

# Abacus Health Products

## Selling CBD the right way

Initiation of coverage

Pharma & biotech

18 November 2019

**Price** **C\$5.11**

**Market cap** **C\$110m**

US\$0.75/C\$

Net cash (US\$m) at 30 June 2019 32.3

Shares in issue (basic) 21.6m

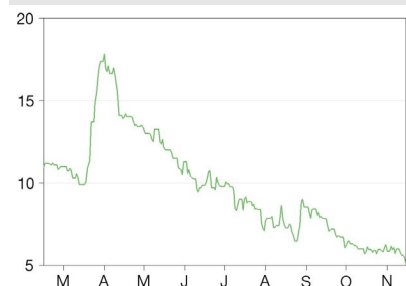
Free float 60.4%

Code ABCS

Primary exchange CSE

Secondary exchange OTCQX: ABAHF

### Share price performance



% 1m 3m 12m

Abs (10.4) (31.9) N/A

Rel (local) (13.6) (35.9) N/A

52-week high/low C\$17.80 C\$5.11

### Business description

Abacus Health Products is a consumer healthcare company that is combining cannabidiol with active ingredients that have known efficacy to provide relief from those suffering from pain, itch and acne, among other indications. It is marketing two separate product lines, CBD CLINIC, which is sold to registered health practitioners, and CBDMEDIC, which is marketed directly to consumers, mainly through retail pharmacies.

### Next events

Launch of ingestible CBD line H120

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**Abacus Health Products is a  
research client of Edison  
Investment Research Limited**

We are initiating coverage on Abacus Health Products, a consumer healthcare company that currently sells topical hemp-derived cannabidiol (CBD) in combination with active pharmaceutical ingredients that have known efficacy to treat indications such as pain, acne and itch. This allows Abacus to make specific medical claims about the efficacy of its products without having to claim that CBD itself is efficacious.

Year end	Revenue (US\$m)	PBT* (US\$m)	EPS* (US\$)	DPS (US\$)	P/E (x)	Yield (%)
12/17	2.6	0.5	N/A	N/A	N/A	N/A
12/18	8.5	0.6	0.04	0.0	N/A	N/A
12/19e	15.9	(13.3)	(0.67)	0.0	N/A	N/A
12/20e	39.3	(7.1)	(0.31)	0.0	N/A	N/A

Note: \*PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

## Product lines using established ingredients

Abacus has two main brands, CBD CLINIC, marketed to healthcare practitioners, and CBDMEDIC, marketed to consumers. The basis for efficacy claims is from well-established active pharmaceutical ingredients. For pain, its products will include lidocaine, menthol or camphor, which are also included in other leading consumer brands such as Icy Hot, Aspercreme and Bengay, with the addition of CBD.

## CBDMEDIC retail launch intensifying

Despite only receiving its first order at the end of February of 2019, CBDMEDIC has now received purchase orders from 3,000 retail locations across 24 states in the United States from multiple pharmacy chains that have a nationwide footprint of over 24,000 stores (the expectation is for CBDMEDIC to expand within the chains it is already present in and to expand into new pharmacy chains). This includes CVS which has a total of 10,000 retail locations by itself.

## Partnered with Rob Gronkowski, NFL great

Abacus has entered into a partnership agreement with Rob Gronkowski, who is widely regarded as the greatest tight end in National Football League (NFL) history. He is a very high-profile individual and will help the company launch a 'Gronk-inspired' ingestible CBD line in 2020. The focus of the all-natural line will be health, fitness and muscle recovery among other things and will include CBD as well as a combination with already known products.

## Valuation: C\$308m or C\$14.26 per basic share

We are initiating coverage of Abacus Health Products with a valuation of C\$308m or C\$14.26 per basic share (C\$12.52 per diluted share) using a discounted cash flow model (DCF). The drivers for the valuation are mainly the external analgesic, anti-itch and upcoming ingestible CBD line of products. As of 30 June, Abacus had US\$32.3m in net cash on its balance sheet, which we believe will be enough to fund operations through to sustainable profitability.

## Investment summary

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### Company description: A consumer healthcare platform

Abacus Health Products is a US-headquartered consumer healthcare company that is combining CBD with active ingredients that have known efficacy to provide relief from those suffering from pain, itch and acne, among other indications. It is marketing two separate brands, CBD CLINIC, which is sold to registered health practitioners, and CBDMEDIC, which is marketed directly to consumers, mainly through retail pharmacies although there is an online component as well.

Abacus was formed in 2014 as a subsidiary of Aidance Scientific, a current Good Manufacturing Practices (cGMP) manufacturer of topical dermatology products that was founded in 2004 in the US and has distribution into 150 countries. Through a reverse merger transaction with a Canadian company in January 2019, Abacus became its own entity, trading on the Canadian Stock Exchange (CSE) and adding a dual listing on the OTCQX in the United States in July 2019.

### Valuation: C\$308m or C\$14.26 per share

We are initiating coverage of Abacus Health Products with a valuation of C\$308m or C\$14.26 per basic share (C\$12.52 per diluted share) using a DCF. We estimate US\$188m in sales by 2024 (US\$91m from external analgesics, US\$13m from acne, US\$22m from anti-itch and US\$63m from the upcoming ingestible CBD line) with a 12.5% discount rate and 40% chance of commercial success. The commercial risk parameter stems from this being a competitive area.

### Financials: Well-funded for commercialization

Abacus reported US\$32.3m in net cash on its balance sheet at the end of Q219, mainly due to a C\$34.5m from an equity raise in May. It has typically kept a low burn rate and was able to have positive cash flow from operations in 2018 on its US\$8.5m in sales. R&D costs are minimal, as is capital expenditure due to the use of third-party manufacturers. We do expect SG&A expense to increase as the company continues the launch of CBDMEDIC as well as its new health and wellness ingestible line but we believe it will be focused and controllable. Hence, we believe the current cash level will be enough to fund operations through to sustainable profitability.

