical.de). The solutions of the US companies Organogenesis (Apligraf and Dermagraft) and Osiris (Grafix), which stimulate the wound healing process, also do not belong to the category of approved drugs. In contrast, Regranex, currently marketed by Smith & Nephew, is a drug that was approved in the US in 1997. The gel is based on a growth factor that stimulates the growth of fibroblasts in the wound. In 2008, however, the FDA issued a box warning that indicates an increased risk of cancer when using Regranex. The S3 guidelines therefore advise against the use of the drug (no longer on the market in Germany).

Further market potential

Should CytoTools now also be able to receive approval in Europe for DermaPro with a proven high cure rate as a drug for diabetic foot syndrome, the company would have a unique selling point in the local market. However, this would not exhaust the potential with regard to the indications covered. Although the company has so far focused primarily on

this disease in clinical trials, DermaPro can in principle be used to treat various chronic wounds. According to a study by the Research Group for Primary Medical Care, DFS accounts for about 13 percent of all acute wounds in Germany (see chart), while the proportion of ulcus cruris is estimated at 39 per cent (source: www.hartmann.de: "Chronic wounds: New statistics show current figures"). About one third of acute wounds do not heal within eight weeks and are thus classified as chronic. According to this study, approximately 1.1 percent of the population in Germany are affected by chronic wounds. The therapy of chronic wounds is generally confronted with similar difficulties as those listed for diabetic foot syndrome.



Source: www.hartmann.de

New study for ulcus cruris

In the case of ulcus cruris, up to 50 percent of wounds do not heal within one year; approximately three quarters of the healed patients also suffer a recurrence (source: Karlsruhe Vascular Centre: "Ulcus Cruris Venosum, Ateriosum, Mixtum - Was zuerst behandeln?"). According to an older study, about 0.6 percent of the total population in Germany suffer from venous leg ulcers, although the proportion increases sharply with increasing age (to 2.4 percent from 70 on) (source: phlebology.de: "Guideline: Diagnostics and therapy of venous leg ulcers - short version"). In the USA, as many as 4 percent of people over 65 are affected and the total number of cases is estimated at up to 2 million (Source: Li (et al.): "External Application of Traditional Chinese Medicine for Venous Ulcers: A Systematic Review and Meta-Analysis", 2015). Data quality for emerging markets is still very poor, a rough estimate for India is 0.45 percent of the population (Vijay Langer: "Leg ulcers: An Indian perspective", 2014). CytoTools has so far carried out a phase II/III study for the treatment of ulcus cruris, but discontinued it due to the incorrect concentration of the active ingredient. Nevertheless, the results are quite promising, which is why a further study is being prepared.

Figures

No current income yet

The business figures of CytoTools have so far been shaped by the R&D activities. Although the company has now received its first approval for DermaPro (in India), sales have not yet started. As a result, there is still no product on the market and no significant revenues have been generated in recent years. Hence, at the level of the AG, which prepares its balance sheet as a micro-capital company in accordance with the German Commercial Code (HGB), the income statement is dominated by personnel costs and other operating expenses, which were largely responsible for the loss of EUR -1.3 m and EUR -1.0 m in the financial years 2015 and 2016. This is very moderate for a research-based biotechnology company, but this is also due to the fact that development costs are borne to a larger extent by the subsidiary DermaTools Biotech GmbH and are therefore not visible in the financial statements of the AG.

AG figures	FY 2015	FY 2016	*Change*
Personnel expenses	0.42	0.30	*-28.5%*
OOE*	0.85	0.64	*-25.2%*
EBIT	-1.30	-0.98	-
Net profit	-1.30	-0.98	-

OOE: Other operating expenses; Source: company

High investments made

According to the latest available financial statements of DermaTools Biotech, a cumulative loss of EUR 13.6 m was generated by the end of 2016, which should reflect in particular the historical R&D expenses. The CytoTools subsidiary had nevertheless positive equity of EUR 0.85 m at the end of 2016 and was almost free of liabilities. By contrast, the values of the minority holding CytoPharma GmbH, whose reported loss (loss carried forward plus net loss for the year) totaled around EUR 1 m at the end of 2016, were significantly lower, with equity of EUR 0.74 m. Figures for CytoTools AG are already available as of mid-2017, which show a cumulative loss of EUR 11.4 m. After deduction of this amount from subscribed capital (EUR 2.1 m) and capital reserves (EUR 20.2 m), equity amounted to EUR 10.9 m as of the reporting date. In relation to this, the sum of accruals and liabilities was very low, so that the equity ratio was 98.7 percent.

