CytoTools AG
Germany - Biotech

HAUCK & AUFHÄUSER
Investment Banking

Buy (Initiation)

Price target: EUR 42.00

Price:	EUR 21.90	**Next result:**	AGM 03.12.20
Bloomberg:	T5O GY	**Market cap:**	EUR 88.0 m
Reuters:	T5OG.DE	**Enterprise Value:**	EUR 82.1 m

17-November-20

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There are no comebacks without setbacks – Initiate with BUY

When in 2015 CytoTools announced that its lead wound healing drug candidate DermaPro failed to meet the objective of the European Phase 3 study in diabetic foot syndrome (DFS), its share price plunged by 88% **wiping out more than € 80m of the market cap**.

The share price drop **implicitly "valued" DermaPro at € 150m** based on CytoTools' 55% ownership stake in the DermaTools subsidiary that holds the rights to the asset.

Considering that the "failure" was traced back to quality issues of the clinical batches of the drug – which contained 50% to 90% lower concentration of the active ingredient than necessary – **the loss of the market value seems grossly misplaced**.

Since then the company has been rectifying the issues while trying to restore the loss of confidence, which was complicating the needed fund raising. Fortunately, management was able to secure the backing of a strategic investor (Klocke Group, a pharma CDMO) and raise **sufficient funds to re-do the Phase 3 trial in Europe**.

In fact, the trial has been initiated in Oct. 2020 with interim results expected in Q4 2021 and **final readout in Q4 2022**. Crucially, the **new trial is strongly de-risked** as the company will be supplying clinical batches from its own purpose-built site, while the recent successful market launch in India provides a rock-solid proof of concept.

With that, **CytoTools is geared up for a comeback** AND **the valuation upside is easy to grasp** considering no adequate therapeutic alternative for DFS and a large addressable patient population. We conservatively estimate the **NPV stemming from DermaPro in DFS at € 128m** (based on 65% stake), which alone substantially exceeds the company's EV of € 82m.

What's best, there are **more value catalysts** – than just DermaPro (in DFS) – that provide **further valuation upside**. This is backed by DermaPro's therapeutic potential that goes beyond DFS (e.g. venous leg ulcers, COVID-19, blood poisoning) as well as gradually restoring confidence and intensified IR activity.

Initiate with BUY and € 42 PT backed by a NVP-based SOTP valuation.

Y/E 31.12 (EUR m)	2018	2019	2020E	2021E	2022E	2023E	2024E
Sales	0.0	0.0	0.0	0.4	1.4	2.4	3.5
Sales growth	n/a	n/a	n/a	n/a	234 %	74 %	45 %
EBITDA	-1.2	-1.2	-1.0	-0.6	0.4	1.4	2.5
EBIT	-1.2	-1.2	-1.0	-0.6	0.4	1.4	2.5
Net income	-1.4	-1.3	-0.8	-0.5	0.5	1.5	2.7
Net debt	0.1	-2.0	-5.9	-5.4	-5.7	-5.4	-7.7
Net gearing	0.9 %	-11.0 %	-27.4 %	-25.5 %	-26.5 %	-23.5 %	-29.9 %
Net Debt/EBITDA	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
EPS pro forma	n/a	n/a	n/a	n/a	0.12	0.38	0.66
CPS	n/a	n/a	n/a	n/a	0.08	0.33	0.61
DPS	n/a	n/a	n/a	n/a	0.00	0.00	0.00
Dividend yield	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Gross profit margin	n/a	n/a	n/a	100.0 %	100.0 %	100.0 %	100.0 %
EBITDA margin	n/a	n/a	n/a	-142.6 %	26.8 %	57.5 %	70.7 %
EBIT margin	n/a	n/a	n/a	-147.1 %	25.4 %	56.8 %	70.2 %
ROCE	n/a	n/a	n/a	n/a	1.6 %	6.1 %	10.3 %
EV/sales	n/a	n/a	n/a	n/a	69.1	39.9	26.9
EV/EBITDA	n/a	n/a	n/a	n/a	258.2	69.3	38.0
EV/EBIT	n/a	n/a	n/a	n/a	272.1	70.2	38.3
PER	n/a	n/a	n/a	n/a	204.3	67.4	38.3
Adjusted FCF yield	n/a	n/a	n/a	n/a	0.5 %	1.7 %	3.2 %

Source: Company data, Hauck & Aufhäuser Close price as of: 16.11.2020

Source: Company data, Hauck & Aufhäuser

High/low 52 weeks:	25.30 / 6.80
Price/Book Ratio:	4.7
Relative performance (SDAX):	
3 months	138.2 %
6 months	142.1 %
12 months	127.4 %

Changes in estimates

		Sales	EBIT	EPS
2020	*old:*	0.0	-1.0	-0.21
	Δ	-	-	-
2021	*old:*	0.4	-0.6	-0.12
	Δ	-	-	-
2022	*old:*	1.4	0.4	0.12
	Δ	-	-	-

Key share data:

Number of shares: (in m pcs)	4.0
Authorised capital: (in € m)	-
Book value per share: (in €)	5.4
Ø trading volume: (12 months)	11,000

Major shareholders:

Free Float	51.7 %
Delphi	17.2 %
Management & Supervisory Board	12.3 %
Heidelberger Beteiligungsholding	9.7 %
Klocke Holding	9.1 %

Company description:
CytoTools is a biotech company focusing on the development of disruptive therapeutic approaches

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Introducing CytoTools

CytoTools is a German biotech company focusing on the **development of disruptive therapeutic approaches** on the back of its deep insight and understanding of the basic cell biology.

Its development pipeline consist of **several small molecule and biologic candidates** in various stages of development with the potential to provide **better treatment options** in dermatology, urology, cardiology and oncology.

CytoTools' development pipeline

Product	Indication	Market	Pre-clinical	Phase 1	Phase 2	Phase 3
DermaPro (DPOCL)	DFS	India	Final market approval granted in Oct. 2019			
DermaPro (DPOCL)	DFS	EU	Phase 3 initiated in Q4 2020			
DermaPro (DPOCL)	Venous Leg Ulcer	EU	Phase 3 in preparation			
DermaPro (DPOCL)	DFS	US	Phase 3 in preparation			
Cancer T17-n	Cancer	EU	Pre-clinical			
DPOCL	Sepsis	EU	Pre-clinical			
Utisept	Urinary Tract Infection	EU	CE certification			

Source: company data; H&A

However, CytoTools is most known for its **lead therapeutic DermaPro** found to be extremely effective in the treatment of various types of wounds.

