Indicative valuation of Regividerm™ in the treatment of psoriasis and atopic dermatitis

Presented to
Regeneratio

August 2001
Terms and conditions

- This report is only for the use of the directors of Regeneratio for the purpose of determining an indicative range of valuation for the drug Regividerm™ in the indication for psoriasis and atopic dermatitis.
- PwC accepts no responsibility if this report is used for any purpose other than that described above.
Agenda

- Objectives of the report
- Summary of primary market research
- Indicative value of Regividerm™
  - market size
  - market share
  - income-based Valuation Model
  - sensitivity and probabilistic analysis
- Conclusions
- Appendix
Purpose of this report on Regividerm™

• Provide an indicative value range for the exploitation of the drug for the treatment of psoriasis and atopic dermatitis based on:
  – assumptions provided by management of Regeneratio
  – external market research interviews with dermatologists and opinion leaders
  – PwC analysis and desk research

• Understand the opportunity to create value by developing Regividerm™ for the treatment of psoriasis and atopic dermatitis
  – clarify the sources of that value
  – identify the uncertainties whose outcomes drive the value of the molecule

Note: Our work does not include a formal audit of the financials of Regeneratio nor a formal opinion of value
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Objectives of the market research

Primary objectives

- To gather information on the size and growth of the total potential market for the drug
- To gather expert opinions on the market share and adoption of the new drug over time
- To validate secondary research on the market

Secondary objectives

- To identify the common criteria used by doctors to segment psoriasis and atopic dermatitis patients
- To learn about the flow of psoriasis and atopic dermatitis patients through the treatment pathway
- To gather information on current methods of treating psoriasis and atopic dermatitis
To meet these objectives, a qualitative interview guide was designed to cover the following areas:

- Background of interviewee
- Psoriasis and atopic dermatitis patients: severity distribution, age analysis, consultation rates, area affected and area treated
- Profile of current treatment of psoriasis and atopic dermatitis
- New developments in the treatment of psoriasis and atopic dermatitis
- Reaction to new drug profile/Prescribing predictions under a number of alternative scenarios
High level summary of the market research results (1 of 2)*

- Sample size:
  - 131 dermatologists and opinion leaders in the US, UK, France and Germany were interviewed by telephone and face to face.
  - 13 competitor interviews were conducted by telephone.

- The incidence of psoriasis is about 2% - 3% of the population.

- The incidence of atopic dermatitis is higher and is rising due to environmental pollutants.

- The most common medications for the treatment of mild and moderate psoriasis are topical corticosteroids, synthetic forms of vitamin D3, such as Dovonex and moisturizers.

- The treatment for mild and moderate atopic dermatitis is very similar to psoriasis, using Protopic (Tacrolimus), topical corticosteroids, and Dovonex.

- Severe form of psoriasis is most often treated with phototherapy and systemic medications such as methotrexate and cyclosporin.

- Virtually all of the dermatologists reacted very positively to the drug due to safety and efficacy.

- However, dermatologists reacted with scepticism and requests to see extensive clinical studies with proven results published in reputable journals.

* Detailed report is included in the Appendix.
Major weaknesses were the time lag before significant improvement and that Regividerm is a topical treatment require application twice a day

Regividerm is seen as a steroid-sparing compound

Respondents would use Regividerm in conjunction with stronger medications to control the condition, such as steroids then continue to use Regividerm as a maintenance drug

Dermatologists predicted that Regividerm would displace or replace at least 50% of all treatments for mild and moderate psoriasis and atopic dermatitis

The most significant factors for new treatment are safety and efficacy of the drug, reputable clinical studies, cost, ease of use, and the opinion of respected colleagues

Respondents recommended a price of Regividerm to be equal to or less than that of Dovonex in all countries

Depending upon the results of clinical studies and the local healthcare system and politics, it may be possible to charge a premium, but this will require further clarification

The greatest threats to the market at this time are the immunomodulator drugs from Genentech (with Xanelim) and Biogen (with Amevive), and also the strong market position of Leo Pharmaceuticals’ vitamin D3 derivative of Dovonex (Calcipitriol)
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An overview of the valuation methodology

Sources of information

- Expert interviews
  - 35 dermatologists' interviews US, 25 interviews UK, 25 interviews France, 25 interviews Germany
  - 5 opinion leaders interviews US, 4 interviews UK, 5 interviews France, 6 interviews Germany
  - 13 competitor interviews
  - Qualitative and quantitative data (Regeneratio, desk research)
  - PwC expertise in the valuation of projects for the pharmaceutical business
  - Regeneratio knowledge of Regividerm™ clinical trials results for the treatment of psoriasis and atopic dermatitis

Model

- Market size
- Market share
- Income based valuation model for compound
- Valuation analysis and conclusion
A staged process has been used involving primary market research, desk research, PwC pharmaceutical experts and Regeneratio management (1 of 2)

- Telephone interviews have been conducted with dermatologists:
  - 35 in USA, 25 in Germany, 25 in UK, and 25 in France

- One-to-one interviews have been held with key opinion leaders and competitors selected by Regeneratio:
  - 5 in USA, 6 in Germany, 4 in UK, and 5 in France with opinion leaders
  - 3 in USA, 3 in Germany, 4 in UK, and 3 in France with competitors

- Learning from the market research has been complemented by desk research, PwC and Regeneratio clinical trials information

- A market size model has been developed to calculate the potential population to be prescribed with Regividerm™:
  - the proportion of the population having the condition of psoriasis and atopic dermatitis has been evaluated
  - according to the body area affected, patients have been segmented into mild, moderate and severe groups
  - patients under the age of eighteen have been analysed separately because of different treatment patterns and different registration process
  - only patients who consult a doctor have been retained for the analysis; consultation rate varies based on the severity of the condition
A staged process has been used involving primary market research, desk research, PwC pharmaceutical experts and Regeneratio management (2 of 2)

- The number of days of therapy per year and the body area treated with Regividerm™ have been calculated for each of the segments (adult/children, mild/moderate/severe)
- Market share over time has been evaluated (replacement rate, new patients)
- The impact of competition and patent expiry date on market share has been modelled
- An income based valuation model (discounted cash flow model) has been developed in Excel to calculate the net present value
- The defined uncertainties have been modelled in DPL (a probabilistic software) and integrated into the discounted cash flow model enabling calculation of the dynamic value of Regividerm™ for the treatment of psoriasis and atopic dermatitis
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Total population affected by psoriasis and atopic dermatitis in the US and in Europe

Population affected by psoriasis and atopic dermatitis (%)

- Psoriasis: 2.1%
- Atopic dermatitis**: 3.2%

Unaffected population 94.8%

Population affected by psoriasis and atopic dermatitis (millions)

<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>France</th>
<th>Germany</th>
<th>UK</th>
<th>Rest of Europe</th>
<th>Total Europe</th>
<th>Total Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>278.1</td>
<td>59.6</td>
<td>83.0</td>
<td>59.6</td>
<td>188.2</td>
<td>390.4</td>
<td>668.5</td>
</tr>
<tr>
<td>Psoriasis</td>
<td>5.6</td>
<td>1.2</td>
<td>1.8</td>
<td>1.2</td>
<td>4.0</td>
<td>8.2</td>
<td>13.9</td>
</tr>
<tr>
<td>Atopic dermatitis</td>
<td>9.2</td>
<td>1.9</td>
<td>2.4</td>
<td>1.9</td>
<td>5.6</td>
<td>11.7</td>
<td>20.9</td>
</tr>
</tbody>
</table>

Source: US Census Bureau, International Database; PwC Research/Expert Interviews

* Europe = European Union plus Norway, Switzerland and Monaco
** Lower than market research as it did not include very mild case
The prevalence of the two diseases per age segmentation

Psoriasis

Psoriasis is prevalent in adult population. Only 5% of the children are affected by the disease.

