AVI BioPharma Incorporated Fourth Quarter 2006 Financial Results Conference Call Transcript

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Moderator: Jody Cain

March 15, 2007, 8:00 a.m. Pacific Time

Operator: Welcome to the AVI BioPharma 2006 Fourth Quarter Financial Results conference call. At this time, all participants are in a listen–only mode.

Following management's prepared remarks, we'll hold a Q&A session. To ask a question, please press star followed by 1 on your touchtone phone. If anyone has difficulty hearing the conference, please press star 0 for operator assistance.

As a reminder, this conference is being recorded today, March 15, 2007. I would now like to turn the conference over to Ms. Jody Cain. Please go ahead, ma'am.

Jody Cain: This is Jody Cain with Lippert Heilshorn & Associates. Thank you for participating in today's call. Joining me from AVI BioPharma are Denis Burger, Chairman and Chief Executive Officer, Alan Timmins, President and Chief Operating Officer, and Mark Webber, Chief Financial Officer.

Earlier today AVI BioPharma released financial results for the 2006 fourth quarter and full year. If you've not received this news release or you'd like to be added to the company's distribution list, please call Lippert Heilshorn in Los Angeles at 310–691–7100 and speak with Erica Torres.

Before we begin I'd like to state that comments made by management during this conference call will include forward–looking statements within the meaning of federal securities laws.

These forward–looking statements involve material risks and uncertainties. For a discussion of risk factors, I encourage you to review the AVI BioPharma annual report on Form 10–K and subsequent reports as filed with the SEC.

Furthermore, the content of this conference call contains time–sensitive information that is accurate only as of the date of the live broadcast -- March 15, 2007. The company undertakes no obligation to revise or update any statements to reflect events or circumstances after the date of this conference call.

With that said, I'd like to turn the call over to Denis Burger. Denis?

Denis Burger: Thank you, Jody and thank you all for joining us today. At AVI BioPharma we have active clinical programs underway with our third generation NeuGene® antisense technology in cardiovascular disease and in hepatitis C.

And with our novel exon–skipping pre–RNA interference technology, or ESPRIT, in muscular dystrophy.

In today's call, first Mark Webber will review our fourth quarter and year end 2006 financial results. Then as indicated in last quarter's call, I will provide you with an overview of our ESPRIT technology and its application to muscular dystrophy.

Alan will then provide updates in our coronary artery bypass graft, or CABG program. And I will then conclude with a summary of upcoming milestones before taking questions.

With that, I would like to now turn the call over to Mark Webber. Mark?

Mark Webber: Thanks, Denis. Today I'd like to review our 2006 fourth quarter financial results and our year–end cash position. And then I'll discuss our 2007 financial guidance.

Revenues from license fees, grants and research contracts in the fourth quarter of 2006 were $18,000 compared with revenues of $1.4 million reported in the fourth quarter of 2005.

Revenues in 2005 were due primarily to recognition of $1.4 million in research contract revenue from government funding.

Operating expenses for the 2006 fourth quarter were $8.8 million compared with $6.2 million in the prior year. This increase was due primarily to higher R&D expenses, which totaled $6.7 million compared with $4.9 million in the prior–year quarter.

R&D expenses in the 2006 fourth quarter included additional employee costs of $725,000, of which $585,000 was from non–cash stock–based compensation expense under SFAS 123R.

Higher R&D expenses this year also reflect $675,000 in AVI common stock issued to Ercole Biotech under terms of a stock purchase agreement announced last December. And $575,000 was due to contracting costs for the production of GMP subunits, which we use to manufacture compounds for future clinical trials.

General and administrative expenses increased to $2.1 million in the fourth quarter of 2006 from $1.4 million in the prior year. This increase was due primarily to higher employee costs of $650,000, including $350,000 in non–cash stock–based compensation expense due to SFAS 123R.

