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Basilea Pharmaceutica

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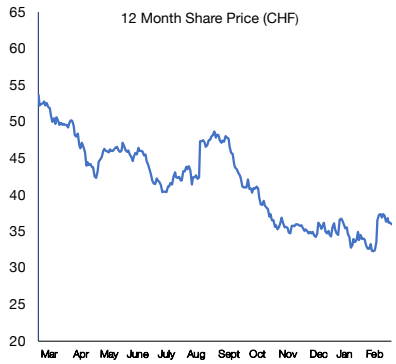
Share Price (CHF)	**36**
CP Fair Value (CHF)	**105**
Market Cap (CHFm)	**470**
Cash (CHFm)	**64**
EV (CHFm)	**521**
Country	Switzerland
Code	BSLN
Index	SIX



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Anti-infectives ascendancy

FY'23 has been a year of excellent execution, both financially and strategically. The acquisition of fosmanogepix brings Basilea a Phase 3-ready novel antifungal. We have previously highlighted that despite Cresemba's continuing commercial success, the longevity of the antifungal franchise and, ultimately, the company's anti-infective franchise have been threatened by the loss of exclusivity for Cresemba in the USA and Europe from Q4 2027. The addition of fosmanogepix effectively removes much of that uncertainty with clinical data generated by originator Amplyx (now a Pfizer subsidiary), demonstrating that fosmanogepix possesses several important attributes which together point to a commercially successful treatment option in a wide variety of critical fungal infections.

Fosmanogepix has a desirable profile

The profile of fosmanogepix appears very attractive. It is highly selective and offers good oral bioavailability, alongside intravenous delivery. It appears to have a broad spectrum of activity against various *Aspergillus* and *Candida*, including those that are resistant to the echinocandins. The importance of fosmanogepix as a novel antifungal has been reflected in the FDA conferring Fast Track status for various invasive fungal infections, including invasive aspergillosis, candidiasis and mucormycosis. Fosmanogepix has already been studied extensively, which included three open-label Phase 2 studies for the treatment of Candidemia, including *Candida auris*, and invasive mould infections. Data have been very promising, with activity against difficult-to-treat fungi and a good side effect profile suggesting that the Phase 3 programme has been substantially de-risked. Our peak sales estimate for fosmanogepix is $1.2bn based on its clinical profile.

Management delivering

The recent past at Basilea has been characterised by a flurry of in-licensing activity fleshing out and extending the anti-infectives pipeline. As a result, the company now has a balanced pipeline of novel antifungal and antibiotic programmes at various stages in development ranging from fosmanogepix poised to enter Phase 3, BAL2062 (another novel first-in-class clinical stage antifungal and a clinical-stage antibacterial (tonabacase). While we expect further in-licensing activities, the pipeline already looks busy, particularly in the key antifungal field.

Substantial de-risking ongoing

The addition of several clinical stage anti-infective assets brings longevity to the franchise, we believe. We look forward to the forthcoming US approval of ceftobiprole and the attraction of a suitable commercial partner to maximise its commercial potential and further de-risk the investment case.

New strategy delivering

Addressing pipeline challenges

Following the earlier than anticipated delivery of profitability in 2022, the focus for Basilea has been firmly on rejuvenating the anti-infectives pipeline and securing a commercial partner for ceftobiprole in the USA. Given the challenging environment for antibiotics and the significantly increased value associated with novel antifungal assets, these two issues have represented an overhang on the Basilea investment case, we believe.

Antifungal franchise in focus

To be fair, management has remained resolutely confident in its ability to deliver on both fronts. The recent past has been characterised by a flurry of activity on the in-licensing front. The first announcement concerned the acquisition of GR-2397 (now BAL-2062), a novel first-in-class agent with antifungal activity against clinically important moulds including *Aspergillus spp*. including those resistant to currently available therapies. This appeared to us to be a commercially important acquisition given that invasive aspergillosis has been the main commercial opportunity for Cresemba.

The antibacterial pipeline has been boosted too

This was followed shortly after by an option and license agreement for the clinical stage novel endolysin tonabacase. Tonabacase is a recombinant endolysin and potentially represents a differentiated antibacterial approach. We are particularly intrigued by this programme noting that many of the reservations surrounding the commercial opportunity for novel antibiotics appear to be concerned with the risk of antibiotic stewardship. As a result, new classes of antibiotics could be reserved for last resort status, limiting the commercial opportunity. With no known bacterial resistance mechanisms described for the endolysins perhaps this is a more viable alternative approach. Additionally, the aim is for a clinical programme that demonstrates clear superiority of tonabacase (in combination with standard of care) which should overcome any temptation to leave it as a last resort treatment option.

Fosmanogepix is the jewel in the crown

Fosmanogepix the jewel in the antifungal crown

With the outlook for Cresemba in the US and Europe likely constrained by the expiration of exclusivity in Q4 2027, all eyes have been on Basilea's plans to address such an eventuality. With the acquisition of the novel Phase 3 ready antifungal fosmanogepix, Basilea has secured the future of the antifungal franchise, we believe. We have previously highlighted the very attractive profile of fosmanogepix. This is the first in a new class of antifungals and the first representative from the new 'gepix' class. It is a prodrug of manogepix and exerts its antifungal activity by inhibiting fungal cell wall synthesis by targeting GPI-anchored protein maturation by inhibiting Gwt1. Gwt1 is essential for mannoprotein-mediated fungal adhesion to mucosal and epithelial surfaces before colonisation.

Targeting an important pathway for antifungal drugs

The glycosylphosphatidylinositol (GPI) biosynthesis pathway is an essential conserved cellular process in many eukaryotes and is proving to be an important pathway for the development of

antifungal drugs. Despite its evolutionary conservation, there are important differences in the GPI pathway in humans and other organisms allowing for the development of inhibitors with excellent selectivity. Importantly, fosmanogepix does not possess inhibitor activity against PIG-W – its closest human analogue suggesting a good safety profile.

...also a well-characterised pathway

In fungi, GPI is needed to anchor mannoproteins to the cell wall. These mannoproteins perform essential functions, including providing structural integrity to the cell wall, adhesion of fungi to mucosal surfaces, and facilitating replication of fungi at mucosal surfaces - a process which can lead to more widespread infection. As far as we are aware two enzymes within the GPI pathway (Gwt1 and Mcd4) have been targeted for antifungal drug development. Of the two, Gwt1 has been the most extensively studied. Gwt1 catalyses the third step in the GPI pathway, which leads to acylation of inositol. We are aware of at least two novel antifungals with activity against Gwt1. One of which is fosmanogepix, while gepinacin development has been compromised by its instability and as such we are unaware of any relevant clinical data.

First in new gepix class

Fosmanogepix is the prodrug of the active moiety manogepix and the first in a new gepix class of antifungals. Although the originator of manogepix was Eisai, recent clinical development has been conducted by the private US biotechnology company Amplyx, following acquisition of manogepix in 2015. Amplyx was acquired by Pfizer in October 2022 for an undisclosed sum.

Differentiated and highly relevant profile

Preclinical and clinical data suggest that fosmanogepix has a differentiated and highly relevant profile. It has a high bioavailability (>90%) and as a result both oral and intravenous preparations are being developed. This is relevant to the extent that the echinocandins can only be delivered by the IV route. The importance of the echinocandins is that they represent the first line of treatment for insidious infections such as *Candida auris* where increasing resistance to the azoles has become apparent.