It has already been **approved in India for the diabetic foot syndrome** (DFS) – notoriously difficult to treat wounds affecting 30m people worldwide. The **market launch was commenced in Sept. 2020** by a licensing partner.

With that, CytoTools not only looks set to generate **first royalty income** already in the short term, but most importantly this should serve as a **rock solid proof of concept** expediting market approval in other regions.

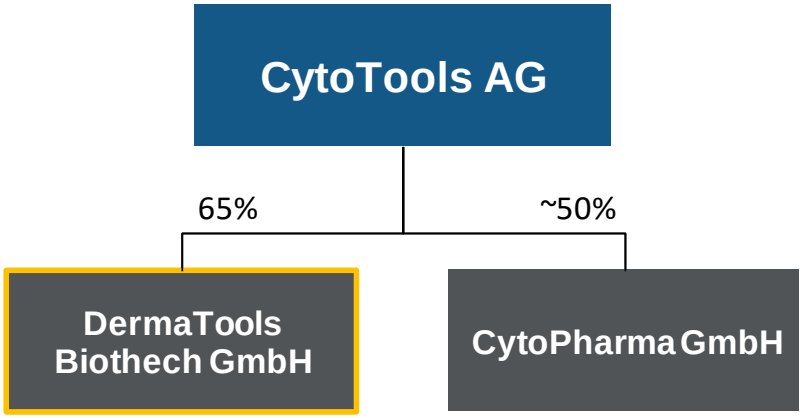
In fact, **market approvals for Europe and the US** as well as extension of indications are on the top of management's agenda and should serve as the **key value inflection events** in the coming years.

Holding structure designed to protect intellectual property

CytoTools was deliberately **structured as a holding company** with majority stakes in two subsidiaries – DermaTools and CytoPharma – that essentially "own" individual development projects. On the CytoTools level, both subsidiaries are **accounted for as financial assets**.

The minority stakes in the subsidiaries belong to CytoTools' management along with other strategic investors.

CytoTools corporate structure



Source: company data; H&A

- **DermaTools (65% stake)** is active in the field of dermatology and urology
- **CytoPharma (50% stake)** is active in the field of cardiovascular diseases and cancer

The rationale behind this structure is above all to **minimize the risk of a hostile takeover of valuable intellectual property** within the company by accumulating a controlling interest in CytoTools AG.

The rationale behind this structure is above all to **minimize the risk of a hostile takeover of valuable intellectual property**. The IP is held by the subsidiaries and in order to gain full control over the IP one would need to accumulate 75%+ ownership stake. Hence, a **hostile takeover of CytoTools is effectively ruled out** as it won't grant the acquirer control over the IP.

With that, the subsidiaries are able to realize their value potential without the risk of interruptions through hostile corporate actions.

What's more, thanks to the holding structure any future sales of a subsidiary in order to unlock the inherent value of its assets (i.e. drug candidates) is **less complex and more tax efficient**.

	CytoTools AG	
	DermaTools	**CytoPharma**
CytoTools share	65%	~50%
Therapeutic focus	Dermatology Urology	Covid-19 Cardiovascular diseases Sepsis
R&D sites	Rödermark (DE)	Darmstadt (DE)
Lead candidate	DermaPro (DPOCL)	DPOCL
Field of application	Treatment of w ounds	Early stage viral infections
Indication	Diabetic foot syndrome, Venous leg ulcer	COVID-19
Development stage	India: commercial, out-licensed EU: Phase 3 initiated in Oct. 2020 US: Initiation depending on funding	Successful pre-clinical trial (90% efficacy)
Next milestone(s)	Phase 3 trial readout	Clinical trials Partner selection Fast-track approval
Expected market launch	2023-2024E	tbd

Source: company data; H&A

Competitive Quality

- **Disrupting the standard of care** in Diabetic Foot Syndrome (DFS)
- Indian approval and subsequent market launch serve as **successful proof-of-concept**
- Further value inflection based on **successful Phase 3 trials in other regions and extension of indications**

Disrupting the standard of care in DFS

On average, **DFS affects more than 30m people worldwide**. If not treated properly, this leads to significant disease complications with 1 in 5 patients undergoing a complete foot amputation.

Despite high socioeconomic costs associated with DFS, there is **no adequate therapeutic option** that would be broadly available, underpinning the significant unmet need in medicine.

The current **standard of care constitutes a rather rudimental solution** relying on glycerin-based hydrogels, which neither is cost efficient nor does it offer an adequate therapeutic response.

DermaPro vs. current standard of care

	Diabetic foot syndrome (DFS)	
Occurance	Ø 6.4% of diabetics	
Worldwide cases	>30,000,000	
Estimated economic costs	~ $ 190bn	
	Wet bandage	**DermaPro (DPOCL)**
Visualisation		
Mode of action	Treatment of the symptoms	Treatment of the cause
Active ingredient	Salt solution / hydrogel	Dichloric acid (DPOCL)
Efficacy profile (i.e. cure rates)	25-30%*	76% complete healing
Treatment cycle	12 weeks and follow-ups required	3-10 weeks
Treatment costs per treatment cycle	~ € 2,000	~ € 500 (eH&A)

*Source: company data; H&A; *typical cure rates (from CytoTool's Indian trial)*

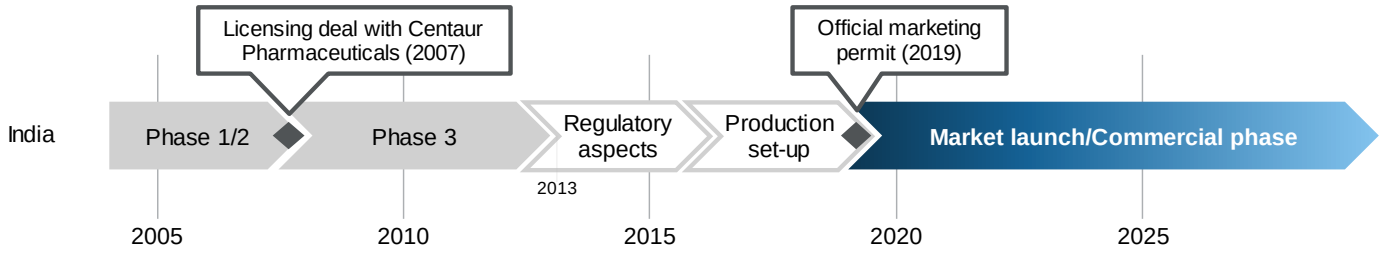
In contracts, DermaPro demonstrated **significantly better efficacy** attacking the cause of the disease instead of merely managing the symptoms. The active ingredient DPOCL contained in DermaPro has an antibacterial effect AND activates cell growth leading, in most cases, to a **complete closure of even large chronic wounds**.