Financial investments dominate the assets side

CytoTools' financing structure is thus very solid. On the other hand, the assets side consists largely of financial investments amounting to EUR 8.5 m, which correspond to the book values of the shares in DermaTools Biotech and CytoPharma. As already mentioned in the Profile section, more than 95 percent of this is accounted for by the majority holding DermaTools. The second largest asset at the end of June 2017 was liquidity, which amounted to EUR 2.1 m.

Financing requirements manageable

Since it will be some time before the revenues from product marketing can cover the running costs, and since the next clinical studies have started and have to be financed, CytoTools is still dependent on external financing. At the Annual General Meeting in August 2017, the Management Board estimated the total requirements for the development of the DPOCL medical product at EUR 1.25 m up to the marketing launch. The costs for the next clinical trials of the drug DermaPro are significantly higher. The upcoming phase II and III studies are estimated at approx. EUR 13 m, of which EUR 7 to 8 m are allotted to the indication diabetic foot syndrome (including phase II dosage study) and EUR 5.5 m for the therapy approach for ulcus cruris. In addition, the AG requires about EUR 650,000 per year for ongoing operations. A first step to meet this demand was taken in April 2017 with the placement of 100,000 shares at EUR 14. The funds raised amounting to EUR 1.4 m gross

are expected to cover the costs for the development of the medical product up to the completion of the certification.

Framework agreement for further issues

To raise the additional funds required, CytoTools intends to use in particular the placement of convertible bonds. After a first planned issue was initially withdrawn in spring 2017 due to insufficient response, the Annual General Meeting in August of the same year established a basis for further steps with the creation of new conditional capital and the authorization to issue various financial instruments. In October, the company then announced a framework agreement with the US investor Yorkville Advisors Global, which has undertaken to acquire non-interest-bearing convertible bonds with a total nominal value of up to EUR 15 m in several tranches of EUR 0.5 m each within three years. CytoTools can decide on the final output volume. The bonds, which have a maximum term of nine months and can be converted at any time during this period, are offered at 95 percent of the nominal amount. Conversion always takes place at a price close to the market price. However, an action has been filed against the resolution of the Annual General Meeting to establish the necessary conditional capital. Nevertheless, the Higher Regional Court in Frankfurt approved an entry in the commercial register this February as part of the release procedure pursuant to § 246a AktG. Subsequently, CytoTools placed at first several tranches of bonds with a nominal value of EUR 2 m with Yorkville. A larger placement with a volume of EUR 2.5 m was then launched in May of this year, which was also associated with a subscription right for the shareholders. Finally, convertible bonds maturing on March 8, 2019 and having an exchange price of 95 percent of the average market price prior to the conversion date for EUR 2.1 million were subscribed.

Capital increase of subsidiaries

With the available liquidity, CytoTools also strengthens the capital base of the subsidiaries. Last December, the company invested more than EUR 1 m in DermaTools and CytoPharma as part of capital increases, laying the foundations for the further development of products and active ingredients. In this context, the share capital of the companies was increased from EUR 144,000 to EUR 149,000 (DermaTools) and from EUR 29,150 to EUR 30,200 (CytoPharma). Due to these capital increases, in which other investors also participated, the shares of CytoTools in the two companies have increased from about 56 percent to almost 58 percent (DermaTools) and from about 42 percent to more than 47 percent (CytoPharma).

Equity story

First approval as a milestone

The development of a new active substance into an approved drug is a very lengthy and costly process with a high risk of failure. CytoTools had already started this process for the flagship DermaPro in the last decade and made total investments of more than EUR 25 m in this context - with the Indian partner Centaur having borne further costs of the development process. In March 2017, these efforts were rewarded with the approval as a drug for the Indian market.

Sales launch imminent

Since then, the company has been working with the Centaur Group, which had already been acquired as a licensee ten years earlier, to build up local production of active ingredients. Following the imminent acceptance of the production site by the authorities, marketing should start within a few months. The Centaur sales team with more than 1,400 employees offers an excellent starting position for rapid market penetration.

