

November 19, 2009

## Syntopix Group plc

### Biotechnology

UK

**Price: £0.73**

RIC: SYN.L

### Trading data

Market cap. £6m

Shares o/s: 7.718m

Free float: 52.4%

Avg. daily volume ('000): 2.1

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Syntopix has developed technologies that allow it to identify antimicrobial compounds that can be licensed to global consumer healthcare companies for incorporation into their leading brands (acne products, toothpastes, chewing gum, shampoos). By taking a small royalty on the sales of products containing its additives, Syntopix has the potential to rake in tens of millions of pounds of revenue from the sale of multi-hundred million dollar and, sometimes, billion-dollar brands.

### Five 'shots on goal'

Syntopix has five pipeline programmes, any one of which could be the subject of a licensing deal and product launch during 2010-13. To provide a 25% 3-year IRR, only one or two of these has to be a success, but if all five are a success, the potential IRR is 170%.

### Profits possible by 2011

Profits could come in 2013 on the back of one product success but as early as 2011 if three or more products are a success.

### NPV of £2.43 per share

An NPV analysis of Syntopix's programmes suggests fair value is £2.43/share, suggesting the stock is 70% undervalued.

### Potential near-term catalyst from Procter & Gamble deal

One of Syntopix's programmes is partnered with Procter & Gamble and designed to provide an additive for one of P&G's 'major consumer healthcare brands'. Several P&G brands sell in excess of \$1bn (e.g. Oral-B, Head & Shoulders) and an announcement that P&G is taking a Syntopix compound forward in 2010 would provide a significant catalyst for the stock, helping to move it towards our fair value. In addition, Syntopix could be in a position to license two additional programmes in 2010, which would underpin any upward price momentum.

### Key Data (Year-end July 31st)

Company	2008	2009E	2010E	2011E
Revenue (£000)	141	141	100	2,150
EBIT (£000)	(1,567)	(1,666)	(2,298)	(152)
EPS (p)	(24.5)	(19.6)	(27.2)	0.0
P/E	NA	NA	NA	NA
Operating burn	1,086	1,000	2,153	(2)

Source: Reuters Consensus, Expert Analysis Group

Disclosure/Certification. Please see page 2.

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*Sam Williams*

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## Investment Overview

Syntopix Group plc is a UK company which identifies antimicrobial agents that can be licensed to global consumer healthcare companies for incorporation into their leading brands (acne products, toothpastes, chewing gum, shampoos) in exchange for licensing fees, milestone payments and royalties. Syntopix was spun out of the University of Leeds in 2003 by Dr Jon Cove and Dr Anne Eady, two experts in the area of skin microbiology. Syntopix was listed on the AIM market in March 2006, raising £3.3m (net) in the process. The company raised a further £1.5m in August 2008 through the issue of approximately two million shares to institutions.

Key investment highlights for Syntopix are as follows:

1. **Huge market opportunities.** Syntopix's products are designed to enhance the activity and marketability of existing consumer healthcare products that range from \$200m to \$2bn in annual sales. The manufacturers of such products are continuously looking for ways to enhance and 'renew' established brands and increase their 'cosmeceutical' profile. Syntopix's products allow its partners to do this by claiming improved benefit without the need to perform extensive clinical testing. While Syntopix only seeks low single digit royalties (1-5%) from its partners on sales of the product lines that incorporate its compounds, these could be worth tens of millions of pounds in annual revenues.
2. **Low-risk development.** Syntopix employs the techniques of biotechnology to identify its products but it should in no way be confused with a conventional biotechnology company engaged in pharmaceutical development. In contrast, the development required for Syntopix's products to reach the market is associated with far less risk for the following reasons:
  - i) **Minimal clinical testing required.** Syntopix does not seek to identify entirely novel chemical compounds. Rather, its technology allows it to search for an antimicrobial effect amongst compounds that have already been approved for use in consumer healthcare and food products, usually for some entirely unrelated reason (e.g. as stabilisers or surfactants). This provides it with new intellectual property rights but also means that the clinical testing required for approval of any product line containing the ingredient is minimal or non-existent since the safety of its compounds is already proven. Most clinical testing is performed to convince potential licensees of the utility of the agent and to enhance marketability.
  - ii) **Topical use.** Where clinical testing is required, the chances of failure are much lower than for conventional pharmaceuticals. Because Syntopix's products are targeted at products for topical use, they avoid any of the potential systemic toxicology associated with oral or injected drugs, which causes over 50% of clinical development programmes to fail.
  - iii) **Three/four years to market.** For the reasons above, it takes only three to four years to take a Syntopix product from pre-clinical testing to market, and sometimes less. This compares to the average eight years for a conventional pharmaceutical.
3. **Market leading position.** Syntopix's approach is unique within the consumer healthcare industry. The company is based at the Institute of Pharmaceutical Innovation in Bradford and the company has been able to draw on the Institute's research into skin biology, formulation and toxicology to develop proprietary assays for screening compounds against common skin and oral bacteria. It has also built a comprehensive library of over 2,000 compounds for screening. Its approach appears to be unmatched in the industry. The advanced nature of Syntopix's approach is validated by the fact that it has attracted partnerships with two of the world's leading healthcare consumer companies, including Procter & Gamble (P&G).
4. **P&G partnership could yield Syntopix's first \$1bn-plus product.** Syntopix's partnership with P&G was signed in July 2008 and is designed to identify an antimicrobial compound that can be added to one of P&G's 'major consumer healthcare brands'. Four relevant P&G brands have sales in excess of \$1bn (Head & Shoulders, Pantene, Oral-B and Crest), such that the potential revenue implications for Syntopix are significant. Should the

collaboration prove a success, we might expect Syntopix to deliver a compound to P&G next year, providing for licensing fees, milestone income and a 0.5-1% royalty on sales.