### Sensitivities: Commercial risk

As the company is selling products with FDA-registered and established registered ingredients, there is no clinical development risk with Abacus, but there is significant commercial risk as the products are in very competitive spaces. Each of the indications that Abacus has entered is full of established brand names. Abacus products also sell at a significant premium to the available OTC brands and will rely on the yet unproven efficacy of CBD in a variety of indications (clinical data are very limited). Teaming up with Rob Gronkowski, a well-regarded celebrity superstar athlete, will help build the brand, especially the 'Gronk-inspired' health and wellness ingestible CBD line in 2020. In the CBD area, there are a variety of competitors, such as Charlotte's Web, although quality and unsubstantiated health claims have been an issue with some of the smaller companies in this space. Besides commercial risk, there is some regulatory risk. The FDA has been very focused on this area recently due to the aforementioned quality and claims issues and it is unclear what future regulations will look like. At present, the official FDA stance is that it is illegal to market CBD as a food ingredient or as a dietary supplement under the Federal Food Drug and Cosmetic Act (FD&C) although they are expected to enact more nuanced regulations in the near future. However, national retail chains have put topical products, including CBDMEDIC, onto their shelves indicating they believe the FDA risk is relatively low.

## Company description: An up-and-coming platform

Abacus Health Products was first formed in 2014 as a part of Aidance Scientific, a cGMP manufacturer of dermatology products that was founded in 2004 and has distribution into 150 countries. Notably, Aidance developed a proprietary formulation technology that uses natural components to improve absorption of active pharmaceutical ingredients. Using Aidance's technology, know-how and other resources, Abacus began development of pain-related products in 2015 and registered its first product with the FDA in 2016. The company went public through a reverse merger transaction on the CSE at the beginning of 2019.

Today, Abacus is a consumer healthcare company that is combining CBD with active ingredients with known efficacy to provide relief from those suffering from pain, itch and acne, among other indications. It is marketing two separate FDA-registered brands, CBD CLINIC, which is sold to registered health practitioners (such as chiropractors, acupuncturists, massage therapists and physical therapists), and CBDMEDIC, which is marketed directly to consumers, mainly through retail pharmacies grocery stores and other general retailers, with an online component as well.

**Exhibit 1: CBD CLINIC product line**



Source: Abacus Health Products

**Exhibit 2: CBDMEDIC product line**



Source: Abacus Health Products

The CBD CLINIC line of products is entirely focused on pain management and was initially commercialized in the third quarter of 2016 with an estimated 12,000 practitioners currently acting as customers and resellers. The CBD CLINIC analgesic ointments and creams go from level 1 to 5 with higher-strength active ingredients (mainly known counterirritants such as menthol, camphor or a combination of the two) and higher amounts of CBD as levels increase. There is also a line of massage oils that was introduced in 2017. This is a premium-priced product with CBD CLINIC ointments and creams selling for between US\$25 and US\$90 for a 44g jar (although prices will vary depending on the reseller). There were US\$8.5m in sales in 2018 and US\$2.4m in Q219, up 18.1% year-on-year.

CBD CLINIC has plenty of room to grow past the 12,000 current customers as there are over 500,000 licensed chiropractors, acupuncturists, massage therapists and physical therapists currently practicing in the US according to the US Bureau of Labor Statistics and industry associations. To help improve penetration, Abacus is continuing to seek additional distributors for CBD CLINIC and recently signed an agreement with WBC Group, which through its wholly owned subsidiary, MeyerDC, is the official distributor of the American Chiropractic Association.

CBDMEDIC has a line of products for different types of pain as well as anti-itch and acne. The pain products are, like the CBD CLINIC products, mostly based on menthol and camphor, usually in

combination and offer the widest portfolio of CBD pain products on the market to our knowledge. The company announced in August that purchase orders have been received from 3,000 retail locations across 24 states with most chains taking eight to 13 stock keeping units (SKUs). If proven successful in those test locations, we expect CBDMEDIC products to be rolled out to additional locations by the chains already selling the products (a potential for penetration into around 24,500 retail locations in those pharmacy chains). Additional pharmacy chains are expected to come on line in the next quarter or two. In October, the company announced that an additional major national retail pharmacy chain would launch CBDMEDIC products in 1,300 locations in December 2019. According to IQVIA, there are around 80,000 retail pharmacies in the country. CBDMEDIC products are premium priced products and typically sell for around US\$30–40 (depending on the retailer) for a standard sized container (eg a 40g tube). Sales in Q219 were US\$0.7m, up 160% compared to the previous quarter.