High potential

For Centaur, this is the first newly developed and approved active ingredient that can be marketed exclusively, and this for an indication that promises high market potential. Between 19 and 34 percent of diabetes patients develop diabetic foot syndrome over time. In India, this corresponds to a population of 14 to 25 million people who cannot yet be adequately treated. Against this background, Centaur is likely to work the market with great commitment. Should rapid sales successes occur, we believe that they will increase the interest of potential licensees in other regions as well. The next predestined market is Europe, for which the phase III study that failed due to an incorrect dosage of the drug must be repeated. If the results of the relaunch meet expectations, the search for a license partner could be completed even before approval. However, the potential of DermaPro would still be far from exhausted. In addition to the development of other interesting countries, such as China and the USA, further indications, such as other chronic wounds, are promising areas of application. Tests for the treatment of ulcus cruris are already well advanced - in clinical phase II.

Medical product as an additional opportunity

In addition, management has found a second way to leverage the great market potential. The studies where the concentration of active ingredient was too low due to an error by the contract manufacturer have shown that a positive healing effect can also be achieved with only 50 percent of the target value of the amount of active ingredient. This insight led to the development of a medical product based on the active substance DPOCL, which can be used to treat wounds at an early stage. This will enable the company to significantly expand the addressed market volume in relation to the pure supply of a drug (which will be noticeably more expensive). At present, the search for a suitable partner is still underway. After its completion, the certification process taking about one year could begin.

Complete sale possible

Whether the company will in future rely on revenues from license agreements, or whether it will sell its subsidiary DermaTools completely, is still open. In the years 2014/15, the selection of potential buyers was already underway as part of a bidding process organised by Morgan Stanley. At that time, investors from the USA were less interested in a license agreement than in acquiring DermaTools including patent rights. With good phase III data in Europe, the process could probably have been completed quickly and successfully, but this was prevented by the incorrect drug dosage. However, as soon as there are indications that the new studies confirm the earlier positive data,

the procedure could be resumed. Management believes that a sale could generate revenues in the triple-digit million range.

Several financing options

At first, however, the focus is on first income from operations. Following the launch of the drug in India this year, the first revenues could also be generated with the medical product from the end of 2019 or the beginning of 2020 on. This would significantly improve the company's internal financing power. Currently, CytoTools is dependent to a large extent on external capital acquisition, especially due to the costs for the clinical studies of the second and third phase. Last year, though, a framework agreement was concluded with a US investor who has undertaken to acquire convertible bonds with a nominal value of up to EUR 15 m. Only approximately EUR 4 m of this has been fully utilized. However, the company should in principle also have other financing options at its disposal, since it has so far completely forgone loans, which leads to a strong balance sheet. This is a future potential lever for increasing the return on equity if the income from the products is accompanied by a realization of economies of scale. In principle, it is quite possible that the company will soon be able to bear its own operating costs (apart from the costs of the studies) with the rising revenues. Another financing contribution could be a possible compensation from the contract manufacturer who had made the production errors in the drug dosage for the clinical studies.

Revaluation of the share

The resulting failure with the clinical phase III study in Europe was a setback for the company as many players in the capital market had lost confidence in the potential of the active substance. This is still reflected today in the low market capitalisation of CytoTools. It is even exceptionally low in light of the approval already granted for an innovative active ingredient for an indication with a high market potential. However, first marketing successes in India, which would serve as proof of concept for the business model, could change that: it would also fire the imagination for high revenues in Europe, first with the medical device and then with the drug. With successful certification of the medical product and positive study data in Europe, the share is likely to be successively revalued on the market. To be sure, there is always the risk that a certification process or a clinical study will not produce the desired result. In view of the overall positive data situation with only one outlier, which the company could, moreover, attribute to the corrigible error of a too low active ingredient dosage, and the approval already granted in India, however, we see this risk for CytoTools below the usual industry average in phase III. In conjunction with the low market capitalisation, this results in a promising risk-reward ratio.

DCF valuation

First revenues now foreseeable

The development process and market development in India took much more time than management had originally expected. Now, however, the partner Centaur is finally about to start sales. If the authorities accept the production facilities soon, the first revenues could be generated before the end of this year. In addition, the certification process for the medical product is expected to start and the clinical dose-finding study for DermaPro should be driven forward.