In fact, based on successfully completed Indian clinical trials, treatment of DFS with DermaPro led to **76% complete cure rate after 10 weeks**, compared to typical cure rates of 25-30% for hydrogel, which, unlike DermaPro, does not lead to compete closure of larger wounds.

DermaPro is already testing waters (in the Indian market)

Crucially, while it took longer than expected, **DermaPro is already exploring commercial opportunities** in the Indian market starting from Q4 2020 under the supervision of the licensing partner Centaur Pharmaceuticals.

India: DermaPro approval timeline



Source: company data; H&A

Back in 2007, following the completion of Phase 1/2 clinical trials CytoTools signed an **early-stage licensing deal** (ahead of Phase 3) with Centaur granting it exclusive rights for the Indian market in exchange for a **low double-digit royalty fee** on future net sales (eH&A: 11%).

Unfortunately, quality issues at the contract manufacturing organization (CMO) led to **significantly delayed market introduction**. The CMO delivered faulty batches of the drug, which compromised the outcome of the earlier European Phase 3 trial. In response, **CytoTools sued the CMO for damages** and as a result had no approved production when the regulatory approval for India was granted. The final outcome of the court case is pending.

To rectify the issue, one new production was built by Centaur in India (approved in Oct. 2019) and another one by CytoTools in Germany (approval expected in Nov. 2020).

While the market introduction has been less than smooth, the product has finally been launched and its **superior efficacy is undisputed** as evidenced by the successful Phase 3 trial.

The quote from Centaur's Chairman is a strong testimony to the **high value add offered by the DermaPro treatment** for patients with DFS.

Centaur's Chairman testimony for DermaPro game-changing potential

"It is a **unique product** for the treatment of diabetic foot ulcers, and we are sure that **it will save millions of diabetics** who have to undergo foot amputation globally. This is a result of **intense research work** which have been carried in the last 14 years for developing this novel drug."

[S D Sawant, Chairman and MD, Centaur Pharmaceuticals]

Source: express pharma; H&A

Closing in on major value inflection events

Having retained exclusive rights for DermaPro in all regions, with the exception of India, CytoTools continues to hold a **significant "option value"** backed by the market opportunity of DermaPro, above all in Europe and the US.

Importantly, subsequent approvals in other geographies (e.g. EU and US) have been **strongly de-risked**. This is thanks to successful market launch in India AND the recent early success of the active ingredient DPOCL in virology (i.e. COVID-19).

What's best, having retained exclusivity for other markets CytoTools should be able to negotiate a **significantly more lucrative later-stage deal** post-Phase 3 with an outright sale of the asset being the most preferred option.

DermaPro value potential overview

Region	Indication	Development stage	Projected launch	Market opportunity * (in € m)	Deal type
India	DFS	Commercial	Launched end of 2020	**468m**	Early licensing deal (pre-Phase 3) ~11% royalty
Major Value Catalysts					
Europe	DFS	Phase 3 (started)	2023-2024E (financing secured)	**1.3bn**	Not licensed (100% owned)
US	DFS	Phase 3 (in preparation)	~2025E (contingent on financing)	**1.8bn**	Not licensed (100% owned)
Europe	Open Leg	Phase 3 (in preparation)	After 2025E (contingent on financing)	**2.8bn**	Not licensed (100% owned)
China	DFS	Phase 3 (+Indian license applies)	n/a (contingent on licensing)	**580m**	Not licensed (100% owned)

Source: company data; H&A ** defined based on 100% penetration and assumed ASP*

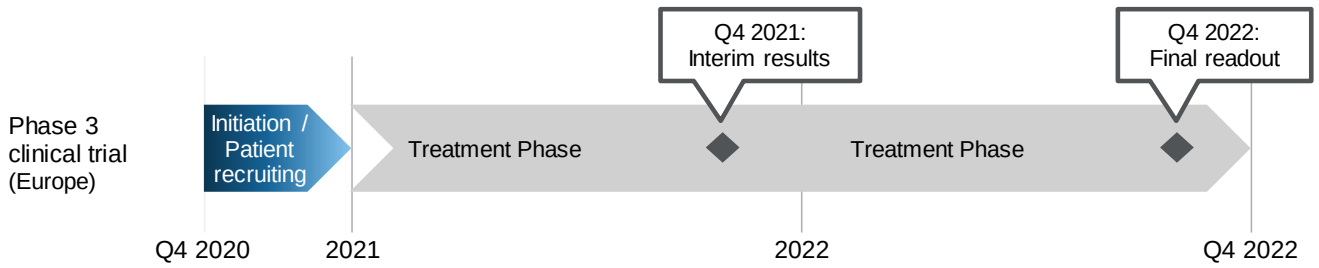
- **Europe (DFS):** Having secured the necessary financing of c. € 6m, the company initiated European Phase 3 clinical trial in the indication DFS on 29th Oct. 2020.

Financing position (in € m)	
Total cash on hand (end of 2020)	**6.3**
Annual opex	-1.2
EU Phase 3 trial costs (over 2 years)	-6.0
DermaPro India royalty income (over 2 years)	1.8

Source: company data; H&A

The actual treatment phase should start in Q1 2021 with interim results available by Q4 2021 and a **final readout of the trial in Q4 2022**.