We reported a net loss for the fourth quarter of 2006 of $8.3 million or 16 cents per share, which compares to the net loss of $4.6 million or 10 cents per share for the fourth quarter of 2005.

Our 2006 fourth quarter results included non–cash stock–based compensation expense of $935,000.

Revenues for the full year of 2006 were approximately $115,000, down from $4.8 million in 2005. Higher revenues in 2005 reflect recognition of $4.6 million in research contract revenue from government funding.

Operating expenses in 2006 were $33.1 million compared with $22.2 million in 2005. This increase was due to higher R&D costs, which total approximately $25.2 million in 2006 compared with $17.1 million in 2005, primarily as a result of an additional $3.1 million in employee costs.

These costs included $2.4 million in non–cash stock–based compensation expense due to SFAS 123R and $430,000 related to the acceleration of the vesting of certain stock options.

The increase in R&D expenses also reflects $2.2 million from the expansion in hepatitis C and CABG clinical programs, and $1.7 million in contracting costs for the production of GMP subunits.

The R&D increase also reflects $675,000 in AVI common stock issued to Ercole Biotech and $500,000 of AVI common stock issued to Chiron Corporation as the first milestone payment under a license agreement that grants AVI a nonexclusive license to Chiron's patent and patent applications for the research, development and commercialization of antisense therapeutics against HCV.

General and administrative expenses increased to $7.8 million in 2006 from $5.2 million in 2005.

This increase is due primarily to an additional $2.4 million in employee costs, including $1.6 million in non–cash stock–based compensation expense due to SFAS 123R and $400,000 related to the acceleration of the vesting of certain stock options.

Our net loss for 2006 was $31.1 million or 59 cents per share. This compares with a net loss for 2005 of $16.7 million or 37 cents per share.

Results for 2006 included non–cash stock–based compensation expense of $4.9 million, of which $4 million was due to SFAS 123R, and $830,000 was related to the acceleration of the vesting of certain stock options.

Reviewing our balance sheet, we reported cash, cash equivalents and short–term securities of $33.2 million as of December 31, 2006 -- a decrease of $13.9 million from December 31, 2005.

This decrease was due primarily to $20.6 million used in operations and $1.5 million used for the purchase of equipment and patent–related costs. This was offset by the receipt of $5 million in net proceeds from a stock purchase agreement with Cook Group and $3.2 million from the exercise of warrants and options and sales under the company's stock purchase plan.

Additionally, in January 2006 we were informed that in accordance with the final version of the 2006 Defense Appropriations Act approved by President Bush, AVI will be allocated $11 million to fund our ongoing defense–related programs.

Net of government administrative costs, it is anticipated that AVI will receive up to $9.8 million under this allocation.

AVI's NeuGene technology expected to be used to continue developing therapeutic agents against Ebola, Marburg and dengue viruses, as well as to continue developing countermeasures for anthrax exposure and antidotes for ricin toxin. These funds have yet to be received and are not reflected in our 2006 financial statements.

In reviewing our 2007 financial guidance, we expect cash expenditures for 2007 to be in the range of $25 million to $28 million. The net cash burn for 2007 could be in the range of $10 million to $17 million, principally depending upon the extent of reimbursement under our DTRA programs.

With that overview, I'd like now to turn the call back to Denis.

Denis Burger: Thank you, Mark. Let me now take some time to introduce you to the concept of alternative slicing, or exon–skipping, and our ESPRIT program. Again, ESPRIT stands for exon–skipping pre–RNA interference technology.

ESPRIT technology holds potential as a highly potent tool for altering many disease mechanisms. And we believe ESPRIT will provide a basis for novel therapeutic drug development in AVI in the years to come.

In a gene, genetic information is found in discreet packets of instructions called exons. These informational packets are separated from each other by other segments of DNA that are not informational.

When the gene is transcribed in order to send instructions to the cell machinery to make a particular protein, the gene first makes an exact copy of itself, called Pre–RNA.