Two sources of income in India

Compared to Europe, the Indian market is relatively low priced. However, this is partly offset by lower local production and distribution costs. Centaur takes over the production of the active ingredients on its own premises with the support of CytoTools. The company receives a share in the product price, but does not have to bear any production costs. However, licensing income is significantly higher: we estimate it to account for more than 10 percent of gross sales. Within the scope of this study, we therefore calculate a total revenue share of 15 percent of sales revenues. This comparatively low rate results from the fact that the agreement with Centaur was concluded at an early stage and the partner helped to bear many risks and development steps.

Sales expected to pick up rapidly

We calculate the product price in India at EUR 45 to 65 for a four-week dose (and use the mean value), assuming that a therapy lasts on average eight weeks. As a precaution, we do not yet expect any revenue in 2018; in 2019, the first 63,000 patients could be treated with DermaPro/Woxheal, which would correspond to a market share (measured by the number of patients) of 1.5 percent. In view of the high degree of innovation of the drug, the high number of cases and the sales strength of Centaur, we expect a rapidly increasing market penetration and calculate with 193,000 (4.5 percent share), 306,000 (7 percent) and 402,000 (9 percent) patients for the following periods. Subsequently, within the framework of a conservative approach, we let the market share decline again slightly by the end of the detailed forecast period and expect it then to reach 358,000 patients, which would correspond to a market share of only 7.5 percent. Since the price has been calculated in such a way that it is also affordable for the Indian middle class, we consider the growth path outlined above to be easily achievable.

Distribution of the medical product from 2019

For Europe, we expect the marketing of the medical product to start at the end of 2019, but here, too, we do not expect revenues until 2020. We estimate the gross sales of a therapy over a period of four weeks at EUR 150 to 250 (ten units at an individual price of EUR 15 to 25). For the time being, we are cautious in our calculations and expect 34,000 units to enter the market, which, measured by the number of patients with chronic wounds in the EU, would correspond to a market share of 0.3 percent (if each patient requires two treatment cycles per year). In the following years, we let the market share increase to 2 percent in 2024 (this corresponds to 233,000 units) and then decline again somewhat. With regard to the revenues resulting from this for CytoTools, we assume outlicensing and a share in gross sales of 15 percent. We classify the outlined scenario as conservative. It could even be significantly exceeded if a company with a large sales force in the target market could be acquired as a licensing partner.

China has an important advantage

The Chinese market also offers a special opportunity, although it is considered very difficult. CytoTools is trying to find a partner who first makes a one-time payment and then pays a license fee. For a transitional

period, the Indian approval could be used for marketing. Because of this favourable constellation, we expect sales to start in 2020. However, the temporary solution must then be backed up by a phase III study in China. The partner is also expected to take care of this with the support of CytoTools. In terms of product price, sales share and market penetration, we follow the Indian scenario. However, we have weighted the revenues with a probability of only 70 percent, which reflects the risk of not finding a suitable partner.

Europe from 2022 on...

The next jump in sales could come with the marketing of DermaPro as a drug in Europe - provided that the subsidiary is not sold by then, which we hypothetically assume in our model. In view of the very good data basis so far, we calculate with a probability of 70 percent that the approval can be brought to a successful conclusion. The revenues recognized in the model are accordingly probability-weighted, while we recognize the full costs for organization and product development. We assume a treatment cycle to cost EUR 800 to 1,100 (of which we will again use the mean value) and expect 46,000 patients in the first marketing year 2022 (market share 1.5 percent for two treatments per year). Although market penetration should benefit significantly from the reference examples of India and China, we have nevertheless assumed only a similar market share development as in India. This corresponds to the assumption that a company with similar sales strength as Centaur will be found as a sales partner. Since outlicensing will take place at a much later stage than in India (following a successful phase III study), we assume that CytoTools will receive 40 percent of the revenues as a fee.

...followed by the USA

In contrast, after approval in 2023, we assume a development for the USA from 2024 on similar to that in Europe, weighting the revenues with a probability of approval of only 50 percent. As a result, our revenue model is based on the marketing of DermaPro for the indication diabetic foot syndrome in four major markets (India, China, Europe and the USA) and the distribution of the medical product for chronic wounds in Europe. For the time being, we therefore ignore numerous other possible revenue potentials. These include the marketing of the drug DermaPro for the treatment of ulcus cruris and other wounds as well as the medical product Utisept for the treatment of urinary tract infections. We have only considered potential sales of the DPOCL medical product in Europe, but not revenues from other regions. Finally, we also ignored CytoPharma's preclinical pipeline (with the opportunity of further licensing agreements). This means that there is considerable upside potential in relation to our estimate if marketing in these areas is successful.

