

Joson Ng: Today, we're very glad to have with us Dr. Adam Gregory, who is a patent attorney at Mewburn Ellis, which is based in the UK. Dr. Adam also has a lot of experience advising companies based in Singapore, based on patenting strategies, as well as licensing. Dr. Adam, thank you for joining us today.

Dr. Adam Gregory: It's a real pleasure to be invited on.

Thank you very much for having me. I'm actually a big fan of the show.

Joson Ng: That's very nice to hear. Thank you so much for giving us that affirmation. Do you mind sharing a bit of yourself and how you got interested in being a patent attorney with the rest of our audience?

Dr. Adam Gregory: I'm a patent attorney that specializes in technologies in the life sciences sector based at Mewburn Ellis. We're a specialist firm of intellectual property attorneys. So I first heard about the profession towards the end of my undergraduate degree in biological sciences.

I thought it sounded really interesting, honestly. So my dad was a barrister, he's in law already. So the law had always been on my radar. And then after my biological sciences undergrad, I went on to do a DPhil, which is like a PhD, in clinical medicine. But I realized quite early on that a career in academia wasn't for me.

So while my DPhil project ultimately resulted in a Nature publication, this was much, much more down to good fortune than any talent or skill on my part. And I worked with a truly amazing team of scientists in the lab. I was based in Oxford and they were much better suited to a career in academia than I could ever have been.

I think maybe because I was just not great at dealing with stuff that doesn't work. So failed experiments were always a bit of a struggle for me. So yeah, a career in patent law seemed to be a really good way to continue to work with the science that I was super interested in. And more importantly, science that actually worked while also exploring my interest in the law and the commercialization of biotechnology.

Joson Ng: I mean, on one hand, I think it's great to know that there are a lot of options for us out there, even if we realize we were not really that well-suited for academia or we don't enjoy the process as much, but could you sort of help us disentangle or tell us what are the differences between a patent attorney and an IP lawyer?

Because these are two terms I commonly hear a lot, and sometimes it gets a little bit confusing.

Dr. Adam Gregory: No, yeah, that's completely understandable. So, patent attorneys are sort of a specialist type of lawyer, and they assist their clients to obtain patent protection for their inventions, and defend their clients patents from attack, and advise them in relation to patents held by others, which can include attacking them.

And patent attorneys usually have a technical background. So, in Europe, it's actually a requirement that you have a STEM degree. So, science, technology, engineering, and maths degree. Because the work requires that we understand the fine technical details of the technology that we're actually working with. On the other hand, IP lawyers typically work with a much broader range of intellectual property. So often their work will include stuff to do with trademarks and copyright and also transactions related to IP. So often they don't have a technical background, although some do. And they're sort of more like traditional lawyers or solicitors. So I guess a simple way to think of it is that patent attorneys are scientists are trained to become lawyers that specialize in protecting technical innovations.

While IP lawyers are more like traditional lawyers that deal particularly with the law relating to IP. Yeah, we've got an awesome team of IP lawyers at our firm as well as specialist trademark attorneys. So between us, we're able to support our clients across the full range of IP services.

Joson Ng: Gotcha. So it's very complementary skill sets. But speaking of scientists and patents, one of the most famous people and scientists in the world, Albert Einstein, was a patent examiner. What do you patent examiners do then?

Dr. Adam Gregory: Sure. Yeah. So they're really on the other side, right?

So we patent attorneys, we would draft and file patent applications. And then the next, that's the part of the process thereafter is that they're examined by patents offices. And so you get examiners at patents offices, they'll examine the patent application and see whether it meets the requirements for a patent to be granted for the invention.

So they'll raise objections, we'll have correspondence with them, that type of thing. And yeah, if you'd filed at the Swiss Federal Institute of IP back in the early 1900s, Einstein might have examined your application.

Joson Ng: That would be so cool though to have like Albert Einstein be the patent examiner for the patent that you apply for. But for you, what kind of patents do you work with and why do you personally choose to work with these patents under your portfolio?

Dr. Adam Gregory: So usually patent attorneys work with inventions in the technical field that they are specialists in. So my technical background is in biology and clinical medicine.

So I work exclusively on patents for life sciences inventions, but this is right across the full range. So of technologies in the sector. So that includes therapeutics, diagnostics, industrial biotech, and also future food technologies. Many of my clients are working on really exciting frontier technologies.

Whereas my colleagues who have different technical backgrounds will be working on other technologies. So as appropriate to their background. So in the fields of organic chemistry, engineering, electronics, that sort of thing.

Joson Ng: Gotcha. So I understand Mewburn Ellis is based in Europe.