When RNA is then processed by snipping out non–informational segments and splicing the exons together, adjacent to each other, the resulting RNA is called messenger RNA and is transported from the nucleus to the cytoplasm of the cell. There, the ribosome factory uses this information to manufacture the encoded protein.

Since a gene may have a number of exons, the cell machinery can mix and match various exons to produce a larger number of discreet but related proteins from a smaller number of genes. This is referred to as alternative splicing.

ESPRIT technology uses our NeuGenes to target sites in the pre–RNA to hide the targeted exon from the splicing machinery. This causes the machinery to skip the targeted exon. And this is referred to as exon–skipping.

The resulting protein would then lack the segment encoded by the skipped exon. This is fine genetic surgery. Rather than block the entire protein production as in a conventional antisense mechanism, only a piece or segment of the protein is not produced.

This mechanism allows us to make "designer proteins" and fine–tune our approach to interfere with the disease process. It also allows us to skip an exon if that exon has a mutation that leads to a disease. And this is our first application of the technology.

We have selected Duchenne muscular dystrophy as the first indication to pursue, based of course on very favorable preclinical results.

As background on this disease, an important muscle protein called Dystrophin, acts as a shock absorber that provides strength and stability to muscle cells during contraction.

Dystrophin is also believed to carry signals inside and outside of the muscle fibers. Without dystrophin, muscles are not able to operate properly.

The dystrophin gene is carried on the X chromosome. Young men are more susceptible to dystrophin damage because they have only one X chromosome. When a boy is diagnosed with Duchenne muscular dystrophy or DMD, his body is not able to produce functional dystrophin.

The most prevalent type of DMD occurs when there is a mutation in exon 51, which causes all of the other exons, and there are many, to be misread by the ribosome so that no viable dystrophin is produced.

Our objective is to use the ESPRIT–based therapeutic AVI–4658 to skip exon 51, which would put the subsequent or downstream exons back in the correct reading frame for the ribosome.

In collaborative preclinical studies, mice with Duchenne–type muscular dystrophy produced dystrophin for at least 16 weeks following initial systemic dosing with our ESPRIT compounds.

The dystrophin formed in this study was shortened, lacking the piece from the skipped exon, but was a functional version of dystrophin.

Let me share with you the importance of this. According to the Muscular Dystrophy Association, the onset of Duchenne muscular dystrophy typically occurs between 2 and 6 years of age.

It is characterized by generalized weakness and muscle wasting, which eventually affects all involuntary muscles, including heart and breathing muscles. These young boys become wheelchair bound and the survival with muscular dystrophy of this type is rare beyond the age of 30.

There are a few patients where the shortened version without the mutated exon occur naturally. And in those cases the disease is much more benign and often not even diagnosed until the later decades of life. Our objective clinically is to move this devastating form of DMD to the much milder form that is asymptomatic for much of life.

We have started our clinical work in Duchenne muscular dystrophy through a collaboration with MDEX Consortium in the U.K., which is a well–respected group, established and funded to conduct clinical trials in Duchenne muscular dystrophy.

The first step in our clinical program is a proof–in–principle, controlled, dose–escalating trial with up to nine boys with Duchenne muscular dystrophy receiving a single intramuscular administration of our drug, AVI–4658.

Four weeks following injection, the muscle will be biopsied and examined for molecular evidence of dystrophin production, representing a positive endpoint.

Concomitantly, we anticipate the expansion of AVI–4658 clinical development to systemic administration for treating Duchenne muscular dystrophy.

While we plan to pursue U.S.-based clinical trial, we are also exploring other locations, including Eastern Europe as well as sponsorship and collaboration opportunities in Australia. Our future goals include expanding this program to include many other exons implicated in Duchenne muscular dystrophy.

We are also pursuing additional opportunities with our ESPRIT program. As announced in December, we entered a collaboration and cross–licensing agreement with Ercole Biotech to identify and develop ESPRIT drugs.