Assumption: as-if group

It is important to note that we have prepared our model not only for the individual financial statements of the public company, but also taking into account the majority holding DermaTools, because a significant part of the income and costs is accounted for here. We assume that CytoTools will prepare consol-

Revenue model (m Euro)	2018	2019	2020	2021	2022	2023	2024	2025
DermaPro/Woxheal								
- India	0.0	2.1	6.4	10.1	13.3	12.1	11.6	11.8
- China	0.0	0.0	2.2	6.6	10.3	13.2	11.8	11.0
- Europe	0.0	0.0	0.0	0.0	24.6	74.4	116.7	151.2
- USA	0.0	0.0	0.0	0.0	0.0	0.0	23.3	70.4
DPOCL medical product								
- Europe	0.0	0.0	1.0	2.8	4.2	5.6	7.0	6.3
Total sales	**0.0**	**2.1**	**9.6**	**19.5**	**52.3**	**105.2**	**170.3**	**250.8**

Estimations SMC-Research

idated financial statements if revenues increase significantly (if a sale of the subsidiary is not foreseeable in the near future) and thus work on an "as-if" basis. The current shareholding results in a relatively high minority interest in future profits (assumption: 40 percent).

Lean business model...

With regard to the expected future costs, we assume that CytoTools will continue to pursue its lean business model. This means that the production of the active ingredient is outsourced. We also assume that the company is not going to establish its own sales structures; instead, the license partners will take over marketing. The main cost blocks are therefore the structural costs of the organisation and the R&D costs. In our model, we have assumed the forthcoming expenses of the two studies of the third clinical phase for DermaPro and the approval costs for the DPOCL medical product for the years 2018 to 2020. From 2020 on, we expect a study for Utisept, clinical studies for the active ingredients from the preclinical pipeline and further studies, for example for approval in the USA. Until the end of the detailed forecast period, we assume a significant increase in R&D activity (target budget in 2025: EUR 75 m p.a.), which will open up further indications and regions for existing products and develop new products.

...with high margin potential

If the products are successful in the market, as we assume, the lean and therefore highly scalable business model will enable very high margins. We expect break-even on an EBIT basis in 2021. Subsequently, the yield should rise to a peak of 43.8 percent towards the end of the detailed forecast period. For the terminal value calculation, we then apply a substantial discount of 50 percent to this figure and thus take into account the risk of generic drug production on the part of the competition. This, however, is a conservative approach, as the further development of the pipeline should create new products with exclusive marketing.

Financing with Yorkville

With regard to the financing of business development, we assume that CytoTools will still have to make significant advance payments in the next two years. For the sake of simplicity, we assume that the volume set

m Euro	12 2018	12 2019	12 2020	12 2021	12 2022	12 2023	12 2024	12 2025
Sales	0.0	2.3	10.4	21.0	55.7	111.5	179.8	264.5
Sales growth	-	-	357.7%	102.5%	165.8%	100.0%	61.3%	47.1%
EBIT margin	-	-334.3%	-29.8%	0.3%	36.5%	44.2%	43.8%	46.7%
EBIT	**-5.0**	**-7.6**	**-3.1**	**0.1**	**20.3**	**49.3**	**78.7**	**123.7**
Tax rate	0.0%	0.0%	0.0%	15.0%	35.0%	35.0%	35.0%	35.0%
Adjusted tax payments	0.0	0.0	0.0	0.0	7.1	17.2	27.5	43.3
NOPAT	**-5.0**	**-7.6**	**-3.1**	**0.1**	**13.2**	**32.0**	**51.2**	**80.4**
+ Depreciation & Amortisation	0.0	0.0	0.0	0.1	0.2	0.4	0.6	1.0
+ Increase long-term accruals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
+ Others	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross operating cash flows	-5.0	-7.5	-3.0	0.2	13.4	32.4	51.8	81.4
- Increase Net Working Capital	0.0	0.1	-0.5	-0.6	-2.2	-3.3	-3.7	-4.1
- Investments in fixed assets	-0.1	-0.1	-0.2	-0.5	-1.0	-2.0	-4.0	-5.0
Free cash flows	**-5.1**	**-7.5**	**-3.8**	**-1.0**	**10.2**	**27.1**	**44.1**	**72.3**

out in the agreement with Yorkville will be fully utilised. This means that we expect another issue of convertible bonds with a nominal value of EUR 11 m. This results in a potential dilution (with a conservatively assumed average exchange price of EUR 10 over the entire term) from currently 2.1 to 3.6 million shares. Based on the increasing internal financing power and the as yet unused debt capital potential, we do not expect any further dilution.

