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Licensing challenges for a biotech

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Apitope®

- **Established leader in discovery and development of antigen specific immunotherapeutic peptides**
  - with a focus on autoimmune disease
  - located in Belgium and UK
- **Key advantages of Apitope® approach of antigen specific immunotherapy**
  - high selectivity in modifying only the malfunctioning part of immune system
  - minimal side effects due to high specificity
- **Proprietary apitope® discovery platform** delivers therapies into development across a broad range of high value autoimmune disorders
- **Extensive clinical and development portfolio of product candidates**
  - 3 programmes in clinical/preclinical development phase
  - 4 programmes in late discovery phase
- **Validated Multiple Sclerosis programme,** partnered with Merck Serono; in Phase II
- **Seeking Series B finance**
- **FP7 (European Commission) and IWT (Flemish Govt.)** current grant funding for Graves' disease and uveitis programmes

Status of Product Pipeline & Objectives for 2016

Three programmes with clinical proof of concept/principle; pipeline expanding and new clinical candidate(s)

Project	Indication	Partner	Grant	Discovery	Preclinical Develop-ment	Phase I FiM/PoP in patients	Phase II
ATX-MS-1467	Multiple Sclerosis	MERCK SERONO	wellcome trust Fast Forward				
ATX-MS2	Multiple Sclerosis	MERCK SERONO					
ATX-MS3	Multiple Sclerosis	MERCK SERONO					
ATX-F8-117	Factor VIII inhibition						
ATX-GD-459	Hyper-thyroidism (Graves' disease)	gsk	iwt; SEVENTH FRAMEWORK PROGRAMME				
ATX-UV1	Uveitis		iwt				
ATX-UV2	Uveitis		iwt				

Apitope funded programmes building value to key inflexion point in 2016

Where are we in the Biopharma industry?

- **Healthcare sector continues to grow and is the biggest innovative sector however**
  - 350M US$ before you even get a sale
  - BUT big pharma can spend 5 Billion US per medicine
- **A number of issues continue to challenge/shape the industry**
  - Patent cliff and growth of generics
  - Regulatory issues
  - Reimbursement
  - Globalisation
  - Anti-IP lobbies
  - uncertainty in managing our IPR?
- **How is/will the industry deal with these challenges?**
  - Change the way we do business?
  - diversification
  - More M&A and/or licensing?
  - Change the way we structure deals

Impact of Patent Cliff

- Emerged in 2009, peaked in 2012 and predicted that by 2016 patent expirations will have caused a loss of around US$ 126 Billion in sales, e.g. Pfizer's Lipitor sales declined from US$ 11 Billion in 2010 to US$ 3 billion in 2013.
- Biologics superstars falling off the cliff, Humira 2016 (10 Billion yr)
- Age of the blockbuster appears to be over.
- More diversification (for all!)
  - Consumer health (OTC), animal health and looking to emerging markets
  - Look to more specialist innovative biotech and research institutes and innovation centres and license in.
  - Set up generic business
  - Consolidation and M&A
  - Speciality drugs biologics – less exposure to generic competition
  - Rise in the orphans (less than 5 in 10,000)
- An interesting time for deal making

Regulatory Progress

- Regulatory approvals for new medicines pretty consistent over the last decade.
- There were 27 new approvals by the FDA in 2013 (2012 was exceptional with 37) EMA approved 81 (38 of these NMEs)
- However only 8 of the 27 approvals (by FDA) were discovered by the companies that registered them and the remaining were licensed in.
- Both regulators reported a rise in approval for rare diseases in 2013
- Orphan drug designations and exclusivity (10 years + 2 for peds)
- Assistance by FDA/EMA is helping companies navigate the process
- Fast track, breakthrough therapy, accelerated approval and priority review is available for drugs for serious diseases for which there is unmet need
- Early Access in Medicines Scheme launched in UK for drugs that do not yet have regulatory approval
- All of these issues have an impact on licence considerations

Uncertainty in Managing our IPR?

- IP protection is key to supporting innovation
- As patent expiry looms problems begin
- Competition law
  - Range of interventions the most challenging cases relate to what the competition would claim is "gaming the system"
  - Abuse of dominant position, e.g. Astra Zeneca – improperly obtaining additional protection through SPCs
  - Life cycle management and patent protection strategies – remember the dawn raids
  - Systematic criticism of generic rivals
  - Using settlement agreements to delay market entry of generics - so called "pay for delay" notably Lundbeck
  - New TTBE in Europe came into force 1 May 2014
- European Unitary Patent and new UPC – need to start considering patent portfolio and licensing implications now!

Licensing Considerations for a biotech

- **IP licensing at the core of biotech survival and growth**
  - Must think strategically
- **Traditional licensing – playing a visible downward trend**
- **Does drug work? Yes, but will it matter?**
  - Needs to work for pharma companies and payers otherwise it will not be paid for
  - Must show differentiated product
  - Must have economic advantages
  - Need to show this early – KOLs and market access
  - Must understand the changing standard of care
  - Finishing line is not approval BUT reimbursement
- **Bar has been raised to what is expected**
- **Are you developing niche, orphan products? Will it be fast tracked**
  - How will this impact on the licensing terms?

Unique Issues

- **Huge lead in times so this must be reflected in the deal**
- **Tend to rely on a basic, primary patent family**
- **Don’t forget to factor life cycle management into your licence**
- **Marketing authorisation “protection” runs in parallel**
- **Paediatric protection**
- **Supplementary Protection Certificates and patent extensions**
- **Don’t forget to factor these into your licence!!**
  - Who is responsible for filing?
  - Term?
  - Royalties?
- **Royalty reductions and stacking**
  - impact of generics

Challenges for the biotech

- **Cash!!**
- **High risk high road investment**
- **Dilution**
- **When/what is the exit?**
- **Sellable v Sustainable**
- **Challenges to pharma companies - beware scope of licences**
- **Limited personnel and cash yet need detailed well thought out development and regulatory path**
- **In summary – need to be clear on strategy**

In summary – where do I think we are going?

- **New ways to find (preferably undiluted) cash**
  - European Commission
  - National and local government
  - MUST manage your IP carefully
- **As biotechs must know about reimbursement and market access – must be able to value asset very early**
- **More focus on speciality markets (rare and unmet need)**
- **Focus on the gaps in pipelines**
- **More new market entries by acquisition**
- **We must be looking at a next phase for truly innovative medicine**
- **Innovative deal structures and innovative corporate structures**
- **More biologics and hence greater reliance on know how**

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Thank you

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