Adaptimmune Therapeutics plc (Q4 2019 Earnings)
February 27, 2020

Corporate Speakers:

- Juli Miller; Adaptimmune Therapeutics plc; Senior Director of IR
- Adrian Rawcliffe; Adaptimmune Therapeutics plc; CEO
- Elliot Norry; Adaptimmune Therapeutics plc; Chief Medical Officer
- Helen Tayton-Martin; Adaptimmune Therapeutics plc; Co-Founder & Chief Business Officer

Participants:

- Tony Butler; Roth Capital Partners, LLC; Analyst
- Marc Frahm; Cowen Inc.; Analyst
- Kelsey Goodwin; Guggenheim Securities, LLC; Analyst
- James Shannon; Citigroup Inc.; Analyst
- Jonathan Chang; SVB Leerink; Analyst
- Yanan Zhu; Wells Fargo Securities, LLC; Analyst

PRESENTATION

Operator^ Ladies and gentlemen, thank you for standing by. Welcome to the Fourth Quarter and Full Year 2019 Adaptimmune Earnings Conference Call.

(Operator Instructions)

I would now like to turn the conference over to your speaker today, Juli Miller. Please go ahead, ma'am.

Juli Miller^ Good morning. Welcome to Adaptimmune's conference call to discuss our fourth quarter and full year 2019 financial results and other business updates. We issued a press release earlier this morning, and I would ask you to please review the full text of our forward-looking statements there.

As a brief reminder, we anticipate making projections during this call and actual results could differ materially due to a number of factors, including those outlined in our latest filings with the SEC. Adrian Rawcliffe, our CEO, is with me for the prepared portion of this call and other members of our management team will be available for Q&A after the prepared portion.

With that, I'll turn the call over to Adrian Rawcliffe. Ad?

Adrian Rawcliffe^ Thank you, Juli, and thank you, everyone, for joining us. 2019 was a transformative year for Adaptimmune. We issued a press release this morning, summarizing our accomplishments last year. These accomplishments are the result of hard work by our dedicated colleagues here at Adaptimmune, the investigators with their teams at clinical sites and other collaborators. I refer you to the press release for details

because I think our time would be better spent providing context about what we are doing at Adaptimmune and our strategy going forward.

So I want to focus on the following key areas: one, organizational changes, including our new R&D team that we announced at the beginning of this year to improve the flow and decision-making process in our pipeline; two, faster execution in our clinical trials, including driving ADP-A2M4 to market in 2022 for sarcoma and demonstrating meaningful efficacy in other solid tumor indications; three, our partnerships and collaborations, including our recent co-development and co-commercialization deal with Astellas, which highlights the opportunity beyond our autologous SPEAR T-cell pipeline. Finally, I want to touch on some of our manufacturing accomplishments and why we believe integration is a key component of our future success.

There were several changes to our leadership during 2019, some planned and some unexpected, including at the executive team level. We saw some notable departures last year, including our former CEO and Co-Founder, James Noble, who retired, but is a testament to those leaders who left that they build excellent teams. Those teams choose to work at Adaptimmune because we believe we can make a difference for people with cancer. And I want to thank everyone who has contributed to the work that we do.

Firstly, I want to thank Mike Garone, who has served as our interim CFO after I became CEO. He has done a fantastic job, including through the recent financing. Mike will be moving on and, as announced last week, Gavin Wood will assume the CFO role in April.

Last August, John Lunger was appointed Chief Patient Supply Officer. I will talk about the great strides we have made in manufacturing under John's leadership later in the call. We announced in August that Rafael Amado, our former President of R&D, was leaving and that Elliot Norry would be our acting CMO. In January, I was very pleased to announce that Elliot has been named permanent CMO. Elliot has been our Head of Safety and Pharmacovigilance and has led our AFP program since 2015. He has a deep commitment and expertise in cell therapy and his passion for patients is clear.

