



**Metavo Life Sciences, Inc.**  
**&**  
**Metavo L.L.C.**  
*A Texas Limited Liability Company*

**A Startup Venture promoting Independent Living  
Status into Advanced Age**

**“It’s Never Too Late To Rejuvenate”**



## Executive Summary

Metavo Life Sciences Inc. and Metavo LLC, a Texas Limited Liability Company (“Metavo”) is a new venture based on science to delay the physiological changes associated with aging. Metavo was formed to develop and market products to maintain health, body functionality and well-being by aiming at the root molecular causes of the aging process. Many natural products exist that improve health and extend lifespan. <http://www.uttx.com/metavo.html>. These natural molecules modulate cells and tissues to extend the period of healthy, functional, independent existence. Metavo is utilizing technologies that improve and extend healthy existence and expects to translate these technologies into marketable products to delay, with the hope of avoiding, the debilitating conditions that are considered ‘normal’ in old age.

Metavo has a provisional funding commitment of matching investment money from CentreStone Ventures LP, a Canadian Life Sciences focused venture capital fund, up to US\$ 1.0 million.

Metavo was formed under the guidance of Genesys Venture Inc.. [GVI] is a company dedicated to the development of biotechnology ventures. <http://www.genesysventure.com> Genesys Venture Inc. (“GVI”), Winnipeg, Canada, provides the expertise, experience and energy required to manage emerging health and biotechnology ventures. Led by bio-entrepreneur Dr. Albert Friesen, the GVI team has extensive experience in helping to develop innovative life-sciences companies and presently has mentored a stable of several public companies. The most notable companies being Mantex, Inc. now part of Gilead Sciences Inc. and Medicare, Inc., a public cardiovascular pharmaceutical venture having a market capitalization of over \$145 million. The latest GVI company, Diamedica, Inc. is [Jan-Feb 2007] pursuing an initial stock offering [IPO] on the Toronto Stock Exchange.

The driving force behind Metavo is Geoffrey Grant, Ph.D. <http://www.uttx.com/Grant.html> an emeritus professor, biochemist and expert on aging who has extensive experience commercializing university based technologies. Dr. Grant has been a scientist at the Salk Institute, a successful entrepreneur and most recently a technology development business manager at the University of Texas.

Metavo technologies are being licensed from several renown research institutes, the most notable being the Salk Institute in San Diego, CA. In his laboratory at Salk, [Dr. David Schubert](#) has spent a lifetime working on the preservation of the brain and nerve cells, and, in particular, have focused upon solutions to the neural and cognitive decline in Alzheimer’s disease. The laboratory has developed pharmaceutical molecules that are related to, but 100-1000 times more active than, the bioflavonoids [such as fisetin and biacalein], the polyphenol, resveratrol, and the Indian spice, curcumin. These molecules are natural ingredients found in a wide variety of fruits, vegetables as well as exotic plants. They have been shown over the past decade to have a wide range of medicinal properties that include the ability to inhibit cancer cell growth, block inflammation, reverse plaque formation in Alzheimer’s models [[Scientific American, Feb 2007](#)], protect nerves cells from toxins, enhance memory and cognitive abilities and most recently [[Nature, Nov 2006](#)] resveratrol significantly extends the lifespan

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## Executive Summary [Cont]

of rodents. These natural compounds, to be clinically active, require dose levels much higher than the levels found naturally in plants. Their medicinal use, therefore, requires either chronic consumption of plant extracts over long periods and/or isolation and purification of the active ingredients so that higher doses can be administered. A clinical trial with curcumin on Alzheimer's disease is presently being conducted at UCLA [ClinicalTrials.gov identifier NCT00099710].

The Schubert laboratory at the Salk Institute has had synthesized curcumin derivatives of the natural molecules that are 100 to one thousand times more active than the natural curcumin plant compounds, depending upon the assay method, functioning as neuro-protective agents in culture. These molecules are being patented as pharmaceuticals and being tested for both possible toxicity [none shown in culture] and for their efficacy in animal clinical models, such as Alzheimer's disease, by the Cole laboratory at UCLA [referenced in the Scientific American article [attached]; and the clinical trial; see above] and in cognition and memory tests by independent laboratories. These synthetic [modified natural compounds] appear to have the potential of high potency cutting edge pharmaceuticals, the next generation prevention and treatment for the diseases of aging. The pharmaceutical giant, Novartis, has already expressed interest in these molecules.

Funding of the Metavo venture has been arranged with Centrestone VC group, a Canadian government-backed venture capital fund who have agreed to provide matching monies up to US \$1.0 million. The alternate matching \$1.0 million will be raised by Metavo LLC., in which member/partner interest increments are restricted to \$25,000 minimum each-to be escrowed until \$500,000 is available. The principal initial use of funds is to further the research of the molecules in animals and establish their potency and efficacy as therapeutics. The long term goal, exit strategy, is to attract the attention of 'Big' Pharma and either joint venture or sell the pharmaceutical licensing rights.

Presently, NO drug is prescribed to prevent or cure Alzheimer's. The compounds that are FDA approved and medically prescribed to treat Alzheimer's are all directed at symptomatic relief not at solutions to the condition. There are only four drugs that the FDA has approved and that are currently available for relief, but not to cure patients with Alzheimer's in the United States; Tacrine (CognexR), Donepezil (AriceptR), and Rivastigmine (ReminylR) that inhibit acetylcholinesterase. and the fourth, Memantine (NamendaR) that prevents glutamate excitotoxicity.

The molecules from the Salk Laboratory are potent and unique. The Salk patented molecules show an ability to promote the destruction of the Alzheimer's plaque  $\beta$ -amyloid protein in cell cultures and therefore we consider the molecules to have the potential to prevent and reverse the neuro-degeneration that are prevalent in Alzheimer's disease.



**INVESTMENT SUMMARY MEMORANDUM**  
**Metavo Life Sciences Inc.**  
**&**  
**Metavo L.L.C.**  
**(“Metavo” or the “Company”)**

THIS IS NOT A SOLICITATION OR OFFER OF THE PURCHASE OR SALE OF SECURITIES. THE STATEMENTS HEREIN HAVE BEEN TAKEN FROM SOURCES WE BELIEVE TO BE RELIABLE, BUT SUCH STATEMENTS ARE MADE WITHOUT ANY REPRESENTATION AS TO ACCURACY OR COMPLETENESS OR OTHERWISE. NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, CONTAINED IN THIS INVESTMENT SUMMARY HAS BEEN MADE. ALL PARTIES IN RECEIPT OF THIS MEMORANDUM EXPRESSLY DISCLAIM ANY AND ALL LIABILITY RELATING TO OR RESULTING FROM THE USE OF THIS INVESTMENT SUMMARY OR SUCH OTHER INFORMATION BY A RECIPIENT OF THIS SUMMARY OR ANY OF IT'S AUTHORS. IT IS UNDERSTOOD THAT YOU WILL MAKE YOU OWN INDEPENDENT INVESTIGATION OF THE MERITS AND RISKS OF THE PROSPECTS OF THIS OPPORTUNITY



**Offering: up to US \$ 1,000,000**

**Objective**

Metavo seeks to raise up to US\$1,000,000 through a partnership of United States based investors (**Metavo, L.L.C.**). The Company has a provisional commitment from CentreStone Ventures LP, a life sciences focused venture capital fund, to match any arms length party investment in Metavo up to US\$1,000,000, effectively allowing the Company to leverage investment in **Metavo, L.L.C** to raise up to US\$2,000,000 to finance the Company through its first 24 months of operations. **Minimum investment in Metavo , L.L.C is US\$25,000 .**

The principal initial use of funds is to further the research of The Company's technology in animals and establish their potency and efficacy as therapeutics in early stage clinical trials. The long term goal, exit strategy, is to attract the attention of “Big” Pharma to ultimately transfer/sell to the pharmaceutical industry, leading edge technology/products that will cure or prevent cognitive impairment, Alzheimer's and other age-related debilitating diseases.