Detailed forecast period up to 2025

The key data of the model business development for the years 2018 to 2025 resulting from our assumptions are contained in the table on the previous page. Moreover, detailed overviews of the forecast balance sheet, P&L and cash flows statement (of the as-if group) can be found in the Annex. To calculate the terminal value, we assume "perpetual" cash flows growth of 1.0 percent.

Discount rate 13.3 percent

We discount the free cash flows using WACC (*Weighted Average Cost of Capital)*, with a peculiarity in the case of CytoTools. The company has so far operated without credit financing, and we assume that this will remain the case. This means that later leverage of the return on equity via credit financing and a reduction of the average cost of capital through debt financing remains an upside potential not taken into account in the model. On the basis of this premise, WACC corresponds to the cost of equity, which we calculate using CAPM (*Capital Asset Pricing Model*). Our risk-free interest rate is – at 2.5 percent – the long-term average value of German current yield, the market risk premium of 5.4 percent is set to an average value adequate for Germany (source: Pablo Fernandez, Javier Aguirreamalloa and Luis Corres: "Market risk premium used in 82 countries in 2012: a survey with 7,192 answers"). As beta, we assume a fundamentally appropriate figure for a research-based biotechnology company without current revenues of 2.0. This results in WACC (or identical return on equity) of 13.3 percent.

Target price: EUR 28.00 per share

In our favourite scenario (perpetual growth 1.0 percent, WACC 13.3 percent), these assumptions add up to a market value of equity after minority interests of EUR 101 m. As explained, we expect a fully diluted number of shares of 3.6 million. This results in a fair value of EUR 27.97 per share, from which we derive a price target of EUR 28.00. Compared to the current share price, this corresponds to a high upside potential of over 230 percent.

High estimation risk

In addition to the fundamental fair value calculation, we assess the estimation risk on a scale from 1 point (very low) to 6 points (very high). We consider it risk-reducing that CytoTools has already received approval for the product DermaPro in India (which can also be used for the Chinese market) and first licensing revenues are expected there in the near future. However, the pace of future market penetration and the prospect of approval in other markets remain highly uncertain. The same applies to the certification process and the potential market success of the DPOCL medical product. Overall, we see a significantly above-average forecast risk and award thus five points.

Sensitivity analysis	perpetual cash flows growth				
WACC	**2.0%**	**1.5%**	**1.0%**	**0.5%**	**0.0%**
12.3%	33.68	32.58	31.58	30.66	29.82
12.8%	31.55	30.58	29.69	28.88	28.13
13.3%	29.62	28.76	**27.97**	27.25	26.57
13.8%	27.86	27.10	26.40	25.75	25.14
14.3%	26.26	25.58	24.95	24.37	23.83

Sensitivity analysis

For our sensitivity analysis, we have varied the input parameters WACC and perpetual growth. The calculated fair value lies between EUR 23.83 per share in the most restrictive case (WACC of 14.3 percent and perpetual growth of 0 percent) and EUR 33.68 in the most optimistic case.

Conclusion

CytoTools has an innovative product with a high market potential. For the treatment of diabetic foot syndrome or leg ulcers - diseases with worldwide patient numbers in the double-digit million range - there are currently no approved drugs that are as effective as CytoTools has proven in numerous studies for the product DermaPro with an active ingredient based on dichloric acid, which the company has patented. A phase III study in India was completed with a cure rate of over 90 percent and led to approval for the Indian market in March 2017. Marketing could now start before the end of the current year.

Quite surprisingly, the previously very positive results of DermaPro could not be confirmed with a phase III study in Europe in 2015. However, the company identified the cause: a production error by the external producer of the active ingredient, which resulted in a too low dosage of the active ingredient.

This failed study, which is now being repeated, has cost the company a great deal of reputation on the capital market. At EUR 17.6 m, CytoTools is valued very low for a biotechnology company with an approved and highly promising active substance.