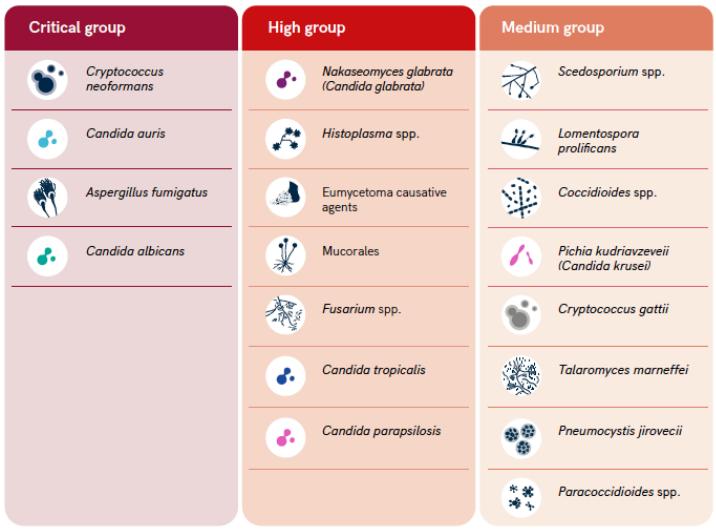
Takes the antifungals franchise to a new level

Inevitably, comparisons will be made with Cresemba (isavuconazole) given its success, relative importance to Basilea today and how fosmanogepix could supersede it. The principal commercial opportunity for Cresemba is invasive aspergillosis (IA), while Cresemba also has good activity against invasive moulds. The US label for Cresemba details both IA and invasive mucormycosis.

Comprehensive Phase 3 programme delivering a broad label

While some of the commercial success enjoyed by Cresemba is due to its extended spectrum, fosmanogepix as a novel agent has activity against azole resistant Candida species. More recently, *C. auris* and *C. glabrata* have proven to be problematic fungal infections in the US. Looking at the Phase 3 programme, fosmanogepix is set to have a much broader label than Cresemba. We have previously highlighted efforts by WHO to raise awareness of the severity of fungal infections with the release of its first-ever (October 2022) list of health-threatening fungi. This effort by the WHO is important and should stimulate increased interest in new antifungal development.

WHO fungal priority pathogens list



Source: World Health Organization

Fosmanogepix covers all critical fungal pathogens

Importantly, fosmanogepix offers coverage of all the fungal pathogens highlighted in the critical group detailed above.

Activity across a broad range of yeasts and moulds confirmed

Fosmanogepix has already undergone extensive preclinical and clinical development. Preclinical data have confirmed the broad activity of fosmanogepix across a broad range of yeasts and moulds. These include most Candida species including *C. auris*, *C. albicans*. *C. glabrata*, *C. tropicalis* and *C. dubliniensis*. Additionally, fosmanogepix has shown activity against azole, echinocandin and amphotericin B resistant isolates. Fosmanogepix also has potent activity against Aspergillus as well as other important and difficult to treat rare moulds which are inherently resistant including Fusarium, Scedosporium and some Mucorales strains. Importantly, it also displayed activity against other rare difficult to treat moulds which were typically resistant to other antifungal agents. Furthermore, fosmanogepix displayed activity against Aspergillus resistant to echinocandins and fluconazole.

Broad spectrum, potency, active in brain and a good volume of distribution

The broad spectrum and potency of fosmanogepix has been demonstrated in various animal models. Several key attributes have been confirmed including its ability to reduce fungal burden particularly in key organs such as the brain, where the echinocandins have negligible activity. Overall, fosmanogepix has a good volume of distribution, penetrating many important tissues and organs including liver, lung, and eye, as well as urine and abdominal fat.

Resistance a distant concern we believe

As a novel first in class antifungal, resistance to fosmanogepix should be a distant concern in a real-world environment, although we note efforts to induce resistance through serial passage has resulted in increased concentrations (MIC) requirements. Nevertheless, given that fosmanogepix has demonstrated both *in vitro* and *in vivo* activity against strains of *Aspergillus* and *Candida* (arguably the key near term commercial targets for fosmanogepix) which are resistant to the echinocandins, amphotericin B, itraconazole and fluconazole, we believe that the differentiated

profile of fosmanogepix suggests that it should be an important new treatment option.

Clinical development of fosmanogepix

Extensive Phase 1 evaluation

Basilea has acquired fosmanogepix on the back of substantial preclinical and clinical data. There have been seven Phase 1 studies conducted in healthy individuals which have confirmed that fosmanogepix was well tolerated with no clinically significant adverse events. Across the various dosing groups evaluated, fosmanogepix was demonstrated to have good oral bioavailability (>90%) with no significant food effects.

C auris a particularly concerning fungal pathogen

Three Phase 2 studies have also been completed in patients with candidaemia caused by *C. auris* and in invasive mould infections. The Phase 2 *C. auris* candidaemia study is particularly interesting given concerns regarding the emerging threat from this pathogen. This is a serious fungal infection which was largely unknown prior to its detection in Japan in 2009 and has proven to be a challenging pathogen to treat.

While historically, Candida species have been responsible for the majority of nosocomial fungal infections, this has largely been caused by *Candida albicans*. Although principally affecting those with compromised immune systems, *C. auris* outbreaks have proven to be an issue not just in hospitals but has also spread rapidly through care homes.

C.auris highlighted by several health authorities

C. auris has been associated with high mortality rates (circa 60%) in patients hospitalised with a *C.auris* infection. Resistance to existing classes of antifungals has been a characteristic of almost all *C. auris* strains, with an increasing threat of pan-resistance to all three available classes particularly concerning. The rapid emergence of *C. auris* along with its MDR and associated high mortality rate have resulted in various health authorities highlighting it as a fungal infection of significant concern. In the US, the CDC has highlighted the increasing prevalence of *C. auris* infections with screening cases tripling between 2020-2021 as well as a tripling of number of infections that were resistant to first-line echinocandin use. Since first being identified in the US in 2016, by the end of 2021 *C. auris* was present in more than half of US states, although overall numbers were relatively modest at 1,471 clinical cases. Consequently, CDC has designated *C. auris* as an urgent antimicrobial resistance threat in the US. In March 2023, the CDC issued a warning regarding the increasing risk of infection from drug-resistant *C. auris* following a spike of cases in California.

Mycological endpoint impressive in Phase 2

The completed Phase 2 study may have been limited in size due to Covid-19 ICU restrictions at the time, but the data generated were supportive. Of the nine patients who received fosmanogepix, eight successfully met the requirements of the primary endpoint. The one treatment failure was a death not deemed related to fosmanogepix treatment. For us the mycological secondary endpoint was particularly impressive with fosmanogepix the most active agent compared to a range of alternative existing antifungals (including the echinocandins).

Candidaemia study also supportive

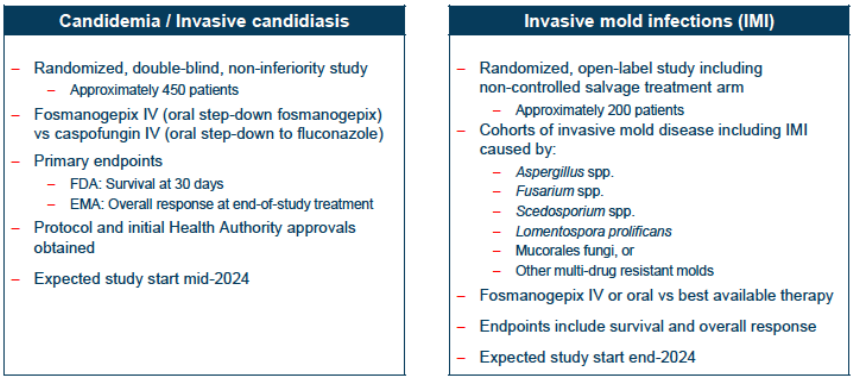
A second candidaemia study which did not include patients with *C. auris* was reported in August 2023. The study results confirmed the activity of fosmanogepix in this study population, albeit this was a relatively small open label, single arm study. From our perspective, the data were highly encouraging with a high clearance rate at the primary endpoint (80%), with fosmanogepix rapidly clearing *Candida* (circa 2.4 days). Reassuringly, of the four patients who failed the primary endpoint, failure was not associated with lower susceptibility to fosmanogepix. Otherwise, although there were several fatalities, the study included patients with typical co-morbidities and none of the deaths deemed to be related to fosmanogepix treatment. It was also worthy of note that almost 50% of patients transitioned from the IV to oral fosmanogepix during the study, with no ill effects.