**Specific Goals and Aims.**

- ✚ Develop and Market naturopathic and nutraceutical supplements to restore memory and cognitive capabilities, prevent age-related debilitation and to extend the independent living status of the elderly.
- ✚ Conduct animal and early clinical studies of the unique pharmaceutical molecules [Salk-CBN001] to prevent and reverse Alzheimer's and neurological disorders.
- ✚ Develop a new generation of compounds from ‘known’ neuro-protective bio-flavonoids, particularly Fisetin.

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## Opportunity

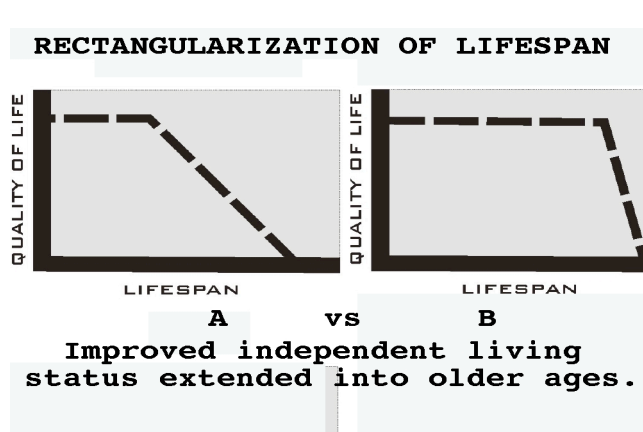
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Throughout history mankind has searched for the “Fountain of Youth”. Never before has the opportunity been so realistic to maintain a state of good health for decades longer than previously thought possible. Medical techniques and understanding of the human body have nearly doubled the average lifespan over the last century, and scientific experiments have documented the possibility to extend both lifespan and quality of life even further. Several molecules have been shown to extend the lifespan in animal experiments. Therefore, an opportunity exists for the Company to develop products which essentially delay the onset of “aging” and age related problems while extending the period of healthy existence and even the lifespan of an individual and potentially create considerable value for shareholders. Anti-Aging is big business as Freedomia Research Group claims the total demand for anti-aging products at roughly US\$25billion. There is great opportunity with technologies that show potential as the pharmaceutical industry has a solid track record of investment.

## The Company

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Metavo is a new venture based on the science of delaying the physiological changes associated with aging. The Company was formed to develop and market products to maintain health and functionality by aiming at the root molecular causes of the underlying aging process and modulate these causes to extend the period of healthy, functional, independent existence. Metavo is utilizing technologies that improve and extend healthy existence and expects to translate these technologies into marketable products to delay, and possibly avoid, the debilitating conditions that are considered normal in old age. Some experts have called this the “rectangularization of lifespan”. The aim is to maintain quality of life with independent living status, well being at the highest level, and for the greatest possible time, as opposed to the normally expected long, slow, degenerative process [see Figure 1]. Extended lifespan may be a side-effect of curing disease and promoting healthier living.



**Figure 1:**

Metavo has agreed to a License Agreement in Principle with the Salk Institute in San Diego, CA, which will grant Metavo an exclusive license to a series of promising technologies from the laboratories of [Dr. David Schubert](#). One of the lead products, Salk-CNB-001, is a curcumin derivative that has unusually activities and a high potency.

Metavo expects to license a select number of technologies from additional institutions and is currently in discussions with institutions regarding other opportunities. The number of technologies Metavo will pursue at any one time will be based upon a strategy that gives Metavo the most abundant chance for success, while allowing the Company to make progress on all fronts in a timely way.

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## Management

The vision and leadership for Metavo has been provided by [Dr. Geoffrey Grant](#) a Professor emeritus (University of Texas Arlington), biochemist and expert on aging with considerable experience in commercializing technologies. Over the past 25 years Dr. Grant has managed several technology, medical device and equipment manufacturing companies. Most recently, as Director of the University of Texas, Arlington Technology Incubator, he mentored and assisted in the development of more than a dozen high tech start-up companies.

The Company was formed under the guidance of [Genesys Venture Inc.](#), a company focused on managing the start-up and development of biotechnology ventures. Based in Winnipeg, Canada, Genesys Venture Inc. (“GVI”) provides the expertise, experience and energy required to start-up and manage emerging health and biotechnology ventures (Figure 2). Founded and lead by renowned bio-entrepreneur Dr. Albert Friesen, the GVI team has extensive experience in helping to develop innovative life-sciences companies.

**Figure 2: Summary of GVI’s Current Clients and Past Successes**

Clients	Date of Initial Investment	Current Stage	Trading Market/Symbol	Market Capitalization
<b>Previous</b>				
<b>Mantex Inc.</b>	<b>November 1998</b>	<b>acquired by Myogen, subsequently acquired by Gilead</b>	<b>NASDAQ [ GILD ]</b>	<b>Myogen acquired by Gilead Sciences Inc. \$ 2.5 Billion. :</b>
<b>Medicure Inc.</b>	<b>September 1999</b>	<b>Enrolling for Phase III clinical study, cardiovascular drug</b>	<b>AMEX [ :MCU ] TSX [ :MPH ]</b>	<b>\$ 145 Million</b>
<b>Current Clients</b>				
<b>Miraculins Inc.</b>	<b>September 2002</b>	<b>human clinical samples on biomarkers discovered for cancer diagnostics, validation studies</b>	<b>TSX-V :MOM</b>	<b>\$ 9.5 Million</b>
<b>Kane Biotech Inc.</b>	<b>November 2001</b>	<b>developing active agents for coating medical devices and reducing infection rates, in vivo studies</b>	<b>TSX-iV :KNE</b>	<b>\$ 4.24 Million</b>
<b>DiaMedica Inc.</b>	<b>October 2001</b>	<b>enrolling for Phase II study, diabetes</b>	<b>TSX-V</b>	<b>preliminary prospectus filed for IPO</b>

The Genesys Venture Inc.’s startup development program has sponsored four [4] public companies [plus one in process of a public offering] all of which have positive track records, with **ZERO** failures to date. Mantex Inc. was acquired by Myogen Inc., which was subsequently acquired in 2006 by Gilead Sciences Inc. for \$2.5 Billion (\$52.50 per share). Medicure [\$145 M market Cap] is currently enrolling patients in a Phase III clinical trial and

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has successfully raised over \$100 Million to date. **An investment in either of these two GVI start-up companies in the late 1990s would have yielded a return on investment of roughly 500% each** (over 65% per year when annualized). GVI's current clients are in various stages of development in the drug, medical device and in vitro diagnostic markets and to date, have all provided positive return on investment for early stage investors.

[Dr. Friesen](#) is well known in both the scientific and business communities. His notable achievements include the establishment of several GMP production facilities for the production of human pharmaceuticals; initiating the research and clinical development of numerous pharmaceutical candidates, including more than 15 INDs (investigational new drugs); and managing the clinical trial process for several therapeutics, including two successful NDAs (new drug applications).

GVI and Dr. Grant have worked together in the past on the start-ups of Mantex Biotech and Kane Biotech. Dr. Grant is currently on the Board of Directors of Kane Biotech. Both parties are enthusiastic about continuing to build on this productive relationship, and building Metavo into a success.

Metavo is also working towards constructing a medical/scientific advisory board comprised of world renowned scientists and opinion leaders that together represent not only a cross section of experience but also specific expertise in relevant therapeutic areas.