Ercole is a recognized leader in alternative splicing fields. We have each selected a set of specific gene targets and will take the respective lead in investigating the potential therapeutic and alternatives of these splicing mechanisms.

We see this agreement as a means to strengthen the intellectual property position for ESPRIT technology and to benefit from a scientific collaboration between AVI and Ercole.

Although our first clinical application of ESPRIT is a potential orphan drug indication, we believe that the principal application of this technology is much broader than genetic diseases and perhaps will eventually include more gene targets than antisense itself. We are positioning AVI to be a leader in exon–skipping in the field of gene silencing.

With that overview on our ESPRIT technology, I'll ask Alan now to review our CABG program.

Alan Timmins: Thanks, Denis and let me add my welcome to those of you joining us this morning on the call and on the Internet. We're making progress with our pivotal clinical study with AVI–5126 or Resten–CP, in coronary artery bypass grafting patients.

CABG surgery is one of the most commonly performed surgical procedures in the United States. Approximately 350,000 CABG procedures are performed in the U.S. annually and about 800,000 are performed worldwide each year.

Although coronary artery bypass surgery is effective in restoring blood flow, 30% to 50% of vein grafts eventually become blocked or otherwise fail. In fact, within the first year after a CABG procedure, an estimated 15% to 30% of saphenous vein grafts fail.

After several years of declining CABG procedures owing to the increased use of balloon angioplasty and stenting, CABG is now again increasing due to caution surrounding the long–term risks associated with drug eluding stent procedures that are coming to light.

Resten–CP is being tested to prevent late–term consequences of intimal hyperplasia, which is considered the primary cause of vessel obstruction after CABG and intracoronary artery stent placement.

We are pursuing Resten–CP for the treatment of CABG through an internal program as we believe this represents an important opportunity for AVI. We've shown in a previous phase 2 clinical study that Resten–NG reduced the restenosis rate after balloon angioplasty by approximately 75%.

Vein graft failure has been shown to involve the same mechanism as cardiovascular restenosis, with the critical involvement again of the c–myc gene.

Resten–CP has the same NeuGene component as Resten–NG and has been shown to be efficacious at silencing the c–myc gene.

We are therefore applying our technology to a clinical problem which involves the same mechanism of action where it's already been shown to be effective -- namely, in reducing the incidence of restenosis. And applied here, we anticipate that it could also reduce the incidence of vein graft failure.

In our CABG study, the saphenous vein is treated with Resten–CP ex vivo or outside the body, before using it to bypass a blockage. Since the vessel is rinsed before the bypass procedure, the patient is not exposed to a detectable level of the drug. Obviously, this lessens any potential safety concerns.

We believe that we'll be able to effectively treat the graft tissue outside the body due to the incorporation of our proprietary drug delivery peptide, CytoPorter, in Resten–CP.

Our CABG trial is the first clinical use of this delivery peptide. In preclinical studies this procedure has been efficacious in down regulating the targeted gene, c–myc and in prolonging graft survival.

Importantly, if successful, our Resten–CP procedure could become the standard of care and may be routinely used in all CABG procedures. We believe that currently there are no approved drugs in this indication.

While the potential for Resten–CP is substantial, the market for such a drug can be addressed without an extensive sales force because the sites where coronary bypass surgeries are performed are well known.

Our clinical program with Resten–CP is a pivotal, multicenter, double–blinded, randomized and placebo–controlled study that's inspected — expected to include up to a total of 600 patients. We're conducting this program in well–respected, high–volume cardiovascular study sites in Eastern Europe.

The phase 1b/2 portion of the study includes 110 patients and is powered for safety and superiority. There will be an interim safety evaluation after 30 patients are enrolled. And we anticipate reporting that data around the middle of the year in 2007.

As previously stated, we expect to report data from the first 110 patients by the end of this year or early next year. At that point the study becomes a phase 3 program.