**Exhibit 3: Abacus detailed product line and key ingredients**

Product	Type	Active ingredient	CBD level
<b>CBD CLINIC</b>			
Analgesic ointments/creams			
Level 1	Cream	Lidocaine (4%)	50mg (per 44g jar)
Level 2	Cream	Camphor (3%)	100mg (per 44g jar)
Level 3	Cream	Menthol (4%)	200mg (per 44g jar)
Level 4	Ointment	Menthol (7%) and camphor (5%)	250mg (per 44g jar)
Level 5 ('Pro Sport')	Ointment, pain stick	Menthol (16%) and camphor (11%)	400mg (per 44g jar)
Analgesic massage oils			
Level 1	Massage oil	Camphor (3%)	1,600mg (per 128oz bottle)
Level 3	Massage oil	Menthol (8%)	2,140mg (per 128oz bottle)
Level 5	Massage oil	Menthol (15%) and camphor (5%)	2,670mg (per 128oz bottle)
<b>CBDMEDIC</b>			
Active sport	Ointment, pain stick	Menthol (15%) and camphor (10%)	>200mg per 30g stick or 40g tube
Muscle and joint	Ointment	Menthol (15%) and camphor (10%)	>150mg per 30g (sold as 10 packets of 3g each)
Muscle and joint	Pain spray	Menthol (10%) and camphor (3%)	>200mg per 50mL spray bottle
Back and neck	Ointment	Menthol (15%) and camphor (10%)	>200mg per 40g tube
Arthritis	Hand cream	Menthol (4%)	>200mg per 50g pump bottle
Arthritis	Ointment	Menthol (10%) and camphor (10%)	>200mg per 40g tube
Massage therapy oil	Massage oil	Menthol (4%) camphor (3%)	>200mg per 3.5oz bottle
Itch, rash and pain	Ointment	Allantoin (0.5%) lidocaine (0.5%)	>200mg per 40g tube
Acne treatment	Cream	Salicylic acid (1%)	>200mg per 40g tube
Acne-prone facial cleanser	Facial cleanser	None	not disclosed
Eczema therapy	Ointment	Colloidal oatmeal (1%)	>200mg per 40g tube

Source: Abacus Health Products

Beyond the stated active ingredients and CBD, Abacus products also contain a variety of essential oils and other natural ingredients that may potentiate the efficacy of their products as well as make them more attractive for those seeking more natural medications for their ailments.

**Exhibit 4: Other natural ingredients found in Abacus products**

Ingredient	Potential benefits
Clove oil	Contains eugenol which has qualities of an anaesthetic
Cottonseed oil	Moisturizer
Eucalyptus oil	Cooling and calming vapor
Jojoba seed oil	Moisturizer
Peppermint oil	Soothing, potential pain relief
Tea tree oil	Historically used as a folk remedy for skin issues
Sorbic acid	Natural preservative with antibiotic qualities

Source: Abacus Health Products

## The current state of CBD

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CBD derived from hemp (a cannabis plant with less than 0.3%  $\Delta^9$ -tetrahydrocannabinol, THC) is legal on the US federal level (but also requires state-level legalization to be sold) thanks to the 2018 Agriculture Improvement Act, which removed CBD from the schedule of controlled substances. However, the FDA is the regulatory body overseeing CBD-related products and the agency is still undecided with how exactly to regulate the CBD industry outside of the traditional drug pathway (such as the one used by GW Pharmaceuticals to get Epidiolex, a pharmaceutical grade CBD, approved for certain rare pediatric epilepsies). At present, its official stance is that it is illegal to market CBD as a food ingredient or as a dietary supplement under the FD&C yet those products are still available due to state laws and relatively lax FDA enforcement. Expectations are for clarity on this subject being released in the coming months and we believe will likely involve some sort of dosage limit for supplements with CBD, potentially in the 200mg to 600mg range for ingestible CBD (which should have no impact on the topical CBD that Abacus sells).

The FDA is more strict on the subject of claims, where some companies are using deceptive marketing practices to sell their CBD products as a treatment for a variety of indications, whether there is real evidence or not. FDA issued a warning letter to [Curaleaf](#), a ~US\$2.5bn cannabis product company, for selling CBD products and making claims on efficacy for a variety of indications such as attention deficit disorder, pain, Alzheimer's disease, Parkinson's disease, breast cancer, heart disease and others without seeking approval for CBD as a drug either through the NDA or over-the-counter (OTC) pathway. Current Abacus products are registered with the FDA as OTC products and the claims associated with their use are related to the proven active ingredients.

Another issue the FDA (along with patients, physicians and caregivers) has is over the quality of products found on the open market. According to one survey of 25 CBD-containing products in Mississippi retail locations (see Exhibit 5) only two accurately depicted the level of CBD in the product. Some had zero, or a fraction of the labelled level, whereas one included a dose that was 23 times higher. Others had high levels of THC, as high as 45% of the product (a problem when a psychoactive effect is not expected). These results were corroborated by another survey by the [Clean Label Project](#), which also found some products with little/no CBD and some with much higher levels than labelled (with THC also being much higher than expected/allowed in some of the products). Additionally, lead, pesticides and phthalates (a group of chemicals used to make plastics) were found.

**Exhibit 5: Survey of CBD containing products**

CBD product #	Label claim (mg)	Actual present (mg)	Actual CBD as a % of label claim	THC >0.3%
1	350	417	119%	
2	300	0.3	0.1%	
3	Not disclosed	10	N/A	
4	500	521	104%	Yes
5	4-5	0.5	10%	Yes (45% THC)
6	75	22	30%	
7	200	44	22%	
8	50	1140	2280%	Yes
9	Not disclosed	134	N/A	
10	25	42	168%	
11	Not disclosed	0.02	N/A	
12	100	40	40%	
13	500	433	87%	
14	75	45	60%	
15	75	19	25%	
16	75	10	13%	
17	Not disclosed	None	0%	
18	25	9	32%	
19	100	0.6	0.6%	
20	500	500	100%	
21	200	10	5%	
22	Not disclosed	10	0%	
23	Not disclosed	17	0%	
24	Not disclosed	None	0%	
25	Not disclosed	None	0%	

Source: Bill Gurley, University of Arkansas for Medical Sciences, College of Pharmacy [FDA public hearing presentation](#)

Abacus is able to differentiate itself from these operators as its products are produced in cGMP facilities by a manufacturer used to creating pharmaceutical-grade product and are THC free. Many of the smaller CBD product marketers will not be able to afford to produce such a high level of product quality (nor be able to survive an FDA audit of their facilities) and will likely disappear in the months or years to come.