### **Potential Therapeutic Impact**

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The numerous “diseases of aging” including Alzheimer’s, Parkinson’s, cancer, diabetes, atherosclerosis, heart conditions and cognitive disorders that interfere with independent living of the aged have been attributed to oxidative cell damage. The specific symptoms common in the aged include muscle wasting, abdominal fat deposits, hip fractures and musculoskeletal impairment, erratic sleep patterns, sleep apnea, severe osteoporosis and syndrome X.

Population surveys indicate that mental/cognitive decline is the paramount concern and greatest fear among Americans, followed by physical/activity incapacity. Metavo is planning to commercialize compounds that have demonstrated the ability to correct the conditions related to these diseases, by improving the efficiency of energy production, and/or reducing the effect of oxidative damage. These claims will be supported by rigorous scientific study. It is the aim of Metavo to conduct clinical trials by the most expeditious means to bring these products to market.

Metavo’s first target for a therapeutic will be cognitive impairment. This is a frequent age-related affliction that is a common precursor to Alzheimer’s disease (“AD”). Metavo’s strategy is to evaluate its therapeutic candidates in other “diseases of the aging” as the Company progresses.

## Company Technology

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Metavo is initially being formed around technology from the laboratory of Dr. David Schubert of the Salk Institute in San Diego, CA. [Dr. Schubert](#) has spent a lifetime working on the preservation of the brain and nerve cells and much of his research has provided new insights into Alzheimer's and other degenerative brain disorders.

The Schubert laboratory has invented, synthesized and developed new pharmaceutical molecules related to the Indian spice curcumin, bio-flavonoids (such as fisetin and biacalein), and polyphenols, like resveratrol. These base molecules are natural ingredients found in a wide variety of fruits, vegetables and exotic plants. They have been shown over the past decade to have a wide range of medicinal properties that include the ability to inhibit cancer cell growth, block inflammation, reverse plaque formation in Alzheimer's models (*Scientific American, February 2007*), protect nerves cells from toxins, enhance memory and cognitive abilities and significantly extend the lifespan of worms, flies, fish and rodents. (*Nature, November 2006*).

However, to be clinically active, these natural compounds would require dose levels much higher than the levels found naturally in plants. Their medicinal use, therefore, requires chronic consumption of large amounts of plant extracts over long periods. Alternately, the active ingredients must be isolated and purified so that higher doses can be administered. Therefore, the Schubert laboratory has synthesized derivatives of the natural molecules that are up to one thousand times more active than the natural plant compounds. These molecules are being patented as pharmaceuticals. They are being tested for both possible toxicity and for their efficacy in animal models, such as Alzheimer's animal models [by the Cole lab @ UCLA, referenced in Am. Scientific article above] and in cognition and memory tests conducted by an independent lab. A new clinical trial with curcumin on Alzheimer's disease is presently being conducted at UCLA [ClinicalTrials.gov identifier NCT00099710 ].

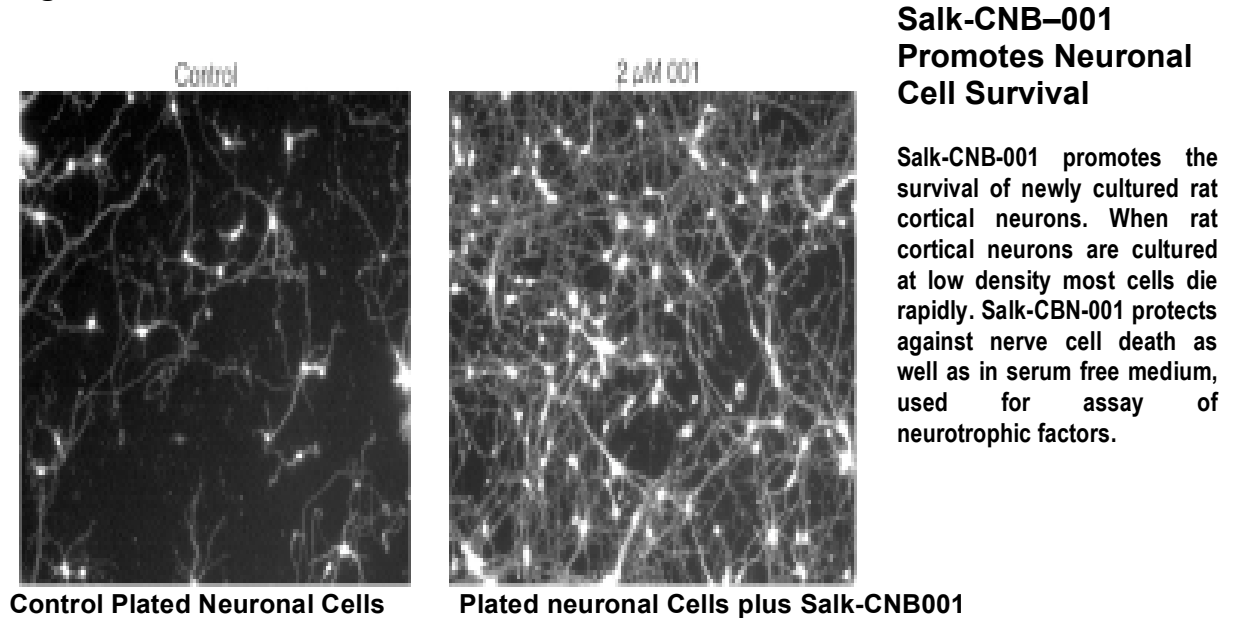
### ***Lead Product – Salk-CNB-001***

Metavo's patented curcumin derivatives from the Schubert Group have been shown to have anti-oxidant and neural protective activity, at a thousand times lower concentrations (nanomolar levels) than curcumin, with significantly less toxicity. As the molecules are synthetic compounds, they are classified as pharmaceuticals. They are therefore subject to standard intellectual property and regulatory policies, including the standard clinical trial process.

The lead molecule is called Salk-CNB-001. In addition to demonstrating neuro-protective activity in oxidative stress, neuro-protective and serum deprivation assays, the molecule is uniquely and unexpectedly active at promoting neuronal cell survival (see Figure 2). This activity has not been previously reported, in fact, no known protein hormone- neurotrophic factors exhibits this ability. Salk-CNB-001 protects neural cells under conditions of significant stress that normally lead to cellular death. Salk-CNB-001 is active at concentrations below microMolar levels in primary neurons and has been shown to be safe at concentrations ~10-100 fold higher.

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Figure 2:



Pilot pharmacokinetic studies showed that orally administered Salk-CNB-001 is rapidly absorbed into the blood and quickly distributes to the brain, meaning that it is able to cross the blood-brain barrier – perhaps the most prominent challenge for therapeutics that treat the brain. The results also show that six hours after administration, a majority of the agent has left the system. In addition, according to the Ames test, the drug is not mutagenic. The mechanism of action of Salk-CNB-001 is expected to be as a promoter of neuronal survival, not as an antioxidant.

In addition to overwhelming evidence in favour of developing Salk-CNB-001 as a pharmaceutical agent, Metavo also has the licensing rights to a group of recently synthesized derivatives of Salk-CNB-001. This includes a very promising compound with even greater potency than Salk-CNB-001, further reduced toxicity, and enhanced solubility. These potential second generation compounds are receiving intensive further study.

***Although statistics show that the incidence of Alzheimer's approaches 50% as humans age past 85 years old, NO drug is FDA approved or prescribed to prevent or cure Alzheimer's. [\[See Metavo web\]](#)***

The compounds that are FDA approved and medically prescribed to treat Alzheimer's are all directed at symptomatic relief not at solutions to the condition. There are only four drugs that the FDA has approved and available for relief of Alzheimer's in the United States; Tacrine (CognexR), Donepezil (AriceptR), and Rivastigmine (ReminylR) that inhibit acetylcholinesterase, and the fourth, Memantine (NamendaR) that prevents glutamate excitotoxicity.