Atopic dermatitis

Atopic dermatitis is prevalent in children, specifically under five years old.

Paediatric registration would bring a significant additional opportunity for Regividerm™.

Source: US Department of Health and Human Services, Centers for Disease Control and Prevention - October 1999, PwC analysis
The severity of psoriasis and atopic dermatitis amongst patients

Psoriasis and atopic dermatitis sufferers have been categorised into 3 segments.

The definitions of these segments as used in this study are as follows:
- Mild: Patients with body surface affected of less than 2%
- Moderate: Patients with body surface affected of between 2 and 10%
- Severe: Patients with body surface affected of more than 10%.

This segmentation is particularly important:
- The volume of cream applied increases directly with the total body area affected, and hence, is significantly different for each severity stage.
- The consultation rate is dependant of the severity of the disease (see later).

Psoriasis and atopic dermatitis present a slightly different severity pattern:
- Psoriasis: 52% mild, 33% moderate, and 15% severe
- Atopic dermatitis: 45% mild, 35% moderate and 20% severe.
Projection of psoriasis and atopic dermatitis’ prevalence for the next 20 years in the US and Europe

The number of people affected by psoriasis will grow from 13.9 to 15.3 million

The number of people affected by atopic dermatitis will grow from 20.8 to 21.4 million

Population growth is estimated at 17% for the US and only 2% for Europe

Children population is actually projected to decline in Europe and impact atopic dermatitis prevalence in this region.

Source: US Census Bureau, International Database; PwC Research/Expert Interviews
Psoriasis and atopic dermatitis per severity segment in the US and Europe

Disease severity in the US and Europe
Consulting rates depend on severity of the condition

- Children are more affected by atopic dermatitis, and hence, parents are more willing to consult.
- More itching with atopic dermatitis that push to pursue treatments.

Source: PwC/HBS Research/Expert Interviews

It is expected that consulting rates will increase due to the growing awareness of new treatments that will be introduced in the next few years (Amevive and Regividerm™).
For psoriasis, we will exclude the 50% of the population that does not consult.

- Average consulting rate is estimated at 50% in 2001 and increases to 70% by 2011 (remaining flat thereafter).
- Severe cases represent 36% of total patients consulting a doctor in 2001 (27% in 2011).

Source: PwC/HBS Research/Expert Interviews
For atopic dermatitis, we will exclude the 32% of the population that does not consult

- Average consulting rate is estimated at 68% in 2001 and increases to 85% by 2011 (remaining flat thereafter)
- Severe cases represent 26% of total patients consulting a doctor in 2001 (22% in 2011)

Source: PwC/HBS Research/Expert Interviews
Based on the previous information, we calculate the number of potential patients per severity of the disease at peak market share (2007)

<table>
<thead>
<tr>
<th>Market Size</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Psoriasis</td>
<td>1.27</td>
<td>1.26</td>
<td>0.83</td>
</tr>
<tr>
<td>US Atopic Dermatitis</td>
<td>2.71</td>
<td>1.74</td>
<td>1.74</td>
</tr>
<tr>
<td>EU Psoriasis</td>
<td>1.79</td>
<td>1.77</td>
<td>1.18</td>
</tr>
<tr>
<td>EU Atopic Dermatitis</td>
<td>2.13</td>
<td>3.36</td>
<td>3.29</td>
</tr>
</tbody>
</table>
Based on the previous information, we calculate the number of potential patients per age at peak market share (2007)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Market Size</th>
<th>US Psoriasis</th>
<th>US Atopic Dermatitis</th>
<th>EU Psoriasis</th>
<th>EU Atopic Dermatitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 18</td>
<td></td>
<td>3.36</td>
<td>2.60</td>
<td>4.73</td>
<td>3.72</td>
</tr>
<tr>
<td>Under 18</td>
<td></td>
<td>3.16</td>
<td>4.61</td>
<td>4.52</td>
<td>5.07</td>
</tr>
</tbody>
</table>

Number of people (millions)
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The market share analysis is based on Regividerm™ phase II and phase III clinical trials data

**Efficacy:**
- Reduction of symptoms
  - 87% of patients with psoriasis are responsive to treatment
  - 71% of patients with atopic dermatitis are responsive to treatment
  - Therapeutic equivalence to Calcipotriol after 12 weeks of treatment
  - Regeneration and recovery in all layers of the dermis
  - Placebo effect is estimated at 68 - 71% for psoriasis treatment and 55 - 57% for atopic dermatitis
- Time-lag before relief of symptoms becomes clinically relevant is 2-3 weeks
- Average effectiveness after termination of treatment is between 1 to 2 months

**Safety/side effects:**
- No limitation regarding length of treatment, treatable body surface or age

**Drug interactions:**
- No adverse drug interactions; possible combination with standard topical and systemic therapies

**Ease of administration:**
- Twice daily on the affected skin areas; no monitoring required

**Mode of action:**
- Downregulation of pro-inflammatory cytokines
Market share assumptions

- At launch (2002), Regividerm™ will be the only topical vitamin B12 drug available in the market.
- We assume strong patent protection for vitamin B12 topical treatment
- None of the current treatment for psoriasis and atopic dermatitis provide a satisfactory solution for patients
- We assume the marketing partner will be strong enough in the US and in Europe to penetrate the potential market by 2007. It has been assumed that peak share will be achieved in 5 years because the demand is high for a safe and effective product, the launch campaign is well funded.
- The marketing partner will be able to generate treatment patterns that maximize the synergies with existing treatment - e.g. 2 weeks of corticosteroids for quick onset of action followed by Vitamin B12 application
- At peak time (2007), the share will be around 43% of total potential mild and moderate psoriasis patients and 23% of total potential severe psoriasis patients; the share will be around 56% of total potential mild and moderate patients and about 54% of total potential severe patients for atopic dermatitis. The market share is generated by replacing Calcipotriol and acquiring large share of new patients
- Additional competition will enter the market in 2007 and 2009 for psoriasis and atopic dermatitis respectively (1 or 2 competitors with comparable efficacy and safety) and a second round of new molecules (1 to 3 competitors with better performance and safety profile) by 2011.
- We consider that Regividerm™ manufacturing will be contracted out and no limitation of supply will happen. Production location sites will allow cost effective supply of the US and Europe markets.
## Competition in the psoriasis and atopic dermatitis market