We're taking a cost–effective, efficient and quality approach to the clinical development of Resten–CP. Our ability to demonstrate efficacy in the phase 3 study will be the first step in our plan to introduce Resten–CP as a CABG treatment in all major markets within the ensuing years.

With that update, I'd like to turn the call back to Denis.

Denis Burger: Thanks, Alan. Before we take your questions, I'd like to review some of our upcoming milestones.

First, in our cardiovascular program we have focused our internal efforts exclusively in our CABG program. As Alan discussed, we anticipate announcing interim safety results following the treatment of the first 30 patients around midyear. And initial results from the first 110 patients in this trial later this year or early in 2008.

With AVI–4126 for the treatment of vascular disease, our licensee, Cook Group, has announced intentions to present independently reviewed core laboratory data from the APPRAISAL trial at the EuroPCR conference in May.

In the APPRAISAL trial, Resten–MP, or AVI–4126 was delivered intravenously via microparticle technology in conjunction with the placement of one or more bare metal stents for the treatment of cardiovascular restenosis.

Turning to our infectious disease program, we are focusing commercial development on HCV, influenza and dengue virus diseases. Starting with HCV, early in 2006 the company reported favorable safety, tolerability and PK results among healthy volunteers.

Preliminary data on HCV patients were presented in May, 2006. The PK in HCV patients was significantly different from that of healthy volunteers, which was not anticipated.

The blood concentration of the drug in HCV patients was only 1/3 of that predicted to be required for a clinically significant reduction in viral load. Consistent with this observation, no clinically significant reduction in viral load was reported.

Based on these data, two additional studies were proposed using AVI–4065 -- an extended treatment duration protocol and a high–dose treatment protocol.

Preliminary data from the protocol extending the treatment duration to 28 days have no shown — have not shown a significant benefit on improving the PK or reducing viral load, although the study is ongoing.

AVI has plans to conduct a high–dose, escalating treatment protocol designed to exceed the predictive blood concentration, with the goal of achieving a clinically significant reduction in viral load.

AVI plans to complete this study and anticipates reporting safety, PK and viral response data from the study before the end of this year. The company recently completed GMP manufacturing of AVI–4065 for this planned high–dose treatment protocol.

In our influenza program we are continuing to work with collaborators to complete preclinical animal data that is required to support our planned filing of an IND.

Our NeuGene technology allows for the targeting of regions of the biogenetic code that are common to all influenza A subtypes. This suggests that a single NeuGene drug could provide effectiveness against most influenza strains, including avian influenza and the more common seasonal influenza.

Additionally, we expect to finish preclinical work in a primate study with the dengue virus program this year. This is expected to be the next viral program to move into clinical development.

As I mentioned in my overview of muscular dystrophy program, with the MDEX Consortium in the U.K. we have initiated a pilot clinical study in DMD

targeting exon 51 and anticipate molecular results to be available later this year.

And lastly, with our rapid response therapeutics that comprise our biodefense program, as Mark mentioned earlier, we have not yet realized any of the $11 million allocation from the Department of Defense. We expect these funds to be recognized in our financial results through the remainder of 2007 and into 2008, once final projects are agreed upon.

In December we announced a two–year, $28 million research contract with the Defense Threat Reduction or DTRA, which is an agency of the Department of Defense. These funds are dedicated to the development of NeuGene therapeutics to treat Ebola, Marburg and Junin hemorrhagic viruses.

This contract is separate from the $11 million allocation. And as this agreement is in contract form, we expect to be receiving funds from our research throughout 2007 and 2008.

With that update, at this time I'd like to open your call to questions. Operator?

Operator: Ladies and gentlemen, if you wish to register for a question for today's question and answer session, you will need to press star then the number 1 on your telephone. You will hear a prompt to acknowledge your request.

If your question has been answered and you wish to withdraw your polling request, you may do so by pressing star then the number 2. If you are using a speakerphone, please pick up your handset before entering your request. One moment please for the first question.

