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Strategic Plan

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# Executive Summary

Andrews Inc. is providing the following Go-To-Market opportunities:

Telomerase Gene Therapy

Pharmaceutical Telomerase Inducers

Nutraceutical Telomerase Inducers

Immortal Pet Cloning

Pet Food Additives

Telomere Protection Products

Telomere Length Measurement

TERT Expression Assay

Cancer Diagnostics

Cancer Treatments

Human Growth Hormone

Gene Editing

CRISPR Gene Regulation

These are all described in more detail on the following pages.

Partnership details described after that.

# The Opportunities

### Telomerase Gene Therapy - Human

Ready for Immediate Marketing

During Clinical Study:

Cost to treat = $1 million USD/patient

Expected Gross Profit = $100,000 USD/patient

Expected Royalty to Andrews Inc. = $10,000 USD/patient

Licensing Fee for Exclusivity = $300,000 USD

Once Approved:

Expected Gross Profit = $100 million USD/year

Expected Royalty to Andrews Inc. = $40 million USD/year

Andrews Inc will be a 40% Shareholder

Andrews Inc.’s patented Telomerase Gene Therapy is ready for immediate clinical testing and regulatory approval. It is listed as “Ready for Immediate Marketing” because, in the U.S. at least, the FDA has recently allowed patients to pay to be in clinical studies under the following terms:

*FDA regulations permit such trials in “extraordinary circumstances,” such as when the drug being tested has a price tag so high that the trial couldn’t otherwise be run.*

-Title 21 of the Code of Federal Regulations (FDA) – June 2016 21 CFR 312.8(b)(1)(iii)

As a result, Go-To-Market Partners can start generating revenue as soon as the testing begins.

Also, in the U.S. the FDA has recently allowed special provisions for gene therapy studies that will allow quicker and easier approval under the new Regenerative Medicine Advanced Therapy (RMAT) designation.

-Section 3033 of the 21st Century Cures Act

However, Go-To-Market partners will need to conduct the studies under the jurisdictions of the countries in which the studies are conducted.

Andrews Inc. has already completed Clinical Protocols for Alzheimer’s Disease, Cardiomyopathy, Critical Limb Ischemia, Idiopathic Pulmonary Fibrosis, and Demyelinating Disorders. Additional protocols for any aging related disease, including aging itself, can easily be designed by Andrews Inc. using the template that we have already created.

### Telomerase Gene Therapy - Pets

Requires Testing and Regulatory Approval

During Pet Clinical Study:

Cost to treat = $3,000 USD/pound in weight

Expected Gross Profit = $300 USD/pound in weight

Expected Royalty to Andrews Inc. = $30 USD/pound in weight

Licensing Fee for Exclusivity = $300,000 USD

Once Approved:

Expected Gross Profit = $100 million USD/year

Expected Royalty to Andrews Inc. = $40 million USD/year

Andrews Inc will be a 40% Shareholder

Andrews Inc. has already created telomerase gene therapies for Dogs, Cats, and Horses. In the United States regulatory approval is required from the Center for Veterinary Medicine (CVM), a division of the FDA, before the gene therapies can be marketed. Other countries will often have similar regulations. Andrews Inc. is seeking Go-To-Market partners that can work with the CVM, or the equivalent in their own countries, to conduct the animal testing for safety and efficacy and obtain regulatory approval. In exchange Andrews Inc. will provide the Go-To-Market partner with marketing rights.

### Pharmaceuticals - Now

Ready for Immediate Marketing

Expected Gross Profit = $1 million USD/month

Expected Royalty to Andrews Inc. = $100,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

Andrews Inc. has one patented pharmaceutical called C0314818 that has already been approved for use in skin care products in Japan, South Korea, New Zealand, and Australia. It has also been approved as an oral supplement in Japan and South Korea. At this time, agreements in Japan and South Korea have expired so opportunities now exist for new Go-To-Market partners to market products containing C0314818 in these countries. The chemical structure of C0314818 will be provided once agreements have been signed. The structure of C0314818, or any structures similar to C0314818, have not been found in any database of chemical structures that Andrews Inc. has searched. That is, it is very unique though still satisfies the tenets of the “Lipinski's rule of five”. C0314818 can be used as an ingredient in supplements, skin care products, and pet products.

Sierra Science has discovered other pharmaceutical telomerase inducers that only need regulatory approval before marketing. To participate in these discoveries, see Pharmaceuticals – Soon in the following pages.

Andrews Inc. is still discovering more Pharmaceutical telomerase inducers. To participate in these discoveries, see Pharmaceuticals – Future in the following pages.

Market Status

Andrews Inc. has already licensed C0314818 to the Chase Life Extension Foundation (CLEF) who markets skin care products containing C0314818 called One Truth 818. They have an exclusive license for New Zealand and Australia and have been marketing the products for 8 years. Skin Care products and oral supplements containing C0314818 called Defytime are being marketed in Japan and South Korea non-exclusively. Andrews Inc. receives royalties from all sales of products containing C0314818 and will continue to do so as long as the products are marketed.

### Pharmaceuticals – Soon

Requires Testing and Regulatory Approval

Expected Gross Profit = $1 million USD/month

Expected Royalty to Andrews Inc. = $100,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

Andrews Inc. has discovered 900+ pharmaceutical telomerase inducers, some of which are as potent as C0314818 discussed on a previous page (See Pharmaceuticals – Now). Many of these have already been allowed by the U.S. Patent Office and patents have been filed on the others. The chemical structures will be provided once agreements have been signed. In many cases the structures are not similar to any structures found in the databases of chemical structures that Andrews Inc. has searched. In other cases, the structures do resemble known pharmaceuticals already on the market. All these satisfy the tenets of the “Lipinski's rule of five”. These pharmaceuticals can be used as an ingredient in supplements, skin care products, and pet products.

Andrews Inc. is still discovering more Pharmaceutical telomerase inducers. To participate in these discoveries, see Pharmaceuticals – Future in the following pages.

Market Status

Only C0314818 has been licensed so far. For more on this see Pharmaceuticals – Now on a previous page

### Pharmaceuticals - Future

Requires Discovery Research, Testing, and Regulatory Approval

Expected Gross Profit = $10 billion USD/month

Expected Royalty to Andrews Inc. = $1 billion USD/month

Licensing Fee for Exclusivity = $300,000 USD

Discovery Research Expenses = $3.75 million/month

Upfront Equipment Expenses = $1 million

Discovering new pharmaceuticals involves many disciplines but mostly Medicinal Chemistry and High Throughput Screening. From previous results we have obtained from screening over 300,000 chemicals (and finding 900+ hits) and from results that we will obtain from additional screening, we can design new chemicals with increased efficacy and decreased toxicity. We would then have the new chemicals synthesized in small scale and run them through our proprietary high throughput screening assay. Extrapolation from our previous efforts in this area tell us that we should have a hit potent enough to completely stop telomere shortening in 1-3 years. Anything more potent after that is expected to reverse aging.