Phase 3 plans well advanced

Fosmanogepix clinical programme is well advanced

One of the benefits of acquiring a programme with a significant body of Phase 2 data, from a well-funded company like Amplyx, particularly post the Pfizer acquisition, is that Phase 3 development plans are well advanced. Reflecting the unmet need and the commercial opportunity the two Phase 3 trials planned comprise one targeting candidaemia/invasive candidiasis and a second targeting invasive mould infections.

Fosmanogepix planned Phase 3 programme



Source: Basilea investor presentation

Candidaemia study starting mid-2024

The candidaemia/invasive candidiasis study is a randomised double-blind trial intended to show non-inferiority to standard of care. The trial is aiming to enrol 450 patients and will compare fosmanogepix to caspofungin – both offering oral step-down options. The primary endpoint agreed with FDA is 30-day survival while for EMA approval the primary endpoint is overall response at the end of study treatment. This study is expected to start in mid-2024.

Broad range of moulds scheduled for Phase 3

The invasive mould study on the other hand is open label and is expected to enrol about 200 patients. The study aims to compare fosmanogepix versus best available therapy against a broad range of clinically and commercially relevant invasive fungal infections including IA, *Fusarium spp*, *Scedosporium spp*, *Mucorales*, *Lomentospora prolificans* as well as other multi-drug resistant moulds. This study is expected to start by end 2024. Given that

fosmanogepix has obtained Fast Track status from FDA for seven different fungal infections, we believe that ultimately fosmanogepix will be relevant to a broad range of critical fungal pathogens.

Looking forward to a more expeditious launch phase for fosmanogepix

With Cresemba's loss of exclusivity looming in the US and Europe by Q4 2027, the acquisition of fosmanogepix represents a significant de-risking event we believe. However, it is also important to remember that Cresemba remains early in its launch phase in important markets including China and Japan providing a strong financial platform as fosmanogepix approaches approval. Nevertheless, we note that the Phase 3 trials for fosmanogepix are global in nature suggesting a less protracted launch compared to Cresemba in these important markets. Inevitably given the expected extended profile of fosmanogepix, and its relevance to a broader range of problematic infections, we suspect there will be significant interest in making it available to patients in all markets on an expeditious basis.

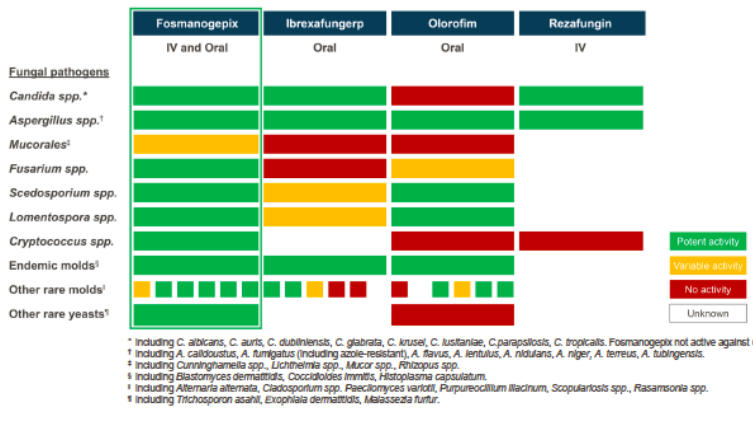
Likely use of fosmanogepix for compassionate use, expanded access

In that regard, we note the importance of expanded access programmes (EAPs), which serve to provide access to novel treatments ahead of approval in that geography. Supporting the use of fosmanogepix as part of an EAP are the date already generated in the clinical programme as well as the recent report in NEJM of its successful compassionate use in immunocompetent patients as part of an outbreak of *Fusarium solani* meningitis at two clinics in Mexico, among patients who received epidural anaesthesia. Of the thirteen patients identified in the article and treated with existing antifungals agents, nine died, while three out of four who received fosmanogepix survived. Additional (postmortem) analysis showed that the fungus causing the outbreak was resistant to all available antifungals except fosmanogepix.

New antifungals moving through development

The acquisition of fosmanogepix has been timely. Not only is Cresemba moving towards maturity in the major markets of the US and Europe, but the competitive environment is also beginning to show signs of intensifying with several novel antifungals in clinical development. Nevertheless, we believe that the profile of fosmanogepix suggests that it has a highly competitive profile.

The new antifungal landscape



Adapted from Hoenigl M, Sprute R, Egger M, at al. Drugs. 2021;81:1703-1729.

Olorofim benefits from Breakthrough Therapy designation

Arguably the foremost of the near-term competitors has been F2G's olorofim. Olorofim is a member of the ortomide antifungal class targeting fungal dihydroorotate dehydrogenase (DHODH), which is involved in pyrimidine synthesis. Although not a broad-spectrum antifungal, it has broad microbiologic activity against several important invasive moulds. Available orally, olorofim has been awarded FDA Breakthrough Therapy designation for the treatment of invasive fungal infections in patients with limited or no treatment options, including aspergillosis refractory or intolerant to currently available therapy, and infections due to *Lomentospora prolificans*, Scedosporium, and Scopulariopsis species as well as treatment of patients with coccidioidomycosis refractory to standard of care.

Shionogi investment is a strong endorsement

In a strong endorsement of its commercial potential, F2G was able to attract the attention of Shionogi in a licensing agreement, which provided both funding for development as well as commercial rights in Europe and Asia. Signed in May 2022, F2G received $100m in upfront payments and could receive up to a further $380m in regulatory and commercial milestones as well as double-digit sales royalties.

Limited Population Pathway but CRL unexpected

Olorofim was developed using the Limited Population Pathway for Antibacterial and Antifungal Drugs, US submission was based on the first 100 patients from a Phase 2b single arm, open-label study (Study 32). Patients enrolled had limited treatment options for proven invasive fungal infections or probable invasive aspergillosis, Unfortunately for F2G and partner Shionogi, olorofim received a complete response letter from FDA in June 2023 following its application for approval with a proposed label for the treatment of invasive fungal infections in patients who have limited or no treatment options. At the time, F2G suggested that the resubmission would include data from the entirety of the Phase 2b study.

Data from the Phase 2b study suggested that olorofim had an acceptable benefit-risk profile with overall success (the primary endpoint) of 28.7% at Day 42 and 27.2% at Day 84. More reassuringly, when considering stable disease as a clinically relevant endpoint, these numbers increased to 75.2% and 63.4% respectively.

Phase 3 ongoing

Following the Phase 2b open label study, a Phase 3 adjudicator blinded trial (OASIS) comparing olorofim to AmBisome in patients with IA is ongoing with a projected completion date of September 2024.