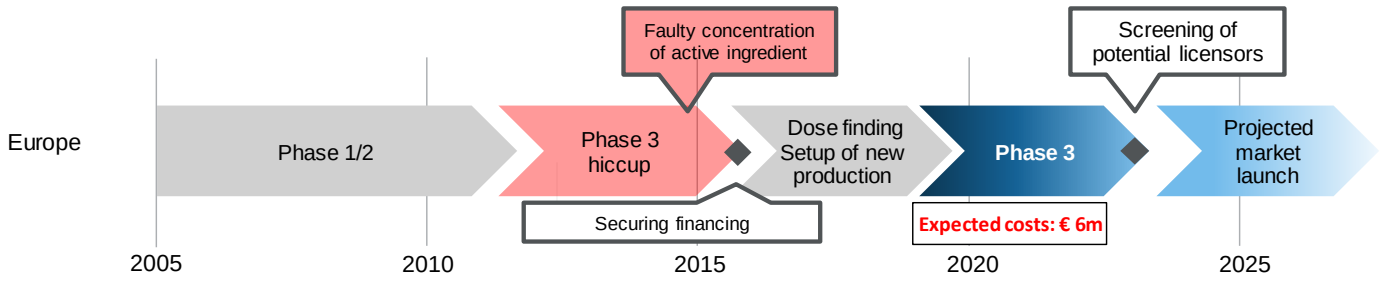
DermaPro: Europe Phase 3 clinical trial



Source: company data; H&A

Admittedly, this is Cytotool's second attempt to complete the Phase 3 trial in Europe after the initial trial flopped due to faulty drug batches provided by the contract manufacturing organization (CMO).

Faulty drug batches de-railed European Phase 3 trial



Source: company data; H&A

Back in Nov. 2015, the company unexpectedly reported unsatisfactory Phase 3 results, which could later be traced back to **faulty drug batches** containing a far lesser amount of the active ingredient than prescribed by CytoTools.

Specifically, an independent chemical analysis of the batches used in the trial showed **50% to 90% lower concentration of DermaPro** than what was ordered by the company.

Consequently, **CytoTools filed a complaint** against the contract manufacturer, who was responsible for manufacturing of the batches, seeking damages. The final ruling is pending.

In the meantime, a new **dose finding trial was successfully completed** (2018-2019) confirming the initially defined concentration as the best treatment

option. In addition, **DermaPro's clinical superiority** has, once again, been established compared to the best alternative (hydrogel).

With that, a successful outcome of the recently initiated European Phase 3 trial is highly likely, in our view.

- **US / China (DFS):** While the US market launch is dependent on a successful Phase 3 trial, which in turn is contingent of further financing, the market launch in China seems to be a **"low hanging fruit"** and hence may lead to a licensing deal already in the near term, in our view.

  This is because the Indian market license allows for a **fast-track market entry in China** with a condition that the Phase 3 trial will be conducted in parallel with the drug marketing.

  This is why **pharma companies should be all over CytoTools to obtain the license** for the Chinese market, especially as DermaPro becomes increasingly successful in India.

  A licensing deal should become more visible once the pandemic-related travel restrictions subside.

US/China: DermaPro projected launches

Source: company data; H&A

- **Europe (Venous leg ulcer):** Besides DFS, DermaPro was found to be an effective treatment of venous leg ulcers, which is an even more widespread condition than DFS affecting 7m people in Europe alone.

  Back in 2014, CytoTools started a Phase 2 trial, which based on interim results **confirmed high efficacy of DermaPro** with complete wound healing rates of 50%, compared to best alternative, despite less than order concentration of the active ingredient.

  Unfortunately, the trial in the venous leg ulcer indication had to be **prematurely terminated** as CMO failed to ensure the prescribed quality of test batches.

  Nevertheless, given encouraging intermediate results suggesting high potential of **DermaPro in treatment of venous leg ulcer**, a new trial is a question of financing.

Valuation

Market implied value of CytoTools' IP

As is typical for a clinical-stage biotech company, the value of the company stems from the value **attributable to its patents minus PV of corporate costs** (i.e. cash burn).

The patent value resides in the **commercial potential of a drug candidate and success probabilities**. Commercial potential, in turn, broadly depends on the total addressable patient population and the availability of alternative treatment options.

Disclaimer: In order to exclude DPOCL's early success in COVID-19 – which carries significant option value – and focus on the core activities in the wound healing space, we use the share price prior to the announcement of DPOCL efficacy in COVID-19 based on the preliminary testing results.

Market implied value of the DermaTools subsidiary	
Share price	20.5
NOSH	4.0
Market capitalisation	**82.4**
Net cash	6.0
EV	**76.4**
PV of corporate costs	-9.2
[A + B] Implied value of CytoTools	**85.6**
A. thereof CytoPharma (10%)	8.6
B. thereof DermaTools (90%)	77.1
C. Shareholding in DermaTools	65%
[B / C] Implied value of DermaTools	**118.6**

Source: H&A

Based on the company's Enterprise Value (EV) of € 76m and PV of corporate costs of € 9m, **the market implied FV for CytoTools stands at € 86m**. Thereof, 10% or € 8.6m is attributable to the CytoPharma subsidiary (as per the most recent capital increase). The remaining € 77m is the value of the DermaTools subsidiary.

Applying CytoTools's 65% ownership, the **market implicitly values the DermaTools subsidiary at € 119m**. This is notably below the value we derive for DermaPro based on the single indication DFS, while the active ingredient DPOCL evidently has a vast therapeutic potential in areas beyond wound healing.

Valuing CytoTools

We derive a **fair value per share of € 42** for CytoTools based on a SOTP analysis focusing on market opportunities of DermaPro in the DFS and venous leg ulcer indications. Additionally, we reflect the recent early success of the active ingredient DPOCL in the treatment of COVID-19.

CytoTools Valuation	
A. DermaPro (DFS)	**128.5**
B. DermaPro (venous leg ulcers)	**23.1**
C. DPOCL in COVID-19	**20.0**
- Corporate costs value drag	9.2
Fair EV	**162.4**
- net debt	6.3
Fair Market Cap	**168.7**
NOSH	4.0
Fair Value per share	**41.9**
upside(+)/downside(-)	65.5%

Source: H&A

Valuation sensitivity

CytoTools fair value per share sensitivity

		Peak penetration				
		5.0%	7.5%	12.5%	15.0%	20.0%
Royalty rate	25%	24.6	27.5	33.5	36.4	42.3
	30%	27.3	30.7	37.7	41.1	48.1
	35%	30.0	33.9	41.9	45.8	53.8
	40%	32.7	37.1	46.1	50.6	59.5
	45%	35.4	40.3	50.3	55.3	65.2

Source: H&A

A. DermaPro (DFS): We derive a **fair value of € 128m for DermaPro in the indication DFS** based on commercialization scenarios in India, Europe, US, and China.