The estimates of expenses above are based on the assumption that we will be testing 15,000 chemicals per month. The rate-limiting step is the number of “High Throughput Robotic Systems” we have available and the estimated testing rate is based on the assumption that we have only one “High Throughput Robotic System”. Increasing the number of “High Throughput Robotic Systems” would increase the screening rate proportionally. The estimates of expenses above are also based on testing expenses of $5,000 per every 20 chemicals tested (including the cost of purchasing the chemicals). Note: Chemicals can only be tested in batches of 20 in our high throughput assay. So, testing just one chemical will cost just as much as testing 20.

For more information on Pharmaceuticals see Pharmaceuticals – Now on a previous page.

### Nutraceuticals - Now

Ready for Immediate Marketing

Expected Gross Profit = $1 million USD/month

Expected Royalty to Andrews Inc. = $100,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

Andrews Inc. has Natural Product telomerase inducers already sitting on the shelf that are immediately available for marketing. Since they are natural products that people already consume it is not necessary to get regulatory approval as per the FDA’s “Generally Recognized as Safe (GRAS)” exclusion criteria in the United States. The same is true for most other countries also. The names of the natural products are trade secrets and will be provided upon signing an agreement. These natural products can be used immediately as ingredients in supplements, skin care products, and pet products.

Andrews Inc. is still discovering more Natural Product telomerase inducers. To participate in these discoveries, see Nutraceuticals – Future in the following pages.

Market Status

Andrews Inc. has already licensed other natural product telomerase inducers that are presently marketed by Isagenix as oral supplements. The products containing the natural products that Andrews Inc. discovered are “Isagenesis” and “Complete Essentials with Isagenesis”. Isagenix has been successfully marketing these for more than 10 years. All agreements with Isagenix and their partners have long expired so there is no possibility of contract infringement. However, Andrews Inc. still receives royalties from the sales of “Isagenesis” and “Complete Essentials with Isagenesis” and will continue to do so as long as Isagenix markets the products.

### Nutraceuticals - Future

Requires Discovery Research

Expected Gross Profit = $2 million USD/month

Expected Royalty to Andrews Inc. = $200,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

Discovery Research Expenses = $500,000/month

Upfront Equipment Expenses = $1 million

Natural products can be used immediately upon discovery as ingredients in supplements, skin care products, and pet products.

Sierra Science has so far screened 12,000 Natural Product extracts. It is estimated that there are more than 3 million Natural Product extracts available for screening (it would take 125 years to screen all 3 million). The rate in which we have been finding new Natural Product telomerase inducers in the past has been about 1 in ever 250 extracts tested. It would be reasonable to guess that we would find hits much stronger than anything we have seen before by screening additional natural product extracts. Funding from Go-To-Market partners would be needed to conduct these screens.

The estimates of expenses above are based on the assumption that we will be testing 2000 natural product extracts per month. The rate-limiting step is the number of “High Throughput Robotic Systems” we have available and the estimated testing rate is based on the assumption that we have only one “High Throughput Robotic System”. Increasing the number of “High Throughput Robotic Systems” would increase the screening rate proportionally. The screening rate per “High Throughput Robotic System” is much lower than it is for testing pharmaceutical compounds (15,000 per month) because preparation of natural extracts for testing is not robotic and very person-intensive. The estimates of expenses above are also based on testing expenses of $5,000 per every 20 extracts tested (including the cost of purchasing the extracts). Note: Extracts can only be tested in batches of 20 in our high throughput assay. So, testing just one extract will cost just as much as testing 20.

For more information on Natural Products see Nutraceuticals – Now on a previous page.

### Purified Active Ingredients from Natural Products

Requires Discovery Research

Expected Gross Profit = $5 million USD/month

Expected Royalty to Andrews Inc. = $500,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

Discovery Research Expenses = $50,000 USD/month

Time required = 3-6 months

Upfront Equipment Expenses = $100,000 USD

Natural Product Extracts are mixtures of 10’s of thousands of different chemicals and it is only 1 or a few of those chemicals that are actually producing the TERT gene induction activity. Purification of that active chemical(s) can enhance its telomerase gene induction ability immensely. This will require the use of numerous purification procedures as well as high throughput screening to identify samples (called fractions) that contain the active ingredient(s). Funding from Go-To-Market partners would be needed to conduct these purifications.

The estimated expenses above are based on purification of active ingredients from just one Natural Product Extract. There is no standard protocol for purifying active ingredients from Natural Product Extracts because every extract is different and presents its own unique challenges. Therefore, discovering purification protocols for each active ingredient can vary a lot in terms of time and expenses. So, the estimated expenses and time above should be considered an average.

As long as no modifications are made to the active ingredients, they have the same GRAS opportunities as the unpurified extracts do.

For more information on Natural Products see Natural Products – Now on a previous page.

### Immortal Pet Cloning

Requires Testing and Regulatory Approval

During Pet Clinical Study:

Cost to treat = $100,000 per pet

Licensing Fee for Exclusivity = $300,000 USD

Once Approved:

Expected Gross Profit = $100 million USD/year

Expected Royalty to Andrews Inc. = $40 million USD/year

Andrews Inc will be a 40% Shareholder

Pet Cloning is already an established industry for dogs, cats, and horses. Companies that provide this service obtain tissue samples from a client’s pet, isolate cells (usually fibroblast cells) from the tissue samples, transfer the nucleus (containing all the chromosomes) from one of the cells into an enucleated egg cell, and then transplant the new egg cell into a surrogate female pet where the egg cell undergoes natural embryogenesis. The surrogate female then gives natural birth to a pet that is genetically identical to the client’s original pet.

Andrews Inc is skilled at isolating fibroblast cells from pet tissues. But, prior to nuclear transfer, Andrews Inc can engineer the cells to produce telomerase activity using the species specific TERT (protein component) and TR (RNA component) genes. At that point a Go-To-Market partner can perform the subsequent steps themselves, under Andrews Inc’s supervision, or send the cells to one of the pre-existing pet cloning companies and and have them do the subsequent steps. The result would be a pet that is genetically identical to the client’s original pet except that it’s telomeres will not shorten. Since telomere lengths are not expected to affect development at all, these pets should develop into normal adult size pets, but not experience any aging afterwards.

In the United States regulatory approval is required from the Center for Veterinary Medicine (CVM), a division of the FDA, before the transplantation of the engineered egg cell into the surrogate female can be performed on a commercial basis. Other countries will often have similar regulations. Andrews Inc. is seeking Go-To-Market partners that can work with the CVM, or the equivalent in their own countries, to conduct the animal testing for safety and efficacy and obtain regulatory approval. In exchange Andrews Inc. will provide the Go-To-Market partner with marketing rights.

### Pet Food Additives

Requires Testing and Regulatory Approval

Expected Gross Profit = $5 million USD/month

Expected Royalty to Andrews Inc. = $500,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

A Pet Food Additive containing Andrews Inc. most potent telomerase inducer, C0314818, is expected to be the most profitable product that can be derived from the discoveries that Andrews Inc. has made so far.. This telomerase inducer is ready to be sprinkled on pet foods as soon as the Center for Vetinary Medicine (CVM), a division of the FDA, provides approval in the United States. Other countries will often have similar regulations. Andrews Inc. is seeking Go-To-Market partners that can work with the CVM, or the equivalent in their own countries, to conduct the animal testing for safety and efficacy and obtain regulatory approval. In exchange Andrews Inc. will provide the Go-To-Market partner with marketing rights.