Potential as an oral step-down treatment

Ibrexafungerp (SCY-078) may also share the same target as the echinocandins but targets a different binding site. Ibrexafungerp displays fungistatic activity against Aspergillus and fungicidal activity against Candida. Given a general lack of cross-resistance with the echinocandins and its availability as an oral presentation, there is the potential for ibrexafungerp to be used as an oral step-down therapy to injectable echinocandins in the short term. A Phase 3 study (MARIO) with ibrexafungerp as a step-down therapy is

ongoing in the treatment of invasive candidiasis, with top-line results expected in H2 2024.

Brexafemme (ibrexafungerp tablets) was approved for the treatment of recurrent vulvovaginal candidiasis (VVC and RVVC) and represented the first approval of a new antifungal class for 20 years and the first non-azole agent approved by the FDA for this indication. The approval of Brexafemme would appear to have been sufficiently compelling to result in the attraction of anti-infective heavyweight GSK, with Scynexis receiving $90m in upfront payments as well as future performance-based milestone payments and tiered royalties in return for an exclusive license (ex-China).

Attraction of GSK provides commercial validation

More relevantly for Basilea, we note that a small Phase 2 ibrexafungerp study (SCYNERGIA) is ongoing in IA. While enrolment was completed, the number of patients enrolled was lower than initially planned. It is worth highlighting that the study evaluates Ibrexafungerp in combination with a mould-active azole (voriconazole), comparing the combination to voriconazole alone.

We believe that the efforts of GSK and Shionogi to in-license novel late-stage antifungal assets are a testament to the heightened awareness surrounding the increasing threat of fungal infections. It also demonstrates the advances in scientific endeavour, which has produced several novel antifungals after an apparent dearth for many decades. Bringing in fosmanogepix neatly transforms the long-term outlook for the antifungal franchise at Basilea.

Heightened awareness of attractions of novel antifungal approaches

Fortunately for the Cresemba franchise, many late-stage novel development programmes do not present a near-term competitive threat. As a result, our forecasts suggest that Cresemba revenues should continue to grow until exclusivity expiration in 2027, retreating modestly thereafter.

BAL2062 another novel antifungal approach

Rounding out the antifungal pipeline for Basilea, at least for now, is BAL2062. It is the first of a new class of siderophore like hexapeptide antifungal agents. BAL2062 is differentiated by its novel mechanism of action that includes rapid fungicidal activity, with data generated to date suggesting activity against a range of difficult-to-treat fungal pathogens (including azole-resistant strains). The rapid reduction in fungal burden could well be a highly attractive feature of BAL-2062, as well as a lack of cross resistance to existing antifungal classes (such as the azoles).

Novel mechanism of action

BAL2062 originated at Astellas and is a naturally derived cyclic hexapeptide derived from the Malaysian leaf litter fungus. Its mechanism of action is based on the use by fungi (and other pathogens) of the siderophore ferrichrome. Ferrichrome is required by fungi to scavenge for essential iron when levels are low. Importantly, it is transported in fungal cells by the Sit1 transporter and fortunately since human cells do not possess a Sit1 transporter BAL2062 should have minimal toxicity.

Targeting a non-human transporter pathway

Although the principal commercial target is likely to be invasive aspergillus infections, BAL2062 also has activity against other

IA the likely commercial target initially

important fungal pathogens including *Candida glabrata* and *Fusarium solani*.

Although these are still early days for BAL2062, Phase 1 clinical evaluation has shown it to be safe and well tolerated. BAL2062 also benefits from QIDP and Fast Track designations for IA. Basilea intends to further flesh out the profile of BAL2062 with the intention of commencing Phase 2 trials in H1 2025. We note that a previous Phase 2 trial undertaken by Vical in IA was terminated due to lack of available funding.

Fleshing out the antibacterial pipeline

Ceftobiprole has been a long-standing component of the anti-infectives franchise at Basilea. At last the key US market opportunity looks imminent given the FDA action date of 3rd April 2024, with a label that includes three indications including commercially important bacteraemia.

Ceftobiprole joined by other promising programmes

Until recently, the antibacterial pipeline at Basilea was bereft of appealing programmes. However, the addition of tonabacase, as well as several OMPTA drug development programmes, adds a non-antibiotic-based programme and an antibiotic programme targeting Gram-negative infections. Successful prosecution of these programmes suggests that Basilea should ultimately possess a broad portfolio targeting many of the priority pathogens highlighted by agencies such as WHO and CDC.

Tonabacase – an alternative antibacterial approach

Antibiotic stewardship limiting commercial potential of novel antibiotics

Within the anti-infectives field it is fair to say, we believe, that the commercial model behind novel antibiotics which has been most concerning. This is perhaps unsurprising given that widespread usage needs to be curtailed if resistance is to be discouraged. As a result, antibiotic stewardship remains a key component of novel antibiotic development.

Tonabacase - a non-antibiotic-based approach

The alternative approach is to focus on areas where resistance is less of an issue and to programmes where there is the potential to demonstrate superiority in clinical development compared to a more typical non-inferiority approach which we believe has led to a more conservative use of new antibiotics. The license and option agreement that Basilea has signed with iNtRON Biotechnology has brought tonabacase – a clinical stage antibacterial agent.

Targeting endolysins should overcome resistance concerns

Tonabacase is a recombinant endolysin and potentially represents a differentiated antibacterial approach. Endolysins like tonabacase, are derived from bacteriophage which infect and kill bacteria. The history of the endolysins is worth revisiting. Arguably, phage represented one of the earliest approaches to treating bacterial infections, but fell out of favour as antibiotics, which offered a broader spectrum of activity against multiple bacterial infections became standard of care.

However, endolysins have recently enjoyed renewed interest because of mounting resistance concerns regarding commonly used antibiotics. Endolysins have several important attributes, of

Several additional attractive attributes

which we suspect the most important is a lack of bacterial resistance mechanisms. Indeed, given the rise of multi-drug resistant bacteria, along with a lack of novel antibiotic classes, lysins and phage could enjoy a rekindling of interest. They also represent attractive antibacterial agents as they have activity against resistant bacteria like MRSA as well as biofilms and have demonstrated synergy with antibiotics.

Potential to combine with existing antibiotic classes a desirable asset

Given their mechanism of action, targeting peptidoglycan in bacterial cell walls, the endolysins generally are more effective against Gram-positive bacteria, although we note encouraging activity against some Gram-negative species, often using modified lysins. Although we recognise the utility of endolysins as a stand-alone approach, we suspect that the potential to combine with existing antibiotic classes could be an attractive proposition for Basilea. In particular, we note encouraging historical data combining endolysin therapy with existing antibiotics targeting MRSA, suggesting greater efficacy and the potential for lower antibiotic dosing.

Tonabacase has arrived at Basilea via a circuitous route. Initially developed by iNtRON (SAL200) it was out-licensed in 2018 to Roivant, with a new company Lysovant formed to develop and commercialise. As a sign of the potential of the programme the agreement could have been worth as much as $657.7m. As LSVT-1701, Lysovant undertook additional preclinical development showing for example that tonabacase was active against a broad array of *S. aureus* isolates and coagulase negative staphylococci.

Potential to augment ceftobiprole activity in SAB

Tonabacase comprises the recombinant phage endolysin SAL-1 which is derived from the staphylococcal specific phage SAP-1. A combination of preclinical and limited clinical data suggests that tonabacase possesses a combination of attractive properties which include rapid bactericidal activity against various *S. aureus* strains including MRSA and a low propensity to cause resistance. In addition to its potent anti-biofilm activity, it has been shown to work synergistically (*in vitro* and *in vivo*) with important anti-staphylococcal antibiotics such as daptomycin and vancomycin which are used routinely where MRSA is suspected. As highlighted above, we suspect that this is where Basilea's interest lies, noting in particular, preclinical data demonstrating that tonabacase enhances the activity of standard of care antibiotics in a murine bacteraemia model. Given that bacteraemia is the main commercial prospect for ceftobiprole, the potential for tonabacase to enhance the already impressive results in this needy patient population looks to be worthy of further investigation.