Denis Burger: While we're waiting for the first question, we continue to conduct active investor outreach through participating in investment conferences.

As many of you know, earlier this week we presented at the Cowen & Company 27th Annual Health Care Conference in Boston. We will keep you apprised of upcoming presentations and invite you to meet with us in person should you be in attendance.

Operator, are we ready for the first question?

Operator: Yes, sir. Your first question comes from Ren Benjamin with Rodman & Renshaw.

Ren Benjamin: Hi. Good morning and thanks for taking the question.

Man: Good morning.

Ren Benjamin: A couple of questions -- one I guess starting from the ESPRIT program. You mentioned that, you know, essentially what you're doing is you're converting this protein now into, you know, the form that causes the asymptomatic version of muscular dystrophy.

What is this form called or what is this asymptomatic indication called?

Denis Burger: When you skip exon 51 naturally, there are examples of this condition. And that form of muscular dystrophy is called Becker Muscular Dystrophy, or BMD.

And it's characterized by loss of muscle function in the fifth or sixth decade of life. These people often come in for diagnosis when they can no longer play tennis or play other active sports that they've been doing most of their life.

So what we're trying to do is convert this early childhood devastating form, which is the Duchenne form in which all of the exons downstream from 51 are out of frame, to the form in which only the exon 51 is skipped and the majority of the exons downstream are in frame.

It turns out that the dystrophin protein has two important functions at each end of it. And as long as you have both ends intact, you can get a functional protein. And by skipping the mutation of an exon somewhere in the middle, you still end up with most of the functions of dystrophin. So that's the objective.

Ren Benjamin: So have you guys compared, let's say the sequence of the BMD — you know, the gene that causes BMD versus the sequence of the gene once you've skipped out exon 51, just to make sure there are — I don't know — no other mutations of, let's say other exons, which might be conferring this dominant activity?

Denis Burger: Yeah. That's a good question, Ren and we haven't done it. But it has been done and is well known by the geneticists in this field. So I think everyone that is working in this field would buy into the concept that this is a very viable clinical objective.

Ren Benjamin: Got it. Have there been interests from other parties regarding this technology because — I guess another way of putting it is, is NeuGene particularly suited for this exon–skipping? Or can any other antisense technology, you know, try to do this?

Denis Burger: Thank you for that question. NeuGenes and our PMO oligomers are particularly suited for this for several reasons. To do this, first you have to have an agent that can make its way to the nucleus.

And once it arrives in the nucleus, it has to be able to recognize and bind to its target, which is somewhere around the junction of the non–informational transcript to the exon. And once it binds there, it must not in any way activate enzymes that clip or disrupt the message.

And that's unique, as you know, to our technology. We operate exclusively by sterically interfering with cell machinery and we don't enzymatically clip the target in any way. If you clip the target, you wouldn't have an RNA and you wouldn't produce the protein.

So it is somewhat unique to our technology. There are other chemistries that can, in the laboratory, produce these effects. But none of them have been extensively used in the clinic like ours has.

So we have the advantage of being able to demonstrate that there's a preferential accumulation of our drug in the nucleus of cells and that it functions in a way that allows the pre–RNA to be processed to functional RNA. And of course, it has quite a distinguished safety record in the clinic.

Ren Benjamin: Got it. So as far as the trial is concerned, has that trial officially started? Have you injected the first patient? And if not, when is that going to happen?

Denis Burger: Yeah, the trial has “officially started.” It’s been initiated. The protocol was originally submitted back in the fall and approved, both by the GTAC agency in the U.K. and the MHRA -- Medicines Health Regulatory Authority.

Then we made — late in the year with consulting with MDEX, we made some modifications to the protocol. It’s gone back a second time and been approved by GTAC. I might mention that that stands for Gene Therapy Advisory Committee.

And different countries consider antisense and gene splicing in different ways. In the U.S. it’s not considered gene therapy. In the U.K. it is. But we’ve gone through those approval hurdles.