Andrews Inc. has already identified Pet Product companies interested in marketing these additives once CVM approval is obtained. And we can introduce parties to these companies if they will conduct the studies needed for regulatory approval. This telomerase inducer is not similar to any other pharmaceutical or natural product that has already been approved by the CVM. No further “discovery research” is needed to make this into a product.

### Telomere Protection Products

Ready for Immediate Marketing

Expected Gross Profit = $1 million USD/month

Expected Royalty to Andrews Inc. = $100,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

Poor genetics, lifestyle choices, and diet can accelerate the rate of telomere shortening and, therefore, accelerate a person’s rate of aging. In most cases, this is due to an increase in inflammation and/or oxidative stress. Andrews Inc. has compiled a list of natural products that when mixed together decreases the rate of accelerated telomere shortening as much as possible. This mixture is called the Dr. Andrews Pak and is available for marketing now.

Since the ingredients are natural products that people already consume it is not necessary to get regulatory approval as per the FDA’s “Generally Recognized as Safe (GRAS)” exclusion criteria in the United States. The same is true for most other countries also. The names of the natural products are trade secrets and will be provided upon signing an agreement. The Dr. Andrews Pak can be used immediately as supplements for humans and pets.

### Telomere Length Measurement - autoFISH

Requires Assembly, Testing, and Regulatory Approval

Expected Gross Profit = $1 million USD/month

Expected Royalty to Andrews Inc. = $100,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

Assembly Expenses = $200,000/month

Time required = 10 months

Upfront Equipment Expenses = $500,000 USD

Many companies already provide telomere length measurement. But, the protocols that are used today are very inaccurate and non-reproducible. Andrews Inc. has designed a telomere length measurement protocol called autoFISH that measures individual telomere lengths by Fluorescence in situ Hybridization (FISH). This protocol should provide the accuracy and reproducibility equivalent to the best telomere length measurement protocols on the market today except quicker, easier, and at a much lower price. This protocol will also add value to Andrews Inc. research since measurement of telomere length is key in demonstrating efficacy with many of the telomere lengthening treatments that Andrews Inc. is discovering. This protocol requires funding to get the system up and running and validated.

Once on the market this protocol will provide patients with the length of their individual telomeres from a cellular extract of 100 million cells containing 9 billion telomeres. It will provide results showing the percent of telomeres that are critically short as well as average, median, and mode telomere lengths.

### Telomere Length Measurement - TeloSMRT

Requires Assembly, Testing, and Regulatory Approval

Expected Gross Profit = $1 million USD/month

Expected Royalty to Andrews Inc. = $100,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

Assembly Expenses = $50,000/month

Time required = 3 months

Upfront Equipment Expenses = $5,000

Many companies already provide telomere length measurement. But, the protocols that are used today are very inaccurate and non-reproducible. Andrews Inc. has designed a telomere length measurement protocol called teloSMRT that measures individual telomere lengths by DNA sequencing using Single Molecule Real Time (SMRT) sequencing. This protocol should provide the maximum accuracy and reproducibility possible. This protocol will also add value to Andrews Inc. research since measurement of telomere length is key in demonstrating efficacy with many of the telomere lengthening treatments we are discovering. This protocol requires funding to get the system up and running and validated.

The estimated expenses shown above are low because Andrews Inc. has the opportunity to send DNA samples to PacBio or CD Genomics to have these companes sequence the telomeres for us with their Sequel II Sequencing System using our proprietary adapters and primers. Once we are convinced that the protocol works, we have the option of buying our own Sequel II System. Then, once we have the system working ourselves we could provide it to the Go-To-Market company to market the personalized testing of patients, humans and pets, telomeres.

Once on the market this protocol will provide the length of specific individual telomeres in a cellular extract containing 9 billion telomeres obtained from 100 million cells. It will not only show the sequence of the telomere and its length, it will show which chromosome the telomere is from as well as the frequency of aberrant telomere repeats within the telomere.

Andrews Inc. is very interested being a client ourselves to do a study to identify which telomeres are important in regulating aging and aging related diseases and provide information on the roles of aberrant telomere repeats in overall health.

Collaborations are already underway with PacBio and further progress is dependent only on funding.

### TERT Expression Assay

Ready for Immediate Marketing

Expected Gross Profit = $5 million USD/sale

Expected Royalty to Andrews Inc. = $4.5 million/sale

Licensing Fee for Exclusivity = $300,000 USD

This assay is available for immediate marketing to any research or commercial institution worldwide. This is a proprietary high throughput robotic assay for detecting the gene expression of the protein component (called TERT) of telomerase in human and pet cells. Such an assay exists nowhere else in the world. TERT is the catalytic and rate-limiting component of telomerase. So, if TERT is produced in a cell then the cell has telomerase activity.

### Cancer Diagnostics

Requires Testing and Regulatory Approval

Expected Gross Profit = $1 million USD/month

Expected Royalty to Andrews Inc. = $100,000 USD/month

Licensing Fee for Exclusivity = $300,000 USD

This assay is the same as the TERT Expression Detection Assay described above. But, before it can be used for diagnostics in humans and pets it must receive regulatory approval from the Divisions of the FDA called CBER (for humans) and CVM (for pets). Getting FDA approval for assays is far easier than getting approval for drugs and therapies. This assay is >95% reliable in identifying a biopsy specimen submitted for testing as cancerous and ~85% reliable in identifying a biopsy specimen submitted for testing as not cancerous. No other diagnostic that exists today to detect early stage cancers is as reliable as this. No further “discovery research” is needed to make this assay available for cancer detection.

### Cancer Treatments – Toxic hTR

Requires Discovery Research, Testing, and Regulatory Approval

Expected Gross Profit = $1 Billion USD/month

Expected Royalty to Andrews Inc. = $100 Million USD/month

Licensing Fee for Exclusivity = $300,000 USD

Assembly Expenses = $200,000/month

Time required = 3 months - 2 years

Upfront Equipment Expenses = $1 million

This patented cancer treatment protocol utilizes active telomerase instead of inhibiting telomerase like all other telomerase related cancer treatments attempt to do. Gene therapy is used to introduce a toxic telomerase RNA component (hTR) that is toxic because the sequence of the telomere template has been altered to change the sequence of the telomere to a sequence that is toxic to the cell.

We have tested nine variations of the telomere template sequences so far and have already found significant toxicity to cancer cells. We have an additional 4087 telomere template sequences to test that should result in far more toxicity without causing non-cancer cells any toxicity at all. We will also want to try varying the length of the telomere template sequence that should provide an indefinite number of other telomere templates to test.

The time required to complete this study is shown as a range above because it is likely that we will quickly find a toxic hTR so toxic that continuing the project could be deemed unnecessary early on.