Tonabacase could be in Phase 2 in 2025

As part of this license and option agreement, Basilea will undertake further, as yet unspecified preclinical evaluation. Assuming that this is successfully completed Basilea intend to progress tonabacase in to Phase 2 development in 2025.

Perhaps blunting some of our enthusiasm for the tonabacase programme has been the recent experience with exebacase and, in particular, the failure of the Phase 3 DISRUPT study evaluating exebacase along with standard of care antibiotics in the treatment

Exebacase failure has perhaps blunted expectations

of SAB and right-sided endocarditis. On the face of it, this was a well-designed study evaluating superiority (not non-inferiority) of a single IV dose alongside standard of care (SoC) antibiotics versus SoC antibiotics alone. Use of a superiority endpoint was justified we believe given the magnitude of the benefit seen in Phase 2 evaluation. Importantly however, additional analysis have provided some key learnings which hopefully will help Basilea as it seeks to define the potential of tonabacase in a similar patient population. Admittedly DISRUPT was conducted during the restrictions associate with the COVID-19 pandemic which brings its own unique set of circumstances. However, other issues highlighted were apparent heterogeneity within the primary analysis population (sicker patients in the exebacase arm) as well as the use of a composite endpoint and a primary efficacy endpoint at Day 14 instead of a test-of-cure at day 70. Furthermore, we note the profile of exebacase limited its administration to a once-daily dosing regimen which may have limited its effect. Tonabacase, on the other hand, has a more favourable tolerability profile facilitating a likely more effective multiple dosing approach.

Not in our forecasts

Given the uncertainty associated with this approach (particularly post DISRUPT) we have not included any revenue contribution from tonabacase in our forecasts.

OMPTA platform – targeting Gram-negative infections

Focus on important Gram-negative infections

At Spexis, and particularly at its forerunner Polyphor, the focus had been at the forefront of novel antibiotic development as it relates to Gram-negative infections. Gram-negative infections are generally more problematic to treat than Gram-positive infections thanks to the presence of an outer membrane which effectively blocks some antibiotic classes. Ceftobiprole, for example, may have an extended spectrum which includes some Gram-negative bacteria but in general would only be used where a broad-spectrum antibiotic is required. There is a clear desire, reflected in treatment guidelines for a more tailored approach to treating infections in general where the causative agent can be ascertained.

Importance of treating Gram-negative infections reflected in guidelines

Resistance associated with Gram-negative infections is therefore particularly problematic with few treatment options and little progress. Such is the seriousness of AMR, the WHO has published a list of priority pathogens of which the majority are Gram-negative. The list is split into three priorities relating to their risk to human life. The highest-level Priority 1 pathogens are all Gram-negative are deemed to pose a critical threat and comprise *Acinetobacter baumannii*, *Pseudomonas aeruginosa* and *Enterobacteriaceae* where resistance has become a significant problem.

HAP and VAP would be obvious targets

Although these are still early days for this programme and no target indications have been suggested, it is worth noting that bacteraemia as well as HAP and VAP and urinary tract infections are often associated with Gram-negative infections.

Focus on disrupting the outer membrane

The OMPTA programme has been focussed on disrupting the outer membrane of Gram-negative bacteria by targeting the LPS bridge. Given the importance of the outer membrane to preserve the integrity of Gram-negative bacteria, and effectively block antibiotics entering, targeting LPS production and its transport machinery has proven to be an attractive approach in antibiotic drug development. Nevertheless, apart from the polymyxins and colistin, which have significant limitations of their own, direct inhibitors of LPS have been found wanting so far. Given the heightened risk of kidney damage associated with colistin and polymyxin B they are usually only used as a rescue/ last resort treatment.

Potentially broad Gram-negative utility

Looking to the Spexis OMPTA programme, development is focusing on several targets including LptD/E, LPS and BamA and LptA Thanatin derivatives. According to Spexis, the lead candidates have demonstrated potent bactericidal activity against a range of important Gram-negative pathogens including *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter spp*, *Acinetobacter baumannii*, *Stenotrophomonas maltophilia* and *Pseudomonas aeruginosa*. Importantly, the candidates have demonstrated activity against colistin resistant isolates.

CARB-X involvement encouraging

The importance of the OMPTA programme has been reflected in the award of non-dilutive funding from CARB-X to aid development, which focuses on accelerating programmes targeting the WHO and CDC's priority list pathogens.

Ceftobiprole approaching US approval

Fortunately for Basilea, despite its availability outside of the US, it has not previously been approved in the US. Significantly, the granting of Qualified Infectious Disease Product (QIDP) has refreshed the period of exclusivity it will enjoy.

QIDP and BARDA interest have transformed the outlook for ceftobiprole from its early days

Potentially, funding of the ceftobiprole Phase 3 programme offers a model for fosmanogepix, with BARDA providing approximately 75% of the ceftobiprole development costs with non-dilutive funding of $112m. The agreement was signed in April 2016 with the intention of developing ceftobiprole in the US for *S. aureus* bacteraemia (SAB), acute bacterial skin & skin structure infections (ABSSSI), and community-acquired bacterial pneumonia (CABP) – although the latter indication was not a subject of the agreed Special Protocol Assessment (SPA).

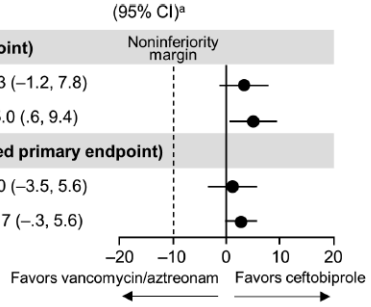
Positive results from both TARGET and ERADICATE

Both TARGET (severe skin infections) and ERADICATE (bacteraemia) were positive, with ceftobiprole meeting all primary and secondary endpoints. Although severe skin infections are generally well served, current empiric treatments often target Gram-positive bacteria. Gram-negative infections can be more problematic, and ceftobiprole does offer coverage of some important Gram-negative bacteria. These include, *Enterobacteriaceae* (including *Citrobacter spp*. *Enterobacter spp*., *Escherichia coli*, *Klebsiella spp*., *Serratia marcescens*), and *Pseudomonas aeruginosa*.

TARGET met regulatory criteria for both FDA (early clinical response) and EMA (clinical response at the test of cure visit), with ceftobiprole demonstrated to be non-inferior to vancomycin plus aztreonam in the intention to treat (ITT) population. It is also worth noting that in TARGET, ceftobiprole was superior to vanco + aztreonam in the clinically evaluable (CE) patient population (secondary endpoint).