We assume that this high markdown can be gradually reduced if sales figures in India increase and further success can be reported in clinical development and further approval processes. Conceivable failures in this area naturally represent a high risk as well, but due to the approval already obtained and the good data basis, this should be significantly lower than the usual industry average in phase III. In addition, the company is working on medical products with lower approval hurdles.

In our model, we have assumed the marketing of a medical product in Europe and of the drug DermaPro in several major markets, but exclusively for the indication of diabetic foot syndrome. This means that we have only depicted part of the earnings potential, but in our initial assessment we still arrive at a fair value of EUR 28.00 per share, which is far above the current stock market price despite a significant dilution already taken into account. On the basis of this promising opportunity, we award the "Speculative Buy" rating. The still speculative nature results from the increased forecast risks with regard to the further clinical testing procedure and the pace of market penetration.

Annex I: Balance sheet and P&L estimation

As-If Group: Balance sheet

m Euro	12 2018	12 2019	12 2020	12 2021	12 2022	12 2023	12 2024	12 2025
ASSETS								
I. Total non-current	9.3	9.4	9.5	9.9	10.7	12.3	15.7	19.7
II. Total current	2.1	3.3	3.0	3.3	10.7	38.0	81.6	152.3
LIABILITIES								
I. Equity	11.3	12.5	8.7	7.2	17.9	45.8	91.1	163.3
II. Accruals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
III. Liabilities	0.1	0.1	3.8	6.0	3.4	4.5	6.2	8.7
TOTAL	**11.4**	**12.7**	**12.6**	**13.3**	**21.4**	**50.4**	**97.3**	**172.0**

As-If Group: P&L estimation

m Euro	12 2018	12 2019	12 2020	12 2021	12 2022	12 2023	12 2024	12 2025
Sales	0.0	2.1	9.6	19.5	52.3	105.2	170.3	250.8
Total operating revenues	0.0	2.1	9.6	19.5	52.3	105.2	170.3	250.8
Gross profit	0.0	2.1	9.6	19.5	52.3	105.2	170.3	250.8
EBITDA	-5.0	-7.7	-3.8	-1.3	17.1	43.4	69.8	110.9
EBIT	-5.0	-7.8	-3.9	-1.4	16.9	43.0	69.2	109.9
EBT	-5.0	-7.8	-3.8	-1.7	16.5	42.9	69.6	111.1
EAT (before minorities)	-5.0	-7.8	-3.8	-1.5	10.7	27.9	45.2	72.2
EAT	-3.0	-4.7	-2.3	-0.9	6.4	16.7	27.1	43.3
EPS (Euro)	-0.84	-1.29	-0.64	-0.24	1.78	4.65	7.54	12.03

Annex II: Cash flows estimation and key figures

As-If Group: Cash flows estimation

m Euro	12 2018	12 2019	12 2020	12 2021	12 2022	12 2023	12 2024	12 2025
CF operating	-5.0	-7.6	-4.3	-2.0	8.8	25.1	42.3	69.3
CF from investments	-0.1	-0.1	-0.2	-0.5	-1.0	-2.0	-4.0	-5.0
CF financing	6.0	9.0	3.6	2.0	-3.1	0.0	0.0	0.0
Liquidity beginning of year	0.9	1.8	3.1	2.2	1.7	6.4	29.6	67.9
Liquidity end of year	1.8	3.1	2.2	1.7	6.4	29.6	67.9	132.2

As-If Group: Key figures

m Euro	12 2018	12 2019	12 2020	12 2021	12 2022	12 2023	12 2024	12 2025
Sales growth	-	-	361.8%	103.0%	168.8%	101.2%	61.8%	47.3%
Gross margin	-	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
EBITDA margin	-	-372.4%	-39.9%	-6.9%	32.7%	41.3%	41.0%	44.2%
EBIT margin	-	-373.8%	-40.3%	-7.4%	32.3%	40.9%	40.6%	43.8%
EBT margin	-	-373.7%	-40.2%	-8.8%	31.5%	40.8%	40.9%	44.3%
Net margin (after minorities)	-	-224.2%	-24.1%	-4.5%	12.3%	15.9%	15.9%	17.3%

Disclaimer

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The present financial analysis was prepared by: Dipl.-Kfm. Holger Steffen

Participants in the preparation of the present financial analysis: -

The present analysis was finished on 11.06.2018 at 8:15 a.m. and published on 11.06.2018 at 8:20 a.m.

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