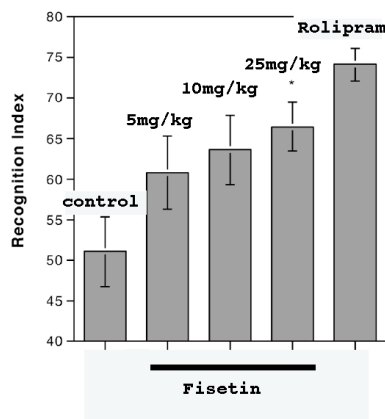
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The molecules from the Salk Laboratory are potent and unique. The Salk patented molecules show an ability to promote the destruction of the Alzheimer's plaque  $\beta$ -amyloid protein in cell cultures and therefore we consider the molecules to have the potential to prevent and reverse the neuro-degeneration that are prevalent in Alzheimer's disease.

The Schubert Group also has a working relationship with the pharmaceutical company Novartis. Metavo intends to explore possible opportunities stemming from the Novartis relationship, once cell culture and animal testing is completed.

### Pipeline – Fisetin and Fisetin Derivatives

As part of the package of technology from the Schubert Group, Metavo has rights to intellectual property related to the natural compound Fisetin. Fisetin is a member of the flavonoid subclass flavonols. Major food sources for flavonols are onions, apples, tea, olives and broccoli. Fisetin is extracted from *Rhus Cotinus*, a shrub of Southern Europe. As a nutritional supplement, Fisetin has been shown to improve cognitive function, learning ability and brain capability in animal studies [[Maher-2006](#)]. These studies showed that Fisetin's ability, when taken as a nutrient, to improve cognitive and memory capability is comparable to the pharmaceutical Rolipram (see Figure 3) that must be injected. Also, Fisetin has been shown to extend the lifespan in lower species, such as *Drosophila*. [See Life Extension nutrients.](#)



### Figure 3: Fisetin Enhances Long Term Memory

Fisetin enhances long term memory in mice. The effect of different oral doses of fisetin on object recognition over a 10 min test period. Rolipram, injected intraperitoneally at 0.1 mg/kg, served as a positive control. Data represent the mean  $\pm$  SEM of 10 mice/treatment group. Data were analyzed by one-way ANOVA followed by post-hoc comparisons with Fisher's test indicates significantly different from vehicle control ( $p < 0.02$ ). Similar results were obtained in 2 independent, blinded experiments done by Psychogenics., an independent commercial laboratory.

Metavo expects to pursue a strategy to exploit the potential of Fisetin as a supplement and food additive. Also, Metavo is particularly enthusiastic about the potential of Fisetin as a base molecule for drug development by developing derivatives of the molecule using combinatorial chemistry.

### Intellectual Property

Metavo has optioned the exclusive rights to the inventions of Dr. Dave Schubert at the Salk Institute. These inventions are protected by patents entitled "*Methods for Protecting Cells from Amyloid Toxicity and for Inhibiting Amyloid Protein Production*" [US#6,472,436, US#7,053,116 and Application No. 60/807,805].

And "*Oral Administration of Polyphenol Bioflavonoids enhances cognitive and memory capabilities.*" P Maher. Patent Pending.

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## Market Opportunity

Anti-aging is big business as 77 million baby boomers approach retirement age. In fact, the Freedonia Research Group claims the total demand for anti-aging products at roughly US\$25 billion. The market is being driven by double-digit growth in demand for active products such as memory enhancers, osteoarthritis remedies and sexual dysfunction drugs. While active pharmaceuticals are the largest segment of this market, it also includes a vast array of nutritional products and supplements that have large and lucrative markets

Metavo has sought and developed a product focused strategy that will allow it to impact the growing market need and momentum of the anti-aging space. The Company subscribes to the theory that cognitive impairment, leading to Alzheimer's disease ("AD"), is a result of aging of the brain, similar to other age-diseases that affect muscles, the immune system and other tissues. As such, the Company believes this is the ideal first target for a therapeutic aims at independent living status and an active mind. However, it must be based upon its tangible clinical trial endpoints, and patient needs.

By the time a person reaches 85 years of age, they have a 50% chance of Dementia and/or Alzheimer's and increases with age [\[see Metavo HomePage\]](#). Reported sales of therapeutics for neurodegenerative diseases (including cognitive impairment and Alzheimer's) are greater than US\$2.3Billion annually and forecast to grow to over US\$10Billion by 2013. There is not currently a disease modifying drug on the market for Alzheimer's.

It is Metavo's strategy to evaluate its therapeutic candidates in other "neurological and age-related diseases" as the Company progresses.

## Product Development Path

The drug development path in the United States is regulated by the Food and Drug Administration ("FDA"). The process of taking a compound from drug discovery through all necessary approvals for human use can be divided into the pre-clinical and clinical stages. The clinical stage can further be subdivided into Phase I, Phase II and Phase III clinical trials. This process is well defined and further explanation can be found in numerous external sources.

## Use of Proceeds & Milestones

	1HY1	2HY1	1HY2	2HY2	TOTAL
<b>Research and Development</b>					
Sponsored Research & Licensing	\$75,000	\$75,000	\$112,500	\$112,500	\$375,000
Salaries and Consulting	\$24,000	\$36,000	\$36,000	\$36,000	\$132,000
Research & Development Programs	\$198,000	\$198,000	\$198,000	\$198,000	\$792,000
<i>Sub-Total</i>	<i>\$297,000</i>	<i>\$309,000</i>	<i>\$346,500</i>	<i>\$346,500</i>	<i>\$1,299,000</i>
<b>Operating</b>					
Professional Fees - Legal and Audit	\$65,000	\$25,000	\$15,000	\$25,000	\$130,000
Salaries and Consulting	\$67,500	\$67,500	\$67,500	\$67,500	\$270,000
Rent and Miscellaneous	\$40,000	\$36,000	\$36,000	\$36,000	\$148,000
<i>Sub-Total</i>	<i>\$172,500</i>	<i>\$128,500</i>	<i>\$118,500</i>	<i>\$128,500</i>	<i>\$548,000</i>
<b>Capital Costs</b>					
Patenting	\$50,000	\$30,000	\$40,000	\$30,000	\$150,000
Lab Start-up and Equipment	\$0	\$0	\$0	\$0	\$0
<i>Sub-Total</i>	<i>\$50,000</i>	<i>\$30,000</i>	<i>\$40,000</i>	<i>\$30,000</i>	<i>\$150,000</i>
<b>TOTAL</b>	<b>\$519,500</b>	<b>\$467,500</b>	<b>\$505,000</b>	<b>\$505,000</b>	<b>\$1,997,000</b>

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**Milestones.**

Assuming the maximum offering, Metavo's key milestones over the next 24 months are as follows:

- Establish Sponsored Research Agreement with Schubert laboratory at Salk to continue to develop scientific evidence supporting Metavo's compounds
- Chemically synthesize several candidate molecules
- Select lead compound for clinical development
- Initiate GMP production of lead compound
- Commence external preclinical studies with lead compound
- Continue negotiation with additional institutions related to additional technologies
- Position additional promising compounds in the Company's pipeline.
- 

**\*\*\* Investment Funds into Metavo LLC may be subject to fund raising finder's fees or equity.**

**Ownership Structure**

Metavo was incorporated in 2006 and is owned 80% by [Genesys Venture Inc.](#) and 20% by [UTTx, Inc.](#) (controlled by Dr. Geoffrey Grant). As part of the License Agreement, the Salk Institute will be granted 8% equity in the Company. The resulting ownership structure is as follows:

Genesys Venture Inc.	76.0 %
UTTx, Inc.	16.0 %
The Salk Institute	8.0 %

Assuming the maximum offering amount, it is anticipated that following this contemplated offering the ownership structure will be as follows:

Genesys Venture Inc.	45.6 %
UTTx, Inc.	9.6 %
The Salk Institute	4.8 %
Metavo L.L.C	20.0 %
Centrestone Ventures LP	20.0 %

**Investment Risk & Forward-looking statements**

An investment of this nature is speculative and involves a high degree of risk that should be considered by potential investors. An investment of this nature should only be undertaken by those persons who can afford total loss of their investment and is only suitable for purchasers aware of such risks. Although results are very optimistic at this preclinical stage, if molecules are developed that show potential the pharmaceutical industry has a solid track record of investment of over \$30 billion dollars per year.