As we announced at the beginning of this year, we made other changes to our R&D leadership. Notably, we formed Early and Late-Stage development groups. Mark Dudley is leading our Early-Stage group to develop and evaluate therapies for clinical safety and to quickly determine their efficacy. Mark has a 20-year history in cell therapy and is a true pioneer in the field, having worked and published on the initial cell therapy trials at the NIH and worked with Novartis on the development of KYMRIAH.

Dennis Williams was named SVP Late-Stage Development, taking products with clear efficacy signals through to registration as rapidly as possible. The first of these products is ADP-A2M4 for sarcoma, which has been evaluated in our Phase II SPEARHEAD-1 trial. Dennis has substantial regulatory and drug development expertise in cell therapy and he will continue to lead our regulatory affairs team. Last year, under Dennis's leadership, ADP-A2M4 received orphan drug designation for soft tissue sarcomas and RMAT for synovial sarcoma.

Outside of our Early and Late-Stage Development groups, we have our pipeline research, preclinical testing and translational sciences teams. Karen Miller has led this team since joining us last year. Karen is an immunologist by training, with more than 25 years of drug discovery experience with small molecules, biologics and cell and gene therapy, including at GSK, UCB and Vertex, across a broad range of therapy areas.

Finally, and for many years, Jo Brewer has led the team that has delivered our stem cell-derived allogeneic program. Jo has 2 decades of direct cell therapy experience, and her team has produced one of the most advanced stem cell-derived allogeneic T-cell platforms in the field. This platform has the capacity to generate T-cells from stem cells without the use of stromal or feeder cells and without the need for human sera, both are huge feats and critical parameters for ensuring we can ultimately scale up allogeneic cell production for the clinic and beyond.

So that's the team we have in place to drive the pipeline. Now I want to touch on what we're doing to deliver data more rapidly in our clinical trials.

This time last year, having transitioned NY-ESO to GSK in 2018, we were dose escalating our Phase I trials with our wholly-owned assets. These Phase I trials have been ongoing for 2 years, and we had no RECIST responses. Since then, we have reported compelling initial response data with ADP-A2M4 in synovial sarcoma, leading us to start our Phase II SPEARHEAD-1 trial and announce our aim to commercialize this first product in 2022.

In other indications, we narrowed our focus to our products targeting MAGE-A4 and AFP and to improving the potency of our SPEAR T-cells to convert the antitumor activity, which we were clearly seeing in a range of tumor types, into RECIST responses that could be the basis for drug development. As reported in January of this year, we have observed RECIST responses in 4 new tumor indications, 2 of these were from the first patients dosed in the next-generation SURPASS trial and the radiation sub-study. These trials began approximately 6 months previously.

Another response was from the first patient dosed at the target dose in the ADP-A2AFP trial. Remarkably, the patient in this trial had a 100% reduction in their target lesions. These are early responses and we need more patients and durability data to determine which indications we will develop. However, these data are a validation of the value of our SPEAR T-cell therapies for people with cancer, the importance of our proprietary affinity engineering and the speed with which we are now able to execute.

We also announced that we will start a combination study in 2020, which we have now confirmed will be in head and neck cancer, with an innovative trial design, the details of which we will disclose in due course. We are incredibly grateful to the people who have chosen to take part in our trials.

It is the strength of these people, the clinical sites and the commitment of my colleagues that have enabled us to get to where I believe we are today, on the cusp of revolutionizing cell therapies for solid tumors. The clinical benefit we demonstrate will translate into value for the company and for investors as long as we keep patients at the heart of everything we do.

On to our partnerships. Although access to the U.S. capital markets is critical to build a successful biotech company, to be a world leader in cell therapy, it's also necessary to strike mutual beneficial partnerships, both as an alternative source of capital and as a way of accessing partner capabilities. At the beginning of this year, we announced our first major pharma alliance in 5 years with Astellas for stem cell-derived allogeneic T-cell therapies.

This agreement was based on the advances in our allogeneic program, building on our successful collaboration with Universal Cells, which was acquired by Astellas. And it is important to note that we can use SPEAR T-cells, CAR-T cells or our recently disclosed HLA-independent T-cells or HiT platform to target tumors as part of this agreement.