You have a huge clientele in Europe as well, but how do you end up working with a lot of companies based in Singapore?

Dr. Adam Gregory: Yeah, we get asked that quite a lot by the local biotechs. And the answer is that we were invited out in about 2000 to work with some early stage Singapore-based biotech ventures, and this was based on having a reputation as being one of the biggest biotech IP practices in Europe.

But as a result of that work, we got to know and begin working with other members in the community. So A*STAR, universities such as NUS, SingHealth, and some of the spin out companies from those institutions. And we committed to make regular visits to see those clients and continue with that commitment to today, honestly.

And we think it's really important to spend time with people that we work with, to learn about their technology, what they plan to do with it, and to understand the commercial goals that they have. And we found there's a really supportive network. And a collaborative attitude to people within the Singaporean biotech community.

And over the years, we've been really fortunate to have been introduced to many new contracts and I work on loads of exciting ventures. So now we've been out

here working out here for about 25 years, and it's been an amazing journey and happily our work in Singapore continues to grow!

Joson Ng: That's amazing. You must have seen how Singapore's biotech ecosystem has evolved from way back then, all the way until now.

Dr. Adam Gregory: That's right. So my colleagues have been doing it for slightly longer than I have, but yeah, you've recently been speaking to Guy Heathers, I know, and he really is the 'godfather' of the Singapore biotech scene, as I'm sure you're familiar.

Joson Ng: Yeah, we can talk about Guy a little bit later on as well.

But for the benefit of our audience, who may not be as familiar with the terminology around IP intellectual property, can you help disentangle some vocabulary words? So there are patents and copyright and trademark and trade secrets. How do they all differ from each other?

Dr. Adam Gregory: Sure.

Yeah. So they work separately, but often in a complimentary way to confer protection for your intellectual property. So patents are property rights that protect the technical features of innovations and they give a time of about 20 years to stop third parties from commercializing the invention covered by the patent. And they're jurisdictional, meaning that you need a patent in every territory you want protection in.

Trademarks, on the other hand, protect designations of origin of a product or service. So this type of thing is like a brand name or logo. And then you've got design rights, and they protect the shape and or appearance of a product.

And then the next one was copyright. So copyright protects particular expressions of ideas. So, these can be literary, dramatic, musical, and artistic works. And then trade secrets protect confidential business knowledge. And an example of that would be the recipe for Coca Cola. And while some of these rights, so copyright trade secrets and certain forms of design rights, can arise automatically, patterns and trademarks and some design rights have to be applied for and certain criteria must be met in order for them to be registered.

Joson Ng: Thank you for that. That's super helpful. But what makes an invention or a claimed invention patentable?

Dr. Adam Gregory: So there's the three core criteria. So it's got to be 'new' or 'novel', it's got to be not 'obvious' or 'inventive'. And then it's got to be capable of 'industrial application'. So taking the first of these, it's got to be 'new'.

And that means it's got to be 'new' over everything ever disclosed by any means prior to the date that the patent application was filed. So the sorts of disclosures it would have to be 'novel' over would be, include journal articles, but also muting abstracts, posters, PowerPoint presentations, essentially, as I say, anything.

In terms of not being 'obvious', it's also got to be not 'obvious' over those disclosures. So 'inventive' over those disclosures. I appreciate that this can be sort of quite subjective and it's something we spend honestly quite a lot of time arguing with the patents offices about.

The third criterion we talked about was it being used in industry. This is not usually a big deal, but there are also some other requirements in order for a patent to be granted for invention. So, it's got to also be described in the application in sufficient detail so it can be reproduced by others. And this really is essentially part of the bargain with the state that in return for this 20-year monopoly right, you've got to make your invention available to the public.

Joson Ng: Can you give a brief rundown of how the typical patent application process looks and why is it important that they have this trade-off with the state, as you mentioned, where they make it replicable but also available for people to see that you've patented this technology?

Dr. Adam Gregory: The first step is to prepare and file a patent application. And this initial application would be called a priority filing. And this needs to be based on a right to open an invention, which might come to us in the form of like an invention disclosure form, which I'm sure many of your listeners will be familiar with, and it can sometimes be a couple of rounds of discussion with the inventors and editors to ensure the application covers everything it should.

And then eight to ten months later, there'll be a decision taken as to whether to proceed to file an international application or PCT application that will claim priority back to that initial filing. The PCT system provides the opportunity to ultimately pursue patent protection for the invention in a very large number of jurisdictions.

About 18 months after that PCT application is filed, so about two and a half years after the initial filing, you've got to then file that application in every

country in which you ultimately want the patent to grant in. And then subsequently we examine the different applications before the different patent offices, hopefully ultimately to the point that they're granted.