**This summary contains forward-looking statements, which are made pursuant to the safe harbor provisions of the U.S. Securities Litigation Reform Act of 1995. Forward-looking statements involve known and unknown risks and uncertainties which could cause the Company's actual results to differ materially from those statements. Such risks and uncertainties include, but are not limited to, the availability of funds and resources to pursue R&D activities, the successful and timely completion of clinical studies, the ability of the Company to take advantage of business opportunities in its specific industry, uncertainties related to the regulatory process and general changes in economic conditions. Investors are cautioned not to rely on these forward-looking statements nor does the Company undertake to update these forward-looking statements.**



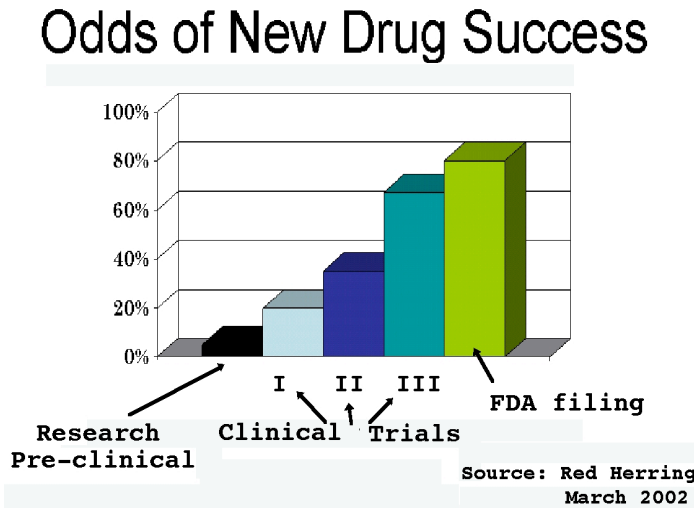
**ADDENDUM**

**Biotechnology Investment Risk & Reward Factors**

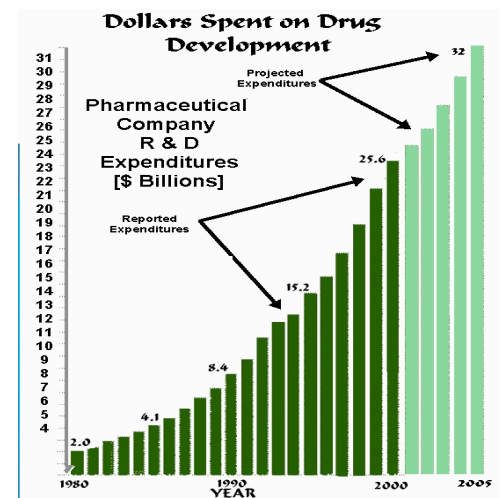
Alzheimer's disease progressively destroys a person's memory and ability to learn, reason, make judgments, communicate and carry out daily activities. It affects more than 4 million Americans and as the population ages Alzheimer's disease will double in next 20 years. FDA approved Alzheimer's pharmaceuticals do not reverse or slow down disease progression but have worldwide annual sales of US\$3.1 billion. The Alzheimer's pharmaceutical market is expected to grow significantly with the arrival of products that have the potential to alter disease progression.

The development of a pharmaceutical drug involves substantial risk. The process ultimately requires many years of extensive research and clinical trials (Figure A1). However, if drugs are developed that show potential, the pharmaceutical industry has a solid track record of investment (Figure A2). The present level of R&D investment in drug development by the pharmaceutical industry totals over \$30 billion dollars per year.

**Figure A1:**



**Figure A2:**



Drug development is a long, involved and expensive process (Figure A3). The research must discover a substantial breakthrough in the activity of new compounds. It must be able to demonstrate reproducible results at all levels of testing. In general, this involves extensive screening of molecules that have potential, and then customizing the most active candidates, by specialized chemistry, to perfect the activity desired.

**Figure A3:**

**Drug Development Process**

- **Drug Discovery** ~3 Years
  - Identify or validate genes, Identify or validate drug targets, Develop cell assays, Discover/develop small molecules, Show efficacy
- **Pre-Clinical** ~ 2.5 Years
  - Pharmacology, Toxicology, Formulation of drug form, Pharmacokinetics
- **Clinical** ~5.5 Years
  - Phase I – Safety & Dose
  - Phase II – Efficacy & Side Effects, Multiple Dosages, Prove Concept
  - Phase III – Reactions & Long-term effects
- **Submission to FDA for approval** ~ 1.5 Years
- **FDA Approval**

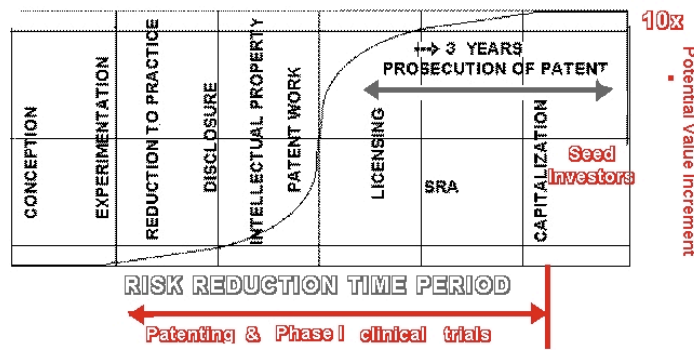
**“It’s Never Too Late To Rejuvenate”**

Once a molecule of interest has been identified it must be protected through the patenting process. This means the molecule must be unique, have specific utility as a therapeutic agent and not be obvious in its design to experts in the field. It generally takes several years until a patent is issued during which time the first stages of animal testing usually take place. Efficacy in animals is essential, together with studies that show the molecule is non-toxic when administered at levels expected to provide therapeutic results.

The patenting and animal testing stages of drug development are designed to reduce the risk to the investors. This will then attract the interest of the big pharmaceutical companies to the potential of the discovery. This is a critical stage, representing a significant potential value increase to early stage investors (see Figure A4). When a compound has shown efficacy in cell culture and animal experiments it proceeds to human clinical trials.

Figure A4:

**Investor Risk Protection Process**



It is critical that testing must be done to show that the therapeutic value is functional in animals, and then upon small groups of humans. The testing must show that the drug is both an effective treatment and has no adverse effects, or toxicity, when administered to patients. As the testing continues through the clinical trial process, the potential value of the drug increases proportionately. It is a common strategy for companies to seek licensing partners, joint cooperative ventures and/or outright sale of the discovery. The value and

potential revenue to the investors (Figures A5& A6) increases as costs continue to rise. Often times, a deal must be arranged to facilitate the final stages of drug development. As a benchmark, a phase III clinical trial can require in the range of hundreds of millions of dollars to conduct and demands thorough conclusive evidence of potential success as a therapeutic drug.