However, despite all of these issues, there is still great interest in CBD with over US\$600m in estimated sales in 2018, according to the Brightfield Group, and forecasts for brisk growth in the years to come. According to [a survey by Consumer Reports](#) in January 2019 that was presented at the FDA public hearing on CBD products, 26% of American adults have tried CBD at least once in the last two years. Not surprisingly, young users have a higher usage rate with 40% of those between the ages of 18 and 29 having used CBD. Even among those over the age of 60, this is a not insignificant usage rate of 15%. They are using it in a variety of ways, most commonly in an edible form (35%), but also as drops/sprays, vapes, topicals, cigarettes and pills. People are using it for anxiety (37%), pain (25%), recreation (11%) and sleep (10%) and whatever they are using it for, 48% view it as 'very' or 'extremely effective', with the highest level of satisfaction (63%) seen in those using CBD for anxiety. Safety does not appear to be a major stumbling block with 74% reporting no side effects with the most common side effects being changes in appetite and fatigue. This is similar to what appears on the label for Epidiolex (CBD) from GW Pharmaceuticals, which is typically dosed at a much higher level (20mg/kg/day, which equates to around 1,600mg per day for the average adult) than that which consumers are using CBD.

Due to the above, we are seeing meaningful sales and fast growth from the leading CBD companies with Charlotte's Web, considered to be the leading CBD player in the space, having annualized sales of around US\$100m, up 45.3% compared with the same period a year before. This level of sales and product pricing (see Exhibit 6) indicates there is a meaningful market for premium natural products.



**Exhibit 6: Annualized sales and pricing of select leading CBD companies**

Company	Annualized sales based on latest results (US\$)	Price per unit (US\$)
Charlotte's Web	\$100.4m	\$49.99 for 2.5oz cream with 750mg hemp extract
CV Sciences	\$50.4m	\$51.95 for 1.3oz balm with 100mg CBD
Elixinol	\$38.4m	\$59.99 for 4oz balm with 250mg CBD
Isodiol	\$16.9m	\$39.99 for 2oz cream with 100mg CBD

Source: Company reports (calendar Q319 except for Isodiol, which is based on calendar Q219) and online stores

## Pain market

According to the Centers for Disease Control, 20.4% of adults in the US (around 50 million people) have chronic pain, with around 40% of those (around 19.6 million people) experiencing high-impact chronic pain. Due to the ongoing opioid crisis, patients, physicians and therapists are actively seeking effective alternatives.

The non-prescription OTC analgesic market is segmented into two parts, internal (oral) and external. The internal market is the bigger of the two with US\$4.3bn in sales in the United States in 2018 compared to US\$861m in sales for the external market (although it is growing faster at 8.1% annually vs 0.6% for internal) according to the [Consumer Healthcare Products Association \(CHPA\)](#). One advantage of products for the external market is that there is typically a lot less systemic absorption, leading to a better safety profile and hence a less challenging regulatory environment.

**Exhibit 7: OTC external analgesic leading brands**

Products	Active ingredients in representative formulation	US sales (US\$)	Price per unit (US\$)
Icy Hot	Menthol (10%) and methyl salicylate (30%) (1.25oz cream)	\$155.9m	\$3.48 for 1.25oz cream
Salonpas	Camphor (3.1%), menthol (10%) and methyl salicylate (15%) (2.75oz gel)	\$121.1m	\$7.97 for 2.75oz gel
Biofreeze	Menthol (10%) (3oz cream)	\$114.1m	\$13.98 for 3oz cream
Aspercreme	Lidocaine (4%) (2.7oz cream)	\$106m	\$6.48 for 2.7oz cream
Blue Emu	Emu oil (12oz cream)	\$46.1m	\$26.88 for 12oz cream
Theraworx Relief	Magnesium sulfate (homeopathic) 7.1oz spray	\$34.6m	\$18.96 per 7.1oz spray
Tiger Balm	Camphor (25%) and menthol (10%)	\$29.8m	\$7 per oz
Bengay	Camphor (4%), menthol (10%) and methyl salicylate (30%) (2oz cream)	\$29.3m	\$5.40 for 2oz cream
Boiron Arnica	Arnica montana (7%) (homeopathic) 4.2oz cream	\$22.5m	\$11.99 for 4.2oz cream

Source: [Statista](#) and Amazon.com. Note: Sales are for the 52 weeks prior to 16 June 2019.

The external analgesic market is somewhat fragmented with a heavy reliance certain active ingredients (including many that are found in Abacus products), although three brands (Theraworx Relief, Boiron Arnica and Blue Emu) have been able to make the top 10 brands using non-traditional active ingredients, including homeopathic therapies.

We believe the use of familiar active ingredients will provide customers comfort that the Abacus family of products will be at least as efficacious as existing products along with the potential benefit from CBD. That said, there is little human clinical data that CBD is efficacious in the treatment of pain with most of the evidence of efficacy coming from animal studies. CBD cream rubbed on the joints of arthritic rats helped reduce inflammation and pain-related behaviors.<sup>1</sup> Another study showed that CBD can prevent pain and nerve damage in osteoarthritic rats.<sup>2</sup>

However, the lack of currently published data has not stopped the use of CBD to treat pain as it is the number two reason for CBD use (following relaxation) with 24% of CBD users using it for help with their pain according to a [Consumer Reports survey](#) that was presented at the recent FDA

1 Hammell et al., 'Transdermal cannabidiol reduces inflammation and pain-related behaviours in a rat model of arthritis.' *European Journal of Pain*. 2016 July; 20(6): 936-948

2 Philpott et al., 'Attenuation of early phase inflammation by cannabidiol prevents pain and nerve damage in rat osteoarthritis.' *Pain*. 2017 December; 158(12): 2442-2451

public hearing on CBD products. It is the number one reason for CBD use among the baby boomer generation with 42% indicating pain as the reason for its use. Importantly, 38% of those who have used CBD for their pain, describe it as being 'extremely or very effective'. Importantly, this level of efficacy was reported using a variety of different formulations of varying quality, unlike Abacus where its product is produced in cGMP facilities and hence is consistent and high quality.