<table>
<thead>
<tr>
<th>Competition</th>
<th>Psoriasis</th>
<th>Atopic dermatitis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional</strong></td>
<td>Treatment</td>
<td>Treatment</td>
</tr>
<tr>
<td></td>
<td>Dovonex</td>
<td>Steroids</td>
</tr>
<tr>
<td></td>
<td>Steroids</td>
<td>Steroids</td>
</tr>
<tr>
<td></td>
<td>Coal tar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vitamin A</td>
<td>Vitamin A</td>
</tr>
<tr>
<td></td>
<td>Systemic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alternative therapies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Phototherapy</td>
<td></td>
</tr>
<tr>
<td><strong>New</strong></td>
<td><strong>Systemic</strong></td>
<td><strong>Topical</strong></td>
</tr>
<tr>
<td></td>
<td>Efalizumab (Genentech/XOMA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amevive (Biogen)</td>
<td>Severe</td>
</tr>
<tr>
<td></td>
<td>Infliximab (J&amp;J)</td>
<td>Severe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe</td>
</tr>
</tbody>
</table>

### Target and Market share for Psoriasis:
- **Traditional**:
  - Dovonex: All, 50%
  - Steroids: All, 10%
  - Coal tar: Mild/Moderate, 20%
  - Vitamin A: All, 20%

### Target and Market share for Atopic dermatitis:
- **Traditional**:
  - Steroids: All
  - Vitamin A: All

### New Treatments:
- **Systemic**:
  - Efalizumab (Genentech/XOMA): Severe, 2002 (US/EU)
  - Amevive (Biogen): Severe, 2002 (US/EU)
  - Infliximab (J&J): Severe, Phase III (US/EU)

- **Topical**:
  - Tacrolimus (Fujisawa): All, 2002 (EU)
  - Pimecrolimus (Novartis): 2002 (US/EU)
Analysis of the psoriasis peak market share per severity of the disease

- Existing patients per severity of the disease
  - Mild
    » Replace 60% of Dovonex and steroids that represent 50% of the market ---> 30% market share gained
  - Moderate severity
    » Replace 60% of Dovonex and steroids that represent 50% of the market ---> 30% market share gained
  - Severe
    » Replace 60% of Dovonex and steroids that represent 30% of the market ---> 18% market share gained
    » No replacement of systemic drug

- New patients
  - Capture on average 80% of new patients
Peak market share of Regividerm™ for psoriasis

Replacement of existing drugs

- Severe - Other drugs: 30%
- Severe - Regividerm: 6%
- Mod. - Other drugs: 28%
- Mod. - Regividerm: 12%
- Mild - Other drugs: 17%
- Mild - Other drugs: 9%

Market share gained by replacement

- Other drugs: 74%
- Regividerm market share gained by replacement: 26%

Capturing new patients

- Severe - Other drugs: 2%
- Severe - Regividerm: 10%
- Mod. - Other drugs: 10%
- Mod. - Regividerm: 41%
- Mild - Other drugs: 9%
- Mild - Regividerm: 28%

Market share of new patients

- Other drugs: 20%
- Regividerm market share of new patients: 80%

Peak market share

- Other drugs: 63%
- Regividerm peak market share: 37%
Analysis of the atopic dermatitis market share per severity of the disease

- Existing patients
  - Mild/Moderate/Severe
    » Replace 65% of existing treatments which represent 80% of the market - 52% market share
- New patients
  - Capture on average 80% of new patients
Peak market share of Regividerm™ for atopic dermatitis

Replacement of existing drugs
- Severe - Regividerm: 14%
- Severe - Other drugs: 13%
- Mild - Regividerm: 16%
- Mild - Other drugs: 14%
- Moderate - Regividerm: 22%
- Moderate - Other drugs: 21%
- Moderate - Other drugs: 21%
- Severe - Other drugs: 9%
- Severe - Other drugs: 1%
- Mild - Other drugs: 12%
- Mild - Other drugs: 6%
- Moderate - Regividerm: 34%
- Moderate - Other drugs: 38%
- Moderate - Other drugs: 6%

Capturing new patients
- Severe - Regividerm: 14%
- Severe - Other drugs: 13%
- Mild - Regividerm: 16%
- Mild - Other drugs: 14%
- Moderate - Regividerm: 22%
- Moderate - Other drugs: 21%
- Moderate - Other drugs: 21%
- Severe - Other drugs: 9%
- Severe - Other drugs: 1%
- Mild - Other drugs: 12%
- Mild - Other drugs: 6%
- Moderate - Regividerm: 34%
- Moderate - Other drugs: 38%
- Moderate - Other drugs: 6%

Market share gained by replacement
- Other drugs: 48%
- Regividerm market share gained by replacement: 52%

Market share of new patients
- Other drugs: 20%
- Regividerm market share of new patients: 80%

Peak market share
- Other drugs: 44%
- Regividerm peak market share: 56%
Market share of Regividerm™ over time assuming additional competition entry in 2007 and 2011 for psoriasis

Mild and moderate psoriasis adult market share

Severe psoriasis adult market share
Market share of Regividerm™ over time assuming additional competition entry in 2009 and 2011 for atopic dermatitis

Mild and moderate atopic dermatitis adult market share

Severe atopic dermatitis adult market share
At peak market share (2007), 2.1 million psoriasis patients and 6.7 million atopic dermatitis patients will be prescribed with Regividerm™.

*Number of patients with Psoriasis under 18 is very small (0.5 million)
At peak market share (2007), 2.1 million psoriasis patients and 6.7 million atopic dermatitis patients will be prescribed with Regividerm™.
Volume of Regividerm™ used in a year based on severity and age

<table>
<thead>
<tr>
<th></th>
<th>Adult</th>
<th></th>
<th>Children**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
<tr>
<td>Treatment days in a year</td>
<td>120</td>
<td>150</td>
<td>180</td>
</tr>
<tr>
<td>X Body area treated (m²)</td>
<td>0.02</td>
<td>0.10</td>
<td>0.40</td>
</tr>
<tr>
<td>= Body area treated in a year (m²)</td>
<td>2.40</td>
<td>15.00</td>
<td>72.00</td>
</tr>
<tr>
<td>X Amount per application (mg/cm²)</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>X Conversion to g/m²</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>X No of application per day</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>= Amount of Regividerm used in a year (g)</td>
<td>72</td>
<td>450</td>
<td>2160</td>
</tr>
</tbody>
</table>

By comparison in the clinical trial, there is a yearly consumption of 2400g and 2100g of Regividerm™ for atopic dermatitis and psoriasis respectively.