5. **Four further programmes give Syntopix multiple 'shots on goal'.** Syntopix has a further collaboration with an undisclosed 'major consumer healthcare company', akin to the P&G deal but in the oral healthcare area. The partner could be Johnson & Johnson, for example, or GSK. Again, we might expect a licensing deal to follow next year and progress appears to have been made, with an extension to the deal signed in April. Syntopix has an additional three products (in acne and oral healthcare) that it intends to license after achieving proof-of-principle data in small clinical studies. Two of these could come next year.
6. **One successful programme would be sufficient for profitability by 2013.** Were Syntopix to achieve success with just one of its five programmes, the company could be profitable by 2013 on royalties. If three or more products are successful, the company could break even as early as 2011.
7. **One successful programme would drive a 3-year 25% IRR.** Syntopix has a £6m market capitalisation. To drive a three-year IRR of 25% (which an investor might require to justify the liquidity risk), Syntopix needs a market capitalisation of £12m in three years' time. Our NPV analysis indicates that, by the last quarter of calendar 2012, if only one of four Syntopix programmes (SYN0126, SYN1113, SYN0017 or the P&G collaboration) has been the subject of a licensing deal and/or reached the market, Syntopix would be worth in excess of £12m. If all five programmes are a success by the end of 2012, Syntopix would be worth £118m, providing a 170% three-year IRR.
8. **NPV valuation of £2.43/share suggests the stock is 70% undervalued.** Figure 1 provides the assumptions behind our current NPV valuation of Syntopix of £18.5m, or £2.43 per share. This suggests that Syntopix shares, at 73p, are undervalued by 70%.

Figure 1: NPV for Syntopix

Programme	Market	Launch	Probability	Peak sales (£m)	NPV (£m)	Per share	
SYN0126	Acne	2012	20%	150	6.2	£0.81	
SYN1113	Acne	2013	20%	150	5.0	£0.65	
SYN0017	Chewing gum	2011	10%	150	2.8	£0.36	
	Toothpaste	2012	10%	150	2.4	£0.31	
Undisclosed collab	Oral healthcare	2012	10%	125	1.3	£0.17	
P&G	Consumer healthcare	2012	5%	900	2.3	£0.29	
					Cash	0.7	£0.09
					One year burn <sup>1</sup>	2.0	£0.25
					<b>Total:</b>	<b>18.7</b>	<b>£2.43</b>

Source: Expert Analysis Group estimates, <sup>1</sup>One year of cash burn is subtracted to reflect committed spend

9. **Several 12-month catalysts to drive the price.** Depending on clinical success, Syntopix could be in a position to sign licensing deals on three of five products in calendar 2010. Although it is unlikely the company signs all of these deals, at least one should be possible, which will validate the business model and provide a substantial catalyst for the stock.

**Most significant risk is Syntopix's need to raise cash.** Syntopix has an estimated £700,000 of cash, enough to last until June 2010. With profits not due until calendar 2011 at the earliest, the company needs to raise at least

£1.5m in the next six months. We believe that Syntopix's compelling equity story should enable it to do so, but investors should be aware that there is the risk of dilution in the near-term as a consequence of a likely capital raise.

## The Opportunity

Syntopix's products are designed to enhance the antimicrobial properties of consumer healthcare brands in the dermal and oral care areas. While there is no limit to the variety of products in which Syntopix's compounds could be used, the company's five main pipeline programmes are targeting over-the-counter (OTC) and cosmetic treatments for acne, toothpastes and chewing gum. Each of these consumer healthcare markets represents multiple billions of dollars, with individual brands that vary in revenue from hundreds of millions to billions of dollars. Some notable examples are provided in Figure 2. The company is also working in collaboration with Procter & Gamble (P&G) to develop antimicrobials for use in an undisclosed 'major consumer healthcare brand'. P&G lists 22 brands that have annual sales in excess of one billion dollars in its most recent quarterly results and we assume that the target of the collaboration must be one of these. Figure 2 lists the four that we believe are most likely to be the brand in question (two shampoos and two toothpastes).

Figure 2: Target markets for Syntopix's products

Market	Overall size	Leading brands	Sales	Manufacturer
Acne	\$1.6bn	ProActiv	\$750m	Guthy-Renker
		Clearasil	\$250m	Reckitt Benckiser
Toothpaste	\$12bn	Colgate	>\$1bn	Colgate
		Aquafresh	\$800m	GSK
		Sensodyne	\$750m	GSK
Chewing gum	\$19bn	Trident	>\$500m	Cadbury
		Orbit/Eclipse	>\$500m	Wrigley
P&G major consumer healthcare brands	\$20bn	Head & Shoulders	>\$1bn	P&G
		Pantene	>\$1bn	
		Oral-B	>\$1bn	
		Crest	>\$1bn	

Source: Expert Analysis Group estimates; company websites

The desire amongst consumer healthcare companies to add novel antimicrobial agents to these products (and hence Syntopix's opportunity), is driven by the following factors:

- i. **The need to renew established brands.** Many of the brands mentioned above have been on the market for several years and, in some cases, decades. Part of the successful marketing of such brands includes their 'renewal' through the introduction of new versions or lines of the same brand claiming some new enhanced property. Recent examples include additives for anti-wrinkle serums, botanical extracts in a range of different products and tri-peptides for moisturisers.
- ii. **The desire to re-brand products as 'cosmeceuticals'.** Cosmeceuticals is a term given by the industry to cosmetics that carry some supposed pharmaceutical benefit (e.g. moisturisers with anti-aging properties, shampoos that prevent dandruff). The US Food and Drug Administration (FDA) has officially dismissed cosmeceuticals as a meaningless category and a term with no significance in law - products are deemed by the regulator to be either pharmaceuticals or cosmetics and approved for the market as such. However, the concept has proved a powerful one with consumers. In theory, the use of Syntopix's antimicrobial compounds would allow manufacturers to claim that their product lines have improved or new antiseptic properties which could prove particularly attractive for toothpastes, anti-dandruff shampoos (which act

against the yeast that cause flaking scalp), mouthwashes and, in particular, treatments for acne, where the causative agent is the microbe *P. acnes*.

- iii. ***The increasing limitations on animal testing of new cosmetic ingredients.*** In March 2009 the European Union banned testing of cosmetic agents in animals (with the exception of repeated-dose toxicity, reproductive toxicity and toxicokinetics). This makes it very hard to bring cosmetics containing entirely new chemical agents to market; without animal testing it is unethical to test on humans, and without human testing it is impossible to make any marketing claims as to the benefit of the new additive. Thus, the emphasis is on finding agents that introduce new properties to existing product lines but which do not require extensive clinical testing of safety.

## Syntopix's Approach

It should be noted that there is nothing new about the idea of attempting to find compounds with previously unrecognised properties from amongst the thousands of additives that have already been approved for use in consumer healthcare or cosmetic products. This is something that some of the larger consumer healthcare companies are engaged in and, in addition, some of the specialist providers of raw materials, such as Symrise AG, a supplier of scents and flavours to the foods and cosmetics industry. However, there are two key features that make Syntopix's approach unique:

1. **2,000-plus compounds to screen from.** Syntopix has collected over 2,000 compounds that are used in existing foods, cosmetics and consumer healthcare products. To our knowledge, the size of this library is unsurpassed and it is continuously expanding.
2. **Novel screening technologies.** Syntopix has built proprietary assays for screening compounds for antimicrobial activity, particularly in the area of acne where its scientific founders are experts. These include unique tools for simulating the natural environment of the skin, such as the water-containing synthetic sebum, which can be used for screening the activity of compounds against *P. acnes* in an environment that mimics the natural situation. Moreover, the company is based at the Institute of Pharmaceutical Innovation in Bradford, giving it access to the expertise in skin biology, formulation and toxicology at the universities of Bradford and Leeds.

It is the combination of a large compound library with its novel screening techniques and access to the latest academic research in the field of dermatology that make it hard for larger companies to compete with Syntopix in its core area of expertise. This explains why a global player such as Procter & Gamble would find a collaboration with Syntopix attractive.

## Pipeline

A summary of Syntopix's five programmes is provided in Figure 3, along with our expectations as to when each programme might be licensed and the possible year of market launch.

Figure 3: Syntopix's pipeline

Programme	Market	Status	Licensing timeline (calendar year)	Product launch (calendar year)
SYN0126	Acne	Clinical POP achieved; further Phase 2 study required	H1 2011	2012
SYN1113	Acne	Clinical studies to start in 2010	H2 2011	2013
SYN0017	Chewing gum	Clinical studies to start in 2010	H2 2010 - H1 2011	2011
	Toothpaste		H2 2010 - H1 2011	2012
Undisclosed collaboration	Oral healthcare	Expect partners to elect a development compound in 2010	H2 2010	2012
P&G	Consumer healthcare	Expect partners to elect a development compound in 2010	H2 2010	2012

Source: Syntopix and Expert Analysis Group estimates

## SYN0126

SYN0126 is an undisclosed compound with antimicrobial activity that is currently used as an active ingredient in a topical cosmetic product. Syntopix has shown that it has equivalent *in vitro* (or test-tube based) activity against *P. acnes* to benzoyl peroxide (BPO) which is a market-leading antimicrobial for the treatment of acne. This is as determined by standard Minimal Inhibitory Concentration, or MIC, and Minimal Bactericidal Concentration, or MBC, assays. Moreover, it is more active than BPO against *P. acnes* in Syntopix's proprietary sebum model. As well as its direct antimicrobial activity, Syntopix has shown that it also works by inhibiting ductal hypercornification, the process by which hair follicles become blocked. On this basis, Syntopix has embarked on a clinical development programme exploring various formulations of the compound and combinations with salicylic acid and other anti-infective compounds in acne.