The use of CBD in pain is compelling enough that the NFL has started to investigate it as a potential pain remedy to allow for greater opioid sparing as opioid use has become a problem with both current and former players. And it is compelling enough for an NFL great such as Rob Gronkowski (three-time Super Bowl champion as a member of the New England Patriots) to become involved with Abacus.

As mentioned previously, CBD CLINIC currently has penetrated approximately 12,000 customers who are mainly licensed chiropractors, acupuncturists, massage therapists and physical therapists. As there are currently over 500,000 licensed practitioners in those occupations in the US, that indicates a current market penetration of around 2.4% after three years. We conservatively estimate that it will be able to increase its penetration to 3.4% by 2024, which would lead to approximately US\$18m in sales in that year.

For CBDMEDIC, we expect that it will be able to gain a 2.4% unit share (~10% dollar share) of the OTC pain market, which would allow it to reach approximately US\$73m in sales by 2024. It is important to note that on a dollar basis, this would put CBDMEDIC among the top five brands in the US, but on a unit basis it would be at the bottom of the top 10 (as the premium pricing makes up for the lower unit volume). Our estimates depend on continued penetration into the major pharmacy chains (which is occurring) and continued premium pricing though we do not believe CBDMEDIC needs to be a high-volume seller at any one location. For the sake of illustration: CBDMEDIC is expected to be in 4,600 retail locations by the end of the year; a conservative estimate of six SKUs per location and two sales per SKU per location per month and a US\$20 wholesale price per unit, you can arrive at CBDMEDIC sales of US\$13.2m on an annualised basis. As mentioned previously, the 4,600 retail locations are only a fraction of the total footprint of the retail pharmacies that are selling CBDMEDIC. If rolled out to all 24,500 locations, this would equate to almost US\$71m in sales on an annualized basis (there is greater upside once additional chains come on line as there are 80,000 retail pharmacies in the United States total). As this illustration indicates, modest sales per month (~12 units per store per month) for CBDMEDIC as a premium product can lead to meaningful sales with broad enough distribution.

## Acne

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Acne is a very common skin condition that has near-universal prevalence in the teenage years. Approximately 95–100% of boys and 83–85% of girls aged 16–17 years old are affected by the condition, with 10–20% having the moderate to severe form.<sup>3</sup> In total, there are an estimated 40–50 million Americans of all age groups that suffer from the condition.<sup>4</sup> Approximately half of those are between the ages of 15-24. That said, the OTC acne treatment market is smaller than the pain market at approximately US\$363.6m over the last 12 months (see Exhibit 8).

There are quite a few types of treatment for acne, which include over-the-counter medications (mostly salicylic acid and benzoyl peroxide) and prescription medications (topical or oral antibiotics and hormonal therapy for women). Treatments generally work by reducing oil/sebum production, unblocking pores and/or killing acne-causing bacteria. More severe forms of acne are often treated with Accutane (isotretinoin) or oral antibiotics such as Solodyn (minocycline).

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3 Burton et al., British Journal of Dermatology, 1971 Aug;85(2) 119-26.

4 Zeichner et al., Journal of Drugs in Dermatology 2013 Dec;12(12):1416-27.



**Exhibit 8: OTC leading acne brands**

Product	Active ingredients in representative formulation	US sales (US\$m)	Price per unit (US\$)	Price per oz (US\$)
Neutrogena	Salicylic acid (2%) (9.1 fluid oz face wash)	94.9	\$5.24	\$0.58
Private label	Various	62.6	Various	Various
Differin	Adapalene gel (0.2%) (1.6 fluid oz gel acne treatment)	45.5	\$23.50	\$14.80
Clearasil	Salicylic acid (2%) (6.8 fluid oz face wash)	30.8	\$8.28	\$1.22
Neutrogena Rapid Clear	Benzoyl peroxide (10%) (5 fluid oz face wash)	30.1	\$8.07	\$1.61
St. Ives	Salicylic acid (2%) (10oz scrub)	25	\$6.13	\$0.61
Aveeno Active Naturals Clear Complexion	Salicylic acid (0.5%) (6oz foaming cleanser)	21.4	\$10.06	\$1.68
Biore	Salicylic acid (2%) (5oz scrub)	20.9	\$5.64	\$1.13
Stiefel Panoxyl	Benzoyl peroxide (10%) (5.5 fluid oz foaming wash)	17.9	\$11.12	\$2.02
Neutrogena Acne Stress Control	Salicylic acid (2%) (5 fluid oz face wash)	14.5	\$7.47	\$1.25

Source: [Statista](#) and Amazon.com. Note: Sales are for the 52 weeks prior to 16 June 2019.

Like pain, there are limited data to support use of CBD in acne with much of the evidence preclinical, such as a study in culture that suggested CBD may help control sebum production.<sup>5</sup> Unlike pain, the Abacus line of products for the treatment of acne is limited to a natural foaming facial cleanser without traditional active ingredients (it is a blend of CBD and other natural moisturizers) and a salicylic acid (1%) medicated cream. Due to this limited assortment, we project 3.4% peak dollar market share with sales of around US\$13m in sales in 2024.