Source: Regeneratio management, PwC research

* Assuming treatment days are the same for both psoriasis and atopic dermatitis

** Most children suffering from atopic dermatitis are under 5 years of age, the body area treated are assumed to be 0.01, 0.03 and 0.09 m² for mild, moderate and severe atopic dermatitis, respectively. The amount of Regividerm™ used in a year are 10.8g, 68g and 243g for mild, moderate and severe atopic dermatitis, respectively.
If we integrate the previous information, we get the number of treatment days per country and per disease at peak market share (2007)

![Bar chart showing treatment days for US and EU psoriasis and atopic dermatitis by severity level (Mild, Moderate, Severe).](chart.png)

- **Total US = 346**: 106 (Mild), 240 (Moderate), 38 (Severe)
- **Total EU = 623**: 240 (Mild), 186 (Moderate), 438 (Severe)

**Market share**
Targeted number of treatment days in a year per age group at peak market share (2007)

- Total US = 346
- Total EU = 623

US psoriasis: 106
US atopic dermatitis: 240
EU psoriasis: 186
EU atopic dermatitis: 438

- Over 18: 102 (US), 113 (US atopic), 181 (EU), 178 (EU atopic)
- Under 18: 3 (US), 127 (US atopic), 4 (EU), 260 (EU atopic)
Treatment pattern in one year

Assuming treatment pattern is the same for psoriasis and atopic dermatitis

No of days

90 180 270

Total days for the year

60 75 90 120 150 180

Market share

Treatment

Remission

Under 18

Moderate

Severe

Over 18

Mild

Moderate

Severe

Under 18

Mild

Moderate

Severe

Over 18

Mild

Moderate

Severe

Assuming treatment pattern is the same for psoriasis and atopic dermatitis
Volume of product at peak market share (2007)

- US psoriasis: 402 (395, 6)
- US atopic dermatitis: 748 (613, 134)
- EU psoriasis: 711 (702, 8)
- EU atopic dermatitis: 1474 (1261, 213)

Total US = 1149
Total EU = 2184

Market share:
- Over 18
- Under 18
Volume of Regividerm™ per year

Current contract is DM2.54 per 100g for more than 100,000 tubes (500 times lower than peak)
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To provide an understanding of the logical structure of the evaluation, we describe below how the base case is constructed

- The base case is one case among many possible scenarios
- The base case is constructed by:
  - assuming the product reaches the market
  - general model assumptions (see next page)
  - specific assumptions for uncertainties (see pages 58-65)
- The base case is not the answer, a prediction, nor a commitment
General model assumptions

- Price is assumed to vary across geographic areas (US$20 price to wholesaler per 100 grams tube in Europe, US$30 price to wholesaler per 100 grams tube in US). Price is driven by the price of Vitamin D3 used for treating psoriasis and atopic dermatitis that are already on the market. US and Europe are modelled specifically. The total value will be extrapolated to include Japan and the rest of the world (ROW).
- We assume no major changes in market dynamics / regulatory environment.
- We assume economic stability.
General model assumptions - financials

- COGS varies with production volume
- Launch costs are estimated at $445 million for US and Europe, starting one year before launch and until two years after launch
- On-going sales and marketing costs are 30% of NSR
- Development costs are estimated at $6m for EU submission and $15m for US
- Capital expenditure is assumed to be zero as manufacturing will be outsourced
- Patent expiry at 2018
- Tax rate is estimated at 35% for all geographic areas
- Discount rate is 11%
General model assumptions - discount rate

- **Selection of comparable companies and calculation of discount rate**
  - We have calculated the discount rate for Regeneratio as weighted average cost of capital based on the data available on the companies comparable to Regeneratio (see appendices for detailed calculation).
  - Since Regeneratio is a start up business with no established product in our selection of comparables we focused on the companies, which market psoriasis treatments and/or have psoriasis drugs in clinical trials.
  - Our selection of comparables yielded major pharmaceutical companies, including Novartis, Schering, Schering-Plough, Roche, SmithKline Beecham, and Teva and medium and small companies, including Genentech, XOMA, Biogen, Angiotech, and Inflazyme. The average beta observed for these companies is used in cost of equity calculation.
  - Small stock premium of 0.6% is from Ibbotson's SBBI Yearbooks, mid-cap premium. We have not added any start-up risk premium because this risk is accounted for in risk profile of cash flows used in ROV.

- **Base case discount rate**
  - It should be noted that as a start up Regeneratio has not diversified its business risk, and therefore, is far more risky investment than any comparable company. However, we have selected a discount rate of 11% for our base case because it is the rate used by most large pharmaceutical companies with whom Regeneratio will negotiate the licensing agreement and the product will be included in their portfolio.
Price comparison for US and Europe (Regividerm™ benchmarked against Dovonex)

- Dermatological interviews indicate that Vitamin B12 compound is not expected to have retail price higher than Calcipotriol creams. Therefore, we benchmarked Regividerm™ price against its main competitor, Dovonex.

  - Taxes: US sales tax - 6%, EU VAT - 17.5%
  - Retail margin: EU - 26%, US - 25%
  - Wholesale margin: EU - 9%, US - 3%

Source: PwC/HBS Research/Expert Interviews
In 2009 Regividerm™ generates $900 Million of net sales revenue for both psoriasis and atopic dermatitis.
Cash-flow represents 40% of Nets Sales Revenues (NSR) for both psoriasis and atopic dermatitis.

Total financials

Year

Net sales revenue ($'m)

-200

0

200

400

600

800

1000

NSR

COGS

S&M costs

Tax

Free cash flow

Total: US, EU
Development plan for launching Regividerm™ in EU and US

Remaining development costs

- EU adult
  - 2003
  - $5M

- US adult
  - 2002
  - $10M

- EU paediatrics
  - 2004
  - $5M

- US paediatrics
  - 2005
  - $5M

- UK adult
  - 2006
  - $1M

Launch year

2001 2002 2003 2004 2005 2006 2007

Sensitivity and probabilistic analysis
The indicative net present value of Regividerm™ for the psoriasis and atopic dermatitis indication is estimated to be $936 million.

Income based valuation model

Adding Japan and ROW will increase the value by 21% to $1,206 million.

NPV is calculated using the discounted free cash flows over the life cycle of the product. No terminal value has been included. The discount rate is 11%.