On your second question about the sort of describing the invention in sufficient detail, so it can be reproduced by others. But part of this concept around the scope of protection that you're granted being commensurate with your contribution to the technical field. So I could say I've invented a process for making free beer. But unless I tell anyone how I've done it, they're not going to give me a claim to that, that encompasses that process. And so it's really a sort of check and balance. And the idea is that you give someone, a monopoly right to prevent people from exploiting that invention without their permission in return for them making that invention available to the public.

So that after the 20-year period that then enters the public domain.

Joson Ng: If it's that important for scientists and companies to protect their intellectual property with patenting, why can't they do it broadly or as often as they can, like, what are some of the costs associated with patent prosecution?

Dr. Adam Gregory: That's a really good question. And honestly, the first thing to say is that patents are super expensive, or they can be certainly. And for this reason, it's really, really important to have a well-thought through patent strategy. You don't want to end up in a situation where you're spending lots and lots of money to build and maintain a patent portfolio that's costing you much more than it's going to ultimately make for you.

But maybe drilling down to your question a little bit more. It usually costs between S\$9,000 to S\$18,000 just to draft the initial patent application. So that's about 7,000 to 13,000 U.S. dollars. And we're talking about a good quality patent application here. That would be inclusive of costs associated with discussions with inventors. That type of thing, official filing fees. I appreciate this is a wide range, but it really does vary depending on the technology and the complexity of the technology, the amount of data, how close the prior art is, that sort of stuff. I'd also place emphasis here on that, 9 to 18,000 range is for a good quality application.

We sometimes see tech transfer offices file minimally drafted applications at an early stage to save on costs. And then and that's just the first stage, right? That initial filing.

Then you've got PCT filing. And that's usually about S\$7,000 to S\$11,000 and then after that, that's actually when the costs can begin to grow. Because at that stage, you're then going to file that application in all of the countries you ultimately want to pursue protection in.

And if you want to pursue protection in countries like Japan, Korea, China, places like that, you're going to need to do file translations. And that's costly. So usually works out about S\$7,500 per country to file the applications in each country. And thereafter, you then look at about S\$7,500 per application per year to prosecute those, those different applications.

And then after the applications ultimately granted, hopefully you've then got to pay maintenance fees to the patent offices to keep them in force. Although they are considerably lower than the costs you incurred during prosecution of the applications, but you can see just from that, you know, just those numbers, how, for example, imagine you've got two or three patent families that you're prosecuting in parallel in multiple different countries, you can really quite quickly get to a place where you've got a substantial annual spend on your patent portfolio. But if your plan strategy is on point and your portfolio has been built and it's being managed correctly, it will be among the most important investments you make in your business. **So it is worth it.**

Joson Ng: Even just the first amount that you listed in terms of coming up with a first draft was already a very jaw-dropping amount and I'm sure it's commensurate as well with all the technicalities and complexities in terms of like drafting out with the language and all that.

Dr. Adam Gregory: Honestly, you get what you pay for, Joson. If you get it wrong early on, it's very, very hard to get it right and to fix it. And you can spend - throw a lot of good money off the bad, trying to fix mistakes that are made early on by trying to economize too much.

Whereas if you invest a little bit more, earlier on, you can set yourself up in a really clean way for a really smooth ride.

Joson Ng: And that's the goal, right? So in your work, how do you help your clients navigate this landscape, and especially in an industry as competitive as biotech?

Dr. Adam Gregory: Yeah, it's a good question. But honestly, you know, I'm going to give you the really annoying lawyer answer of "it depends" and there's no one-size-fits-all approach. It's not a uniform landscape and the landscape's

dynamic as well. Right? So every venture is different. In terms of their profile, the available resources to them and their ambitions for the technology and for the company.

So I think the most important thing that we do is invest the time in our clients to really understand their technology, the evolving plans for its further technical development, and to understand their commercial goals. And this enables us to devise and execute an appropriate supporting IP strategy.

From the venture's perspective, I think it can be a really good approach to start off with the question, “what have we got that's special that we want to protect?” And from that answer, we can start to devise a suitable IP strategy. And while in many instances, this might involve filing one or more patent applications for the technology, there also might be an alternative or complementary approaches.

So maintaining aspects of the quality of technology is confidential. That type of thing that we also might want to build into the plan.

Joson Ng: In the very early onset of the filing or with the intention of filing a patent application, what are some due diligence procedures that startups or inspiring entrepreneurs can do early to start preparing for that setting up a first draft or working or looking for a patent attorney to work with them on this?