### Phase 2 clinical study

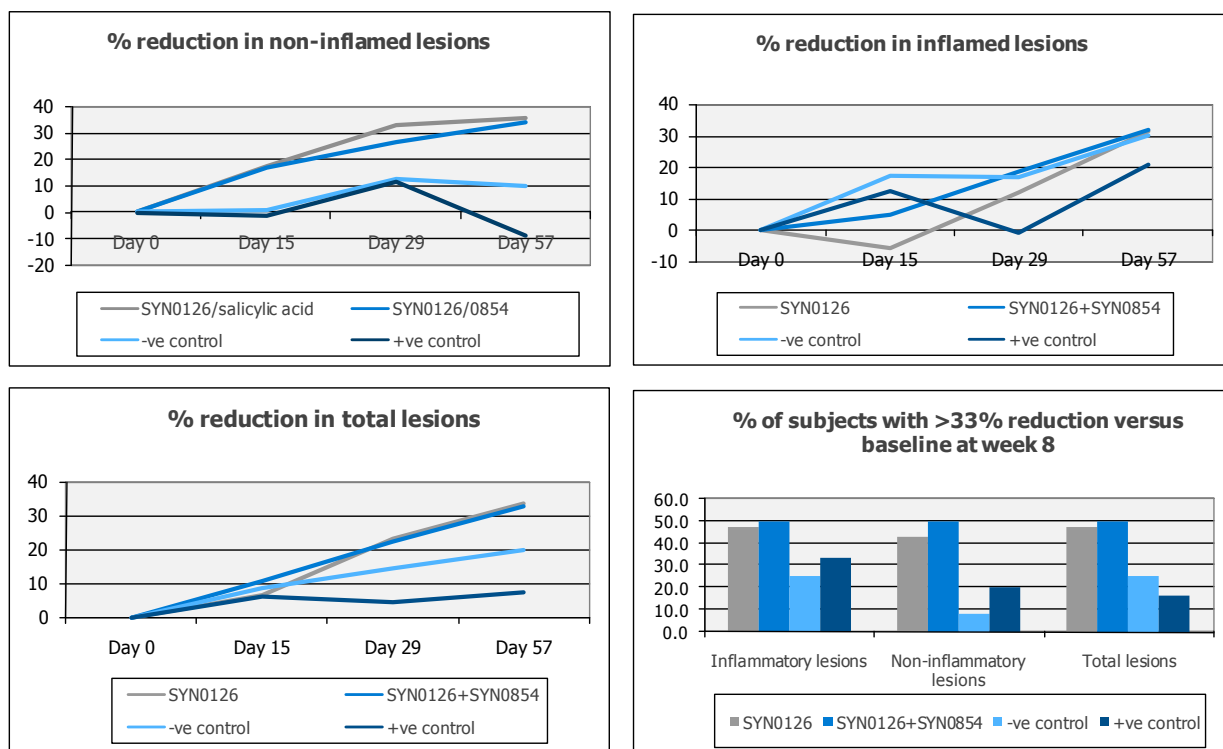
Evidence for SYN0126's activity in acne comes from a Phase 2 study conducted in approximately 70 subjects, each with at least 30 acne lesions (or 'spots'). SYN0126 was tested in two formulations: A, which consisted of 5% SYN0126 and 2% salicylic acid (an active anti-acne agent that is found in many acne products); and B, which included a combination of SYN0126 and a second antimicrobial agent, SYN0854, plus 2% salicylic acid. A positive control was included – Garnier's Pure Active Intensive Treatment Night Gel, which includes salicylic acid 2% - and a negative control in the form of viscous (or 'thick') water. Each of four products was given on each day for a total period of 57 days.

Detailed results are given in Figure 4 and these indicate the following:

1. the combination of SYN0126 and salicylic acid is able to reduce the incidence of inflamed and non-inflamed lesions versus baseline (and this result was statistically significant although this is not indicated on the graphs);
2. there is no difference between Formulations A and B i.e. the addition of SYN0854 to SYN0126 provides no advantage;

3. there is a strong placebo effect (not unusual in acne studies), with the negative control (viscous water) as good as the Garnier product in terms of effect on total number of spots but not as effective as either of the Syntopix formulations;
4. SYN0126 is very similar to the negative control in terms of its effect on inflamed spots, but better than the Garnier product (at day 57);
5. SYN0126 appears to be better than placebo and Garnier product in terms of its effect on non-inflamed lesions, although the trial was not big enough - or adequately 'powered' - to demonstrate statistical significance in this respect;
6. The percentage of subjects who experienced a >33% reduction in non-inflamed and inflamed lesions was greater with SYN0126/salicylic than with placebo or the Garnier product, although one has to bear in mind that the 33% point was chosen by the company on a *post hoc* basis when trying to identify trends in the data and therefore has little meaning as a true measure of efficacy.

Figure 4: Results from SYN0126 Phase 2a study



Source: Syntopix and Expert Analysis Group estimates

In conclusion, we think it's a fair assumption that SYN0126, in combination with salicylic acid, has more activity than placebo and that it is at least as good, if not better, than Garnier's Pure Active product. Moreover, since the primary active ingredient in Garnier's product is salicylic acid, one can argue, fairly convincingly, that the activity of SYN0126/salicylic acid is not just down to the salicylic acid alone. Although there is a possibility that differences in formulation might increase the activity of salicylic acid in Formulation A compared to the Garnier formulation, it seems unlikely that the Garnier product does not already contain an optimal formulation of salicylic acid.

## Development

To enable it to sign a licensing deal with a global cosmetics/healthcare company, Syntopix is due to embark on an 18 month programme of work with the intention of:

1. optimising the formulation to maximise SYN0126's *in vivo* anti-infective activity - according to samples taken from subjects prior to and following treatment, this was lacking in the Phase 2 and might explain the lower efficacy in inflamed lesions;
2. exploring new combinations of SYN0126 and other Syntopix compounds, such as SYN1113 whose potent antimicrobial activity (see below) could provide a significant additive or synergistic effect;
3. demonstrating in a further Phase 2 study:
  - a. a potent *in vivo* antimicrobial effect;
  - b. a potent effect on inflamed as well as non-inflamed lesions;
  - c. a statistically significant superior benefit over placebo or an existing product – while not essential to signing a deal, this would significantly enhance the value of any deal by providing any prospective partner with a substantial marketing claim for the product.