NPV DermaPro in DFS	India	Europe	US	China
Addressable market assumptions:				
DFS prevalence rate	11.6%	5.1%	13.0%	4.1%
DFS patient population	9,185,222	3,056,357	4,028,427	4,863,792
CAGR	2.5%	0.6%	1.3%	1.4%
Sales and earnings assumptions:				
(Assumed) market launch in	Oct. 2020	2023-2024E	2027E	2025E
Lifetime (in years)	15	15	15	15
DermaPro peak penetration	12.5%	12.5%	12.5%	12.5%
ASP per treatment cycle (in €)	80	550	550	125
DermaPro peak annual sales (in € m)	144	268	434	140
(Assumed) royalty rate	11%	35%	35%	35%
Valuation assumptions:				
Success rate	100%	80%	80%	90%
WACC	15%	15%	15%	15%
NPV (in € m)	**22.9**	**62.6**	**78.1**	**34.1**
Sum of NPV		**197.7**		
CytoTools participation		65%		
Ownership adjusted NPV		**128.5**		

Source: H&A

- **DFS patient population:** The number of DFS patients is defined as the number of diabetics multiplied by the prevalence rate of DFS.
- **DermaPro penetration rate:** We mode a linear increase in the penetration rates from 0.5% to 5% between year 1 and year 5, a linear progression towards the peak penetration of 12.5% in year 10 and a subsequent decline towards 3% in year 15.
- **Average selling price (ASP):** ASP varies by region based on purchasing power and overall quality of access to healthcare and reflects treatment costs per treatment cycle, which can range from three to 12 weeks, depending on the severity of the disease.
- **Royalty rate:** In India, CytoTools receives a royalty rate of only 11% due to the early licensing deal with Centaur. In the remaining regions (e.g. Europe, US and China), we model 35% royalty rate, given significantly de-risked market approvals on the back of the successful market launch in India.
- **Success rate:** While market approvals in other regions is rather a formality following the successfully approval and market launch in India, we conservatively set success rates at 80% for Europe and the US and at 90% for China given the possibility of a fast-track market entry.

B. DermaPro (venous leg ulcer opportunity): In order to account for low visibility and higher uncertainty of a potential market introduction of DermaPro in the venous leg ulcer indication, we conduct an annuity-based NPV valuation based solely on the European market launch.

Venous leg ulcer opportunity (Europe)	
Addressable market (patinets)	6,930,613
CAGR	2.0%
Market launch	2025
Penetration rate	3.0%
Projected sales (2030E)	**126.7**
Royalty rate	35%
Royalty income	**44.4**
Tax rate	28%
Success rate	50%
PV	**3.9**
WACC	15%
Lifetime (years)	15.0
PV of annuity	**23.1**

Source: H&A

Based on 3% penetration rate in 2030, 35% royalty rate, 15% WACC and 50% success rate, we calculate a static PV of € 3.9m p.a. Assuming 15 years lifetime of the drug, we derive a **PV of € 23m.**

C. DPOCL in COVID-19: Last week, CytoTools announced positive preliminary results of the testing carried out in cooperation with the Institute for Medical Virology at the University Hospital Frankfurt clearly **confirming the efficacy of the DPOCL active ingredient in the treatment of COVID-19**.

In fact, **efficacy rates of more than 90%** could be confirmed and hence a virucidal efficacy (i.e. the capacity to destroy or inactivate the virus) of DPOCL on the virus SARS-CoV-2 has been proven.

With the preclinical data of DPOCL already available, **human trials can be initiated in the short-term**. The company is currently in search of a suitable partner to pursue a fast-track market approval and subsequent market launch with the final decision expected by Q1 2021.

In order to remain conservative, **we restrictively value the COVID-19 opportunity at € 40m** merely reflecting the company's share price appreciation following the release of the positive preliminary testing results of DPOCL in the treatment of COVID-19. CytoTools' participation in CytoPharma who holds the rights to the COVID-19 asset is c. 50%.

Needless to say, the **value potential stemming from a successful treatment option is immense**, considering the scope of the pandemic and the associated socioeconomic costs to the society.

Take for instance the **significant value appreciation of BioNTech** who partnered up with Pfizer to accelerate the development of its potential first-in-class COVID-19 mRNA vaccine program.

BioNTech's market value rose three-fold from $ 9bn pre-COVID-19 vaccine announcement to now more than $ 25bn.

Theme

Early Phase 3 setback sheds light on the DermaPro value potential

Following the unexpected unsatisfactory outcome of the European Phase 3 trial in 2015, CytoTools' shares **plunged 88% wiping out € 84m of the market cap**.

Share price overview

European Phase 3 trial setback	26.11.15	27.11.15	12.11.20*
Market Cap	**96**	**12**	**80**
Change		-84	
CytoTools' stake in DermaTools		55%	65%
Implied value for DermaPro		**153**	
Implied value of CT's stake in DermaPro			**99**

*Source: Bloomberg; H&A; *prior to COVID announcement*

This would suggest that even back in 2015 the market opportunity of **DermaPro was valued at c. € 150m** (derived from CytoTools' 55% ownership in 2015).

The company's current **participation on DermaPro of 65% would yield a value of € 99m** exceeding the entire market cap of € 75m.

Considering that today DermaPro is already a commercially marketed product, **further valuation upside is evident**, in our view, on the back of greatly de-risked other regional approvals.