Figure A5:

**Historical Biotech Valuations**

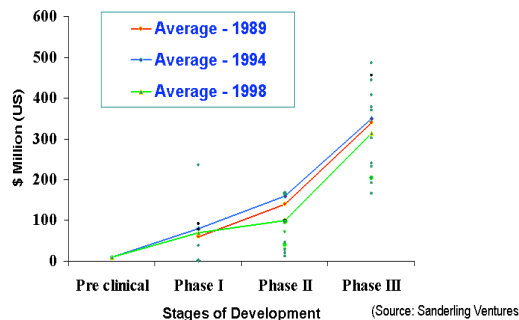
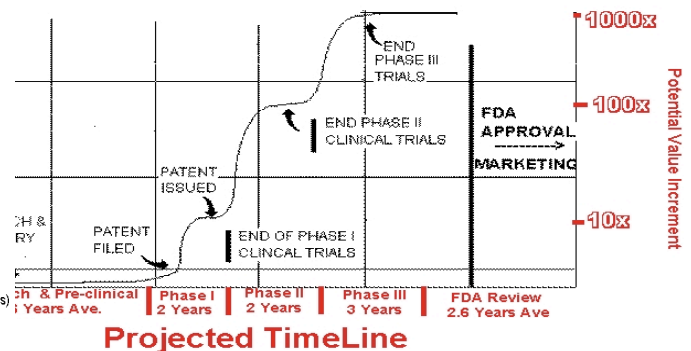


Figure A6: Source PhRMA (2001)

Tufts CSDD Approved NCE Database. DiMasi et al PharmacoEconomics. 2002, V20Supplement3, p11. DiMasi et al. J. Health Economics 22 (2003) 151-185

**Valuation Potential of a Pharmaceutical Drug vs. Stage of Clinical Trial.**



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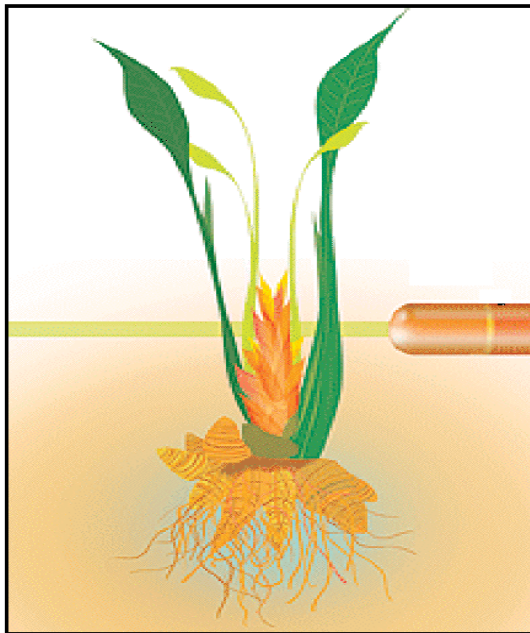
SCIENTIFIC  
AMERICAN  
presents

## Spice Healer

An ingredient in curry shows promise for treating Alzheimer's, cancer and other diseases.

By Gary Stix.

### Curcumin for Alzheimer's



Searching for new drugs by milling through ancient folk pharmacopoeia or by just picking a plant while walking in the woods has a decidedly checkered history. Many well-established therapeutic compounds originated in trees, shrubs, mollusks, even dirt. Aspirin came from willow bark, cholesterol-lowering statins from a mold, and the antimalarial artemisinin from a shrub used in traditional Chinese medicine. Yet after raising \$90 million during the 1990s in a much publicized bid to tap indigenous knowledge for new drug leads, Shaman Pharmaceuticals had to lower its sights until it was doing nothing more than selling its products as nutritional supplements before

finally shutting its doors for good a few years ago.

Now the trend may be reversing itself again. Recently a number of natural compounds--such as resveratrol from red wine and omega-3 fatty acids from fish oil--have begun to receive close scrutiny because preliminary research suggests they might treat and prevent disease inexpensively with few side effects. Turmeric, an orange-yellow powder from an Asian plant, *Curcuma longa*, has joined this list. No longer is it just an ingredient in vindaloos and tandooris that, since ancient times, has flavored food and prevented spoilage. A chapter in a forthcoming book, for instance, describes the biologically active components of turmeric--curcumin and related compounds called curcuminoids--as having antioxidant, anti-inflammatory, antiviral, antibacterial and antifungal properties, with potential activity against cancer, diabetes, arthritis, Alzheimer's disease and other chronic maladies. And in 2005 nearly 300 scientific and technical papers referenced curcumin in the National Library of Medicine's PubMed database, compared with about 100 just five years earlier. Scientists who sometimes jokingly label themselves curcuminologists are drawn to the compound both because of its many possible valuable effects in the body and its apparent low toxicity. They ponder how the spice or its derivatives might be used, not just as a treatment but as a low-cost preventive medication for some of the most feared ailments. As a treatment, it also has some enticing attributes. Because

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curcumin targets so many biological pathways, it could have benefits for cancer therapy: malignant cells may be slow to acquire resistance to it and so might have to go through multiple mutations to avoid the substance's multipronged attack.

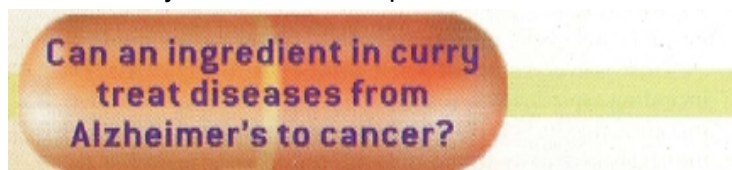
But is the compound ready for widespread use? Some work offers grounds for caution. Among the more than 1,700 references to curcumin in PubMed are studies showing how a compound that can affect so many biological pathways can sometimes hit the wrong switch and actually help to foster disease.

Long Medical History Known as HALDI in HINDI, jiang huang in Chinese, manjal in Tamil (and just plain "yuk" as the yellow stain on a white T-shirt from the splatting of ballpark mustard), turmeric has a medicinal history that dates back 5,000 years. At that time it was a key medicament for wound healing, blood cleansing and stomach ailments in India's Ayurvedic system of medicine. The first record in PubMed of research on the biological activity of curcumin dates back to 1970, when a group of Indian researchers reported the effects of the compound on cholesterol levels in rats. The pace of studies picked up in the 1990s; one of the leaders was Bharat Aggarwal, a former scientist at Genentech who, before turning to curcumin, had taken another approach to seeking cancer treatments. That work led him circuitously to the compound. In the 1980s Aggarwal and his team at Genentech were the first to purify two important immune molecules--tumor necrosis factor (TNF) alpha and beta--that have been identified as potential anticancer compounds. These molecules can, in fact, kill cancer cells when deployed in localized areas, but when circulated widely in the bloodstream, they take on different properties, acting as potent tumor promoters. The TNFs activate an important protein, nuclear factor kappa B (NF kappa B), which can then turn on a host of genes involved in inflammation and cell proliferation.

This link between inflammation and the unchecked proliferation of cancer cells prompted Aggarwal to return to his roots. In 1989 he moved to the University of Texas M. D. Anderson Cancer Center and began looking for compounds that might quell inflammation and have an anticancer effect. Remembering from his youth in India that turmeric was an anti-inflammatory in the Ayurvedic literature, he decided to give the spice a try. "We took some from the kitchen and threw it on some cells," he remembers. "We couldn't believe it. It completely blocked TNF and NF kappa B."