Dr. Adam Gregory: If you think you've got an invention that might be worth seeking patent protection for, there are a couple of common-sense things you can do at an early stage to get a feel for your position in the landscape. So often we find that the people who work in the relevant area that the inventors will be aware of others working in the same field. And so you might want to take a look at publications that are coming out of other groups to understand if they've got something close to what you're working on.

And you might also consider doing some very basic searching, for example, on Google patents for patents or patent applications from those groups or from other companies, you know, to be active in that space. But all you're trying to do with this basic research is get a rough impression as to what you've got is in fact new and understand who else is working and filing in the same space.

It's not really much point in going much deeper than that at this early stage. Because your time and energy, honestly, is better invested in developing the innovative tech.

Joson Ng: Where do people get tripped up? What are the most common pitfalls, the mistakes that they make when they're filing their first patent?

Dr. Adam Gregory: So the classic one we still see a decent amount of is a weak initial patent filing followed by a comprehensive disclosure of the technology prior to the filing of a more fully drafted PCT application.

Because this can have catastrophic consequences. So let's take a step back to explain this properly: We discussed earlier that in order for a patent to be granted, the claim to the patent must be 'new' and 'inventive'. And novelty and inventive steps are evaluated relative to disclosures made prior to the date of filing the application for the patent for that relevant subject-matter.

We often see tech transfer offices at academic institutions instruct the filing of what they term 'minimally drafted' patent applications. And these very often lack all of the necessary technical detail, language and fallback positions that will ultimately be required as the application is examined by the different patent offices.

But they more often sort of at PCT, so 10 months later when they decide to proceed with an international patents application, they'll have a little bit more money to spend. And at that point, the application will be drafted properly. But the problem is that most of the content of the comprehensively application is only entitled to the filing date of that PCT application and not the date of the initial filing.

So when, during examination, we're required to amend the claims to subject matter that only finds basis in that later filed application. The effective date for claims on that subject matter is only given that date, right? The date of the founding date of the PCT application. And this can be super problematic, particularly in the academic setting, where often there's been a comprehensive disclosure of the technology in between that initial minimally drafted filing and the later comprehensively drafted PCT filing.

So this might be, for example, a publication of a journal article, a peer reviewed journal article. And the result is - if you're still with me - is that the journal publication is citable against the claims that we're trying to pursue, ultimately, and because those disclosures either relate precisely to, or are otherwise really closely related to the technology that we're trying to obtain protection for. The publication can, in many cases, prevent us from attaining the granted patent in most jurisdictions.

I think we still see this problem because the tech transfer offices have finite resources and really large numbers of invention disclosure forms landing with them to review and evaluate. And they've got very limited time to assess their commercial potential. So it can be quite difficult for them to take the decision to commit more resource to one project over another.

And then from the other side, PIs are under loads of pressure to publish. And so as soon as there is any sort of filing on the technology, they go ahead and publish. Unfortunately, I don't think there's a straightforward solution because while on the one hand you could say, "oh, well, the tech transfer officers could commit more resource to those initial filings" and are really expensive.

Maybe a large proportion of those early-stage projects might not succeed. The alternative will be for them to be a little bit more selective about which projects they back or commit more resource to at the initial filing stage. But that can be a really difficult call to make and can leave them open to accusations of favouritism.

And then on the other side of the coin. You could say, oh, academics could take a longer view and adopt a more commercial mindset and not publish their work until after a comprehensively drafted application for the technology has been filed. However, of course, like I said before, they've got their KPIs, right. And all the pressures to publish. So that also isn't as straightforward as it sounds.

Joson Ng: For sure. It sounds like it's really a case of trying to avoid shooting yourself in the foot with publishing the data.

Dr. Adam Gregory: Most definitely. With the patent process timing it's just so important, the timing and communication. So communication between the inventors, the tech transfer office, between the tech transfer office and the attorneys who are doing the drafting. Timing and communication. Yeah. Key.

Joson Ng: But on the other hand the other concern is that they will get scooped as well, like, in their attempt to, like, be discreet about the invention as well.

Dr. Adam Gregory: For sure. I mean, and that's the risk, right? It is competing pressures and competing I don't know, sectors, right? So they've got their academic mindset, which is **publish, publish, publish**, don't be scooped. Versus the commercial mindset, which is **retain it as confidential** for as long as possible to maximize the term of protection you might ultimately get on the technology extending furthest into the future.

Joson Ng: Absolutely. You also mentioned a while ago that patent attorneys also work with tech transfer offices to help develop eventually the overall IP strategy. How does this eventually influence how the biotech company or that specific invention, for example, is eventually viewed by prospective investors?