Ceftobiprole primary endpoint analysis in TARGET study

	Ceftobiprole n/N (%)	Vancomycin/ aztreonam n/N (%)	Adjusted difference (ceftobiprole minus vancomycin/aztreonam) (95% CI)[a]
Early clinical response (FDA-defined primary endpoint)			
ITT	306/335 (91.3)	303/344 (88.1)	3.3 (–1.2, 7.8)
CE[b]	267/283 (94.3)	262/293 (89.4)	5.0 (.6, 9.4)
Investigator-assessed clinical success (EMA-defined primary endpoint)			
ITT	302/335 (90.1)	306/344 (89.0)	1.0 (–3.5, 5.6)
CE	277/283 (97.9)	279/293 (95.2)	2.7 (–.3, 5.6)



Source: Overcash et al., Clinical Infectious Diseases

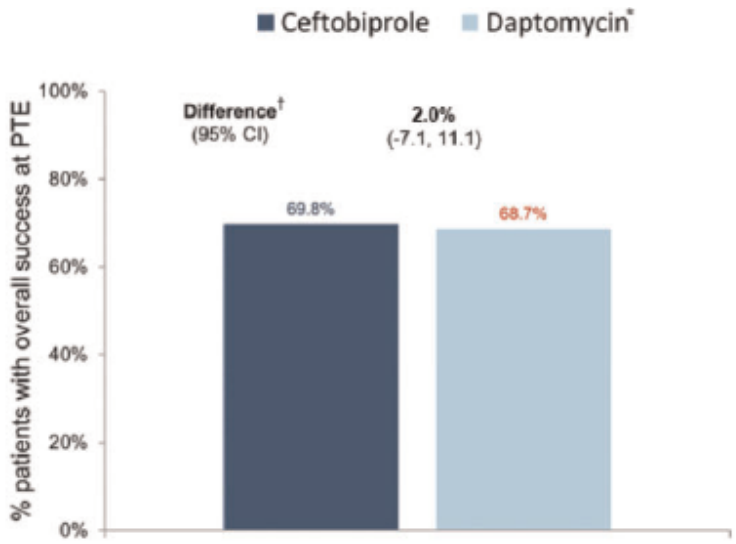
Additionally, time to microbiological eradication was significantly shorter with ceftobiprole, and the results were similar irrespective of MSSA or MRSA.

SAB is the real value-added

The SAB indication presents a significantly greater opportunity than ABSSSI, we believe, given the unmet need and the limited treatment options for patients suffering from resistant infections.

The primary endpoint of ERADICATE evaluated overall success at post-treatment evaluation (day 70 post-randomisation +/-5 days). Ceftobiprole was associated with an overall success rate of 69.8% in the mITT population at 70 days, which compared favourably to daptomycin (68.7%). With a NI delta of +2% (-7.1%-11.1%), the result of ERADICATE was well within the predefined 15% NI margin for the primary endpoint.

ERADICATE study result



Source: Holland et al., Open Forum Infectious Diseases

Activity similar between MSSA and MRSA

Importantly, the primary endpoint results were similar between the treatment groups irrespective of whether patients were infected with MSSA or MRSA bloodstream infections at baseline. This result was confirmed when contributing underlying conditions were evaluated and included skin and skin structure infections, abdominal abscesses, chronic dialysis, septic arthritis, osteomyelitis, definite right-sided IE, as well as in patients with persistent SAB.

Ceftobiprole suitable for empiric therapy

As we have noted previously, inclusion in treatment guidelines is important for adoption. Unfortunately, perhaps for ceftobiprole, the available US guidelines for both SAB and ABSSSI are significantly outdated. The IDSA guidelines for ABSSSI were last issued in 2013. As a result, they do not incorporate important long-standing clinical practices such as including dalbavancin (a second-generation lipopeptide). As we have highlighted above, ceftobiprole offers important Gram-negative coverage, and data from TARGET effectively show that it is relevant to a broad selection of patients with ABSSSI. Each of the three different types of ABSSSI was well represented (cellulitis/erysipelas, infected wounds and cutaneous abscess), while 93% involved patients with Gram-positive infections and 13% with Gram-negative infections, supporting the use of ceftobiprole as a monotherapy for empiric treatment of patients with ABSSSI.

Guidelines update is long overdue

The IDSA SAB guidelines date from 2011, and while there has been a paucity of new antibiotics approved for complicated SAB, they are overdue. We note that new guidelines are currently in development, and perhaps ceftobiprole may feature, given the strength of the data, if and when they are published.

Treatment with a beta-lactam antibiotic remains first line for patients with susceptible infections (MSSA). Treatment for SAB can be for up to six weeks if the condition has become metastatic compared to two weeks if the bacteraemia remains uncomplicated. Antibiotics typically used for MSSA include anti-Staphylococcal penicillins such as flucloxacillin, as well as first-generation cephalosporins such as cefazolin.

Presence of MRSA a concerning prognosis

MRSA, on the other hand, leads to poorer outcomes, with 15%-50% mortality rates in patients with MRSA bacteraemia. The glycopeptides, vancomycin and daptomycin, are first-line treatments in MRSA bacteraemia, requiring 4-6 weeks of intravenous therapy. Metastatic infections often require surgical intervention and can result in extended hospitalisation.

Growing risk of resistance to existing antibiotics

Worryingly, although still relatively rare, there is a growing risk of resistance to both agents. The lipoglycopeptide dalbavancin may be used (currently off-label) as an alternative to vancomycin-resistant infections and has the added benefit of offering a lower level of renal injury in comparison and a long half-life resulting in a much-reduced dosing schedule. Dalbavancin offers the potential for a shorter and less invasive treatment regimen, lowering risks associated with prolonged central venous access.

Dalbavancin a useful alternative

With a view to confirming the potential of dalbavancin in complicated SAB, the DOTS (dalbavancin as an option for treatment of SAB) trial has been designed as a prospective Phase 2b study. DOTS enrolled 200 SAB patients who had already experienced bacteraemia clearance before randomisation to two doses of dalbavancin or 4-8 weeks of standard intravenous antibiotic therapy. According to clinicaltrials.gov, the primary completion date was December 2023.

Clear need for additional and effective treatment options like ceftobiprole

The standard of care (vancomycin and daptomycin) has been associated with a significant risk of treatment failure. Despite not being approved for first-line SAB, efforts to improve SAB patients' outcomes have led to several exploratory trials using the 5th-generation cephalosporin antibiotic, ceftaroline. The benefits of such a combination appear compelling, given ceftaroline’s inherent activity against MRSA, and the observation that reduced susceptibility against glycopeptides and lipopeptides leads to increased susceptibility to beta-lactams like ceftaroline. The data generated have been very supportive of this approach, resulting in complete clearance of persistent bacteraemia when the combination is used as salvage therapy. These data point to the need for additional treatment options for patients with intractable SAB and the attractive proposition offered by the 5th-generation cephalosporin class, such as ceftaroline and ceftobiprole.

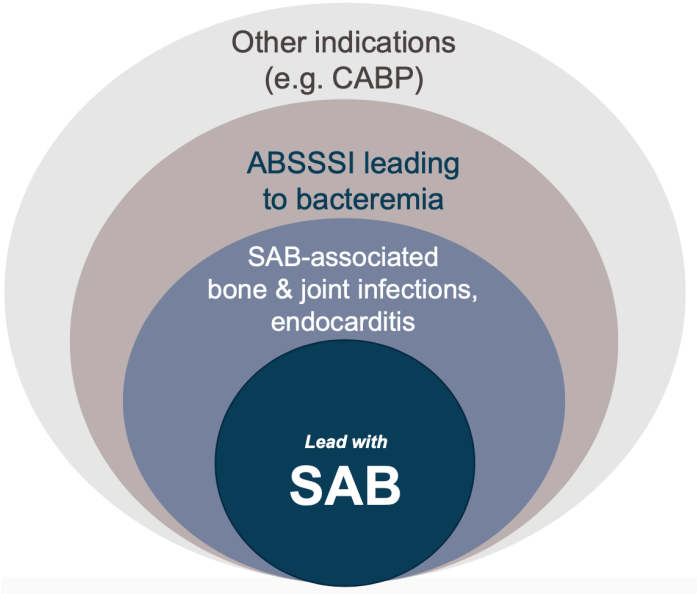
Furthermore, both daptomycin and vancomycin have concerns over emerging resistance (and the potential for cross-resistance), as well as vancomycin's poor tissue distribution and risk of renal toxicity. Additionally, daptomycin is inactivated in the lung, rendering it useless for the treatment of respiratory infections. Ultimately, we believe there is a clear need for additional antibiotics in SAB with a notable shortage of high-quality controlled studies. As noted above,

salvage therapy using a non-approved (off-label) antibiotic (such as the combination with ceftaroline), has proven to be a last resort approach in those with a persistent infection.