### Cancer Treatments – Toxic Nucleotides

Requires Discovery Research, Testing, and Regulatory Approval

Expected Gross Profit = $1 Billion USD/month

Expected Royalty to Andrews Inc. = $100 Million USD/month

Licensing Fee for Exclusivity = $300,000 USD

Assembly Expenses = $200,000/month

Time required = 3 months – 2 years

Upfront Equipment Expenses = $1 Million

This cancer treatment protocol utilizes active telomerase instead of inhibiting telomerase like all other telomerase related cancer treatments attempt to do. The Disovery Research involves testing 100’s of nucleotide analogs to find nulecotides that get successfully incorportated into telomere sequences by telomerase but are completely ignored by all other polymerases. These nucleotides can then be modified to be toxic, if they are not already toxic, using medicinal chemistry. When introducing these toxic nucleotides to cancer cells the telomerase enzyme will incorporate the nucleotides into the telomere sequence killing the cancer cell. Since non-cancer cells do not contain telomerase, or significantly less telomerase than cancer cells do, these nucleotides will be relatively harmless, to non-cancer cells.

As of yet, we have not tested any nucleotide analogs in this project. But, there are 1000’s available to test and our medicinal chemists can design hundreds of thousands more if necessary.

The time required to complete this study is shown as a range above because it is likely that we will quickly find a toxic hTR so toxic that continuing the project could be deemed unnecessary early on.

### Human Growth Hormone

Requires Assembly

Expected Gross Profit = $25 million USD/month

Expected Royalty to Andrews Inc. = $2.5 million USD/month

Licensing Fee for Exclusivity = $300,000 USD

Assembly Expenses = $100,000/month

Time required = 3-6 months

Upfront Equipment Expenses = $1 million

Though it isn’t a telomere biology project, Sierra Science has the technology to produce Bio-Identical Human Growth Hormone. The technology would have to be woken up from deep freeze, but manufacturing of high levels of Human Growth Hormone could be underway in 3-6 months once Andrews inc. finds a Go-To-Market Partner. All patents on Human Growth Hormone have expired many years ago. So, there is no concern for patent infringement. No further “discovery research” is needed to make this assay available but Andrews Inc. will need funding to wake everything up from deep freeze.

### Gene Editing

Requires Assembly, Testing, and Regulatory Approval for Pets

Requires Assembly for Humans

Humans

During Clinical Study:

Cost to treat = $1 million USD/patient

Expected Gross Profit = $100,000 USD/patient

Expected Royalty to Andrews Inc. = $10,000 USD/patient

Licensing Fee for Exclusivity = $300,000 USD

Once Approved:

Expected Gross Profit = $100 million USD/year

Expected Royalty to Andrews Inc. = $40 million USD/year

Andrews Inc will be a 40% Shareholder

Pets

During Pet Clinical Study:

Cost to treat = $3,000 USD/pound in weight

Expected Gross Profit = $300 USD/pound in weight

Expected Royalty to Andrews Inc. = $30 USD/pound in weight

Licensing Fee for Exclusivity = $300,000 USD

Once Approved:

Expected Gross Profit = $100 million USD/year

Expected Royalty to Andrews Inc. = $40 million USD/year

Andrews Inc will be a 40% Shareholder

Assembly Expenses = $100,000/month

Time required = 3-6 months

Upfront Equipment Expenses = $1 million

Andrews Inc. has the technology to edit the regulatory regions of the TERT gene in humans and pets by gene therapy delivery of Zinc Fingers, Talen, or CRISPr. Once delivered, these gene editing tools can be used to allow inducible or constitutive TERT expression.

Likewise, Andrews Inc. can edit other genes and other regulatory regions also.

For more information on gene therapy see Telomerase Gene Therapy – Humans and Telomerase Gene Therapy – Pets on previous pages.

### CRISPR Gene Regulation

Requires Assembly, Testing, and Regulatory Approval for Pets

Requires Assembly for Humans

Humans

During Clinical Study:

Cost to treat = $1 million USD/patient

Expected Gross Profit = $100,000 USD/patient

Expected Royalty to Andrews Inc. = $10,000 USD/patient

Licensing Fee for Exclusivity = $300,000 USD

Once Approved:

Expected Gross Profit = $100 million USD/year

Expected Royalty to Andrews Inc. = $40 million USD/year

Andrews Inc will be a 40% Shareholder

Pets

During Pet Clinical Study:

Cost to treat = $3,000 USD/pound in weight

Expected Gross Profit = $300 USD/pound in weight

Expected Royalty to Andrews Inc. = $30 USD/pound in weight

Licensing Fee for Exclusivity = $300,000 USD

Once Approved:

Expected Gross Profit = $100 million USD/year

Expected Royalty to Andrews Inc. = $40 million USD/year

Andrews Inc will be a 40% Shareholder

Assembly Expenses = $100,000/month

Time required = 3-6 months

Upfront Equipment Expenses = $1 million

The use of Gene Therapy to produce telomerase activity in humans and pets can also be accomplished by overriding the regulation of the TERT gene by gene therapy delivery of the CRISPRa gene activation system. Similarly, CRISPRi can be used to repress expression of the gene encoding endogenous TERT gene repressors.

Likewise, Andrews Inc., can regulate other genes also.

For more information on gene therapy see Telomerase Gene Therapy – Humans and Telomerase Gene Therapy – Pets on previous pages.

# Partnership Details

## Opportunities for Go-To-Market Partners

The previous pages list the ingredients, diagnostics, and therapies that are available to Go-To-Market partners. The strategy employed for partnering is described below.

### Terms for Go-To-Market Partners

1. “Licensing fees” will be requested from Go-To-Market partners seeking exclusivity. These will be an upfront payment and, in most cases, be 3x the minimum monthly royalty during the first year of sales; not to exceed $300,000. This will be due at the time of signing the agreement.
2. “Royalties”, in most cases, will be 10% of Gross Profit and paid monthly. “Gross Profit” is defined as “Revenue” less “Cost of Goods Sold (i.e. the material required to manufacture the product)”. “Cost of Goods Sold” will not include administrative, fixed costs, overhead, or any direct labor associated with product sales unless the labor is expressly towards the manufacture of the product. Royalties are expected to begin being paid as soon as the product(s) begins to be marketed. And royalties will continue as long as the product is marketed even if other agreements have expired or have been terminated.
3. “Minimum monthly sales volume” (MMSV) is calculated by dividing the present worldwide market size by 20 when a market already exists with many companies marketing the product. In cases in which the new product would be superior to anything on the market today the MMSV is calculated proportionally by its superiority (e.g. potency) over the leading products that exist today. In cases where the new product is expected to reverse aging the MMSV provided should be considered very achievable.
4. The expected “gross profit” is calculated by dividing the world wide market by 10 and is therefore double the MMSV. Note these are very rough estimates and are intended only as a starting point for negotiation.
5. Since Andrews Inc. is a Discovery Research company, we do not provide expected market sizes. Potential Go-To-Market partners are expected to research that on their own and make an offer based on what sales they believe they are capable of generating.
6. The Regulatory Approvals necessary to market products will be under the jurisdiction of the country in which the Go-To-Market partner wishes to market their products. Since Andrews Inc. is a Discovery Research company, we provide minimum advice regarding regulatory approvals. Potential Go-To-Market partners are expected to research those on their own.
7. Go-To-Market partners would own the marketing rights to the discoveries that resulted from their participation provided they can meet their obligations.
8. Exclusivity to the Go-To-Market partner would be provided only for the discoveries the Go-To-Market partner participated in.
9. In cases where Go-To-Market partners are asked to provide funding for discovery research, funding to cover one year’s worth of research will be asked for up front (for projects that take more than 12 months). After that funding will be asked for on a monthly basis until the partnership is terminated.