Key elements of the deal are: one, it takes us beyond our autologous SPEAR T-cell platform; two, it's a 50-50 global co-development and co-commercialization deal that sets the tone for our future pharma partnerships; and three, it's a clear statement of our intent to derive non-dilutive capital from the capabilities and assets that we have built.

In addition to investing in people and partnerships, we have been building our manufacturing and supply capabilities for more than 5 years. This investment validates what is becoming recognized more broadly that control of process development, manufacturing and supply is key to success for any cell therapy company.

From the point of standing up our Navy Yard facility and initiating manufacturing at the beginning of 2017, we now have the capability to deliver cells for all existing and planned clinical trials as well as with additional investment to be launch-ready.

Further, at our dedicated space within the cell and gene therapy Catapult Manufacturing Centre in the U.K., where we have our internal vector manufacturing, we are in the process of building vector inventory to support all our trials. These accomplishments are due in large part to John Lunger and the team and facilities he has built.

John has championed the importance of full integration to enable development flexibility. This is enhanced greatly by being able to rapidly design, test and implement new processes in-house. John has also been working with the clinical, manufacturing and commercial teams to map out how we can optimize the way we supply our therapies to patients.

We have made sizable investments in people, partnerships and capabilities. We have a shared vision of Adaptimmune as an integrated cell therapy company. We believe that

cell therapy will revolutionize cancer treatment and that the challenges of delivering cell therapy will be sold by such integrated companies.

As a leader in this cancer evolution, Adaptimmune is designed from the ground up to bring cell therapies to people with cancer. We're not here to simply conduct proof-of-concept studies on our technology. We are here to bring cell therapies to patients. And we're not here simply to be a one-product company, we're here to deliver our pipeline of products through innovation and expertise to treat a broad range of cancers.

We stand here in early 2020 with responses in 5 different solid tumors. We have demonstrated we have the tools and expertise to tackle the challenges of difficult-to-treat cancers. We have the leadership and an organization entirely focused on our mission to transform the lives of people with cancer by designing and delivering cell therapies. I am privileged to lead Adaptimmune into this new phase, and we look forward to providing data updates throughout the year at major medical conferences.

And with that, I will open the call for questions. Operator?

QUESTIONS AND ANSWERS

Operator^ (Operator Instructions)

Our first question comes from Tony Butler of Roth Capital.

Tony Butler^ So there are actually 3, and I'll be brief with reciting them. So as I recall in the January update, there were 2 unconfirmed responses. You allude to all 4 being RECIST today. I just want to confirm that. That's number one. Number two is, again, despite what you're alluding to in your press release, I wanted to just ask you specifically, because I think it's important, what sorts of information you would like to present at appropriate medical meetings.

And then the third question is, if we step back a minute, it seems that there has been -- and this is very important because we don't really know the translational effects, there seems to have been some positive RECIST-confirming outcomes based on -- I'm not really sure. For example, is it because cells are now able to traffic appropriately into the tumor? Or is it a durability concern?

Or are the cells able to grow to larger levels? Because it seems that SURPASS and the radiation sub-study are telling us 2 different things. AFP is telling us a third thing. And then with all due respect, you're moving forward with the PD-1 combo, all of which I understand. I just want to get a better grasp on, as we end this year, what do you think we will have -- or Adaptimmune will have learned from investigating these particular studies that are ongoing today?

Adrian Rawcliffe^ Thanks, Tony. I appreciate the questions. So on your first one, with -- about the responses. I think everybody understands the history of our communication of

data over the last couple of years. And I don't think it's done anybody any good to give patient-by-patient updates. And so we are absolutely categorically going to refuse to do that. And that brings me onto the second question about what we are going to disclose.

However, I can confirm, I mean, perhaps not surprisingly, given the responses that we reported for the patients for the 2 unconfirmed responses in January, one is passed with the junction cancer and the other one in head and neck patient with the first generation ADP-A2M4 Phase I trial. Both of those did confirm at their next scan, as anticipated and not particularly surprisingly.

So we -- but we aren't going to comment further on individual patients as we go forward rather, and onto your second question, our plan is to announce at major medical conferences. We have, as you pointed out, put some slight more granularity about the first half versus the second half and what we plan on announcing.