## Anti-itch/eczema

Many conditions can cause itching but one of the main causes is eczema, an umbrella term for conditions (such as atopic dermatitis) that cause dry, itchy skin. According to the National Eczema Association, over 10% of the population suffers from eczema indicating that over 30 million people have that condition. Approximately 23% have daily symptoms, 50% suffer intermittent symptoms (more than 14 days per year but not every day) and 27% suffer symptoms less than 14 days per year.<sup>6</sup>

There are a number of different types of treatments for itch and eczema, including steroids (hydrocortisone), antihistamines (diphenhydramine) and avenanthramides found in oats (colloidal oatmeal). In general, treatments attempt to reduce inflammation except for diphenhydramine, which is more often used when the itch is due to an allergic reaction. The total OTC anti-itch market is estimated at US\$570.8m, according to [Drug Store News](#).

**Exhibit 9: OTC anti-itch leading brands**

Product	Active ingredients in representative formulation	US sales (US\$m)	Price per unit (US\$)	Price per oz (US\$)
Private label	Various	134.8		
Cortizone 10	Hydrocortisone (1%) (2oz cream)	104.7	\$8.58	\$4.29
Benadryl	Diphenhydramine (2%) (3.5 fluid oz gel)	44.9	\$4.80	\$1.37
Aveeno Active Naturals	Colloidal oatmeal (1%) (7.3oz lotion)	33.6	\$7.99	\$1.14
Lotrimin AF	Butenafine HCL (1%) (0.42oz cream)	31.7	\$9.94	\$23.67
Gold Bond Ultimate	Colloidal oatmeal (1%) (14oz lotion)	28.1	\$14.28	\$1.02
Eucerin	Colloidal oatmeal (1%) (8oz lotion)	19.9	\$7.18	\$0.90
Cortizone 10 Plus	Hydrocortisone (1%) (2oz cream)	17.4	\$8.63	\$4.32
Gold Bond	Dimethicone (5%) and menthol (0.5%) (14oz lotion)	13.4	\$9.75	\$0.70
CeraVe	Promixine HCL (1%) (8oz lotion)	12.1	\$ 10.99	\$1.37

Source: [Statista](#) and Amazon.com. Note: Sales are for the 52 weeks prior to 17 June 2018.

5 Olah et al., Cannabidiol exerts sebostatic and anti-inflammatory effects on human sebocytes. *Journal of Clinical Investigation*. 2014;124(9):3713–3724. doi:10.1172/JCI64628

6 Hanifin et al., Eczema Prevalence and Impact Working Group. A population-based survey of eczema prevalence in the United States. *Dermatitis*. 2007;18(2):82-91.

Once again, evidence of CBD efficacy is limited but there is some evidence that CBD has anti-inflammatory effects on skin cells and could be useful in dermatology.<sup>7</sup> Abacus has two products for itch within its CBDMEDIC line, a colloidal oatmeal-based eczema therapy and an itch, rash and pain medicated ointment with allantoin, a skin conditioning agent, and lidocaine. As with acne, due to the limited assortment of products in this market, we are estimating a 0.7% peak unit market share with sales of US\$21.9m in 2024.

## New health and wellness products

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Abacus plans to launch a health and wellness line in 2020, which will feature edible/ingestible CBD products, an expansion past the topical products sold so far (we expect the launch to be after FDA clarifies their view of CBD in food and supplements in the coming months). The addressable market is vast as the health and wellness category includes organic foods and beverages and is estimated at US\$186bn a year in North America in 2017 by [Agriculture and Agri-Food Canada](#). This line will be inspired by Rob Gronkowski, three-time Super Bowl champion with the New England Patriots who is widely regarded as the best tight end of all time. He and the company announced a partnership in August 2019 and he is quoted as saying 'Once I retired, I looked for better and more natural ways to recover and discovered CBDMEDIC. These products have helped me safely manage pain better than anything else I've tried. Building on my own experience with CBDMEDIC for pain, I'm inspired to work with the company to introduce new CBD products to the market.' Per the partnership, Rob Gronkowski was paid an undisclosed upfront fee, 302,835 subordinate voting shares, warrants to acquire 35,666 at US\$15.00 per share as well as royalties on the 'Gronk inspired' health and wellness line.

The focus of the all-natural line will be health, fitness and muscle recovery among others and will include CBD as well as a combination with ingredients that are indicated for the relevant therapeutic indications, just as with the topical lines. For example, the company could develop products to assist in sleep (a US\$410m OTC market in 2018 according to the Consumer Healthcare Products Association), which may contain valerian root or melatonin, along with CBD (as a reminder, sleep is one of the top uses for CBD currently). The company could also enter the sports nutrition market with items such as protein products (according to Statista, the protein powder supplement market in the US was [US\\$3.9bn](#) in 2017 and the ready-to-drink protein beverage market was [US\\$1.3bn](#)).

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<sup>7</sup> Wilkinson et al., Cannabinoids inhibit human keratinocyte proliferation through a non-CB1/CB2 mechanism and have a potential therapeutic value in the treatment of psoriasis. *Journal of Dermatological Science*. (2007) 45, 87-92.

**Exhibit 10: NFL great Rob Gronkowski**

Source: Abacus Health Products

We expect to have more information on the line up of new products in early 2020, which will give a better sense of the addressable market. At the very least, going towards edibles/ingestibles will help expand the addressable market within the CBD market itself as only 21% of CBD users use a topical form, according to Consumer Reports. The ultimate size of the CBD market is up for debate with estimates varying wildly. GMP Securities estimates it will reach US\$4–5bn by 2024 whereas Brightfield Group expects CBD sales to increase to US\$22bn by 2022. We are estimating a US\$3.4bn market in 2024 for CBD products. As a reminder, in our [Cannabis sector report](#) we estimated a US\$88bn market in the US if recreational cannabis is fully realized so our US\$3.4bn estimate for CBD appears achievable, especially if people continue to find it beneficial and if the FDA provides a cooperative regulatory environment. We estimate the new line of products will be able to gain around 2% of the total CBD market in 2024, equating to approximately US\$63m in sales in that year.