### Stages of Opportunities

Putting products on the market requires several steps

1. Basic Research
2. Concept Development
3. Discovery Research and/or Assembly
4. Testing
	1. Animal
	2. Human
5. Regulatory Approval
6. Manufacturing
7. Marketing
8. Treatment (if administration requires doctors or veterinarians)

Andrews Inc.’s role is step 1-3 above. Go-To-Market partners would be responsible for steps 4-8.

Ingredients, Therapies, and Diagnostics presently available for Go-To-Market partners are at the stages described below and can be found on the following pages.

1. Ready for Immediate Marketing

Andrews Inc. has several discoveries sitting on the shelf ready for Go-To-Market partners to market immediately. No additional discovery research is needed. Andrews Inc. is seeking Go-To-Market partners to market these discoveries.

1. Requires Assembly

Andrews Inc. has several opportunities for Go-To-Market that simply require assembly. So, Andrews Inc. is seeking funding to assemble these ingredients, diagnostics, and therapies in exchange for marketing rights when the assembly is completed.

1. Requires Testing and Regulatory Approval

Andrews Inc. has several discoveries sitting on the shelf ready for testing and regulatory approval. In some cases, Andrews Inc. has already identified marketing companies that are interested in marketing if someone else does the testing and obtains the necessary regulatory approvals. Andrews Inc. is seeking Go-To-Market partners to oversee the testing and regulatory approvals in exchange for marketing rights once approval is acquired.

1. Requires Discovery Research

Andrews Inc. has several opportunities for Go-To-Market partners to market products in the future. But, the ingredients, diagnostics, and therapies still require discovery. So, Andrews Inc. is seeking funding to conduct the research in exchange for marketing rights when the discoveries are completed.

### Markets

* Human Pharmaceutical Telomerase Inducers
* Pet Pharmaceutical Telomerase Inducers
* Human Natural Product Telomerase Inducers
* Pet Natural Product Telomerase Inducers
* Supplement Pack for Telomere Protection
* Cosmetics
* Skin Care
* Wound Healing
* Degenerative Disc Disease
* *ex vivo* Therapies
* Stem Cell Enhancement
* Human Growth Hormone
* Pet Food Additives
* Human Telomerase Gene Therapy
* Dog Telomerase Gene Therapy
* Cat Telomerase Gene Therapy
* Horse Telomerase Gene Therapy
* Telomere Length Measurement
* TERT High Throughput Expression Assay
* High Throughput Assay for Cancer Detection
* Cancer Therapies
* Gene Editing
* All Human and Pet Healthcare, including eyecare, dental care, hair products, etc.

# Background

## Andrews Inc.

Andrews Inc. (aka Sierra Sciences) is a “Discovery Research” company focused on finding ways to lengthen telomeres to slow down, stop, and reverse aging and aging related diseases in humans and pets. Our skill areas include:

Assay Development, Basic Research, Bioinformatics, Cell & Tissue Culture, Cell Biology, Chemistry, Data Analysis, Experimental Design, Experimental Psychology, Gene Expression, High Throughput Drug Screening, Logic, Math, Medicinal Chemistry, Molecular Biology, Physics, Probability, Protein Chemistry, Protein Purification, Statistical Theory, Virology, and others.

We have already discovered Natural Products, Pharmaceuticals, Gene Therapies, and various diagnostics to manage telomere lengths for the treatment of aging as well as cancer (which we consider an aging related disease).

Andrews Inc. seeks Go-To-Market Partners and Investors as discussed below:

## Go-To-Market Partners

Andrews Inc. seeks Go-To-Market partners to market our discoveries. Some of our discoveries are ready for immediate marketing, some require assembly, some require testing and regulatory approval, while others require additional discovery research. Andrews Inc. is offering marketing rights to Go-To-Market Partners that provide the funding for manufacturing and marketing or for advancing our discoveries that are not yet ready for manufacturing and marketing. These discoveries can be used as ingredients, therapies, or diagnostics in markets that include supplements, skin care products, pet products, and numerous others.

In exchange for marketing rights Andrews Inc. seeks licensing fees and royalties that will be used to fund our discovery research.

Andrews Inc. will assist in finding investors for Go-To-Market Partners as well as Go-To-Market partners for investors. We will also assist in finding employees, as well as provide training to develop and run new entities if the entities don’t already exist. And, we will also assist in marketing to educate potential clients on the science behind telomere biology and aging.

Andrews Inc. has no interest in pursuing the marketing of our discoveries ourselves and choose, instead, to focus on further discovery research since we are still quite a way away from achieving our main goals of curing aging.

## Dr. William Andrews, Ph.D.

Bill Andrews received his Ph.D. in Molecular and Population Genetics in 1981 at the University of Georgia. His career in Biotech began three days later as a Senior Scientist at Armos Corporation in South San Francisco, California. In 1983 he joined Codon Corporation as a Senior Scientist where he was later promoted to Director of Molecular Biology. Bill remained as Director of Moleculer Biology at Codon after Codon was acquired by Schering AG and renamed Berlex Biosciences. While at Codon/Berlex he played key roles in the discovery and development of many of the blockbusters of biotech in collaboration with Genentech, Amgen, and others. These include Human Growth Hormone, Prochymosin, Tissue Plasminogen Activator, Erythropoietin, Thrombomodulin, Osteo-Inductive Factor, and Beta-Seron. He also did significant cancer research at Codon/Berlex studying c-erbB-2, DCC, Estrogen Receptor, Heregulin, Endothelin, Cripto, RAGE, to name a few. He left Codon/Berlex in 1993 to pursue his dream of curing aging at Geron Corporation. Within three months the team he led discovered the RNA component of human telomerase followed about a year later with the discovery of the protein component of human telomerase as well as the protein component of *tetrahymena* telomerase. After demonstrating he could lengthen telomeres in normal human cells, allowing them to exceed the Hayflick Limit (a feat considered impossible by the scientific community before then) and simultaneously demonstrating that he could kill cancer cells using the anti-sense of telomerase, he left Geron to start his own company, Sierra Sciences, in 1999 to pursue the use of telomerase to cure aging while Geron decided to pursue the cure for cancer. Nevertheless, while at Geron, Bill was one of the key inventors of Geron’s lead cancer treatments Imetelstat, hTERT immunotherapy, and Suicide Gene Therapy. Sierra Sciences became Andrews Inc. in 2012.