However, the deadlines for many of the conferences haven't past, much less the acceptance notifications, although we have submitted to a number of the ones that you would anticipate we would be submitting to. And so we can't say exactly what we're going to present at the conference.

But to talk more generally, I think the key for this year is to go from what we have demonstrated in January, which is unequivocal demonstration of the breadth of the potential of the platform and convert that this year into a demonstration that we have a product in a particular area. And we've talked in the past about what that would take.

Going back several years now, we've talked about the fact that we believe that 3 out of 10 patients with good responses would be a good basis upon which to start late-stage development registration-directed development program, be that a Phase II trial or multiple. And so that's really what we want to get to this year on these trials, and we will be updating on both -- on the SURPASS trial, on AFP and on the radiation sub-study, and actually on the first generation MAGE-A4 pilot study, ADP-A2M4 pilot study throughout the year.

But the clear objective for us is not just to report the data but to be able to define for one or more of these assets our route forward. And so that's what we hope to be able to conclude from the basis of the data that we'll report at major medical conferences.

With respect to what we've learned, I'm just going to tee up the framework and then I'm going to just ask Elliot to comment on some of the -- on where we are with the translational data and the learnings. But I think you outlined quite nicely the approaches that we're taking.

From last May, we were of the firm belief that we were seeing activity from our TCRs. We saw it in abundance and leading to clinical benefit in sarcoma and we saw it still high level activity at low levels but across a range of different solid tumors elsewhere. And so

we set out, as I think as you know, to be able to convert that low levels of activity into responses.

We looked at trafficking to tumors and the radiation sub-study, we looked at a more potent T-cell with the second generation. And as announced in the tail end of last year and we'll initiate this year, we looked at a combination study, which we've now said will be in head and neck cancer.

Those are the 3 approaches that we have to shift from activity into clinical benefit to patients. And so it is true that the efficacy that we have seen, the response that we have seen in each of those settings in the first patient, I think, is a signal that those approaches are working and that we really were only 1 or 2 insights away from converting ourselves into effective therapies.

But I'll ask Elliot to comment on other areas of learnings.

Elliot Norry^ So that was a pretty comprehensive answer, but I'll touch a little bit on the issue of using, for example, the PD-1 inhibitor combination trial. We have specific translational data that demonstrates that PD-1 can be up-regulated in the presence of solid tumors, and we've looked at responders versus nonresponders in the sarcoma population. And we published that data at SITC in 2019. So it's with that type of translational data that we're moving forward with a combination study with a PD-1 inhibitor.

There is preclinical and clinical data that demonstrate that low-dose radiation can improve trafficking of T-cells to tumors. That's largely leveraged by our relationship with MD Anderson Cancer Center. And for that reason, we chose to open the radiation sub-study and -- open the radiation sub-study and explore whether or not low-dose radiation, so not enough radiation to actually treat the tumor on its own but to just change the microenvironment, change the architecture of the tumor to make it more amenable for T-cells to traffic. And that's the translational and scientific information behind that.

And with respect to CD8 alpha, again, it's really a multi-modality approach, whereby we not only translate the CD4 cells into having better killing potential, but we also improve the ability for the T-cells to activate the rest of the immune system and to bring other parts of it into the tumor to help with activity. And that -- the preclinical work associated with that we published last year at AACR.

So it's really -- we're really taking scientific information and feeding it back into the clinical trial system so that we can test which of these things, once you really get into humans with tumors, as compared to the laboratory and scientific findings, which ones really can work.

And I will also say that they're not exclusive. There's nothing to say that one can't use a second generation product with low-dose radiation or with a PD-1 combination. But in order to see which of them is working and which is not working, you have to study them individually, and that's what we're doing.

Operator^ And our next question comes from Marc Frahm of Cowen & Company.

Marc Frahm^ I guess one is, with these reports of these responses, have you noticed -- I recognize it has been terribly long, but have you noticed kind of a change in enthusiasm in the space? And how many patients are being -- the pace of patients being referred in for screening for the trials? And maybe alongside that, if you can kind of give us an update on kind of where you are in the enrollment of, say Cohort 3 for AFP and within the other -- the M4 trials?