### ***Intellectual Property***

SYN0126 is protected by three patents:

- 1) an international patent application covering the use of >3.5% SYN0126 in any formulation (or 'vehicle') for use in treatment of acne and body odour and in oral health, which protects those concentrations of SYN0126 that Syntopix believes are therapeutically relevant;
- 2) an international patent application covering any concentration of SYN0126 in a specific formulation/vehicle in any therapeutic area, which was granted on the 11th November 2009 by the UK patent office;
- 3) an international patent application covering the combination of SYN0126 and salicylic acid in acne.

It is likely that the patent protection for SYN0126 will grow as Syntopix identifies optimised formulations for the combination with salicylic acid for acne and other Syntopix compounds.

## SYN1113

SYN1113 is an undisclosed compound that is a little used but permitted cosmetic ingredient in the EU and US. SYN1113 has shown the greatest *in vitro* activity against *P. acnes* amongst all Syntopix's compounds, with greater activity than benzoyl peroxide (BPO) in standard MIC/MBC tests, aqueous time to kill assays and Syntopix's proprietary sebum model.

Other than its activity, SYN1113 has certain other properties that might make it attractive to a marketing partner/licensee from a cosmetics marketing point of view. In particular, it can be described as a 'natural' product since it is a copper-derivative of a naturally occurring compound, and it bestows a green colour to any formula that it is made up in, which plays to the 'natural' theme.

### **Development**

Syntopix is embarking on a 12-18 month development programme with SYN1113 that will involve the following and allow for a licensing deal from H2 2011 onwards:

1. testing of 5 or 6 prototype formulations on human skin for inhibition of *P. acnes*;
2. optimisation of the best formulation;
3. demonstration in a Phase 2 study of the anti-acne activity of two optimised formulations (similar to the Phase 2 for SYN0126 described above).

As mentioned above, it is likely that Syntopix tests SYN1113 in combination with SYN0126. If this combination proves additive/synergistic, then it's possible that these two programmes will be combined into one.

### **Intellectual Property**

Syntopix aims to protect its use of SYN1113 with a range of formulation patents, as for SYN0126, and our understanding is that the first of these was filed on the 3rd November 2009. The expectation would be that the protection for SYN1113 could be stronger than that for SYN0126. The latter is often found in topical formulations as a penetration enhancer and there is much existing prior art (although not with respect to acne). In the case of SYN1113, there is only one prior formulation patent on SYN1113 so there is scope to fully protect SYN1113 via a range of formulation patents.

## **SYN0017**

SYN0017 is an undisclosed antimicrobial compound that is currently used as an ingredient in cosmetics and certain food products. Its activity against certain anaerobic bacteria was first identified by Syntopix, which is aiming to develop it for dental healthcare and confectionary markets – mouthwashes, denture cleaning, toothpaste and chewing gum. This broadens the licensing potential and makes companies with franchises in oral healthcare (e.g. GSK, JNJ, Colgate) and confectionary/chewing gums (e.g. Wrigley's) potential partners. Although Syntopix already has an R&D collaboration with a large consumer healthcare company in the oral healthcare area (see below), our understanding is that Syntopix's rights to SYN0017 are unencumbered by this collaboration.

### ***Development***

The major technical hurdle to overcome with SYN0017 is formulation, since it is our understanding that the compound is unstable in the presence of water, yet only active in its unstable state. Hence, Syntopix is developing formulations that stabilise the product while allowing it to remain active and has already made considerable advances on this front.

Syntopix aims to move to a proof-of-principle study in oral care within several months, in which it will test the ability of several formulations of the compound to reduce bacterial load on oral plaque. This 'plaque re-growth' study has a standard design, recognised by the healthcare industry, which involves subjects rinsing daily with the test formulations and bacterial build-up measured at days 0 and 4.

Syntopix expects the data in H1 2010, allowing for a licensing deal within the following 12 months.

### ***Intellectual property***

Syntopix's discovery of SYN0017's antimicrobial effect provides the foundation for a strong patent position built on broad patents covering use of all formulations or concentrations or combinations of the compound in the treatment and prevention of acne and periodontal conditions. Patents are in progress and will be filed in parallel with formulation optimisation and proof-of-principle data generation.

## Oral Healthcare Partnership

In December 2007, Syntopix signed a 12-month exclusive evaluation agreement with an undisclosed 'major consumer healthcare company'. Under the agreement, Syntopix made its library of compounds available to the partner for an assessment of their potential utility in oral healthcare (i.e. for use in toothpastes). The financial details of the agreement were confidential, with Syntopix due to receive an upfront payment and payments for any compounds subject to additional evaluation. Given that Syntopix received £141,000 of unattributed revenue in its financial year 2008 and £85,000 in the six months to January 31st, it is a fair assumption that progress has been made with at least some of this revenue coming from the undisclosed partner.

Commercialisation of a compound would be subject to a licence agreement to be negotiated separately. We estimate that such terms will be in the range of £1m in development-related milestone payments spread over the period between licensing and product launch and a 1-3% royalty on sales of any brand that contains the Syntopix compound (though there may be some cap on this in terms of absolute revenue amounts payable).