Dr. Adam Gregory: So IP protection is, is often really, really important to the commercial success of a biotech venture. So the situation we get is that new biotechs really quite rarely have products or services to sell in the immediate or even medium term.

Classic example is you've got a new drug, right? But it's going to be a very long time before you generate any revenue from it. So you're also going to need a lot of investment, a lot of money to get there. So the primary assets, your venture at that early stage are often the proprietary technologies you've got - your products, methodologies that have arisen from the research activity.

And so the value of the venture is tied to how well those proprietary technologies have been protected. And investors and maybe licensees for the tech will ask, what have you got that's special? And what's stopping someone else from doing what you're doing? And they'll do due diligence to determine whether the core technology of the venture has been properly protected.

So you can imagine you've got an amazing new drug, but if you told everyone about it, without seeking patent protection for it, why should that investor invest in you to take it through further development? And so what we see is that ultimately decisions to invest on the scale of any such investment are usually based really heavily on the strength of the IP position.

Joson Ng: Right. Something I've always been curious about, and this is coming from someone who has not been involved yet in entrepreneurship, but coming as a trainee is, how sensitive are prospective investors in terms of what makes a good versus bad IP strategy?

Dr. Adam Gregory: Yeah, it depends. So you get more sophisticated investors who have more experience with IP and who have a standard type of strategy in broad terms for that they'd expect to see for a certain type of asset. So a new drug, that type of thing. And those guys, the due diligence process around the venture can be quite a lot of work. But then you get others who are sort of a lighter touch or it's just not really something they know loads about but even with a mature investor who has a really detailed due diligence processes, they can be looking for different things from different ventures and the, as I said before, there's no one size fits all strategy, so you might adopt very different

strategies just based on the technology and based on the state of the landscape that your technology is in. And so you might occupy a different space - they might want to see a broader position in a less crowded landscape, whereas in a really crowded landscape, they might realistically understand that you're going to be pursuing a narrower position for the IP.

Jason Ng: Gotcha. That was super helpful. We kind of hinted at this earlier on when you talked about the idea of a strategy being carefully planned out about how much you can protect at this stage, at this earlier stage versus later on when you have a bit more going on. But could you explain how a patent strategy evolves as a company grows from first launch to maturity eventually, whether they exit by an acquisition merger or by a listing for IPO.

Dr. Adam Gregory: The IP strategy often evolves over time as the venture grows and matures. So the strategy for an early-stage biotech can look really quite different from that from a multinational pharma. So early stage, we often see that filings are driven by the need in particular to disclose details of technology outside of the venture.

So it might be necessary or like strongly desirable for the inventors to present elements of technology at meetings, to generate interest in the technology and the company, to attract that sort of interest from investors and prospective partners for the technology. As we've already discussed, particularly for technology coming out of academic institutions, there can be pressure to publish.

And so in those instances, we might be filing in advance of such disclosures. And often we'll also file on proprietary technologies in advance of planned discussions with potential investors or licensees for the technology, even if those will be under NDA. So overall, you know, early-stage ventures, IP strategy can often be largely disclosure driven.

But then as the venture matures, as we're looking at sort of better resource, we see a move more often towards an IP-driven strategy over that disclosure-driven strategy. And this is because you know, patent protection term is limited. So it's for 20 years. And so often you might be looking to delay filing patent applications for novel technologies as long as possible. Of course, this is only viable if there are no plans to disclose the technology. And I work with some large biopharma companies that routinely wait several years, for example, until a product is well into clinical development before they file on it.

And this is all built around this idea of trying to extend that term of exclusivity as long into the future as possible.

Joson Ng: In larger companies, you also hear about them having their in-house patenting team.

Are there differences in how your patents or patent portfolio should be managed, whether it's done in-house or by getting help from outside, for example?

Dr. Adam Gregory: Yeah, that's a great question. And so as their portfolios grow, larger companies often take the decision to hire in-house patent counsel to manage their patents.

But even in such cases, they often still engage external patents counsel in relation to specific projects. So maybe ones of really high importance or where special expertise is required. An example is, I do lots of drafting work for a multinational biopharma company, and on projects that they consider to be highly technically complex or of considerable commercial importance to them; and colleagues of mine that are hugely experienced in relation to complex contentious proceedings are often engaged by large multinationals to help attack others' patents or defend their key patents from attack.

And we also undertake large-scale FTO projects for such companies, for example, if they're looking to clear a product prior to launch or to enter into a new technical field.

Joson Ng: To bring things back to Singapore specifically. Can you share some examples of how an effective patent strategy has helped the Singapore biotech company grow or flourish?