## Sensitivities

As the company is selling products with FDA-registered and established registered ingredients, there is no clinical development risk with Abacus, but there is significant commercial risk as it is in very competitive spaces where multiple players can provide quality products. Each of the indications that Abacus has entered is full of established brand names. Abacus products also sell at a significant premium to the currently available OTC brands and will rely on the yet unproven efficacy of CBD in a variety of indications (clinical data are very limited). Teaming up with Rob Gronkowski, a well-regarded celebrity superstar athlete, will help build the brand, especially the 'Gronk-inspired' health and wellness ingestible CBD line set to be released in 2020. In the CBD area, there are a variety of different competitors, such as Charlotte's Web, although quality and unsubstantiated health claims have been an issue with many of the smaller manufacturers in this space (however, eventually we would expect additional high-quality cGMP CBD competitors). Besides commercial risk, there is some regulatory risk. The FDA has been very focused on this area recently, due to the aforementioned quality and claims issues and it is unclear what future regulations will look like. At present, the official FDA stance is that it is illegal to market CBD as a

food ingredient or as a dietary supplement under the FD&C although they are expected to enact more nuanced regulations in the near future. However, national retail chains have put topical products, including CBDMEDIC, onto their shelves indicating they believe the FDA risk is relatively low. Also due to industry self-regulation, online giants such as Amazon and Facebook have not allowed the sale of CBD products on their platforms despite the de-scheduling of hemp-derived CBD (making CBD no longer a controlled substance), although this is changing as these platforms and their legal staff become more comfortable with the regulatory landscape.

## Valuation

We are initiating coverage of Abacus Health Products with a valuation of C\$308m or C\$14.26 per basic share (C\$12.52 per diluted share) using a DCF. We estimate US\$188m in sales by 2024 (US\$91m from external analgesics, US\$13m from acne, US\$23m from anti-itch and US\$63m from the upcoming health and wellness ingestible CBD line) with a 12.5% discount rate and 40% chance of commercial success. The commercial risk stems from this being a competitive area so an additional risk parameter is warranted. As the company matures and achieves milestones, we expect to adjust the probability of success upwards as well as reduce the discount rate to 10%, which is what we typically use for commercial-stage companies (as it is still early, with quite a few unknowns, we are using 12.5% currently).

### Exhibit 11: Valuation based on DCF

Discounted cash flow (US\$000)	496,423
Probability of commercial success	40%
Risk-adjusted discounted cash flow (US\$000)	198,569
Net cash (US\$000) at 30 June 2019	32,270
Valuation (US\$000)	230,839
C\$/US\$ exchange rate	0.75
<b>Valuation (C\$000)</b>	<b>307,786</b>
Basic shares (m)	21.6
<b>Value per basic share (C\$)</b>	<b>14.26</b>
Options (m)	3.0
Fully diluted shares (m)	24.6
<b>Value per diluted share (C\$)</b>	<b>12.52</b>

Source: Edison Investment Research

Please note that our total number of basic shares is based on 11.9m of subordinate voting common shares that are listed and trading on the Canadian Stock Exchange (CSE) as well as 9.7m reserved for issuance that are attached to proportionate voting shares that are issued and outstanding but not listed. The proportionate voting shares are owned by Aidance Scientific and some of the original shareholders/founders of Abacus. Additionally, there are 3.0m options that are outstanding, 1.6m of which are in-the-money with strike prices between US\$3.12 and US\$3.75. 1.2m of the out-of-the-money options have a strike price of C\$18.00 while the remaining 148,000 have a strike price of C\$14.00.

## Financials

Abacus reported revenue of US\$3.2m in Q219, up 55% year-on-year. CBD CLINIC sales were US\$2.4m, up 18.1% and CBDMEDIC sales were US\$0.7m, up 160% compared to Q119 (and we expect to continue to grow at high rates as it increases penetration into retail pharmacies and also gets better in-store placement). Abacus reported an operating loss of US\$3.5m in Q219 compared to an operating profit of US\$0.6m in Q218, with the difference mainly being a higher headcount and increased marketing expenses related to the CBDMEDIC launch. Abacus has typically maintained a low cash burn rate and was able to have positive cash flow from operations in 2018 on its US\$8.5m

in sales. R&D is minimal (US\$0.5m through the first six months of the year though we expect it to increase to US\$1.7m per year in 2020 as the company researches and tests additional formulations), as is capital expenditure due to the use of third-party manufacturers. We do expect SG&A expense to increase as the company continues the launch of CBDMEDIC as well as their new health and wellness ingestible line but we believe it will be focused and controllable. A summary of our key estimates are in Exhibit 12.

**Exhibit 12: Summary of key estimates**

(US\$m)	2018	2019e	2020e
Revenues	8.5	15.9	39.3
SG&A	4.0	21.3	30.2
Operating profit/(loss)	1.0	(12.6)	(6.4)

Source: Abacus Health Products reports, Edison Investment Research

The company reported US\$32.3m in net cash on its balance sheet at the end of Q219. It raised a total of US\$38.2m in equity mainly in two separate transactions, the reverse merger transaction in January and an additional equity raise in May. We believe the current cash level will be enough to fund operations through sustainable profitability, which we project to occur in 2021.