It is our understanding that this agreement has been extended and, given the nature of the press release issued in April 2009 regarding an 'exclusive evaluation agreement with a major consumer healthcare company', it's a fair assumption that this represents the extension deal.

Assuming that the partner identifies a compound that it wishes to take forward into development in 2010, we imagine that it could be introduced into a product line by 2012.

## Partnership with Procter & Gamble

In July 2008, Syntopix entered a joint development agreement with Procter & Gamble, under which the companies are due to investigate whether any of Syntopix's antimicrobial compounds could be added to one of P&G's 'major consumer healthcare brands' to improve its activity and provide a new marketing angle. P&G lists 22 brands that have annual sales in excess of one billion dollars in its most recent quarterly results and we assume that the target of the collaboration must be one of these. Four brands, in particular, would suit the addition of a new anti-microbial, including the shampoos Head & Shoulders and Pantene and the toothpastes Oral-B and Crest (see Figure 2). Our understanding is that at least one of these (e.g. Head & Shoulders) may sell closer to \$2bn per annum.

Financial details were not disclosed but we imagine that they are similar to those we have suggested for the oral healthcare deal above i.e. £1m in development-related milestones and a 0.5-1% royalty on the sales of any of P&G's brand that contains the new agent – a lower royalty rate reflecting the fact that the collaboration may be targeting a 'mega-brand', in which case P&G would be likely to limit the royalty potential. Our understanding is that there is no timeline on this deal but we imagine that, if a compound is not found this year or next, it will not run on indefinitely. Again, given the unattributed revenues that Syntopix has received in financial years 2008 and H1 2009, it would appear that Syntopix has made progress in this collaboration in terms of identifying compounds for further evaluation.

Assuming that the partner identifies a compound that it wishes to take forward into development at some point in 2010, we imagine that it could be introduced into a product line by 2012.

## Deal Potential

Figure 5 gives the development timelines and our estimated deal potential for each of Syntopix's key pipeline products.

Market	Licensing timeline (calendar years)	Product launch (calendar years)	Milestones	Peak sales potential (\$m)	Royalties
Acne	H1 2011	2012	£1-3m	200-300	3-5%
Acne	H2 2011	2013	£1-3m	200-300	2-5%
Chewing gum	H2 2010 - H1 2011	2011	£1-3m	200-300	2-4%
Toothpaste	H2 2010 - H1 2011	2012	£1-3m	200-300	2-4%
Oral healthcare	H2 2010	2012	£1m	150-250	1-3%
Consumer healthcare	H2 2010	2012	£1m	1,000-2,000	0.5-1.5%

Source: Syntopix and Expert Analysis Group estimates

### The background to the assumptions underlying our figures are as follows:

1. **Deal sizes.** The financial details of licensing deals in the consumer healthcare market are rarely released so it is difficult to benchmark. However, our SYN0126 estimate (£1-3m in milestones spread over the period between licensing and product launch and a 3-5% royalty on sales) is based on discussions with industry insiders and their expectations as to what a partner might pay for a product at that stage of development. For the other products, we have assumed:
  - a. the potential for a lower royalty rate (2-5%) on SYN1113 given that it will only have been tested in one Phase 2 at the time of partnering (versus two Phase 2s for SYN0126);
  - b. lower royalties for SYN017 (2-4%), given that it will not have been developed as far as SYN0126 by the time it is licensed, with only early proof-of-principle clinical data;
  - c. smaller deals for any compounds taken forward by the undisclosed collaborator given that these compounds will be at an early stage of development without any clinical data – as discussed above, we have assumed £1m in milestones and a 1-3% royalty;
  - d. a 0.5-1.5% royalty on any product taken forward by P&G and £1m in milestones, as discussed above.
2. **Sales potential.** Our estimates are based on the sales of existing brands as follows:
  - a. In acne, the top-selling brands range from \$160m (Clearasil, Reckitt Benckiser) to \$750m (Proactiv, Guthy-Renker). We have assumed that \$200-300m would be reasonable for a mid-selling brand amongst the top-tier of products (and this depends, naturally, on finding a top-tier partner such as a L'Oreal).
  - b. Global sales of all chewing gums are \$19bn/year, with several multi-hundred million-dollar brands. Wrigley's brands are worth \$5bn/year. A product with an antimicrobial component is unlikely to appeal to all users but, with a company such as Wrigley's behind it, a \$200-300m brand might be feasible.

- c. Leading toothpaste brands range in sales from \$200m to in excess of \$1bn/year in the case of Colgate. GSK's Aquafresh and Sensodyne brands together do approximately \$1.5bn. We assume that with a partner such as GSK, a \$200-300m product should be possible.
- d. We assume sales of \$1-2bn for the P&G consumer brand that is the target of the Syntopix collaboration (see discussion above).