The second round with — of the modifications we’ve made should be approved by MHRA in the next few days. And we expect then the recruitment and the first patients to be injected sometime in the second quarter.

Ren Benjamin: Okay. Just turning briefly to the CABG trial, that trial is ongoing right now. Correct?

Denis Burger: Yeah. The MDEX trial for muscular dystrophy, we would consider ongoing, although the first patient hasn’t been injected.

In the case of CABG, not only has that been initiated back in the fall, but patients’ saphenous veins have been treated and those have been transplanted.

Ren Benjamin: So what sort of data would we expect by midyear? I know you said safety but is there — in the CABG indication can you look at, say, you know, 30–day restenosis rate or 90–day restenosis data? Will any of that be available by the middle of the year?

Denis Burger: The only thing that will be available by midyear will be overall safety in the first 30 patients. There simply isn’t enough time to get three–month — 90–day efficacy data. And one really can’t get any efficacy data before 90 days.

What do expect is, and what we’re indicating is that we are on track to meet our overall original objective that we set forth -- the benchmark back in the fall -- that we would have the data on the first 110 patients around the end of this year.

Ren Benjamin: Got it. The program that Cook is running right now, you mentioned that there’s going to be some data hopefully, presented at the EuroPCR meeting. What sort of data are you expecting and what happens to the program after that?

Denis Burger: The program was fully enrolled some time ago in Germany. It’s called APPRAISAL. It involves three different clinical sites in Germany — a very well–controlled study where we deliver AVI–4126, Resten–NG, with a microparticle formulation, which is our microbubbles.

And what we’re trying to show is that delivering this drug systemically at the time of angioplasty and the placement of a bare metal stent is as good an alternative as a drug eluting stent.

And with all of the concerns in the last six months to a year on the long–term issues around drug eluting stents and lifelong antiplatelet therapy, et cetera, this could be a very, very critical result.

What do we expect in the data? The data is all independently reviewed by the group at Harvard and analyzed. And Cook has indicated that they are going to present that data. So we’ll know the statistical significance of how well systemic delivery of this drug performed with bare metal stents.

Ren Benjamin: How would — have you talked at all about how this program is going to move forward? So for example, if the results are good, do you or do they anticipate being in pivotal trials, say later this year?

Denis Burger: We would expect that they’ll make their intentions known at the May PCR. As we indicated back when they presented some preliminary indications at the TCT meeting last fall, they were pleased with the program. Other than that, they have not shared the data with us.

Ren Benjamin: Got it. And then finally, my last question has to do with the HCV program. So clearly, extending the dose, you know, was disappointing. The results don’t seem to show any more benefit than what was previously described.

But how is this high–dose study — I guess, when does the high–dose study officially start and how high a dose are you going? And how long do you have to treat for?

Denis Burger: One thing we learned from the HCV program is that the chronic active hepatitis patients are handling the drug differently than normal volunteers.

And what that means is that the predicted dose from the normal volunteers, to achieve the — what’s referred to as the “EC90,” the effective concentration that should produce clinically significant reduction in viral titer 90% of the time, was not reached.

In fact, the study missed it — the dosing missed it — by threefold. We only achieved 1/3 of the targeted dose. When we extended the treatment from 14 to 28 days, we didn’t appreciably change that.

So what we’re doing now in the dose–escalating high–dose program is to give enough drug so that we exceed the EC90. Now in actual amount of drug, we’re going to three to five times the previously administered doses. And three times the previous dose should reach the EC90 but we’re going almost to as high as twice that.

In addition, there’s another factor that’s relevant. And that is the intraday frequency at which you administer the drug because what you want is the highest concentration for the longest time, without peaks and valleys.

So we’re not only changing the dose, but we’re also changing the frequency at which we give the dose. And we’re looking at a number of different sites to do this.

We have every anticipation that we will complete the study and be able to report safety PK and viral load data from all of the dose–escalating cohorts

before the end of the year.