Elliot Norry^ So I think, first of all, I don't think we're going to provide data specifically around enrollment in specific trials. But I will say that we've long believed and I think it's sort of well recognized that there's no better tool for recruiting patients to trials than having responses. So I think that we are seeing interest. We're seeing more patients and advocacy groups contacting us, asking for information about our trials. So I do believe that what we're seeing will have a positive effect on recruitment and enrollment in the study.

Marc Frahm^ Okay, great. And then just to clarify a little bit from the press release, it breaks out separately a safety update for Cohorts 1, 2 of the AFP trial versus the update for Cohort 3. Should we be assuming that those are independent conferences that those are likely to be presented at? Or is that just the way you decided to write it?

Adrian Rawcliffe^ That's just the way we decided to write it. I think we've talked about what we've seen in the past, with respect to the AFP, the first 2 doses of AFP. And I think the specific thing we want to call out is that the Phase I and II is primarily a safety update. Whilst we did see what we believe are signs of activity there, that is a safety update, where it is obvious that the -- given that we've announced a response in the top dose cohort already, that, that will be a little more than a safety update.

Operator^ And our next question comes from Michael Schmidt of Guggenheim Securities.

Kelsey Goodwin^ This is Kelsey on for Michael. Building a bit off of your first answer, I guess, kind of as SPEARHEAD progresses with the first generation of M4 and SURPASS progresses with the next generation, I guess, how do you see both of these assets sitting within your platform longer term? And then secondly, could you just remind us how your iPSC-derived platform differs from some of the others in the space?

Adrian Rawcliffe^ Thanks, Kelsey. So with respect to SPEARHEAD and SURPASS, I think what you've seen us do with SPEARHEAD is what every patient-focused drug development company should be -- does and should be doing, which is I've seen a signal, it's clearly enough in the plate with the Generation 1. A 50% response rate in this setting and a 90-plus-percent disease control rate is clearly sufficient to enable that product to be a huge benefit to patients who solely need it and need options in this space.

So I think driving forward with SPEARHEAD is absolutely the right thing to do, particularly as it is actually unknown, generally speaking, but also in sarcoma, what the incremental benefit of the CD8 will be. That's the purpose of the SURPASS Phase I trial, and that's what we seek to understand.

I would just caution that where we have looked at the effect of -- and this is a general statement, not a specific statement as it relates to CD8 in sarcoma because we don't have that, but generally speaking, where we have looked at the effects of second generation approaches, they are most effective where the first generation doesn't work very well in the in-vitro in the labs.

And so where I have with sarcoma something that works really well, we don't know what the impact of adding the CD8 will be in sarcoma, specifically, and we'll have to understand that. So I think we've got a Phase I -- we've got a Generation 1 product. It's clearly a product. We have said that we are closing the enrollment on the MAGE-A4 first generation pilot trial outside of the radiation sub-study, and I think we will report out on that in due course as well.

So I think it is clear from our previous statements that the first generation programs, probably outside sarcoma, either require something else -- require something else to be effective, be that a second generation or a combination of radiation, because when we've tested the first generation and we've now gone back.

We've got NY-ESO, we've got MAGE-A10, and we've got MAGE-A4, outside of sarcoma, we see a consistent level of low -- of activity, but we see very few responses, with the head and neck patient being the exception to that. So that's the overview of Gen 1 versus Gen 2. And I think they both fit in, depending on where they work in patients.

For the allogeneic, I'll ask Helen Tayton-Martin, who was the architect of the deal with Astellas, to comment on the differentiation that our platform provides versus others.

Helen Tayton-Martin^ Yes, thanks for the question. So there are 2 elements to the platform that we've been developing in collaboration originally with Universal Cells, subsequently Astellas, for the last 4 years. There's the editing component, which -- from which we work with the Universal Cells technology, which is AAV-based gene editing steps, sequential deletion and addition of specific genes, and that's a very -- it's an accurate but laborious process, but it enabled us to select out specific edits very successfully each time.