NPV (Million $)

<table>
<thead>
<tr>
<th>Region</th>
<th>NPV (£Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>500</td>
</tr>
<tr>
<td>Europe</td>
<td>453</td>
</tr>
<tr>
<td>Japan/ROW</td>
<td>252</td>
</tr>
<tr>
<td>Development</td>
<td>-17</td>
</tr>
</tbody>
</table>

NPV (Million £)
Agenda

- Objectives of the Study
- Summary of primary market research
- Indicative value of Regividerm™
  - market size
  - market share
  - income-based Valuation Model
  - sensitivity and probabilistic analysis
- Conclusions
- Appendix
The major uncertainties affecting the indicative value of the project:

Population over 18 with atopic dermatitis
Product reaches market
Atopic dermatitis adult body area treated (m²)
Amount per application (mg/cm²)
Retail price US ($ per 100g tube)
Atopic dermatitis treatment days adults (per year)
Atopic dermatitis severity ratio
Psoriasis adult body area treated (m²)
Reimbursement
Atopic dermatitis replacement rate
Retail price EU ($ per 100g tube)
Psoriasis treatment days adults (per year)
Population over 18 with psoriasis
Years to peak market share
Adult UK launch year

NPV = $936 Million

Mild Moderate Severe
35% 40% 25%
45% 35% 20%
55% 35% 30%
Model outputs - sensitivity diagrams

- Above is a sensitivity chart for the indicative value of Regividerm™ for psoriasis and atopic dermatitis. The diagram graphically illustrates the sensitivity of the value of Regividerm™ to the modelled uncertainties.
- In determining the range of impact of a particular variable, the variable is flexed from the low case to the high case value, with all other variables being held in their most likely state.
- From the diagram, we can draw the following conclusions:
  - the base case value is $936 million. There is slightly more upside than downside, so the expected net present value will be a little higher ($1.08 billion - see next page)
  - if the product does not reach market (5% chance), the value is - $56 million NPV
  - the value is most sensitive to the market size of people over 18 years old affected by atopic dermatitis
  - other key uncertainties are:
    » the adult body area treated
    » the amount of Regividerm™ used per application
    » the price of Regividerm™ 100 grams tube in US
    » the atopic dermatitis treatment days
    » the atopic dermatitis severity ratio.
**Indicative value and risk of Regividerm™ for psoriasis and atopic dermatitis**

The risk profile chart, shown here, graphically represents the possible and expected value of Regividerm™ for psoriasis and atopic dermatitis.

The chart should be read as follows:
- There is a 63% chance that the value will be $1.08 billion (expected value) or less.
- There is 5% chance that the value will be less than zero (product not registered).

The expected value is the weighted average (mean) of possible outcomes based on the uncertainties listed. It is not the measure of risk. The range of possible values and the associated possibilities is a measure of the risk undertaken.
Agenda

- Objectives of the Study
- Summary of primary market research
- Indicative value of Regividerm™
  - market size
  - market share
  - income-based Valuation Model
  - sensitivity and probabilistic analysis
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- Appendix
Based on available data, Regividerm™ generates much value for the treatment of psoriasis and atopic dermatitis

- The indicative expected net present value (probability weighted NPV) is $1.08billion because of the following:
  - in absence of final cure there is a constant need for effective but safe treatment for psoriasis and atopic dermatitis
  - a significant number of people from the developed world are suffering from psoriasis and atopic dermatitis
  - consulting rate is high and is likely to improve due to the increased product awareness
  - diagnosis is easy
  - development costs/time are limited due to the product being in Phase III
  - probability of reaching market is high (95%)
  - COGS are low and supply is not an issue
  - expected market share is high due to better safety profile and good efficacy of Revigiderm™ compared to existing topical treatments
  - competition is not expected to knock the product completely off market
  - new immuno suppression treatment would be limited to severe case, not applicable for children due to their important adverse side effects

- The evaluation assume that the patent on “use of corrinoids in topical treatment of skin diseases” is well protected and broad.
The evaluation analysis revealed challenges for Regeneratio (1 of 2)

- The major challenge is to capture the potential of the compound.
- The marketing partner needs to have the resources to commercialise the compound and to penetrate the psoriasis and atopic dermatitis markets quickly, especially if Regividerm is already less than one year from the planned launch date of 2002 in the UK.
- This marketing partner needs to convince dermatologists in a very short time of the efficacy and safety of the compound. The market research has revealed that dermatologists will prescribed the drug if they are able to get access to:
  - clinical trials results
  - recommendations from opinion leaders
  - additional information on the mode of action
- A better understanding of the reimbursement opportunities is required before deciding on final pricing decision.
- The onset of action is quite long, and compliance can be an issue. Several opportunities exist in combination with other treatments
  - potential combination with potent topical treatments
  - treatment patterns with systemic treatments
The evaluation analysis revealed challenges for Regeneratio (2 of 2)

- The negotiation with large pharmaceutical group needs to be carefully prepared:
  - a public relation strategy has to be designed shortly to increase the awareness of the compound (several opportunities have been highlighted in the market research part)
  - an understanding of the synergies with existing products of large pharmaceutical companies can help strengthen the negotiation position
  - Regeneratio needs to keep in mind that the indicative value is the potential that the molecule can reach if a perfect marketing partner is found. In reality, each partner brings specific skills but not all of them
  - we recommend to use the model to simulate deals with real pharmaceutical companies
  - moreover, the value for Regeneratio will be certainly lower as on average the indicative value is split two to one for the large pharmaceutical group
Agenda

• Objectives of the Study
• Summary of primary market research
• Indicative value of Regividerm™
  – market size
  – market share
  – income-based Valuation Model
  – sensitivity and probabilistic analysis
• Conclusions
• Appendix
Variables included in the probabilistic analysis
Ranges of indicative values for the uncertainties (1 of 8)

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>Influence in model</th>
<th>Outcome states [probability of outcome]</th>
</tr>
</thead>
</table>
| % of population under 18 with disease | Percentage of people under the age of 18 in the population suffering from psoriasis and atopic dermatitis. Higher population, higher the value | Low: Psoriasis 0.3%, AD 8.0%  
Mid: Psoriasis 0.5%, AD 8.5%  
High: Psoriasis 0.8%, AD 12.0% |
| % of population over 18 with disease | Percentage of people over the age of 18 in the population suffering from psoriasis and atopic dermatitis. Higher population, higher the value | Low: Psoriasis 1.2%, AD 1.0%  
Mid: Psoriasis 2.5%, AD 1.5%  
High: Psoriasis 3.0%, AD 3.0% |
| Severity of disease                | Proportion of the potential market with mild, moderate, and severe case of the disease. Higher proportion of people with severe cases, the higher the value, due to the impact on consulting rate and treatment days | Psoriasis  
Scenario 1: Mild 40%, Moderate 40%, Severe 20%  
Scenario 2: Mild 52%, Moderate 33%, Severe 15%  
Scenario 3: Mild 55%, Moderate 35%, Severe 10%  
Atopic dermatitis  
Scenario 1: Mild 35%, Moderate 40%, Severe 25%  
Scenario 2: Mild 45%, Moderate 35%, Severe 20%  
Scenario 3: Mild 55%, Moderate 35%, Severe 10% |

* Probabilities are 0.3 for Low, 0.4 for Middle, and 0.3 for High unless otherwise stated
Ranges of indicative values for the uncertainties (2 of 8)