## Valuation

Figure 6 gives the main assumptions and output of our NPV analysis

Figure 6: NPV calculation

Programme	Market	Launch	Probability	Peak sales (£m)	NPV (£m)	Per share	
SYN0126	Acne	2012	20%	150	6.2	£0.81	
SYN1113	Acne	2013	20%	150	5.0	£0.65	
SYN0017	Chewing gum	2011	10%	150	2.8	£0.36	
	Toothpaste	2012	10%	150	2.4	£0.31	
Undisclosed collab	Oral healthcare	2012	10%	125	1.3	£0.17	
P&G	Consumer healthcare	2012	5%	900	2.3	£0.29	
					Cash	0.7	£0.09
					One year burn <sup>1</sup>	2.0	£0.25
					<b>Total:</b>	<b>18.7</b>	<b>£2.43</b>

Source: Expert Analysis Group estimates, <sup>1</sup>One year of cash burn is subtracted to reflect committed spend

Most of the assumptions underlying our NPV analysis are outlined above (year of launch, peak sales potential, royalties and milestones). Note that we take the mid-point of each of the estimated potential sales ranges given in Figure 5. In terms of product life cycle, we assume that each product reaches peak sales four years after launch, the normal expectation for a new product line. Our discussions with industry insiders suggest that, if a product is not on a trajectory in year one and two of launch that will see it reach a peak sales target within four years, the product is typically pulled.

We also assume that each product line will remain at peak sales for ten years, with 3% annual price inflation.

We use a 10% discount rate for the revenue flows for each product and then apply a probability weighting. It is important to note that this is the probability of the product achieving the ten years of peak sales projections, not simply achieving product launch. These are low for Syntopix's product lines (5-20%), reflecting the overall lack of definitive clinical data in the case of the company's named compounds and limited overall visibility in the case of the two collaborations.

Thus, while we have positive clinical data for SYN0126, a definitive effect over control has not yet been demonstrated (as discussed above). Therefore, we attribute the same probability to SYN1113, which is further behind but for which the pre-clinical data is compelling.

In the case of the undisclosed partner, we have no knowledge of who the partner is or what the target product is that the partner is seeking to improve. Therefore, we assign a 10% probability. In the case of P&G we use 5% since we assume the target product line is likely to be a 'mega-brand' and therefore there is likely to be a higher hurdle in the way of creating an improved product that can replace the existing version of the brand.

### Potential for a three-year 170% IRR

Figure 7 gives an illustration of what Syntopix might be worth in three years' time (Q4 2012), assuming that all programmes achieve their development and commercial milestones, which include the following:

- i) SYN0126 is subject to a partnering deal and is launched on the market in an acne product with first year of sales meeting expectations;
- ii) SYN1113 achieves proof-of-principle clinical results and is subject to a licensing deal;
- iii) SYN017 is licensed for use in a chewing gum and a toothpaste and the corresponding products achieve initial sales expectations;
- iv) a compound is identified from the undisclosed collaboration, is licensed by the partner and launched and sales expectations meet expectations;
- v) a compound is identified by P&G, licensed and taken forward into a major brand, with first year sales meeting expectations.

The valuation at this point would be £118m, representing a 170% IRR based on Syntopix's current £6m market capitalisation.

Figure 7: Potential NPV in three years' time

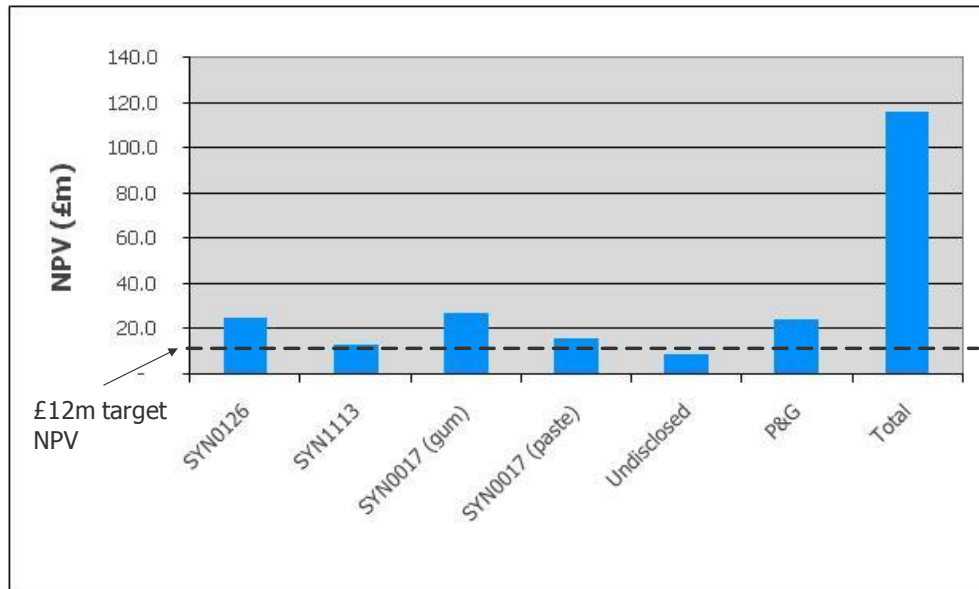
Programme	Market	Launch	Probability	Peak sales (£m)	NPV (£m)
SYN0126	Acne	2012	60%	150	25.4
SYN1113	Acne	2013	40%	150	13.8
SYN0017	Chewing gum	2011	75%	150	28.4
	Toothpaste	2012	50%	150	16.1
Undisclosed collab	Oral healthcare	2012	50%	125	9.3
P&G	Consumer healthcare	2012	40%	900	25.0
<b>Total:</b>					<b>118.0</b>

Source: Expert Analysis Group estimates

### 25% IRR is possible if only one or two products are a success

Clearly, it is highly unlikely that all five programmes will be a success. However, Figure 8 indicates that it takes only one of four programmes to succeed for Syntopix to reach a value of £12m by the end of 2012 (any one of SYN0126, SYN1113, SYN0017 in gum or toothpaste or the P&G programme). This represents a 25% three-year IRR from the current market capitalisation, the return that an investor might require to justify the liquidity risk associated with investing in a micro-cap AIM-listed company.