And the component that Adaptimmune has developed and wholly own is a proprietary process for differentiation of stem cells to T-cells, which we've been able to reproduce with both edited stem cells in addition. And the differences there relate to the ability to use a serum-free process and also a feeder cell-free process.

And those are the 2 very different and clear distinctions that we have that we've been focused on to have an effective process, but also one which is scalable down the line to

get to large batches of products for patients. So those are distinctions that also obviously gives us a very unique IP position as well. So those are the key differences.

Operator^ And our next question comes from Mohit Bansal of Citi.

James Shannon^ This is James Shannon on for Mohit. Just wanted to ask a question, how much do we know about the safety of SPEAR to your platform at this point? And what are you monitoring on your ongoing trials? And then I have a couple of follow-ons after that.

Adrian Rawcliffe^ Elliot, do you want to take the safety question?

Elliot Norry^ Yes. So we -- the safety profile of the platform, I think, is generally demonstrating favorable benefit risk to support ongoing development. We see similar adverse events to other T-cell therapies, including cytokine release syndrome and neurotoxicity. Although the frequency and severity may be lower than has been typically seen with CAR-T therapy.

From the chemotherapy regimen, we also see decrease in blood counts that follow on, which is the intended effects of the chemotherapy. And we were very clear about making changes to our chemotherapy regimen last year in response to 2 deaths associated with aplastic anemia. And since doing that and based on data that we have from prior to increasing the chemotherapy regimen, we're very confident with the safety of the regimen at this juncture.

So I think that, in general, those are the 3 adverse events, sort of, of particular interest to us. We obviously follow all patients as it relates to all adverse events consistent with typical drug development standards and pay special attention to those and are very comfortable at this juncture with respect to the safety profile.

I will also add that there was a specific safety level of attention to liver toxicity associated with the alpha fetoprotein study. But to date, we have not seen any evidence of T-cell activity against the noncancerous liver. So we're very positive about that particular -- the resolution of that safety concern.

James Shannon^ Got it. And then at the beginning of the call, you guys mentioned there was a lot of changes to the team. And given that moving towards you're commercialization, should we expect some more additions to the team? Or is what the team currently is what you envision for '22 -- for the 2022 launch?

Adrian Rawcliffe^ Yes. I think we have a -- I think I feel very comfortable with the strength of the team that we have now. I think, clearly, as we move forward into commercialization, we'll need to build that capability, and I don't think it's appropriate to comment on intended future changes to that.

But clearly, we'll need to build a commercial capability on a European and U.S. basis as a minimum, and we look forward to doing that. And in fact, I would argue, we've already started. We've had a head of commercial for some years now, working with groups thinking about pricing, interactions with payers and what the patient journey looks like, and we look forward to building on that as we go forward.

Operator^ And our next question comes from Jonathan Chang of SVB Leerink.

Jonathan Chang^ Congrats on a great start to the year.

Adrian Rawcliffe^ Thanks.

Jonathan Chang^ So first question, how should we be thinking about benchmarks for durability for synovial sarcoma?

Elliot Norry^ So with the data that we've published to date with synovial sarcoma, we've seen durability out to 9 months. And we do plan to provide an update to that, again, at a future medical conference. I'm not sure -- I hope that addresses the question.

Jonathan Chang^ Got it. And just one more question for me. So it looks like GSK entered into partnership last week with another company on TCR cell therapies. How should we be thinking about the impact of this, if any, on your existing partnership with GSK?

Adrian Rawcliffe^ So I think -- I'd like -- I'll ask Helen to answer that, but I would just point out -- the only thing I would point out before that is I'm not sure that anybody, least of all GSK, have actually expected our relation to be monogamous. And if there were already doubts from the GSK side on that front, that would have been dispelled by our deal with Astellas. So I think there's a broad range of companies out there looking at this, and I fully anticipate that a company like GSK would make multiple bets in this space.