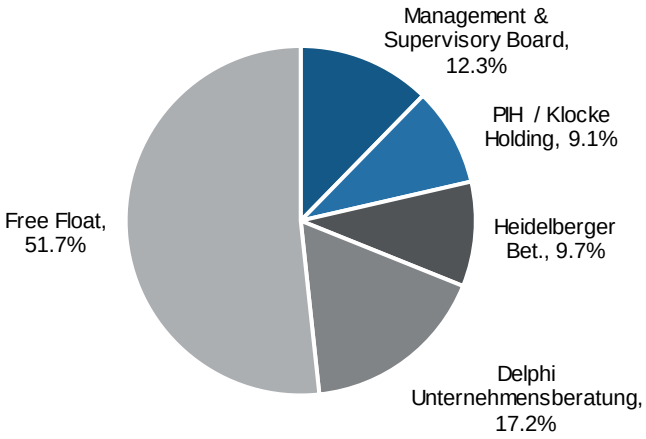
Therapeutic potential beyond DFS

The efficacy of DPOCL is also being investigated for the indication of blood poisoning (sepsis). Phase 1 trial is currently in progress and a patent has been filed. So far, the treatment has shown **cure rates of 75-100%** in mice, compared to a lethality of 100% without treatment.

In case of clinical success, this could open up yet another substantial market opportunity. The sepsis market is growing rapidly and is estimated to reach **$ 5.9bn by 2026**.

Company Background

Shareholder structure



Source: company data

Management board

Dr. Mark-Andre Freyberg (CEO, Founder)

- Founder of CytoTools in 2000
- Successfully closed multiple funding rounds and secured numerous grants from the federal Ministry of Education and Research (BMBF)
- Project manager at the Institute of Biochemistry at TU Darmstadt
- PhD in biochemistry and molecular biology from TU Darmstadt

Dr. Dirk Kaiser (CRO, Co-founder)

- Co-founder of CytoTools in 2000
- Coordination of R&D activities within the subsidiaries and controlling of clinical studies
- PhD in biochemistry from TU Darmstadt

Marc Herwick (CFO)

- Joined the board in October 2020
- >20 years experience in accounting and controlling
- Regional CFO at JELD-WEN (€ 4bn revenue from 2016 - 2019)
- Management position in renowned pharma companies: Aenova & Novartis
- Associate professor in finance at Munich Business School

Investment Risks

- Unexpected setback in regulatory clinical trials
- Slower than expected take up rates of DermaPro in various geographies
- Emergence of cheaper and more effective treatment options

Financials

Profit and loss (EUR m)	2018	2019	2020E	2021E	2022E	2023E	2024E
Net sales	**0.0**	**0.0**	**0.0**	**0.4**	**1.4**	**2.4**	**3.5**
Sales growth	n/a	n/a	n/a	n/a	*234.2 %*	*74.0 %*	*44.9 %*
Increase/decrease in finished goods and work-in-process	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total sales	**0.0**	**0.0**	**0.0**	**0.4**	**1.4**	**2.4**	**3.5**
Other operating income	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Material expenses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Personnel expenses	0.4	0.3	0.4	0.4	0.4	0.4	0.4
Other operating expenses	0.8	0.9	0.7	0.7	0.7	0.7	0.7
Total operating expenses	1.2	1.2	1.0	1.0	1.0	1.0	1.0
EBITDA	**-1.2**	**-1.2**	**-1.0**	**-0.6**	**0.4**	**1.4**	**2.5**
Depreciation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBITA	**-1.2**	**-1.2**	**-1.0**	**-0.6**	**0.4**	**1.4**	**2.5**
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Impairment charges	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBIT (inc revaluation net)	**-1.2**	**-1.2**	**-1.0**	**-0.6**	**0.4**	**1.4**	**2.5**
Interest income	0.1	0.0	0.2	0.1	0.1	0.1	0.2
Interest expenses	0.3	0.1	0.0	0.0	0.0	0.0	0.0
Other financial result	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial result	-0.2	-0.1	0.2	0.1	0.1	0.1	0.2
Recurring pretax income from continuing operations	**-1.4**	**-1.3**	**-0.8**	**-0.5**	**0.5**	**1.5**	**2.7**
Extraordinary income/loss	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings before taxes	**-1.4**	**-1.3**	**-0.8**	**-0.5**	**0.5**	**1.5**	**2.7**
Taxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income from continuing operations	**-1.4**	**-1.3**	**-0.8**	**-0.5**	**0.5**	**1.5**	**2.7**
Result from discontinued operations (net of tax)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income	**-1.4**	**-1.3**	**-0.8**	**-0.5**	**0.5**	**1.5**	**2.7**
Minority interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net profit (reported)	**-1.4**	**-1.3**	**-0.8**	**-0.5**	**0.5**	**1.5**	**2.7**
Average number of shares	0.0	4.0	4.0	4.0	4.0	4.0	4.0
EPS reported	**n/a**	**-0.32**	**-0.21**	**-0.12**	**0.12**	**0.38**	**0.66**

Profit and loss (common size)	2018	2019	2020E	2021E	2022E	2023E	2024E
Net sales	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**
Increase/decrease in finished goods and work-in-process	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Total sales	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**
Other operating income	n/a	n/a	n/a	n/a	0.1 %	0.1 %	0.0 %
Material expenses	n/a	n/a	n/a	n/a	0.0 %	0.0 %	0.0 %
Personnel expenses	n/a	n/a	n/a	n/a	26.5 %	15.6 %	10.8 %
Other operating expenses	n/a	n/a	n/a	n/a	46.8 %	26.9 %	18.6 %
Total operating expenses	n/a	n/a	n/a	n/a	73.2 %	42.5 %	29.3 %
EBITDA	**neg.**	**neg.**	**neg.**	**neg.**	**26.8 %**	**57.5 %**	**70.7 %**
Depreciation	0.0 %	52.4 %	52.4 %	4.6 %	1.4 %	0.8 %	0.5 %
EBITA	**neg.**	**neg.**	**neg.**	**neg.**	**25.4 %**	**56.8 %**	**70.2 %**
Amortisation of goodwill	n/a	n/a	n/a	n/a	0.0 %	0.0 %	0.0 %
Amortisation of intangible assets	n/a	n/a	n/a	n/a	0.0 %	0.0 %	0.0 %
Impairment charges	n/a	n/a	n/a	n/a	0.0 %	0.0 %	0.0 %
EBIT (inc revaluation net)	**neg.**	**neg.**	**neg.**	**neg.**	**25.4 %**	**56.8 %**	**70.2 %**
Interest income	n/a	n/a	n/a	n/a	10.4 %	5.7 %	5.6 %
Interest expenses	n/a	n/a	n/a	n/a	0.0 %	0.0 %	0.0 %
Other financial result	n/a	n/a	n/a	n/a	0.0 %	0.0 %	0.0 %
Financial result	n/a	n/a	n/a	n/a	10.4 %	5.7 %	5.6 %
Recurring pretax income from continuing operations	**neg.**	**neg.**	**neg.**	**neg.**	**35.8 %**	**62.4 %**	**75.7 %**
Extraordinary income/loss	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Earnings before taxes	**neg.**	**neg.**	**neg.**	**neg.**	**35.8 %**	**62.4 %**	**75.7 %**
Tax rate	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Net income from continuing operations	**neg.**	**neg.**	**neg.**	**neg.**	**35.9 %**	**62.5 %**	**75.7 %**
Income from discontinued operations (net of tax)	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Net income	**neg.**	**neg.**	**neg.**	**neg.**	**35.9 %**	**62.5 %**	**75.7 %**
Minority interest	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Net profit (reported)	**neg.**	**neg.**	**neg.**	**neg.**	**35.9 %**	**62.5 %**	**75.7 %**