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>Influence in model</th>
<th>Outcome states [probability of outcome]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consulting rate</td>
<td>Percentage of people with disease and seeks medical advise. Higher the rate, higher the value</td>
<td>Psoriasis:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td>Low</td>
<td>20%</td>
<td>45%</td>
</tr>
<tr>
<td>Mid</td>
<td>30%</td>
<td>50%</td>
</tr>
<tr>
<td>High</td>
<td>35%</td>
<td>55%</td>
</tr>
<tr>
<td>Atopic dermatitis:</td>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td>Low</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Mid</td>
<td>50%</td>
<td>75%</td>
</tr>
<tr>
<td>High</td>
<td>55%</td>
<td>80%</td>
</tr>
<tr>
<td>Maximum consulting rate</td>
<td>Maximum consulting rate to be achieved by 2011 due to the efficacy and lack of side effects of the drug, and increase in awareness of other new treatments</td>
<td>Mild: Psoriasis 50%, AD 75%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate: Psoriasis 75%, AD 90%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe: Psoriasis 95%, AD 95%</td>
</tr>
<tr>
<td>Growth rate of disease</td>
<td>Percentage increase of psoriasis and atopic dermatitis. Higher growth rate, higher the value</td>
<td>Low: Psoriasis 0.5%, AD 1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid: Psoriasis 1%, AD 1.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High: Psoriasis 1.5%, AD 2%</td>
</tr>
</tbody>
</table>
### Ranges of indicative values for the uncertainties (3 of 8)

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>Influence in model</th>
<th>Outcome states [probability of outcome]</th>
</tr>
</thead>
</table>
| Replacement rate      | The rate at which the new Vitamin B12 treatment is going to replace existing treatment. Higher the replacement rate, larger the peak sale market share, higher the value | Mild: Psoriasis 50%, AD 50%  
Moderate: Psoriasis 60%, AD 65%  
Severe: Psoriasis 70%, AD 80% |
| New patients          | Percentage of new patients being treated with Regividerm. Higher this percentage, higher the value | Psoriasis:  
Mild  
Low 70% 75% 80%  
Mid 75% 80% 85%  
High 90% 90% 90%  
Atopic dermatitis:  
Mild  
Low 70% 80% 85%  
Mid 75% 85% 90%  
High 100% 100% 100% |
| Price                 | Price of product to be sold by manufacturer to distributors. Higher the price, higher the revenue | Low: EU $18, US $25  
Mid: EU $20, US $30  
High: EU $25, US $60 |
## Ranges of indicative values for the uncertainties (4 of 8)

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>Influence in model</th>
<th>Outcome states [probability of outcome]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reimbursement</td>
<td>Whether Regividerm would be reimbursed</td>
<td>Yes [80%]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No [20%]</td>
</tr>
<tr>
<td>Reimbursement rate</td>
<td>If Regividerm is not reimbursed, this will impact the peak sale market share percentage. Lower the rate, lower the value</td>
<td>If Reimbursement=Yes, Rate is 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If Reimbursement=No, Rate is:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low 0.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid 0.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High 0.8</td>
</tr>
<tr>
<td>Product reaches market</td>
<td>Probability of the new Vitamin B12 cream reaching the market</td>
<td>Yes [95%]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No [5%]</td>
</tr>
<tr>
<td>Patent expiry year</td>
<td>Patent expires 2013, but would apply for an extension to 2018. The later the patent expiry, the higher the market share</td>
<td>2013 [10%]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2018 [90%]</td>
</tr>
<tr>
<td>Early competition year</td>
<td>Impact on peak sales market share due to early competition entering the market. Earlier the entry, lower the value</td>
<td>Low: Psoriasis 2006, AD 2008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid: Psoriasis 2007, AD 2009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High: Psoriasis 2008, AD 2010</td>
</tr>
<tr>
<td>Early competition market share</td>
<td>Impact on peak sales market share due to early competition entering the market. Larger the early competition market share, lower the value</td>
<td>Low: Psoriasis 30%, AD 40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid: Psoriasis 40%, AD 45%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High: Psoriasis 50%, AD 50%</td>
</tr>
</tbody>
</table>
Ranges of indicative values for the uncertainties (5 of 8)

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>Influence in model</th>
<th>Outcome states [probability of outcome]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late competition year</td>
<td>Impact on peak sales market share due to late competition entering the market. Earlier the entry, lower the value</td>
<td>Low: Psoriasis 2010, AD 2010&lt;br&gt;Mid: Psoriasis 2011, AD 2011&lt;br&gt;High: Psoriasis 2012, AD 2012</td>
</tr>
<tr>
<td>Late competition market share</td>
<td>Impact on peak sales market share due to late competition entering the market. Larger the late competition market share, lower the value</td>
<td>Low: Psoriasis 30%, AD 50%&lt;br&gt;Mid: Psoriasis 40%, AD 60%&lt;br&gt;High: Psoriasis 50%, AD 70%</td>
</tr>
<tr>
<td>Years to peak</td>
<td>Number of years to take to reach peak sale market share. More years, lower the value</td>
<td>Low: 4 years&lt;br&gt;Mid: 5 years&lt;br&gt;High: 6 years</td>
</tr>
</tbody>
</table>
### Ranges of indicative values for the uncertainties (6 of 8)

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>Influence in model</th>
<th>Outcome states [probability of outcome]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body area treated</strong></td>
<td>Treatment area expressed as $m^2$ of body with condition. Bigger the area treated, higher the value</td>
<td>Psoriasis and atopic dermatitis:</td>
</tr>
<tr>
<td>Adults</td>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.04</td>
</tr>
<tr>
<td><strong>Body area treated</strong></td>
<td>Treatment area expressed as $m^2$ of body with condition. Bigger the area treated, higher the value</td>
<td>Psoriasis:</td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Atopic dermatitis:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.012</td>
</tr>
</tbody>
</table>
Ranges of indicative values for the uncertainties (7 of 8)

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>Influence in model</th>
<th>Outcome states [probability of outcome]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment days Adults</td>
<td>Number of days the patient use the product for treatment per year. More treatment days, the higher the value</td>
<td>Psoriasis and atopic dermatitis:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
</tr>
<tr>
<td>Treatment days Children</td>
<td>Number of days the patient use the product for treatment per year. More treatment days, the higher the value</td>
<td>Psoriasis and atopic dermatitis:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
</tr>
<tr>
<td>Amount per application, mg/cm²</td>
<td>Amount of product applied to the affected area per application. More cream needed, the higher the value</td>
<td>Low 1.2</td>
</tr>
<tr>
<td>Registration bridge EU/US</td>
<td>Whether the registration can be transferred from EU to US for adults and US to EU for paediatrics. Success in bridges, higher the value</td>
<td>Yes [5%]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

Low...
Ranges of indicative values for the uncertainties (8 of 8)