**Exhibit 13: Financial summary**

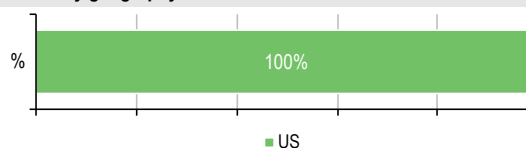
	US\$'000s	2017	2018	2019e	2020e
Year end 31 December		IFRS	IFRS	IFRS	IFRS
<b>PROFIT &amp; LOSS</b>					
Revenue		2,575	8,537	15,919	39,341
Cost of Sales		(1,249)	(3,484)	(5,918)	(13,769)
Gross Profit		1,327	5,053	10,000	25,572
Research and development		(1)	(119)	(1,178)	(1,650)
Selling, general & administrative		(759)	(3,958)	(21,257)	(30,186)
EBITDA		567	965	(12,726)	(6,554)
Operating Profit (before amort. and except.)		567	970	(12,581)	(6,409)
Intangible Amortisation		0	0	0	0
Exceptionals/Other		0	0	0	0
Operating Profit		567	970	(12,581)	(6,409)
Net Interest		(42)	(410)	(675)	(682)
Other (change in fair value of warrants)		0	(1,020)	(7,266)	0
Profit Before Tax (norm)		525	561	(13,256)	(7,091)
Profit Before Tax (IFRS)		525	(459)	(20,522)	(7,091)
Tax		0	0	0	0
Deferred tax		0	81	1,741	0
Profit After Tax (norm)		525	561	(13,256)	(7,091)
Profit After Tax (IFRS)		525	(378)	(18,781)	(7,091)
Average Number of Shares Outstanding (m)		N/A	13.0	19.7	22.6
EPS - normalised (\$)		N/A	0.04	(0.67)	(0.31)
EPS - IFRS (\$)		N/A	(0.03)	(0.96)	(0.31)
Dividend per share (c)		N/A	0.0	0.0	0.0
Gross Margin (%)		N/A	N/A	N/A	N/A
EBITDA Margin (%)		N/A	N/A	N/A	N/A
Operating Margin (before GW and except.) (%)		N/A	N/A	N/A	N/A
<b>BALANCE SHEET</b>					
Fixed Assets		0	158	2,595	3,567
Intangible Assets		0	0	0	0
Tangible Assets		0	57	216	1,188
Other		0	102	2,379	2,379
Current Assets		830	6,504	34,062	27,004
Stocks		46	1,004	4,373	7,126
Debtors		404	913	2,717	2,717
Cash		345	3,814	25,648	15,836
Other		35	773	1,325	1,325
Current Liabilities		(96)	(4,600)	(8,888)	(8,888)
Creditors		(96)	(4,600)	(8,888)	(8,888)
Short term borrowings		0	0	0	0
Long Term Liabilities		0	(2,198)	(333)	(333)
Long term borrowings		0	(2,198)	0	0
Other long term liabilities		0	0	(333)	(333)
Net Assets		733	(135)	27,436	21,350
<b>CASH FLOW</b>					
Operating Cash Flow		(30)	829	(17,032)	(8,695)
Net Interest		0	0	0	0
Tax		0	0	0	0
Capex		0	(63)	(745)	(1,117)
Acquisitions/disposals		0	0	0	0
Financing		0	(170)	39,619	0
Dividends		0	0	0	0
Other		0	(22)	(1)	0
Net Cash Flow		(30)	575	21,842	(9,811)
Opening net debt/(cash)		(375)	(345)	(1,367)	(25,647)
HP finance leases initiated		0	0	0	0
Exchange rate movements		0	0	0	0
Other		(0)	448	2,439	0
Closing net debt/(cash)		(345)	(1,367)	(25,647)	(15,836)

Source: Edison Investment Research, company reports



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**Revenue by geography**

**Management team**
**Chief executive officer: Perry Antelman**

Mr Antelman has over 30 years of executive business experience, funding, launching and growing companies in the chemical and medical technology/pharmaceutical sectors. He was the founder and CEO of Tivian Industries, a chemical manufacturer of electro-plating solutions from 1988 to 1999. He was the founder and CEO of Marantech Holdings, a pharmaceutical research company specializing in broad spectrum anti-microbial materials from 1999 to 2004. Since 2004 he has been the CEO of Aidance, a pharmaceutical company specializing in unique dermatological formulations and products sold internationally and into Walgreens and CVS. Mr Antelman has filed more than 30 patents internationally in his extensive career.

**Chief financial officer: Henry (Hank) Hague, III**

Mr Hague has over 11 years of experience as chief financial officer. Prior to joining the corporation in 2018, from 2009 to 2018, Mr Hague was the chief financial officer of Foster Corporation, a biomedical polymer compounder and distributor for the medical device industry that operates as an ISO13485-certified manufacturer and a cGMP CMO for drug delivery and combination devices. Mr Hague has years of finance experience and has worked for global consumer products companies. Mr Hague completed a BS finance at Bentley University.

**Chief technology officer: Dr Bharat Madhavan**

Dr Madhavan holds several international patents and specializes in R&D and quality control/assurance in the field of pharmaceutical science. Dr Madhavan designs, develops and tests new formulations to ensure they adhere to the highest standards and provide maximum benefits. Before joining the corporation in 2018, he was a Lead Scientist (R&D) at Aidance from 2010 to 2018. He holds a PhD from the University of Rhode Island.

**Vice president, marketing: James Barkat**

Prior to joining Abacus in 2019, Mr Barkat spent over 10 years at Sanofi Consumer Health, where he most recently served as US marketing head – digestive health, a \$300m portfolio that includes brands such as Dulcolax, Zantac and Rolaids. Mr Barkat has over 20 years' experience in the OTC pharmaceutical industry, including new OTC classifications and product launches and has marketed in joint collaboration with 10 major US retailers.

**Principal shareholders**

	(%)
Horizons Investment Management	2.0
Purpose Investments	1.0
KW Capital Partners	0.6
Redwood Asset Management	0.5

**Companies named in this report**

GW Pharmaceuticals (GWPH), Curaleaf (CURLF), Charlotte's Web (CWBHF), CV Sciences (CVSI), Elixinol (EXL.AU)

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