Bill is recognized world-wide as a top researcher in the anti-aging field. And, his lifestyle is designed from the things that he and other scientists have learned regarding slowing down the aging process. These include diet, supplements, exercise, and other lifestyle choices.

Bill has been featured in many Documentaries, NEWS stories, Magazine Articles, and Talk Shows. The ones he is most noted for are an article in Popular Science magazine, a documentary called The Immortalists (that almost won an Oscar), a documentary called Immortal (that won an Emmy), and a documentary called The High which includes him running a 138 mile race non-stop at 18,000 feet elevation in the Himalayas of Northern India. Bill agrees to be featured in these ways as a means to raise awareness, and therefore funding, for his research. But, his true interest is just to be able to do research to cure aging related diseases including aging itself.

## Telomere Biology

Telomeres are found at the tips of our chromosomes. They are equivalent to the caps on shoelaces, called aglets, that protect our shoelaces. That is, telomeres are the aglets of our chromosomes. As we get older our telomeres get shorter. By re-lengthening telomeres with the enzyme Telomerase, Bill’s team was able to show that they could reverse aging in human cells by every method of measurement imaginable. Finding ways to safely induce telomerase production within humans and pets and/or deliver telomerase to humans and pets has been the mission of Andrews Inc. (and Sierra Sciences LLC) since its inception.

It is important to mention that telomere shortening and lengthening is like a tug-of-war. Low levels of telomerase will slow down the shortening, higher levels will stop the telomere shortening, and even higher levels of telomerase will lengthen telomeres, thus winning the tug-of-war. Only Telomerase Gene Therapy can win the tug-of-war at this time, but with further research we will discover natural products and/or pharmaceuticals that will also win the tug-of-war. In the meantime, the natural products and pharmaceuticals that we have already discovered that reduce the rate of telomere shortening should provide tremendous health benefits and increased longevity already.

## Videos

For a recent presentation of our Research go to: <https://www.youtube.com/watch?v=5sSwwMZ3JWU&ab_channel=SierraSciences>

Everything there is to know about telomeres:

<https://youtu.be/0SIgfYiO2PI>

## Books

*Bill Andrews on Telomere Basics: Curing Aging* <https://www.amazon.com/gp/product/0615949983?pf_rd_r=NCJZQC262195RSQDKE20&pf_rd_p=edaba0ee-c2fe-4124-9f5d-b31d6b1bfbee>

*Telomere Lengthening: Curing all diseases including cancer and aging*

[https://www.amazon.com/Telomere-Lengthening-Curing-Disease-Including/dp/0692830111/ref=sr\_1\_1?dchild=1&keywords=telomere+lengthening+bill+andrews&qid=1602090237&s=books&sr=1-1](https://www.amazon.com/Telomere-Lengthening-Curing-Disease-Including/dp/0692830111/ref%3Dsr_1_1?dchild=1&keywords=telomere+lengthening+bill+andrews&qid=1602090237&s=books&sr=1-1)

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# Investment

In addition to seeking Go-To-Market partners, Andrews Inc. is also looking for investment funding.

Based on 20+ years of research, Andrews Inc. estimates that a drug that induces enough telomerase to lengthen all telomeres could be discovered within 3 years with funding of $50 million USD.

For a $50 million USD investment Andrews Inc. will provide the investor 30% equity in Andrews Inc. Andrews Inc. will provide 7.5% equity for an investment of $15 million USD.

As discussed above, Andrews Inc. is also pursuing Go-To-Market partners as a source of the necessary funding. But, to be clear, Andrews Inc.’s key goal is to discover an affordable drug that lengthens all telomeres as described in the Strategic Plan below. So, marketing other products, is not something that Andrews Inc. is interested in pursuing itself. Instead, Andrews Inc. is relying on Go-To-Market partners to take its discoveries to market for the purpose of providing Andrews Inc. with royalties and licensing fees to fund its key research. Therefore, investors are incouraged to invest in these Go-To-Market partners also.

## Strategic Plan

### Mission

The mission of Andrews Inc. (aka Sierra Sciences LLC) is to discover a drug that will induce telomerase activity in human cells to a level high enough to reverse human aging, in every way imaginable, by lengthening telomeres. We refer to this as “Curing Aging”.

### Areas of Expertise

Putting products on the market involves several steps:

1. Basic Research
2. Concept Development
3. Discovery Research and/or Assembly
4. Testing
	1. Animal
	2. Human
5. Regulatory Approval
6. Manufacturing
7. Marketing
8. Treatment (if administration requires doctors or veterinarians)

Andrews Inc.’s areas of expertise are basic research, concept development, discovery research, and assembling prototypes. We do not do testing, regulatory affairs, manufacturing, marketing, or treatments since these would distract from the earlier steps. Our skill areas include Assay Development, Basic Research, Bioinformatics, Cell & Tissue Culture, Cell Biology, Chemistry, Data Analysis, Experimental Design, Experimental Psychology, Gene Expression, High Throughput Drug Screening, Logic, Math, Medicinal Chemistry, Molecular Biology, Physics, Probability, Protein Chemistry, Protein Purification, Statistical Theory, Virology, and other early stage disciplines. Testing and anything beyond the steps of testing would need to be done by Go-To-Market partners.

### The Science

At the tips of every chromosome in the human body is a biological “clock” called the “telomere”. Every time a cell divides, its telomeres get shorter and shorter, and the cell functions less and less effectively. Eventually, the telomeres become critically short, cell division stops, and the cell eventually atrophies and dies. Telomere shortening is a primary cause of many age-related diseases (aka telomeropathies), including heart disease, cancer, Alzheimer’s, arthritis, and COPD, to name a few. In addition, telomere shortening weakens the cells of our immune system progressively limiting the body’s ability to fight infectious diseases and cancer.

Telomerase cannot be added to cells directly; it is too big. But there is a gene for producing telomerase in every cell of the body already. This gene is active in reproductive cells (more specifically, Primordial Germ Cells), but in all other cells of the body it is turned off. The drugs that Andrews Inc.’s seeks funding for will turn the gene back on, and in time, be developed into commercial pharmaceuticals.

The 2009 Nobel Prize for Medicine was awarded to the scientists who, in the mid 1980s, characterized telomeres and discovered the existence of an enzyme called telomere terminal transferase that can lengthen telomeres in a single cell pond scum organism called *Tetrahymena*[[1]](#endnote-2). Since the discovery of a similar enzyme, called Telomerase, in humans, by Dr. Andrews and his team in the mid-1990’s, and their subsequent demonstration that lengthening telomeres using Telomerase in human cells reversed their aging, interest in lengthening telomeres has soared. A study published in the January 2011 journal *Nature*[[2]](#endnote-3) demonstrating that activating telomerase in engineered mice actually reversed their aging has further fueled this excitement and has provided the clearest support of concept yet that aging can be reversed through telomerase gene induction.