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>Influence in model</th>
<th>Outcome states [probability of outcome]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paediatrics registration</td>
<td>Whether Regividerm receive paediatrics registration</td>
<td>Yes [90%]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No [10%]</td>
</tr>
<tr>
<td>Clinical trials cost</td>
<td>Cost of carrying out clinical trials for adults in the US and paediatrics clinical</td>
<td>Low $15m</td>
</tr>
<tr>
<td></td>
<td>trials in UK, France, Germany and US.</td>
<td>Mid $21m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High $27m</td>
</tr>
<tr>
<td>Launch cost</td>
<td>Cost of marketing the new vitamin B12 compound. Will start one or two years</td>
<td>Low $385m</td>
</tr>
<tr>
<td></td>
<td>before launch and continue two years after launch</td>
<td>Mid $445m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High $590m</td>
</tr>
<tr>
<td>Ongoing sales and marketing costs</td>
<td>Defined as a percentage of net sales. Not cumulative with initial launch costs</td>
<td>Low 25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid 30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High 35%</td>
</tr>
</tbody>
</table>
Discount rate
## Calculation of discount rate (1 of 2)

### Assumptions:

<table>
<thead>
<tr>
<th>Calculating</th>
<th>Formula</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk-free Rate (US 10 yr Treasury Strips)</td>
<td>$R_f$</td>
<td>5.60%</td>
</tr>
<tr>
<td>Equity Risk Premium</td>
<td>$R_p$</td>
<td>5.0%</td>
</tr>
<tr>
<td>Effective Tax Rate</td>
<td>$T_t$</td>
<td>35.0%</td>
</tr>
<tr>
<td>Long-Term Debt as a % of Total Capitalisation (Based on Capital Structure of Comparables)</td>
<td>$D$</td>
<td>1.0%</td>
</tr>
<tr>
<td>Market Value of Equity as a % of Total Capitalisation (Comparables)</td>
<td>$E$</td>
<td>99.0%</td>
</tr>
<tr>
<td>Long-Term Debt as a % of Total Capitalisation (Based on Optimal Capital Structure)</td>
<td>$D$</td>
<td>1.0%</td>
</tr>
<tr>
<td>Market Value of Equity as a % of Total Capitalisation</td>
<td>$E$</td>
<td>99.0%</td>
</tr>
<tr>
<td>Small stock premium</td>
<td>SSP</td>
<td>0.6%</td>
</tr>
<tr>
<td>Start-up risk premium</td>
<td>SRP</td>
<td>0.0%</td>
</tr>
<tr>
<td>Debt Premium pre tax (above risk free rate)</td>
<td>DP</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

### Comparable Company Analysis

<table>
<thead>
<tr>
<th>Company</th>
<th>Currency</th>
<th>Beta (Adjusted)</th>
<th>Stock Price</th>
<th>Shares O/S (m)</th>
<th>Total Debt</th>
<th>Market Capitalisation (m)</th>
<th>Total Capitalisation</th>
<th>Debt/ Equity</th>
<th>Debt/ Capital</th>
<th>Tax Rate</th>
<th>Unlever Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novartis</td>
<td>CHF'm</td>
<td>0.83</td>
<td>68.7</td>
<td>2,606.7</td>
<td>0</td>
<td>178,948.6</td>
<td>178,948.6</td>
<td>0.0%</td>
<td>0.0%</td>
<td>20%</td>
<td>0.83</td>
</tr>
<tr>
<td>Schering</td>
<td>EUR'm</td>
<td>0.67</td>
<td>64.1</td>
<td>198.0</td>
<td>0</td>
<td>12,693.8</td>
<td>12,693.8</td>
<td>0.0%</td>
<td>0.0%</td>
<td>45%</td>
<td>0.67</td>
</tr>
<tr>
<td>Schering-Plough</td>
<td>$'m</td>
<td>0.89</td>
<td>41.0</td>
<td>1,463.1</td>
<td>0</td>
<td>59,956.1</td>
<td>59,956.1</td>
<td>0.0%</td>
<td>0.0%</td>
<td>24%</td>
<td>0.89</td>
</tr>
<tr>
<td>Teva Pharmaceutical Industries</td>
<td>ILS'm</td>
<td>0.92</td>
<td>246.2</td>
<td>127.9</td>
<td>2958</td>
<td>31,493.9</td>
<td>34,452.2</td>
<td>9.4%</td>
<td>8.6%</td>
<td>29%</td>
<td>0.86</td>
</tr>
<tr>
<td>SmithKline Beecham</td>
<td>£'m</td>
<td>0.97</td>
<td>8.3</td>
<td>5,643.0</td>
<td>771</td>
<td>47,006.2</td>
<td>47,777.2</td>
<td>1.6%</td>
<td>1.6%</td>
<td>28%</td>
<td>0.96</td>
</tr>
<tr>
<td>Genentech</td>
<td>$'m</td>
<td>1.20</td>
<td>52.4</td>
<td>526.4</td>
<td>0</td>
<td>27,583.2</td>
<td>27,583.2</td>
<td>0.0%</td>
<td>0.0%</td>
<td>28%</td>
<td>1.20</td>
</tr>
<tr>
<td>XOMA</td>
<td>$'m</td>
<td>1.29</td>
<td>12.5</td>
<td>66.2</td>
<td>0</td>
<td>827.4</td>
<td>827.4</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0%</td>
<td>1.29</td>
</tr>
<tr>
<td>Biogen</td>
<td>$'m</td>
<td>0.80</td>
<td>65.0</td>
<td>148.6</td>
<td>0</td>
<td>965.3</td>
<td>9,656.3</td>
<td>0.0%</td>
<td>0.0%</td>
<td>32%</td>
<td>0.80</td>
</tr>
<tr>
<td>Inflazyme Pharmaceuticals</td>
<td>CAD'm</td>
<td>0.64</td>
<td>3.0</td>
<td>52.0</td>
<td>0</td>
<td>155.9</td>
<td>155.9</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0%</td>
<td>0.64</td>
</tr>
<tr>
<td>Angiotech Pharmaceuticals</td>
<td>CAD'm</td>
<td>0.62</td>
<td>68.7</td>
<td>15.5</td>
<td>0</td>
<td>1,060.8</td>
<td>1,060.8</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0%</td>
<td>0.62</td>
</tr>
<tr>
<td>Roche Holding</td>
<td>CHF'm</td>
<td>0.79</td>
<td>134.0</td>
<td>860.1</td>
<td>970</td>
<td>115,250.2</td>
<td>116,220.2</td>
<td>0.8%</td>
<td>0.8%</td>
<td>24%</td>
<td>0.78</td>
</tr>
</tbody>
</table>

Source: Bloomberg, 12 June 2001

Average of selected comparables: 0.87

1.0% 1.0% 0.87
# Calculation of discount rate (2 of 2)