Relevant partner should maximise commercial potential

We look forward to Basilea securing a relevant commercial partner to ensure an effective US launch. Basilea has highlighted the broad relevance of ceftobiprole following approval in SAB, ABSSSI and CABP. The CABP addition should also be helpful, and we note that there are sufficient Phase 3 data available to aid with this approval despite not being formally part of the SPA agreed with FDA. The company described a likely commercial scenario starting with SAB and subsequently involving other complications such as SAB-associated bone and joint infections, bacteraemia caused by ABSSSI and other related indications.

Ceftobiprole's commercial opportunity



Source: Basilea investor presentation

We forecast ceftobiprole to achieve a 10-12% peak penetration of the US bacteraemia market, resulting in an un-risked peak sales opportunity of $250m. Patients with SAB usually receive antibiotics for between 2 to 6 weeks. Additionally, the ABSSSI indication remains an important element of the regulatory filing process in the US, with both studies required for FDA approval. Ultimately, this is a large market, and our analysis suggests that even a small market share should generate meaningful revenues for ceftobiprole. We have assumed that ceftobiprole is able to secure a 2-3% share of the large ABSSSI market at peak, recognising that much will depend on the capabilities of the partner selected. Nevertheless, such is the size of the ABSSSI indication in the US, even this modest market penetration suggests an un-risked peak sales market potential of $130m. Overall, we forecast that ceftobiprole could deliver peak in-market sales of $380m in the US.

Peak sales forecast approaching $400m

Risks

Basilea's business model currently involves partnerships and out-licensing to third parties, suggesting little influence over sales performance. Nevertheless, execution on key product Cresemba has been through highly appropriate partners (particularly Astellas and Pfizer), and we believe this model has worked well for Basilea and its partners.

The Phase 3 programme for fosmanogepix represents a significant investment for Basilea. Potentially, this could be offset with non-dilutive funding in the same way as ceftobiprole given the unmet need, although there can be no guarantee that funding will be secured. Reassuringly we note that Pfizer has retained right of first negotiation for commercialisation.

The key to maximising ceftobiprole's value in the US is attracting a commercial partner. There remains a partnering risk until an appropriate partnership is secured. Basilea has historically proven to be adept at securing relevant commercial partners.

Our concerns over the endolysin approach and the early-stage nature of the OMPTA programme suggests that there is still a very real risk of failure. At this stage, we have not included either programme in our financial model until more compelling data are generated. In any event, we expect Basilea to continue to replenish its pipeline with interesting programmes.

Our financial forecasts suggest sustainable profitability. The current level of R&D spending may need to increase should Basilea be successful in progressing multiple anti-infective programmes into late-stage clinical trials.

Financial Model and Summary

Fosmanogepix transforms the outlook

2023 has been a highly successful year for Basilea, both strategically and financially. As we entered the year, there was still uncertainty regarding the long-term future of the antifungal franchise. Cresemba matures and exclusivity wanes in the US and Europe from Q4 2027. The acquisition of fosmanogepix transforms the outlook for the anti-infective franchise bringing in a Phase 3 ready programme and the first in a new 'gepix' class of novel antifungals. Fosmanogepix promises not only to continue the existing antifungal franchise dominated by targeting invasive fungal infections (particularly invasive aspergillosis in the near term) but should also extend the franchise into the treatment of candidiasis – a rapidly growing fungal threat.

The acquisition of fosmanogepix was associated with an upfront payment of $37m along with sales associated milestones of up to $110m. At the same time, Basilea has assumed all rights and obligations from previous agreements which comprise development, regulatory and commercial milestone payments of $396m with tiered single digit royalty payments.

Potential for non-dilutive funding to reduce associated spending

The cost of the Phase 3 programme for fosmanogepix is likely to be in the region of $140m given the size and scope of the IFI and candidiasis trials. While we anticipate that Basilea may be able to offset some of this with non-dilutive funding, our financial model has incorporated associated R&D spend over four years but with the majority over the next 2-3 years. Clearly, this is a highly conservative approach given that we believe that fosmanogepix (as well as the other anti-infective programmes) meets all the criteria required by BARDA.

China and Japan should be important markets for the antifungal franchise

Our new forecasts assume that Cresemba sales decline in both the US and Europe after expiry of exclusivity in Q4 2027. Key to the longer-term growth of Cresemba will be recent launches in important markets such as China and Japan, which represent substantial opportunities at about 25% of the overall global market. Both oral and IV preparations of Cresemba are now available in China. Cresemba has been approved for invasive aspergillosis and invasive mucormycosis. Numbers for China are difficult to find and like other markets, data likely underrepresent the true scale of the problem given that patients are often treated on the basis of suspected and not just proven, fungal infections. Data presented at ECCMID in 2013 suggested that there were 162,000 cases of IA and 2,726 cases of mucormycosis. With other growth drivers, including a marked increase in organ transplantation (particularly lung) in China over the past few years, these numbers are clearly conservative.

With the forthcoming approval of ceftobiprole in the key US market and the successful recent in-licensing activities (particularly fosmanogepix), the future prosperity of Basilea is not all about Cresemba. Indeed, we have high expectations that fosmanogepix could enhance the long-term prospects for the antifungal franchise.

Ceftobiprole partnering a key de-risking event

Our sales forecasts for ceftobiprole are unchanged with peak sales of around $400m. The identity of a commercial partner for ceftobiprole is still unknown and with April 3rd looming fast, management remains confident in securing a relevant partner. We have previously acknowledged that the attraction of a suitable commercial partner represents another important de-risking event for the Basilea investment case. We have assumed that Basilea eschews the attraction of a substantial upfront payment and have assumed a participation of 25%+ in net sales should be attainable at this late stage in the development of ceftobiprole.

Peak sales of fosmanogepix should comfortable exceed Cresemba

Based on the clinical data that we have seen so far for fosmanogepix, we believe that clinical development has largely been de-risked. With two Phase 3 programmes set to flesh out the clinical and commercial profile of fosmanogepix, we believe that fosmanogepix could have a peak sales potential in excess of $1.2bn, comfortably exceeding the peak sales of $900m achieved by voriconazole in 2014. With Phase 3 trials still to be conducted we have introduced risk adjusted fosmanogepix sales with a probability of success of 75%. We have also intimated that prior to approval fosmanogepix may be used on a compassionate use/named patient basis and from an expanded access programme. However, at this stage, we have not included any contribution from this source. As we have intimated above, we believe that the activity of fosmanogepix along with the global Phase 3 programme suggests that fosmanogepix will enter markets outside of the US and Europe on a timelier basis than Cresemba experienced.