### ***Can an ingredient in curry treat diseases from Alzheimer's to cancer?***

Aggarwal has gone on to publish studies showing that blocking the NF kappa B pathway with curcumin inhibits the replication and spread of various types of cancer cells. This work has served as a jumping-off point for early, small clinical trials at M. D. Anderson using curcumin as an adjunct therapy to treat pancreatic cancer and multiple myeloma. Trials are beginning or under way elsewhere for prevention of colon cancer and Alzheimer's disease, among



others. And early cell-based or animal studies have shown that curcumin may act against a range of inflammatory diseases, including pancreatitis, arthritis,

inflammatory bowel disease, colitis, gastritis, allergy and fever. It has also shown some promise for diabetes and autoimmune and cardiovascular diseases.

So far the large clinical trials needed to prove efficacy against cancer and other diseases

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have yet to be conducted. But Aggarwal has nonetheless become an aggressive champion for a spice that Vasco da Gama brought back to Europe from his voyages eastward. Aggarwal's chapter in a new textbook that he co-edited is entitled **"Curcumin: The Indian Solid Gold."**

M. D. Anderson, a world-leading cancer institution, has also begun to promote the use of curcumin more than would be expected for a treatment that has not gone through the rigors of full clinical trials. The "frequently asked questions" section on its Web site recommends buying curcumin from a specific wholesaler, for which Aggarwal has served as a paid speaker. That company even issued a press release declaring that its product is the "ingredient of choice" of M. D. Anderson. The FAQ section suggests that cancer patients gradually work up to a daily dose of eight grams a day, some 40 times the amount consumed in the average Indian diet. Most pharmaceuticals, in contrast, are meted out in milligrams. At one point, the Web site had even asserted: "By the end of eight weeks, a significant improvement is expected." Asked whether he was worried that any side effects might emerge at a dosage of eight grams, Aggarwal said that small clinical trials at other institutions have dosed up to 12 grams and that patients would have notified him if any untoward effects had occurred with the dosage recommended by M. D. Anderson. The researcher, who takes a curcumin pill every day, shuns the caution typical of investigators

... But Some Research Suggests Possible Cancer-Promoting Effects			
CONDITION	FINDINGS	INSTITUTION	PUBLICATION
Myeloid leukemia	Curcumin at high doses in cell culture spurs degradation of a protein, p53, that prevents replication of cancer cells or induces their death	Weizmann Institute of Science, Rehovot, Israel	<i>Proceedings of the National Academy of Sciences USA</i> , April 12, 2005
Colon cancer	Curcumin inactivates p53's tumor suppressor role in colon cancer cells	University of Utah	<i>Carcinogenesis</i> , September 2004
Breast cancer	Curcumin inhibits several chemotherapeutic drugs from inducing cell death both in cell culture and in animal models	University of North Carolina at Chapel Hill	<i>Cancer Research</i> , July 1, 2002

before well-controlled, large-scale clinical trials have been conducted. "People take a lot of other supplements, and I don't think you need anything else if you're taking this," Aggarwal says.

**Does Curcumin Abet Cancer?**

Recent Studies Show Possible Benefits from Curcumin ...			
CONDITION	FINDINGS	INSTITUTION	PUBLICATION
Rheumatoid arthritis	An extract of turmeric root inhibited joint inflammation and destruction in rats	University of Arizona College of Medicine	<i>Arthritis and Rheumatism</i> , November 2006
Alzheimer's disease	In test-tube studies, curcumin helped immune cells degrade components of Alzheimer's plaques	U.C.L.A. and the Veterans Administration	<i>Journal of Alzheimer's Disease</i> , October 9, 2006
Colon cancer	In cell cultures, curcumin blocked the activity of a hormone tied to development of colon cancer	University of Texas Medical Branch at Galveston	<i>Clinical Cancer Research</i> , September 15, 2006
Colorectal polyps	A combination of curcumin and the plant compound quercetin reduced the size and number of precancerous lesions in five patients	Johns Hopkins University and Cleveland Clinic	<i>Clinical Gastroenterology and Hepatology</i> , August 2006
Cognitive impairment	More than 1,000 elderly subjects from Singapore who reported eating curry at least occasionally had better scores on a cognitive test than did those who rarely or never ate the dish, an effect that might be attributed to curcumin	National University of Singapore and other institutions	<i>American Journal of Epidemiology</i> , November 1, 2006

The M.D.Anderson faqs and the stream of press releases from various institutions on the wonders of curcumin ignore a small portion of the literature that points to a dark side: the possibility that this spice may sometimes actually encourage the survival of cancer cells. In 2004 Yosef Shaul in the department of molecular genetics at the Weizmann

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Institute of Science in Rehovot, Israel, was studying an enzyme, NQO1, that regulates the amount of a well-known protein called p53. When p53 levels increase in cells, the protein institutes a defensive maneuver for the organism by inducing cancerous or damaged cells to stop dividing or even to commit suicide.

Shaul and his colleagues had found that an anticoagulant, dicoumarol, and related compounds blocked NQO1, which prevented p53 from doing its job. The researchers wondered what would happen if they exposed p53 in normal and myeloid leukemia cells to antioxidants such as curcumin and resveratrol. To their surprise, curcumin, by inhibiting the same enzyme, stopped p53 from sending aberrant cells to the gallows, a finding that was reported in 2005 in the *Proceedings of the National Academy of Sciences USA*. A few other researchers have published similar results. Aggarwal responds to this body of work by pointing to studies that show the opposite, that curcumin actually activates p53.

Clinical researchers will now have to address whether Shaul's work in cell cultures relates to what happens when a person ingests the compound. The curcumin concentrations used by the Weizmann team in cell cultures--measuring 10 to 60  $\mu\text{M}$  (micromolar)--are roughly comparable to levels reached in some of the test-tube experiments conducted at M. D. Anderson. But because curcumin is absorbed poorly from the gut into the bloodstream and is also broken down in the body rapidly, a patient consuming eight grams would probably end up with a concentration in blood plasma no higher than about 2.0  $\mu\text{M}$ , Shaul notes, although that level could range higher in the gastrointestinal tract and in the liver. It could also remain elevated if researchers develop various means of increasing the concentration of curcumin in the bloodstream.

M. D. Anderson's FAQs might convey the impression of certitude by prescribing an eight-gram dose. But the low presence of curcumin in the blood--and the corresponding need to elevate the amount consumed if the substance does indeed fight disease--is a challenge that will continue to nag curcumin researchers. The animal studies that investigators cite as suggestive of curcumin's diverse benefits have generally used less than the equivalent of eight grams in humans, and blood concentrations have usually been in the nanomolar range. "We don't know how to explain how such low concentrations of curcumin can be beneficial in animals tested," Shaul states.

Dose is everything for a new drug--any therapeutic agent, including aspirin, turns toxic at high levels. For most new pharmaceuticals, the best dose for achieving the desired blood plasma levels is usually found through round after round of preclinical trials in cell cultures and mice. Yet drug companies are not battling one another to be the first to conduct these tests on curcumin. They have a preference for highly targeted therapeutics: hitting a specific receptor, for instance, may treat disease while lowering side effects, whereas a drug with multiple actions could, in theory, increase the chance that an unwanted effect will occur. Another reason is the nettlesome issue of property rights for folk medicines.