<table>
<thead>
<tr>
<th>Relevered Beta Analysis</th>
<th>Comparables</th>
<th>Target Gearing</th>
<th>Relevering Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta (Unlevered)</td>
<td>0.87</td>
<td>0.87</td>
<td>Unlevered Beta = Beta (Adjusted) / [ 1 + D/E ( 1 - t )]</td>
</tr>
<tr>
<td>D/E</td>
<td>1.0%</td>
<td>1.0%</td>
<td>Relevered Beta = Unlevered Beta * [ 1 + D/E ( 1 - t )]</td>
</tr>
<tr>
<td>Tax Rate (US)</td>
<td>35.0%</td>
<td>35.0%</td>
<td></td>
</tr>
<tr>
<td>Beta (Relevered)</td>
<td>0.88</td>
<td>0.88</td>
<td></td>
</tr>
</tbody>
</table>

## Weighted Average Cost of Capital - Capital Asset Pricing Model (Targetted Gearing)

Cost of Debt = 4.62%

Cost of Equity= 10.00%

WACC [D/(D+E)*Cost of Debt + E/(D+E)*Cost of Equity]+SSP+SRP = **10.55%**
External references
External references

General information

Market
Getting under the skin of psoriasis, www.l-squared.imshealth.com
New combinations of psoriasis therapies offer positive results, www.l-squared.imshealth.com
World Drug Purchases, IMS Health - Drug Monitor 12 months to April 2001
Dermatological Drugs - Market Overview/Consumer Overview, MarkIntel, 1998

Psoriasis/atopic dermatitis FAQ (e.g. How many are affected?)
www.eczema-assn.org/allabout_atopic_dermatitis.html
www.eczema-assn.org/atopic_dermatitis_children.html
www.psoriasis.org/b100.htm; www.psoriasis.org/g200.htm; www.psoriasis.org/b500.htm
health.excite.com/encyc_content/asset/adam_disease_eczema
www.skincarephysicians.com/eczemanet/whatls.html
dermnetnz.org/dna.psoriasis/info.html
www.blackwell-synergy.com/Journals/content/abstracts/bjd/2001/144/3/abstract.html

Severity/Age analysis
www.census.gov/cgi-bin/ipc/idbsprd
www.psoriasis.org/b200.htm
SGA costs and tax rate - Industry standards
Benchmark of SGA costs of pharmaceutical companies

SGA as % of sales

Source: Annual reports  SGA = Selling, General and Admin costs
Benchmark of tax rate of pharmaceutical companies

Source: Annual reports
Supporting statistical data on psoriasis and atopic dermatitis
Patients suffering from psoriasis represent around 1.2% of targeted population

<table>
<thead>
<tr>
<th>Age range</th>
<th>Proportion of total population in age range</th>
<th>% psoriasis sufferers in age range</th>
<th>Proportion of total population with psoriasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18</td>
<td>23.2%</td>
<td>0.32%</td>
<td>0.07%</td>
</tr>
<tr>
<td>18-44</td>
<td>39.8%</td>
<td>1.05%</td>
<td>0.42%</td>
</tr>
<tr>
<td>45-64</td>
<td>23.2%</td>
<td>2.07%</td>
<td>0.48%</td>
</tr>
<tr>
<td>65-74</td>
<td>7.5%</td>
<td>1.63%</td>
<td>0.12%</td>
</tr>
<tr>
<td>75+</td>
<td>6.4%</td>
<td>1.32%</td>
<td>0.08%</td>
</tr>
<tr>
<td><strong>100.0%</strong></td>
<td><strong>1.2%</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Recent US based data extrapolated to the targeted population

Source: US Department of Health and Human Services, Centers for Disease Control and Prevention - October 1999
Patients suffering from dermatitis represent around 3.2% of targeted population

<table>
<thead>
<tr>
<th>Age range</th>
<th>Proportion of total population in age range</th>
<th>% dermatitis sufferers in age range</th>
<th>Proportion of total population with dermatitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18</td>
<td>23.2%</td>
<td>3.50%</td>
<td>0.81%</td>
</tr>
<tr>
<td>18-44</td>
<td>39.8%</td>
<td>3.01%</td>
<td>1.20%</td>
</tr>
<tr>
<td>45-64</td>
<td>23.2%</td>
<td>3.81%</td>
<td>0.88%</td>
</tr>
<tr>
<td>65-74</td>
<td>7.5%</td>
<td>2.66%</td>
<td>0.20%</td>
</tr>
<tr>
<td>75+</td>
<td>6.4%</td>
<td>2.31%</td>
<td>0.15%</td>
</tr>
<tr>
<td></td>
<td><strong>100.0%</strong></td>
<td></td>
<td><strong>3.2%</strong></td>
</tr>
</tbody>
</table>

*Recent US based data extrapolated to the targeted population

Source: US Department of Health and Human Services, Centers for Disease Control and Prevention - October 1999
Market growth - we estimate psoriasis/atopic dermatitis market growth of around 3.4/2.3% CAGR compared to 8.4% average CAGR forecasted by IMS Health in targeted markets for 2000-2005

- We estimate psoriasis market growth of 3.4% for five years 2000-2005 expressed as compound annual growth rate (CAGR) of number of patients. Atopic dermatitis market growth for the same period is estimated at 2.3% CAGR.

- IMS Health forecasts sales growth in 10 leading global pharmaceutical markets at a CAGR of 9%. Total pharmaceutical sales for the countries featured in the study – Australia, Belgium, Canada, France, Germany, Italy, Japan, Spain, the UK and the US – are expected to reach US$434 billion in 2005, compared with $281 billion in sales recorded in 2000.

- The table to the right presents the growth rates forecasted by IMS Health for US, France, Germany, and UK compared to GAGR estimated in our model.

- Given this data we consider our estimate of market growth conservative.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>150</td>
<td>263</td>
<td>11.8%</td>
<td>60.5%</td>
</tr>
<tr>
<td>France</td>
<td>16</td>
<td>22</td>
<td>6.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Germany</td>
<td>17</td>
<td>24</td>
<td>7.5%</td>
<td>5.6%</td>
</tr>
<tr>
<td>UK</td>
<td>11</td>
<td>16</td>
<td>8.3%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>325</td>
<td>8.4%*</td>
<td>74.8%</td>
</tr>
<tr>
<td>Psoriasis market</td>
<td></td>
<td>3.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atopic dermatitis market</td>
<td></td>
<td>2.3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Average projected CAGR

Source: IMS Health Pharma-Prognosis International, 2001-2005
Faster product take-off

Source: Lehman Bros. FT Conference 1998

Years after launch

$B

Voltaren (1976)
Tagamet (1976)
Zantac (1981)
Augmentin (1982)
Pepcid (1986)
Zocor (1989)
Losec (1990)
Claritin (1993)
Fosamax (1994)
Cozaar (1995)
Zyprexa (1996)
Lipitor (1997)
Uncertainties evaluated
Market research report