For more on the science watch the 38 minute video of Dr. Andrews’ presentation in Florida in December, 2019 at <https://www.youtube.com/watch?v=5sSwwMZ3JWU&ab_channel=SierraSciences>

### Markets

Though the main market that Andrews Inc is pursuing is age reversal and increased longevity in humans and pets, numerous other markets exist for the discoveries made at Andrews Inc. They include Pharmaceuticals, Natural Product Supplements, Pet Products, Skin Care Products, Therapies, and Diagnostics. These markets include almost all Diseases, Ailments, and Enhancements for humans and pets. Some of the key specific markets are listed below:

* Human Pharmaceutical Telomerase Inducers
* Pet Pharmaceutical Telomerase Inducers
* Human Natural Product Telomerase Inducers
* Pet Natural Product Telomerase Inducers
* Supplement Pack for Telomere Protection
* Cosmetics
* Skin Care
* Wound Healing
* Degenerative Disc Disease
* *ex vivo* Therapies
* Stem Cell Enhancement
* Human Growth Hormone
* Pet Food Additives
* Human Telomerase Gene Therapy
* Dog Telomerase Gene Therapy
* Cat Telomerase Gene Therapy
* Horse Telomerase Gene Therapy
* Telomere Length Measurement
* TERT High Throughput Expression Assay
* High Throughput Assay for Cancer Detection
* Cancer Therapies
* Gene Editing
* All Human and Pet Healthcare, including eyecare, dental care, hair products, etc.

### Scientific Leadership

Dr. Bill Andrews, founder and President, leads the research effort at Andrews Inc. From 1993 to 1997, Dr. Andrews led the team at Geron Corporation that discovered human telomerase. For this achievement, he was awarded second place as 1997 National Inventor of the Year. Dr. Andrews is a named inventor on more than 50 US-issued patents related to telomerase.

Prior to working at Geron, Dr. Andrews, had a spectacular career playing key roles in discovering and testing many of the blockbuster biotech discoveries that have ever been made. These include Human Growth Hormone (HGH), Prochymosin (aka prorennin), Tissue Plasminogen Activator (tPA), Erythropoietin (EPO), Thrombomodulin, and BetaSeron. Dr. Andrews also has a strong background in cancer research and has been instrumental in a lot of the research involving targets for treating cancer such as c-erbB-2, DCC, Estrogen Receptor, Heregulin, Endothelin, Cripto, RAGE, to name a few.

##

### Use of Funds

Once funding is obtained to discover a drug that will lengthen all telomeres Andrews Inc. will need to increase its scientific and support staff:



To efficiently pursue this phase of research, Andrews Inc. intends to expand its laboratory space and immediately acquire the following equipment (costs based on needs and estimates determined in ~2008):





An investment of $50 million would cover the operating expenses for three years and provide the investor with 30% share of ownership. An investment of $15 million would over the first eight months and provide the investor with 7.5% share of ownership. This will leave enough available equity to bring in additional investors after the first eight months.

The next layer of research following the discovery of drugs that induce sufficient telomerase expression and activity *in vitro* will include animal studies, estimated to cost $10 million (based on 2008 estimates) spread over 2 years for each compound to be further developed. We believe the cost of animal testing and much of our ongoing research will be entirely paid from royalties generated from Go-To-Market Partners.

## Business History

Highlights

Sierra Sciences Inc. founded July 20, 1999

Sierra Sciences LLC founded November 2006

C0057684 discovered November 6th, 2007

C0314818 (aka TAM-818) discovered June 11, 2010

Andrews Inc. founded November 30, 2012

Two days after receiving his Ph.D. in 1981 Dr. Andrews entered the biotech industry as a Senior Scientist at Armos Corporation and then,18 months later, as a Senior Scientist at Codon Corporation. While at Codon Dr. Andrews was promoted to Director of Molecular Biology and was key to adding the value to the company that attracted Schering AG to acquire Codon in 1989 to create Berlex Biosciences where Dr. Andrews remained as Director of Molecular Biology. In December 1993 Dr. Andrews joined Geron Corporation, as their Director of Molecular Biology, to lead the effort to discover the genes for human telomerase. The success of this effort was the key to Geron’s initial public offering in June 1996. Dr. Andrews left Geron in October 1997, when the company shifted its focus away from aging towards cancer. He spent nearly 12 months as an employee and consultant at EOS Biotechnology, while simultaneously creating a business plan to seek startup financing for Yonder Technologies, Inc. to pursue his own ideas for controlling the aging process through the regulation of telomerase.

Yonder Technologies Inc. was organized as a corporation in Nevada on July 20, 1999, in conjunction with the closing of a seed stage financing of $1.2 million in common stock invested by six “angel” investors, led by Daniel H. Fylstra, who became SSI’s President. The investors changed the name of the company to Sierra Sciences, Inc. (SSI). Dr. Andrews became SSI’s Vice President of Research, and SSI began executing Dr. Andrews’ research strategy. From inception through August 2001, SSI worked under a program at the University of Nevada, in Reno, called the Applied Research Initiative (ARI) program. This program enabled private companies to work in offices and laboratories on the campus of the University of Nevada, Reno (UNR), make use of laboratory equipment, libraries and other resources, and collaborate with a faculty principal investigator – in SSI’s case, Dr. Kenneth W. Hunter, Professor of Microbiology, Vice President of Research at UNR, and Dean of the Graduate School. In August of 2001, Sierra Sciences moved to its current facilities on Rock Boulevard in Reno, NV. Over the course of the next seven years, Sierra Sciences Inc. raised a total of $16.7 million through several rounds of common and preferred series A and B stock issuances. In late 2006, it became apparent that only two investors, Richard Offerdahl and Pierluigi Zappacosta were able to continue funding Sierra Sciences’ research and the company was reorganized to be taxed as a partnership. Sierra Sciences LLC was formed in November of 2006 and the LLC purchased all of the assets of Sierra Sciences Inc. soon thereafter. After that, Richard Offerdahl and Pierluigi Zappacost invested monthly at approximately $300,000 per month total.

After 2006 Sierra Sciences LLC saw much scientific progress, particularly the development of a high-throughput screening protocol allowing Sierra Sciences LLC to mechanically assay up to 4,000 chemical compounds per week for their ability to generate telomerase activity when added to human cells. Very quickly, over 300,000 random compounds were screened and 900+ telomerase inducers were discovered that were all more potent than TA-65. One of these telomerase inducers, discovered on November 6th, 2007, called C0057684, was found to activate telomerase expression to 5% of the level found in HeLa cells (an immortal cancerous cell widely used in life science research). 5% of HeLa is more than 100 times more potent than any other telomerase inducer.

These 900+ compounds were organized into 39 different families based on chemical structure, and this data was used to launch Sierra Sciences’ Medicinal Chemistry phase of drug discovery. That is, Sierra Sciences used the structural information in this data to design new chemicals to improve potency and safety.

Due to consequences of the global financial crisis of 2008, funding decreased significantly. In response, Sierra Sciences reduced its staff and operations dramatically in order to reduce expenses. Nevertheless, on June 11, 2010 Sierra Sciences discovered C0314818 that induces telomerase expression to 16% of HeLa (~3 fold more potent than C0057684).