Dr. Adam Gregory: I've been really fortunate, honestly, in the last few years to be involved in a couple of them.

So I'll speak to a couple that I've got first-hand knowledge of. So first is [Enleofen Bio](#). They're a therapeutics company that's focused on targeting the IL-11 pathway for the treatment of fibrosis. Fibrosis is central to the pathology of a really wide range of diseases, including loads of chronic fibro inflammatory conditions.

And there's a huge unmet clinical need there. So we were brought into the Enleofen project by Guy and we sat down with Stuart and Sebastian, so Stuart

Cook and Sebastian Schaefer, very early on and we spent that time with them that I've mentioned a couple of times already to really understand the excellent science that they'd done and how and why what they'd done differed from what was already known in the field. And came up with an IP strategy for them that was aligned to their commercial plans. Ultimately, we've got some really broad and super useful claims granted in the major patent jurisdictions. And on this basis, back in 2020, the IP was acquired by a big biopharma company in what is still the biggest ever deal for a Singapore based biotech company. And perhaps more impressively among the largest deals anywhere in the world for a program that's at the preclinical stage of development. And that deal could see Enleofen receive more than 1 billion U.S. dollars per product in upfront and success-based milestones.

The other example I would give would be [Hummingbird Bioscience](#). They're a really innovative therapeutics company that developing drugs with transformative potential for patients with cancer and autoimmune diseases. And we've been super fortunate to be working with Hummingbird from the very start. Helping them to build and manage a really robust and multi-layered patent portfolio.

We supported them through several funding rounds, which they've had enormous success with. And they've done some seriously impressive deals as well, including a recent deal with Endeavor BioMedicines for their HER3 targeted ADC, which is worth up to 430 million US dollars in upfront master payments. And Hummingbird were recently awarded the WIPO IPOs IP for Innovation and WIPO IP Enterprise Awards. And these awards celebrate companies that have used their IP to achieve outstanding growth and success. So it was a proud moment for the Hummingbird team.

Joson Ng: It's definitely very encouraging to hear, like from the podcast episode that we had with Guy Heathers, we did talk about how we really just need a lot more success stories and for me, honestly, I think it's a little bit shocking that I didn't know about how big a deal Enleofen's sale was, that it was one of the largest in the world for a preclinical company because it's over here, right here in Duke-NUS where I am right now.

Dr. Adam Gregory: People are super modest in Singapore. Honestly. I can imagine if even a West Coast US biotech, we might have heard a bit more about it from the local community, I guess, but no, it was a super exciting story and something that everyone should be really proud of.

Joson Ng: What are the laws in Singapore surrounding the enforcement of IP and patents, either, you know, them being local or overseas or international?

Dr. Adam Gregory: The law relating to patent infringement is, is harmonized globally, and it's essentially the same across all jurisdictions. So, I think we've discussed earlier that patents are sort of negative rights, and that they don't give you the right to do anything. They just give you the right to stop other people doing things. So, if your invention is a product, you can stop them making, selling, or offering to sell, or using, or importing, or storing it, even in the relevant country. If the patented invention is a process, you can stop someone using it, or offering to use it, when they know it would be an infringement to do selling, or offering to sell, using, or importing, or storing the product obtained directly by that process.

And then another patent infringement would be to supply or offer the supply in the relevant country means relating to an essential element of that invention to put it into effect when the person supplying them would know or should know that those means are suitable for putting the invention into effect in that country.

Joson Ng: Does that mean that the company itself has to be constantly aware of other attempts to infringe on their patent? Or to actively seek litigation against companies trying to infringe on their patent.

Dr. Adam Gregory: So it can be more challenging to enforce patents for certain types of inventions than others.

So the classic example is a process versus a product. If you've got a patent on a novel antibody and someone starts selling that antibody, you're going to know pretty quickly, right? Cause someone's coming to your market. However, if you've got a patent for a process, it can be difficult to understand whether someone's using your patented process.

And often one of the sorts of only surefire easy ways to know that is if the process confers some structural features on the product, which could only have been arrived at by using the patented process. It's enforcement can be sort of more challenging for some patents for some inventions than others.

Joson Ng: And how much of a country's culture influences the whole patent examination process. And you've mentioned Singapore being quite a modest country, for example. Where in that spectrum does Singapore lie?

Dr. Adam Gregory: I don't know if certain patents offices have reputations for being strict or more relaxed in relating to certain issues that come up during patent examination.

So an example would be that the US patents office is pretty laid back when it comes to there being basic terms of language in the application, documents for amendments we might want to make to the claims. Whilst the European Patents Office is super strict and essentially, you've got to have that language in that exact language in there if you want it in your claims.