Our forecasts include new guidance for 2024F (as per recent guidance). As a result, our forecasts continue to reflect a period of positive cash flow and sustainable profitability. Given the scale of operating loss carry forwards, we do not anticipate tax payments for the next several years. We recognise that their remains some uncertainty regarding R&D spend over the next several years. There are several variables to consider including the extent of non-dilutive funding secured and whether any of the early-stage programmes such as tonabacase or BAL2062 progress into later stage evaluation. For now, however, we have not included sales from either programme, and suspect that they are beyond our forecast time horizon in any case. Also, the timing of future milestone commitments as part of the fosmanogepix in-licensing have yet to be detailed. However, Basilea has been adept at managing costs while aggressively pursuing the creation of a world leading anti-infective franchise. We look forward more of the same as the current expanded pipeline progresses.

Basilea Income Statement (CHF' 000)

Year to December	2023A	2024E	2025E	2026E	2027E	2028E
Total revenue	**157634**	**183552**	**190412**	**224878**	**239632**	**217697**
COGS	(26,794)	(33,039)	(34,274)	(40,478)	(43,134)	(39,186)
Gross profit	**130,840**	**150,513**	**156,138**	**184,400**	**196,498**	**178,512**
Gross margin	83.0%	82.0%	82.0%	82.0%	82.0%	82.0%
R&D	(77,852)	(85,352)	(87,590)	(87,702)	(62,304)	(50,070)
SG&A	(33,783)	(34,875)	(36,178)	(38,229)	(43,134)	(43,539)
Total cost and operating expenses	(138,429)	(153,266)	(158,042)	(166,410)	(148,572)	(132,795)
Non-underlying items	0.00	0.00	0.00	0.00	0.00	0.00
Operating profit US GAAP	**19,205**	**30,286**	**32,370**	**58,468**	**91,060**	**84,902**
Finance income	1,690	1,498	1,849	2,657	4,022	3,566
Finance expense	(11,202)	(8,273)	(4,799)	(4,826)	(4,853)	0
Other financial income	2,420	0	0	0	0	0
Other financial expense	(1,652)	0	0	0	0	0
Underlying PBT	10,461	23,512	29,419	56,299	90,229	88,468
PBT IFRS	10,461	23,512	29,419	56,299	90,229	88,468
Loss before tax	10,461	23,512	29,419	56,299	90,229	88,468
Tax	(10)	0	0	0	(12,812)	(12,562)
Underlying net income	**10,451**	**23,512**	**29,419**	**56,299**	**77,416**	**75,905**
Net income US GAAP	**10,451**	**23,512**	**29,419**	**56,299**	**77,416**	**75,905**
EPS Basic (CHF)	0.87	1.96	2.45	4.69	6.46	6.33
EPS Diluted (CHF)	**0.86**	**1.94**	**2.42**	**4.64**	**6.38**	**6.25**

Source: Calvine Partners Research

Basilea Cash Flow Statement (CHF' 000)

Year to December	2023A	2024E	2025E	2026E	2027E
Net profit/(loss)	10,451	23,512	29,419	56,299	77,416
Depreciation and amortization	1,577	924	961	1,003	1,048
Gain on disposal of assets, net	0	0	0	0	0
Stock-based compensation	4,762	5,000	5,250	5,513	5,788
Interest and accretion of debt issuance cost	1,443	534	534	534	0
Accounts receivable	5,229	(4,866)	(377)	(1,896)	(811)
Other receivables	(1,778)	3,000	0	0	0
Inventories	(2,166)	(4,170)	(1,143)	(5,742)	(2,458)
Accounts payable	5,656	2,413	309	1,551	664
Deferred revenue	(1,233)	(1,233)	(1,233)	(1,233)	(1,233)
Accruals and other current liabilities	(10,933)	0	0	0	0
Other operating cash flow items	1,235	0	0	0	0
Net cash provided by/used in operating activities	**14,243**	**25,113**	**33,720**	**56,029**	**80,414**
Cash flow from investing activities					
Payments for short-term investments	0	0	0	0	0
Maturities of short-term investments	0	0	0	0	0
Payments for long-term investments	0	0	0	0	0
Proceeds from sale of assets	0	0	0	0	0
Investments in tangible assets	(813)	(751)	(827)	(909)	(1,000)
Investment in intangible assets	(221)	(548)	(548)	(548)	(548)
Net cash used in/provided by investing activities	**(1,034)**	**(1,299)**	**(1,375)**	**(1,457)**	**(1,548)**
Cash flow financing activities					
Net proceeds from exercise of stock options	(91)	0	0	0	0
Debt extinguishment	(59,314)	(14,186)	0	0	(97,100)
Issuance of Convertible bonds					
Senior secured loan					
Purchase of treasury shares	2,481				
Issuance of new shares	(381)				
Net cash provided by financing activities	**(57,305)**	**(14,186)**	**0**	**0**	**(97,100)**
Effect of exchange rate changes on cash and cash equivalents	(151)		0	0	0
Net change in cash and cash equivalents	(44,247)	9,628	32,346	54,572	(18,234)
Cash and cash equivalents at beginning of period	108,566	64,319	73,947	106,292	160,864
Cash and cash equivalents at end of period	**64,319**	**73,947**	**106,292**	**160,864**	**142,630**

Source: Calvine Partners Research

Basilea Balance Sheet (CHF' 000)

Year to December	2023A	2024E	2025E	2026E	2027E
Non-current assets					
Tangible assets, net	3,757	4,133	4,546	5,001	5,501
Intangible assets, net	548	548	548	548	548
Long-term investments	0	0	0	0	0
Other non-current assets	16,838	16,838	16,838	16,838	16,838
Total non-current assets	21,143	21,519	21,932	22,387	22,887
Current Assets					
Cash and cash equivalents	59,933	73,947	106,292	160,864	142,630
Short-term investments	0	0	0	0	0
Accounts receivable	27,891	10,095	10,473	12,368	13,180
Other receivables	30,257	30,257	30,257	30,257	30,257
Inventories	26,410	30,580	31,723	37,465	39,923
Other current assets	7,654	7,654	7,654	7,654	7,654
Total current assets	152,145	152,533	186,399	248,608	233,643
Total assets	**173,288**	**174,052**	**208,331**	**270,994**	**256,530**
Current liabilities					
Convertible senior unsecured bonds					
Senior secured debt	15,453				
Accounts payable	5,847	8,260	8,569	10,119	10,783
Deferred revenue	1,233	1,233	1,233	1,233	1,233
Accruals and other current liabilities	25,059	25,059	25,059	25,059	25,059
Total current liabilities	47,592	34,552	34,861	36,411	37,075
Non-current liabilities					
Convertible senior unsecured bonds	95,455	95,989	96,523	97,057	0
Deferred revenue, less of current portion	9,460	8,227	6,994	5,761	4,528
Senior secured debt					
Other non-current liabilities	30,784	21,784	26,784	31,784	36,784
Total non-current liabilities	135,699	126,000	130,301	134,602	41,312
Total liabilities	**183,291**	**160,552**	**165,162**	**171,013**	**78,387**
Shareholders equity (deficit)					
Share capital	13,100	13,100	13,100	13,100	13,100
Additional paid-in capital	1,042,002	1,042,002	1,042,002	1,042,002	1,042,002
Accumulated other comprehensive loss	(10,210)	(10,210)	(10,210)	(10,210)	(10,210)
Treasury shares held by a subsidiary	(54,008)	(54,008)	(54,008)	(54,008)	(54,008)
Loss carried forward	(1,011,337)	(1,000,886)	(977,374)	(947,955)	(891,656)
Net loss for the year	10,451	23,512	29,419	56,299	77,416
Total shareholders' equity (deficit)	(10,002)	13,510	42,929	99,228	176,645
Total liabilities and equity (deficit)	**173,289**	**174,062**	**208,091**	**270,242**	**255,032**

Source: Calvine Partners Research

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