Turmeric is a poster child for one of the most noted intellectual-property cases on biopiracy, which pitted an Indian government-supported research organization against a 1995 patent issued to the University of Mississippi for the use of the spice for wound healing. The U.S. Patent and Trademark Office invalidated the patent after the Indian Council for Scientific and Industrial Research questioned whether one criterion for patentability--that an invention be new--had been met. The council objected by pointing to a 1953 Indian journal article about the spice and by offering a citation about turmeric's healing properties from an ancient Sanskrit text. The patent office has subsequently issued patents for specific uses for curcumin as an isolate. But the rejection means that drug companies will never obtain a "product" patent with a much broader scope that would help them to fend off competitors for drugs based on the spice. A few small companies are still trying to exploit the substance's

promise by changing its chemical composition to enhance activity and, by creating a novel compound, to bolster intellectual-property protection. AndroScience in San Diego plans to enter the first phase of clinical trials this year with a drug candidate for acne based on compounds derived from curcumin that were discovered in collaboration with the University of North Carolina at Chapel Hill. Similarly, Curry Pharmaceuticals in Research Triangle Park, N.C., is trying to raise financing to move curcumin derivatives from Emory University into clinical trials. But in an age of targeted pharmaceuticals, venture capitalists, leery of side effects, have been hesitant to back new drugs that act on multiple pathways. For his part, Aggarwal, even though he is a co-founder of Curry Pharmaceuticals and holds patents on curcumin, asserts that chemists may have trouble improving on nature: modifying curcumin may only introduce unwanted side effects in patients, he says. If the multitude of developmental hurdles can be overcome and safety can be assured, curcumin might provide an inexpensive alternative to mainstream pharmaceuticals. Based on positive results in rodents, Greg Cole of the University of California, Los Angeles, and the Veterans Administration, is organizing a clinical trial in humans to test whether curcumin can prevent the buildup of amyloid plaques that burden the brains of Alzheimer's patients. If successful, he and his collaborator (and wife), Sally Frautschy, plan to come up with formulations that could be mixed in cooking oil (to enhance bioavailability) and eaten as part of a meal to impede plaque accumulation--a recipe that might be affordable for both rich and poor in an aging world.

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## Strawberries Seen to Enhance Long-Term Memory

### Got flavonoids? Got Fisetin ?

#### Study shows how colorful fruits and veggies help preserve long-term brain health *by Craig Weatherby*



Researchers in the US and Japan have published the results of a mouse study with implications for the benefits of Americans' favorite berry (Maher P et al 2006).

As Lead author Pamela Maher, Ph.D. of the Salk Institute said, "... the holy grail of CNS [central nervous system] research in the pharmaceutical industry is the identification of a safe, orally active drug that activates memory-associated pathways

and enhances memory."

And her team may have found a good candidate, if not the grail itself. The US-Japan team found that fisetin--a flavonoid-class, polyphenol antioxidant found in strawberries and other fruits and vegetables--stimulates signaling pathways that enhance long-term memory.

Dr. Maher discovered the beneficial effects of fisetin earlier, while screening a number of flavonoids for their ability to protect brain cells in a test-tube experiment that simulated the effects of Alzheimer's and other degenerative brain diseases.

She found that many flavonoids perform several key functions:

- ✚ Protect brain cells from dying
- ✚ Promote new connections between nerve cells
- ✚ Promotes memory formation.

The pan-Pacific team found that fisetin also stimulated key processes in the hippocampus: a part of the brain that plays a key role in creating and storing new memories.

For any neuroscientists in the audience, fisetin activated the ERK signaling pathway, stimulated long-term potentiation, and induced phosphorylation of the cAMP response element-binding protein in hippocampal tissues from the rats.

They also tested fisetin's ability to help mice remember different objects, and found that the animals given a dose of fisetin recalled objects more quickly and easily.

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In fact, the extract improved their performance about as effectively as a new pharmaceutical drug called 'Rolipram', which enhances memory by making brain synapses more resistant to damage caused by accumulation of the beta-amyloid protein plaques characteristic of Alzheimer's.

Fisetin is also found in tomatoes, onions, oranges, apples, peaches, grapes, kiwifruit and persimmons. Interestingly, while the memory-enhancing supplements derived from the leaves of Gingko biloba trees are rich in other flavonoids, they do not contain fisetin.

Fortunately, fisetin is not the only brain-benefiting flavonoid, since it would take about 10 pounds of strawberries a day to equal the dose given the mice!

Instead, the idea is to fill your diet with berries and a range of colorful, flavonoid-filled foods and beverages: a perfectly pleasurable prospect.

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Tuesday, July 27, 2004

Issue 11

VOLUME 1 ISSUE 11

([http://www.imakenews.com/vitalchoiceseafood/e\\_article000285007.cfm](http://www.imakenews.com/vitalchoiceseafood/e_article000285007.cfm))

## Organic Strawberries and Red Raspberries; bountiful anti-aging benefits from delicious natural delights.

by Randy Hartnell



Sweet, succulent, certified-organic Vital Choice wild blueberries deliver bountiful anti-aging benefits in superbly delicious fashion. As famed nutrition expert Andrew Weil, M.D. explains, "Blueberries pack the most powerful antioxidant punch of any fresh vegetable or fruit because they contain plentiful amounts of anthocyanins, which are the pigments that give red and purple fruits their color."

Like blueberries, strawberries and red raspberries are rich in anthocyanin pigments, ranking #5 and #6 for antioxidant capacity respectively. This is just one reason why we're very pleased to introduce certified-organic Vital Choice strawberries and red raspberries. Flash-frozen right after harvest, they retain all of the vibrant color, rich fragrance, and intense flavor and you expect from premium quality berries—minus the heavy pesticide residues that characterize their conventionally grown counterparts. (To get started enjoying them, see "Berry Good Recipes" in this issue.)

### Sweet, succulent anti-aging superstars

Strawberries and red raspberries—especially organically grown ones—are considered some of the best anti-aging allies you can put on a plate. The benefits of these berries flow largely from their strong antioxidant action against free radicals: the unstable oxygen compounds produced as a normal byproduct of metabolism. Left unchecked, free radicals can damage the body's own cells.

Normally, the body's own internal antioxidant system can keep free radicals under control. However, the sugars and refined starches in modern diets and the pollutants common in today's air and water generate abnormally large amounts of bodily free radicals. Without help from antioxidant-rich fruits and vegetables, this excess of free radicals can overwhelm the body's antioxidant defense network: an imbalance that inevitably results in age-accelerating free radical damage to the body's cells.

The results of numerous studies\* indicate that berries offer powerful protection against cardiovascular disease, senility, and cancer—thanks in large part to their extraordinary antioxidant and anti-inflammatory properties. In particular, their anthocyanin pigments help the body block, detoxify, and eliminate carcinogens, and repair DNA damage. Berry anthocyanins also reduce inflammation in arteries, prevent oxidation of cholesterol, and enhance vascular dilation and flexibility.

Strawberries are also high in folic acid, dietary fiber and potassium, while red raspberries contain calcium, vitamins such as A, C, E, folic acid, and cholesterol-lowering fiber.

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### **The pesticide problem**

Unfortunately, strawberries and red raspberries rank high on another, less desirable scale. Because these delicate berries are highly vulnerable to fungi and speedy spoilage, they're heavily sprayed with anti-fungal pesticides—which their pebbled surfaces trap and make very hard to wash off. In fact, according to research by the well regarded non-profit Environmental Working Group, strawberries and raspberries rank #3 and #11 among the "dirty dozen" produce items with the highest levels of pesticide residues.\*\*

### **Our certified-organic solution**

To enjoy all the culinary and health benefits of berries, it's smart to pick fruits grown organically, in rich, healthy soil, without petrochemical pesticides. Naturally, all of our new Vital Choice strawberries and raspberries are certified organic. Enjoy!

#### **\*Berry references**

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\*\*The EWG's rankings were based on an analysis of more than 100,000 tests for pesticides on these foods, conducted from 1992 - 2001 by the U.S. Department of Agriculture and the Food and Drug Administration. Contamination was measured in six different ways and crops were ranked based on a composite score from all categories (see <http://www.foodnews.org/reportcard.php>).