Source: Company data, Hauck & Aufhäuser

Balance sheet (EUR m)	2018	2019	2020E	2021E	2022E	2023E	2024E
Intangible assets	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Property, plant and equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial assets	13.3	15.7	15.7	15.7	15.7	15.7	15.7
FIXED ASSETS	**13.4**	**15.8**	**15.8**	**15.8**	**15.7**	**15.7**	**15.7**
Inventories	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accounts receivable	0.1	0.0	0.0	0.1	0.2	0.4	0.6
Other current assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquid assets	2.7	2.0	6.0	5.5	5.8	5.5	7.8
Deferred taxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred charges and prepaid expenses	0.2	0.0	0.0	0.0	0.0	0.0	0.0
CURRENT ASSETS	3.0	2.1	6.0	5.6	6.1	5.9	8.4
TOTAL ASSETS	**16.4**	**17.9**	**21.8**	**21.3**	**21.8**	**21.7**	**24.1**
SHAREHOLDERS EQUITY	13.5	17.7	21.7	21.2	21.7	23.2	25.8
MINORITY INTEREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Long-term debt	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provisions for pensions and similar obligations	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-current liabilities	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
short-term liabilities to banks	2.8	0.1	0.1	0.1	0.1	0.1	0.1
Accounts payable	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance payments received on orders	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other liabilities (incl. from lease and rental contracts)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred taxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred income	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Current liabilities	**2.8**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	**16.4**	**17.9**	**21.8**	**21.3**	**21.8**	**23.3**	**26.0**

Balance sheet (common size)	2018	2019	2020E	2021E	2022E	2023E	2024E
Intangible assets	**0.5 %**	**0.4 %**	**0.2 %**	**0.1 %**	**0.0 %**	**-0.1 %**	**-0.1 %**
Property, plant and equipment	0.1 %	0.1 %	0.1 %	0.1 %	0.1 %	0.1 %	0.1 %
Financial assets	81.2 %	88.0 %	72.0 %	73.7 %	72.1 %	67.4 %	60.5 %
FIXED ASSETS	**81.8 %**	**88.4 %**	**72.3 %**	**73.9 %**	**72.2 %**	**67.4 %**	**60.5 %**
Inventories	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Accounts receivable	0.4 %	0.2 %	0.0 %	0.3 %	1.1 %	1.8 %	2.3 %
Other current assets	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Liquid assets	16.4 %	11.3 %	27.5 %	25.6 %	26.6 %	23.6 %	30.0 %
Deferred taxes	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Deferred charges and prepaid expenses	1.4 %	0.1 %	0.1 %	0.1 %	0.1 %	0.1 %	0.1 %
CURRENT ASSETS	18.2 %	11.6 %	27.7 %	26.1 %	27.8 %	25.5 %	32.4 %
TOTAL ASSETS	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**93.0 %**	**92.9 %**
SHAREHOLDERS EQUITY	82.5 %	99.4 %	99.5 %	99.5 %	99.5 %	99.5 %	99.6 %
MINORITY INTEREST	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Long-term debt	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Provisions for pensions and similar obligations	0.3 %	0.3 %	0.2 %	0.2 %	0.2 %	0.2 %	0.2 %
Other provisions	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Non-current liabilities	**0.3 %**	**0.3 %**	**0.2 %**	**0.2 %**	**0.2 %**	**0.2 %**	**0.2 %**
short-term liabilities to banks	17.2 %	0.3 %	0.3 %	0.3 %	0.3 %	0.3 %	0.2 %
Accounts payable	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Advance payments received on orders	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Other liabilities (incl. from lease and rental contracts)	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Deferred taxes	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Deferred income	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Current liabilities	**17.2 %**	**0.3 %**	**0.3 %**	**0.3 %**	**0.3 %**	**0.3 %**	**0.2 %**
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**	**100.0 %**

Source: Company data, Hauck & Aufhäuser

Cash flow statement (EUR m)	2018	2019	2020E	2021E	2022E	2023E	2024E
Net profit/loss	-1.4	-1.3	-0.8	-0.5	0.5	1.5	2.7
Depreciation of fixed assets (incl. leases)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.2	0.3	0.0	0.0	0.0	0.0	0.0
Cash flow from operations before changes in w/c	-1.2	-0.9	-0.8	-0.5	0.5	1.5	2.7
Increase/decrease in inventory	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Increase/decrease in accounts receivable	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.2
Increase/decrease in accounts payable	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Increase/decrease in other working capital positions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Increase/decrease in working capital	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.2
Cash flow from operating activities	**-1.3**	**-0.9**	**-0.8**	**-0.5**	**0.3**	**1.3**	**2.5**
CAPEX	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Payments for acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial investments	3.3	2.4	0.0	0.0	0.0	0.0	0.0
Income from asset disposals	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash flow from investing activities	**-3.3**	**-2.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Cash flow before financing	-4.6	-3.3	-0.8	-0.5	0.3	1.3	2.5
Increase/decrease in debt position	4.4	6.0	0.0	0.0	0.0	0.0	0.0
Purchase of own shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital measures	1.5	-2.3	4.0	0.0	0.0	0.0	0.0
Dividends paid	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Others	-0.7	-1.0	0.8	0.0	0.0	0.0	0.0
Effects of exchange rate changes on cash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash flow from financing activities	**5.2**	**2.7**	**4.8**	**0.0**	**0.0**	**0.0**	**0.0**
Increase/decrease in liquid assets	0.6	-0.7	4.0	-0.5	0.3	1.3	2.5
Liquid assets at end of period	**2.7**	**2.0**	**6.0**	**5.5**	**5.8**	**7.1**	**9.6**