Anticipating further decline in research funding, Sierra Sciences signed a deal with Dream Master on September 8th, 2010 to screen natural products for their ability to induce telomerase expression in exchange for royalties to fund its pharmaceutical research. After testing more than 10,000 different natural products, Sierra Sciences LLC discovered 37 natural product telomerase inducers. Dream Master combined some of the more potent of these inducers to form the product called Product B (aka Isagenesis) that is presently distributed by Isagenix. Sierra Sciences LLC began to collect royalties from Dream Master on October 10th, 2011 and is still doing so.

On November 30, 2012, Andrews Inc was incorporated and purchased the Common and Preferred Membership Units of Sierra Sciences LLC which resulted in the equity ownership entirely in the hands of Dr. Andrews. Dr. Andrews still likes to refer to the company as Sierra Sciences.

All funding for operations and research is presently coming from royalties generated from the other companies that have licensed Andrews Inc.’s discoveries and turned them into products. The agreement with Dream Master expired in September 2015 though Andrews Inc. still collects royalties from their product sales. The name Sierra Sciences LLC and the name Andrews Inc are now used interchangeably as the present name of the company.

## Patent Portfolio

Andrews Inc. has an aggressive patent strategy and has strong defensible patent applications on its discoveries including targets of intervention, numerous novel compounds activating telomerase expression, telomerase gene therapies, and telomerase related cancer therapies. As shown in the table below Andrews Inc. currently is the holder of eight U.S.-issued telomerase related patents as well as wo patents that have been “allowed”, with established filing dates. Andrews Inc. elected to detain issuance of these two allowed patents to keep the discoveries described in them from becoming public. But, Andrews Inc. can have them issued at any time if it becomes necessary to demonstrate an early filing date. Andrews Inc also has one pending patent and numerous discoveries that it has chosen to keep as trade secrets.

The following is Andrews Inc.’s patent portfolio as of October 6, 2020.

I. Filed Applications

| Reference No. | Serial No. Filing Date | TitleSubject Matter | Status |
| --- | --- | --- | --- |
| SIER-005 | 09/932,581August 17, 2001 | Methods and compositions for modulating telomerase reverse transcriptase (TERT) expressionSite C  | Issued as6,686,159 on February 3, 2004Expires August 17, 2021 |
| SIER-020 | 10/177,744June 21, 2002 | Telomerase expression repressor proteins and methods of using the sameF13 and F13H repressor binding protein | Issued as 7,211,435 on May 1, 2007Expires August 19, 2023 |
| SIER-020CON | 11/726,388March 20, 2007 | Telomerase expression repressor proteins and methods of using the sameFollow on application for F13 and F13H repressor binding protein | Issued as 7,795,416 on September 14, 2010Expires June 21, 2022 |
| SIER-022CON | 10/826,466Filed 4/16/04 | Methods and compositions for modulating telomerase reverse transcriptase (TERT) expression5th GC box of promoter as a site important in telomerase expression | Issued as 7,279,328on October 9, 2007Expires November 3, 2023 |
| SIER-034 | 11/085,872March 21, 2005 | Assays for TERT Promoter Modulatory Agents Using a Telomerase Structural RNA ComponentApplication directed to mutant TR based assays | Issued as 7,226,744 on June 5, 2007Expires March 21, 2025 |
| SIER-040CIPCON | 14/163,983January 24, 2014 | Telomerase Reverse Transcriptase (TERT) Expression Enhancing Compounds and Methods for Using the SameScreening hits including C0057684, excluding strong Family 5 activators | This patent was allowed but we refiled instead of issuing. So, it is technically still Pending |
| SIER-041CON | 14/258,596April 22, 2014 | Compounds for Enhancing Telomerase Reverse Transcriptase (TERT) ExpressionExceptional Family 5 hits with levels of 500 or greater including C0314818. | This patent was allowed but we refiled instead of issuing. So, it is technically still Pending |
| SIER-042 | 13/110,583May 18, 2011 | 8-Hydroxy Quinoline Derivatives for Enhancing Telomerase Reverse Transcriptase (TERT) ExpressionUse of compounds described in third-party (Prana) patents as telomerase inducers | Pending |
| SIER-044US | 14/655,140June 24, 2015  | Enhancing Health in Mammals Using Telomerase Reverse Transcriptase Gene TherapyAAV caseAlternate methods of enhancing TERT expression | Issued as 9,453,209 on September 27, 2016Expires December 23, 2033 |
| SIER-044USCON | 15/220,250July 26, 2016 | Enhancing Health in Mammals Using Telomerase Reverse Transcriptase Gene TherapyPursuing claims of broader/difference scope than what was allowed in 044US | Issued as 10,485,852 on Nov 26, 2019Expires December 23, 2033 |
| SIER-044USCON2 | 15/994,421May 31, 2018 | Enhancing Health in Mammals Using Telomerase Reverse Transcriptase Gene TherapyFurther pursuing claims of broader/difference scope than what was allowed in 044US | Issued as 10,610,574 on Apr 7, 2020Expires December 23, 2033 |

## Videos

For a recent presentation of our Research go to: <https://www.youtube.com/watch?v=5sSwwMZ3JWU&ab_channel=SierraSciences>

Everything there is to know about telomeres:

<https://youtu.be/0SIgfYiO2PI>

## Books

*Bill Andrews on Telomere Basics: Curing Aging* <https://www.amazon.com/gp/product/0615949983?pf_rd_r=NCJZQC262195RSQDKE20&pf_rd_p=edaba0ee-c2fe-4124-9f5d-b31d6b1bfbee>

*Telomere Lengthening: Curing all diseases including cancer and aging*

[https://www.amazon.com/Telomere-Lengthening-Curing-Disease-Including/dp/0692830111/ref=sr\_1\_1?dchild=1&keywords=telomere+lengthening+bill+andrews&qid=1602090237&s=books&sr=1-1](https://www.amazon.com/Telomere-Lengthening-Curing-Disease-Including/dp/0692830111/ref%3Dsr_1_1?dchild=1&keywords=telomere+lengthening+bill+andrews&qid=1602090237&s=books&sr=1-1)

## Contact

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# Footnotes

1. <http://nobelprize.org/nobel_prizes/medicine/laureates/2009/press.html> [↑](#endnote-ref-2)
2. Telomerase reactivation reverses tissue degeneration in aged telomerase-deficient mice, Mariela Jaskelioff, Florian L. Muller, Ji-Hye Paik, Emily Thomas, Shan Jiang, Andrew C. Adams, Ergun Sahin, Maria Kost-Alimova, Alexei Protopopov, Juan Cadiñanos, James W. Horner, Eleftheria Maratos-Flier & Ronald A. DePinho, Nature Volume: 469, Pages: 102–106 Date published: (06 January 2011) DOI: doi:10.1038/nature09603, <http://www.nature.com/nature/journal/v469/n7328/full/nature09603.html> [↑](#endnote-ref-3)