Another example would be the whilst the EPO, so the European Patents Office and the US Patents Office generally allow your claims to be a reasonable extrapolation from the products or processes that you've exemplified in the patent application, the Chinese Patents Office takes a much narrower view on what the technical content of the application supports. And they often push you to narrow your claims accordingly.

But yeah, to your question, where does IPOS, so the Singaporean Patent Office, where does it fit? In our experience, their style and approach to examination is really similar to that of the European Patents Office. And that's the quality of examination by IPOS is of a very, very high standard.

Joson Ng: It is high standards, but it seems like it's also a lot of work that needs to be put in to make sure that the language is correct and punctuation and grammar and all that, right?

Dr. Adam Gregory: What's good is that when you have something drafted to a standard that will fly in Europe and IPOS and those really good high quality examination jurisdictions, that means it will fly everywhere.

Joson Ng: That makes sense. Zooming back out to sort of looking at Singapore more from a macro point of view, what's your experience in terms of the kind of exciting areas in biotech that you're seeing happening in Singapore?

Dr. Adam Gregory: So from my perspective, Singapore really has its finger on the pulse of global biotech and is buzzing with ventures that are working right across what we see as being the hottest areas in biotech right now.

So just giving you some examples, antibody technology is always a huge area. But there's been a lot of excitement recently, in particular relation to antibody drug conjugates, and we're seeing a lot of interest in this space by Singapore biotechs at the moment thinking more to next generation therapeutic modalities.

We work with some really exciting Singapore based ventures that are focused on cell therapies, so CAR-T cell therapies, but also TCR T-cell therapies and gene therapies. There's also some really cool tech born out of microbiome based research that we're excited to be working on. And Singapore has an emerging femtech and women's health sector that really is one to watch from a global perspective. And then away from healthcare, there's some really exciting stuff going on with cellular agriculture and alternative protein companies.

Joson Ng: It's super exciting for me to hear. That's probably where I'm headed to as well in the future, hopefully. We talked about Guy Heathers in the previous parts and we mentioned him around; he was also on in a previous episode for the podcast. And we talked about how Singapore's biotech ecosystem has developed from 10 years back, 15 years back, 20 years back.

But where's Singapore now specifically on biotech patents?

Dr. Adam Gregory: Yeah, I really enjoyed listening to those recent episodes with Guy, he's a great friend and a hugely important figure in the local scene. And I've been really fortunate to work with him for many years, actually, on some really exciting ventures and field changing technologies.

And yeah, I'm often asked by clients in Singapore where the local scene sits in terms of the technological development. And I work with innovative biotechs and multinational biopharma companies across Europe and the US, but honestly, in my experience, the quality of the research I work with in Singapore is as good or better.

Guy mentioned this when you spoke to him, but where I see room for development is translating this extra excellent scientific research output into commercial success. And there are a few awesome success stories. We've talked about a couple of them, but in my view, Singapore needs, and in fact, actually deserves many more.

Part of the challenge is just accessing that expertise, the people who've actually been there and done it. And I think this time, this really does take time to develop organically. It's not an easy thing to import. But on the IP side of things, I guess I think people working in the Singapore biotech scene are increasingly IP savvy.

They're ever more alive to the importance of IP, opportunities available for obtaining protection. I think at least part of this comes from the success stories like Enleofen. I often get asked things like, you know, can we do the same thing

here? And in the medium-term, I'm really optimistic. I think the local biotech scene is vibrant, and it's most definitely back on the up after having weathered the global biotech winter with remarkable resilience.

Joson Ng: That's exciting to hear and we're really eager to just recover back from that the macroeconomic headwinds that we experienced last year and earlier on.

Looking forward to the future there are a lot of sophisticated technologies and knowhow, artificial intelligence to start off, gene editing, precision medicine. How do you see biotech patenting strategies evolve in conjunction with all these?

Dr. Adam Gregory: New technologies often require new strategic approaches to the IP, right?

I think this is like where it's really important to really understand the technology and think through how it will be deployed in the real world. So, an example I can give is of the importance of method claims for the production of an antibody versus the production of an autologous cell therapy. So, claims to routine methods for producing a novel antibody are not typically viewed as being super important. And the focus instead in those patent portfolios would be on composition of matter protection for the antibody. But with autologous cell therapies, the real-world situation is that you have to produce the therapeutic agent individually for each patient. So in that instance, claims to the methods for producing that agent can be really highly commercially valuable.