Source: Company data, Hauck & Aufhäuser

Key ratios (EUR m)	2018	2019	2020E	2021E	2022E	2023E	2024E
P&L growth analysis							
Sales growth	n/a	n/a	n/a	n/a	n/a	74.0 %	44.9 %
EBITDA growth	n/a	n/a	n/a	n/a	n/a	274.0 %	78.0 %
EBIT growth	n/a	n/a	n/a	n/a	n/a	288.7 %	79.1 %
EPS growth	n/a	n/a	n/a	n/a	n/a	203.2 %	75.7 %
Efficiency							
Total operating costs / sales	n/a	n/a	n/a	242.6 %	73.2 %	42.5 %	29.3 %
Sales per employee	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EBITDA per employee	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Balance sheet analysis							
Avg. working capital / sales	n/a	n/a	n/a	n/a	8.9 %	10.1 %	12.1 %
Inventory turnover (sales/inventory)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Trade debtors in days of sales	63.1	63.1	63.1	63.1	63.1	63.1	63.1
A/P turnover [(A/P*365)/sales]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash conversion cycle (days)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cash flow analysis							
Free cash flow	-1.3	-0.9	-0.8	-0.5	0.3	1.3	2.5
Free cash flow/sales	n/a	n/a	n/a	n/a	23.7 %	55.1 %	70.4 %
FCF / net profit	neg.	neg.	neg.	neg.	66.2 %	88.2 %	92.9 %
Capex / depn	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Capex / maintenance capex	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Capex / sales	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Security							
Net debt	0.1	-2.0	-5.9	-5.4	-5.7	-5.4	-7.7
Net Debt/EBITDA	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Net debt / equity	0.0	neg.	neg.	neg.	neg.	neg.	neg.
Interest cover	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dividend payout ratio	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Asset utilisation							
Capital employed turnover	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Operating assets turnover	0.0	0.7	1.3	4.5	5.3	5.5	5.6
Plant turnover	0.1	1.7	1.7	19.4	64.7	112.6	163.2
Inventory turnover (sales/inventory)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Returns							
ROCE	-8.5 %	-6.9 %	-5.1 %	-3.1 %	1.6 %	6.1 %	10.3 %
ROE	-10.5 %	-7.2 %	-3.8 %	-2.2 %	2.3 %	6.5 %	10.3 %
Other							
Interest paid / avg. debt	10.6 %	6.9 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
No. employees (average)	0	0	0	0	0	0	0
Number of shares	0.0	4.0	4.0	4.0	4.0	4.0	4.0
DPS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EPS reported	n/a	-0.32	-0.21	-0.12	0.12	0.38	0.66
Valuation ratios							
P/BV	n/a	5.7	4.7	4.8	4.7	4.4	3.9
EV/sales	n/a	n/a	n/a	n/a	69.1	39.9	26.9
EV/EBITDA	n/a	n/a	n/a	n/a	258.2	69.3	38.0
EV/EBITA	n/a	n/a	n/a	n/a	272.1	70.2	38.3
EV/EBIT	n/a	n/a	n/a	n/a	272.1	70.2	38.3
EV/FCF	n/a	n/a	n/a	n/a	835.2	67.1	32.5
Adjusted FCF yield	n/a	n/a	n/a	n/a	0.5 %	1.7 %	3.2 %
Dividend yield	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %

Source: Company data, Hauck & Aufhäuser

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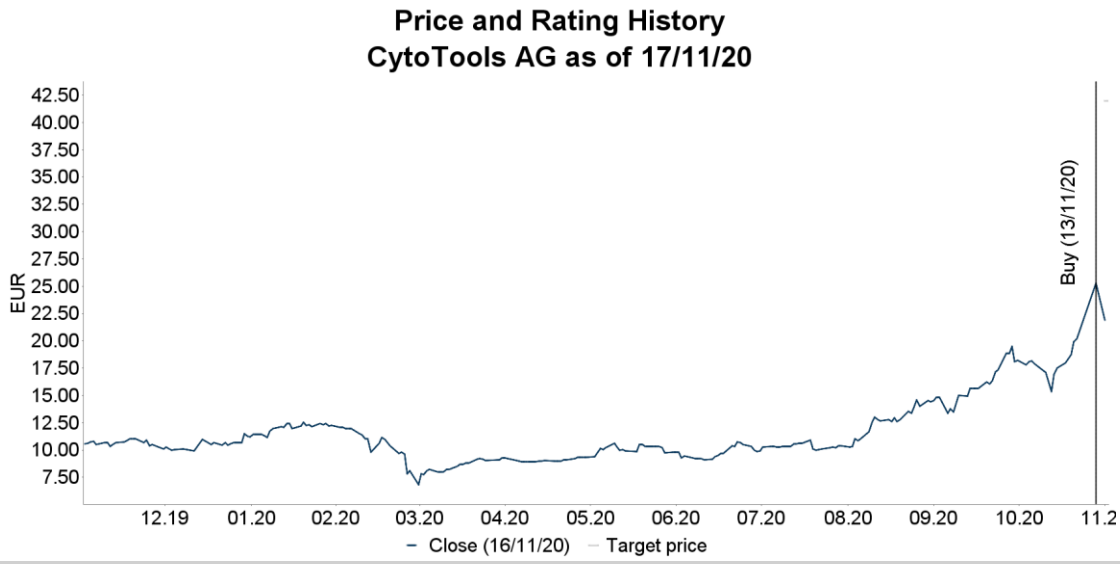
Company	Disclosure
CytoTools AG	2, 8

Historical target price and rating changes for CytoTools AG in the last 12 months



Company	Date	Analyst	Rating	Target price	Close

Hauck & Aufhäuser distribution of ratings and in proportion to investment banking services

Buy	70.47 %	83.33 %
Sell	8.72 %	0.00 %
Hold	20.81 %	16.67 %

Date of publication creation: 17/11/2020 08:09 AM

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