And we believe, furthermore, that we're at the stage of development of a technology where a rising tide lifts all boats. And we and Immatics and GSK and all the other companies that are trying to put products in the market for patients with -- in the solid tumor setting -- with cell therapies in the solid tumor setting, I think benefit from increased activity in the space. But I'll just hand over to Helen to talk a bit more detail about that.

Helen Tayton-Martin^ Yes. Thanks for the question. I think it's obviously a very good question. I think 1 or 2 observations. One, you may recall at the time of the NY-ESO exercise -- option exercise with a Adaptimmune by GSK, there was the scope to take 2 more targets, and then that has happened. And that work is progressing and going well and both parties are comfortable with how that is progressing.

Beyond that, GSK only have access to one further target from Adaptimmune under the arrangements for our original collaboration, and that will come at some point in the future in relation to Gen 2 programs.

And so, really, I think what that deal probably shows is an ongoing commitment to T-cell therapy, which is obviously in our interest in our partnership with GSK as well as more broadly. And potentially, looking outside for other targets, we are not obliged to share targets with GSK that we were already working on. So I think that, that also probably speaks to the type of deal we would want to do in the future is a bit more like the one we have just done with Astellas, where we're looking for co-development, co-commercialization as we build an integrated cell therapy company.

Operator^ And our next question comes from James Birchenough of Wells Fargo Securities.

Yanan Zhu^ This is Yanan in for Jim. Just 2 questions on the technology platforms. First, can you talk a little bit about the HLA-independent T-cell technology in terms of how HLA independence is achieved? And secondly, regarding the stem cell-derived allogeneic T-cell platform, can you talk about whether you have reached the capability to differentiate cells into the stem cells, into CD4 T-cells as well as the ability to differentiate into CD8 T-cells?

Helen Tayton-Martin^ Yes. This is Helen. Thanks very much for the 2 questions. So the HLA-independent TCL platform is exactly what it says on the [10]. So these are TCRs that we have been able to isolate from our platform capabilities that are able to recognize cell-surface proteins, traditional CAR targets, if you will, but to function on the surface of the T-cell in much the same physiological way as a TCR.

So there are other companies out there that you will probably be familiar with that utilize CAR or antibody targeting, linking it to TCR signaling. This is actually ATCR with TCR signaling, but able to recognize a cell-surface protein.

Now that may seem slightly unusual and unexpected immunologically, but these have been reported historically in the past. And as we have deep expertise in isolating TCRs, we have a lot of capabilities around our phage libraries and the types of TCRs that we can source and the diversity of those libraries.

We have been able to find these TCRs on more than one occasion now 2 CAR targets. And in addition to that, we're also leveraging the deep expertise and the specificity testing, the safety testing of these types of TCRs, which is something we've utilized in our ongoing pipeline programs.

So it's really the marriage of those 2 capabilities that has enabled us to generate TCLs to CAR targets and to look to take those forward and they become potential programs under the -- for ourselves, but also under the Astellas collaboration.

So -- and so I hope that answers that question. And you'll be hearing more about that as we have more to talk about publicly. With relation -- in relation to the second question, I think the simple answer is yes. We've been able to make CD4 and CD8 T-cells, and we'll be able to, again, talk more about those at forthcoming scientific conferences in terms of the functionality of those cells.

Operator^ And ladies and gentlemen, this does conclude our question-and-answer session. I would now like to turn the call back over to Adrian Rawcliffe for any closing remarks.

Adrian Rawcliffe^ Thanks. This year, we've confirmed the potential of the platform with responses in 5 different solid tumors, and we look forward to sharing data updates at future conferences throughout 2020.

We're recruiting very effectively patients in synovial sarcoma and in MRCLS with the SPEARHEAD-1 trial, and we're gearing up our commercial readiness to go to market in 2022. And as reflected by the last question, we're working on a pipeline of cell therapy treatments, including next-gen, allogeneic and the HiT platform to go beyond our current pipeline in transforming the lives of people with cancer, and we'll update those as we go through 2020 as well.

With that, I'd like to thank you all for your time and close the call. Thanks. Bye.

Operator^ Ladies and gentlemen, this concludes today's conference call. Thank you for participating. You may now disconnect.