Ren Benjamin: Has the FDA approved the protocol already?

Denis Burger: We originally had approval for doses that are higher than we used originally. And that's one of the alternatives we are pursuing. But we're also pursuing sites outside the U.S. where we can do this in a more cost–effective manner.

We have the full expectation that we'll have this high–dose data to report before the end of the year.

Ren Benjamin: Okay. Thank you very much.

Denis Burger: Thank you, Ren.

Operator: Your next question comes from Phillip Wiggins with PharmSouth.

Phillip Wiggins: Yes. Dr. Burger, does AVI anticipate any possible upstream or downstream bottlenecks and higher production quantities for our HCV drug? I believe that's AVI–4065.

Denis Burger: I think I understand the question and we've made several rounds of GMP production of 4065. So we've very confident at the efficiency and yields we get.

I think what your question relates to is when we go to these high–dose studies, what does this mean for actually the commercial formulation of the drug? And the answer to this question is we don't believe that the final commercial formulation is — will be used in these high–dose studies. These high–dose studies are to completely validate target selection.

We have many alternatives available to us because of the malleability of our technology, to then enhance delivery and target delivery to the liver, et cetera, so that the dose will be within a commercially viable range. And we've already talked through many of these alternatives.

So we honestly expect our higher dose studies to be fruitful. I think we'd love — have loved that the initial studies we did to have decreased viral load by the clinically relevant target areas. But seeing the pharmacokinetics, there's a rational approach to why we didn't see those big viral drops and how to achieve that.

So we feel positive about the program. We feel that with the alternatives available to us we're going to be able to make a viable commercial product here and that we don't anticipate GMP or manufacturing hang–ups to achieve that.

Phillip Wiggins: Yeah. That was my question because I believe it's Mrs. Christensen that works for AVI, that's on the board of — maybe bioprocess. And they were discussing monoclonal antibodies.

And a lot of companies were having trouble once they scaled up for production purposes. It was a lot different than producing for clinical trials. Of course, we're talking apples and oranges here -- antisense PMOs versus monoclonal antibodies.

Denis Burger: Yeah. I appreciate that. Janet Christensen is the head of our regulatory department and very familiar with the FDA and production issues that — surrounding that and experienced in the monoclonal antibody technology and production issues because of her past accomplishments.

But certainly with PMOs, one of the chief advantages is this technology is scalable.

Phillip Wiggins: Thank you. Thank you.

Denis Burger: And we've learned that in the past and have every confidence that that's not where the issues will lie. Thanks for the question.

Phillip Wiggins: You answered my question. Thank you.

Operator: Once again, ladies and gentlemen as a reminder to register for a question, please press star then the number 1 on your telephone. Your next question comes from Dennis Stanek with RBC.

Dennis Stanek: Morning, guys.

Denis Burger: Good morning.

Dennis Stanek: Hey, is there any plan to file for pandemic flu funding that was talked about last year?

Denis Burger: We originally had a funding request that involved influenza in one of our applications that we submitted to the Department of Defense. And at some point the recommendation from the folks at the Department of Defense asked us to concentrate on some of the Category A pathogens. And we'd have a better chance of being successful without influenza in it.

So although we originally had a request for some influenza funding, that didn't make it to the final round of our grant applications. However, we don't feel that the lack of funding in influenza and particularly in avian influenza, is influencing our program.

Right now we have three outside collaborators trying to finish up with the animal data that's required for our eventual IND. And we believe that on all three fronts we're making nice progress.

Dennis Stanek: Okay. Thank you.

Operator: There are no further questions at this time. Please proceed with your presentation or any closing remarks.

Denis Burger: I just want to thank you all for listening to this call. And we'll certainly keep you up to speed on the conferences we're attending in the future and up to date. Thank you so much.

Operator: Ladies and gentlemen, that concludes your conference call for today. We thank you for your participation and ask that you please disconnect

your line.

END