Figure 8: Individual product NPVs in three years' time



Source: Expert Analysis Group estimates

## Financials

Figure 9 gives a historic and projected P&L for Syntopix.

Figure 9: Historic and projected P&L

Year-end July 31st; £000s	2008	2009E	2010E	2011E	2012E	2013E	2014E	2015E
License fees/milestones								
SYN0126				250	500	1,250		
SYN1113					250	500	1,250	
SYN0017 (gum)				1,000	1,000			
SYN0017 (paste)				200	150	500	1,150	
Undisclosed collaboration	70	70	50	200	250	500		
P&G	71	71	50	200	250	500		
<b>Total</b>	<b>141</b>	<b>141</b>	<b>100</b>	<b>1,850</b>	<b>2,400</b>	<b>3,250</b>	<b>2,400</b>	
Royalties								
SYN0126					400	2,000	4,000	6,000
SYN1113						350	1,750	3,500
SYN0017 (gum)				300	1,500	3,000	4,500	4,635
SYN0017 (paste)					300	1,500	3,000	4,500
Undisclosed					200	800	1,600	2,500
P&G					500	3,000	6,000	9,000
<b>Total royalties</b>				<b>300</b>	<b>2,900</b>	<b>10,650</b>	<b>20,850</b>	<b>30,135</b>
<b>Total revenue</b>	<b>141</b>	<b>141</b>	<b>100</b>	<b>2,150</b>	<b>5,300</b>	<b>13,900</b>	<b>23,250</b>	<b>30,135</b>
Expenses								
R&D	1,050	1,103	1,658	1,525	700	735	772	810
Admin	671	705	740	777	816	856	899	944
<b>Total expenses</b>	<b>1,721</b>	<b>1,807</b>	<b>2,398</b>	<b>2,302</b>	<b>1,516</b>	<b>1,591</b>	<b>1,671</b>	<b>1,755</b>
<b>Operating profit/(loss)</b>	<b>(1,567)</b>	<b>(1,666)</b>	<b>(2,298)</b>	<b>(152)</b>	<b>3,784</b>	<b>12,309</b>	<b>21,579</b>	<b>28,380</b>
Financial income	33	23	0	0	189	805	1,876	3,295
<b>Loss before tax</b>	<b>(1,534)</b>	<b>(1,643)</b>	<b>(2,298)</b>	<b>(152)</b>	<b>3,974</b>	<b>13,113</b>	<b>23,455</b>	<b>31,676</b>
Tax	(131)	(138)	(144)	(154)	1,113	3,672	6,567	8,869
<b>Net profit</b>	<b>(1,403)</b>	<b>(1,505)</b>	<b>(2,153)</b>	<b>2</b>	<b>2,861</b>	<b>9,442</b>	<b>16,888</b>	<b>22,806</b>
<b>EPS (fully diluted; pence)</b>	<b>(24.5)</b>	<b>(19.6)</b>	<b>(27.2)</b>	<b>0.0</b>	<b>34.0</b>	<b>109.0</b>	<b>189.4</b>	<b>248.3</b>
Shares out	5,726,531	7,693,333	7,924,133	8,161,857	8,406,713	8,658,914	8,918,681	9,186,242
<b>Cash at end of period</b>	<b>437</b>	<b>914</b>	<b>(1,239)</b>	<b>(1,237)</b>	<b>1,624</b>	<b>11,066</b>	<b>27,953</b>	<b>50,760</b>
<b>Financing</b>		1,477						
Operating burn	1,086	1,000	2,153	(2)	(2,861)	(9,442)	(16,888)	(22,806)

Source: Syntopix and Expert Analysis Group estimates

Key features of our projections are as follows.

- i) **R&D build in 2010/2011.** Aggregate R&D and Admin spend was £1.7m in financial year 2008 (to July 31st 2008) and £740,000 in the first half of 2009 (to 31st January 2009). We assume the aggregate will be £1.8m for 2009 but will pick up in 2010 and 2011 to £2.4m and £2.3m, respectively, as the company ramps up its clinical trial activities. We would then expect R&D to tail off as development costs are off-loaded on licensing partners.
- ii) **All product milestones and royalties included.** These are not probability weighted and are included to illustrate when the products could start yielding milestone and royalty income.
- iii) **Break-even in 2011 if all products are a success.** The respective stage of development of each of Syntopix's products and the rapid timelines to market mean that licensing deals will occur in financial year 2011/12 and milestone payments will be bunched around 2011/12/13. If all five programmes are the subject of licensing deals, then Syntopix could break even in 2011 on milestones and the first royalties.

- iv) **Unattributed revenue of £141,000 attributed to partners.** We assume this was from P&G and the undisclosed partner and we apportion this 50/50 to each partner, with a continuation in 2009.
  
- v) **Likely fundraise not shown.** Although we believe Syntopix will need to raise £1.5m of funds in the next few months to see it through to profitability, we do not show a capital increase in our P&L projections. Our model therefore illustrates a theoretical scenario in which the company has a negative bank balance during 2010 and 2011. Note that we have, however, increased the shares out figure by 3% in each year from 2009 onwards to allow for the potential issue of employee stock options.