Timescales are really important too, in sort of thinking about novel strategies for emerging tech and some fast-moving technical fields, such as machine learning enabled biotech. And we need to consider whether what we're doing will still be relevant several years from now. And for some inventions of this kind, it can be better to either maintain them as being confidential or otherwise deploy concise precision filings on certain aspects of the technology to serve short-term commercial goals.

Another example would be future food technology, right? So, for cellular agriculture inventions, we're not looking at the same sort of time scales to regulatory approval that we'd be looking for novel therapy. So, the strategic considerations, feeding into portfolio building and patent lifecycle management are different.

But the main one I see as changing lots of things is the sort of increasingly decentralized nature of innovation and commerce in an increasingly connected world. This presents a challenge because it doesn't really map neatly onto the patent system, which was quite rigidly jurisdictional, but no doubt we'll develop novel IP strategies in the coming years to address these and other challenges.

Joson Ng: To round up the interview, I also kind of wanted to know as well, your perspective on it, which is that at least for people, graduate trainees like us towards the end of our training, we start to think about what we want to do in the future and we're very commonly exposed to jobs in the biotech industry as a scientist for example, or in VC or consulting and these are sort of more commonplace knowledge. And given you also started from a very similar background, you did your graduate training and all that. And eventually you went into being a patent attorney. What would your advice be to people who are thinking about the different possible roles in the biotech industry in the future in terms of, like, exploring, trying new things?

Dr. Adam Gregory: Yeah, that's a really good question, Joson. I don't know, really, honestly. So, I sort of stumbled across this career. I had an interest in the law that we discussed at the top. I had technical background. I wasn't ready to give up on science, honestly completely, however frustrated I was with how poor I was in the lab. I'm not a wet lab scientist, right? I'm not good at that stuff. But I think you have to sort of try different things. I have thought at different times during my early stage of my patent career as well. I thought like, oh, maybe it would have been good to give that, you know, give biotech a shot.

I think maybe you'd have to sort of select career paths that align to your appetite for risk, honestly, because biotech isn't super stable and it can be up and down, right? The high risk, high reward sort of perspective on it. Being a patent attorney is honestly a lower risk position to adopt within the biotech ecosystem. So maybe that suits my more risk-averse personality.

Joson Ng: You mentioned a while ago that towards the end of your training, you found that you still love the science. You've been a patent attorney for quite a while now, do you feel like that's still true right now and do you have those opportunities to really like geek out over the science through your client support of patent applications and all that?

Dr. Adam Gregory: That's exactly right. So I think particularly because I work with a lot of early-stage startups and spin outs. I mean, I love it. If anything, I'm more of a geek now than I ever was when I was actually a wet lab scientist because I get to see the stuff that's like really, really exciting frontier tech,

which is on the verge of changing the world. And you work with people who are immersed in their science and who've quit jobs or, you know, put substantial personal financial resource to committing to a venture and just to work with that energy and that excitement and that amazing science is just honestly a privilege.

Very, very fortunate to have that opportunity and really, really value the work that we're working with these great clients in particular in the Singapore biotech scene. But yeah, I geek out all the time, the other thing is like in our role, we can't talk about it.

It's all highly confidential. So I'm just sometimes I'm just really excited when the time comes to be able to, to celebrate the successes.

Joson Ng: And to share with everyone. Like, oh, I've worked with this amazing technology. It's such a great idea.

Dr. Adam Gregory: Well, so it's never the patent attorneys, right? And this is the thing. Some people get really excited over like super legalistic or you know grammatical things and that, but for me, it's got to be technology driven. And that is what we see in Singapore, it's people developing innovative tech, and that's the exciting stuff. And that's where the job satisfaction comes from. But yeah, it's for me and for my team more generally, we're much more tech focused and sort of overly obsessed with legal wheezes and loopholes and things like that.

Joson Ng: So there's a different thing that you also geek out on, on top of the science?

Dr. Adam Gregory: That's right, yeah. The strategy development is fun. Because like I said, there's no one-size-fits-all, everyone's different, and you come in early and you learn about a whole new field and you think, right, that's the challenge of building something.

And that's where, honestly, you can get to something really special if you get the right level of communication and you invest that time and energy and get to know people and really understand what's driving them where they want to take it. That's where we get really great outcomes.

Joson Ng: That's really super exciting to hear. Thank you so much. That was very inspirational sharing. Thanks for sharing your expertise, your insights and all your experience working with different biotech companies in Singapore as well as in the different jurisdictions as well in the Europe and the US.

Dr. Adam Gregory: Again, thank you so much for having me on. I love listening to this podcast and partly because it allows me to feel connected to the scene, even when I'm not on the ground in Singapore. So yeah, it's brilliant and I look forward to hearing who you've got on next time.

Joson Ng: Thank you so much.