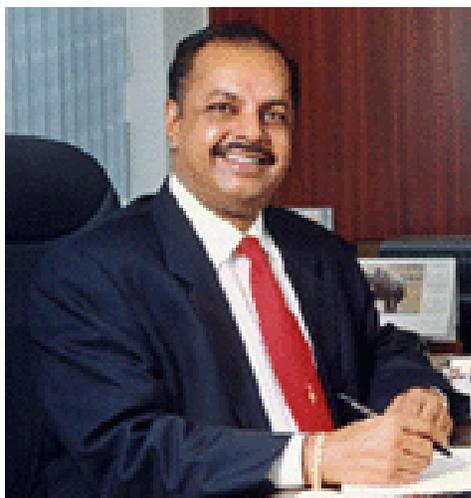


## Message from Dr. Majeed



Sabinsa Corporation is now in its seventeenth year. We are proud to have pioneered the manufacture and introduction of several innovative phytonutrients to the US and global markets. In the early years, these were primarily used by the dietary supplement, food and pharmaceutical industries as nutraceuticals. In later years, the focus expanded to include cosmeceuticals with multifunctional applications in personal care products.

Sabinsa Corporation continues to be committed to innovative research and development projects targeted toward fulfilling specific preventive health maintenance needs. A pertinent example is the weight management sector. Over the past 20 years, obesity has risen at an epidemic rate in the United States and the situation continues to worsen. According to the CDC's National Center for Chronic Disease Prevention and Health Promotion, one of the national health objectives for the year 2010 is to reduce the prevalence of obesity among adults to less than 15%. The costs involved in the management of obesity and its associated conditions have a significant economic impact on the US Healthcare System. These conditions also have an indirect impact on the country's economy by way of decreased productivity, restricted activity, absenteeism, sick days and increased premature mortality. A preventive approach to obesity through lifestyle management and the judicious use of nutraceuticals presents a practical option to promoting health and wellness.

We strongly believe in our ForsLean ingredient, the forskolin composition supported by an award winning patent, and its ability to safely and effectively help individuals increase their lean body mass and improve overall health. Sabinsa was founded on the premise of creating innovative products through state of the art research, and the 2004 Thomas Alva Edison Patent Award received for the forskolin composition is a testament to the company's ongoing efforts in this area. In keeping with our tradition of products supported by solid science, we focused on establishing the safety and efficacy of ForsLean through multicenter clinical trials in 2004. The results were promising, and further strengthened our belief in this healthful ingredient.



OUR INNOVATION IS  
YOUR ANSWER®  
info@sabinsa.com

### Visit Sabinsa's Websites

[www.sabinsa.com](http://www.sabinsa.com)  
[www.aquasolextracts.com](http://www.aquasolextracts.com)  
[www.bacopin.com](http://www.bacopin.com)  
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[www.boswellin.com](http://www.boswellin.com)  
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[www.seleniumselect.com](http://www.seleniumselect.com)  
[www.silbinol.com](http://www.silbinol.com)  
[www.tetrahydrocurcuminoids.com](http://www.tetrahydrocurcuminoids.com)  
[www.venocin.com](http://www.venocin.com)

The popularity of ForsLean in the US and global markets is particularly heartwarming, in light of the fact that increased demand for the composition has generated the need for sustained cultivation efforts. We have thus been able to enhance the quality of life for a group of farmers in India, through facilitating their participation in Coleus cultivation efforts. About 5000 additional acres of land in the Indian subcontinent are now devoted to Coleus cultivation.

As always, we will remain caring and committed in our contributions to preventive healthcare, and will continue to foster the tradition of quality and innovation that you have come to expect from SABINSA, in the current year and in the years to come.

I take this opportunity to wish you all a very Happy and Healthy 2005

## A Focus on Natural COX-2 Inhibitors

The removal of Vioxx® from the market and recent warnings about other conventionally used COX-2 inhibitors, has resulted in a renewed interest in natural approaches to the management of pain and inflammation.

### A brief note on COX:

Oxygenation of arachidonic acid is increased in inflammation. Under these conditions, the production of inflammatory mediators, the prostaglandins (PG), through the action of the enzyme COX (cyclooxygenase) and leukotrienes (through the action of the enzyme 5-lipoxygenase) is enhanced, leading to increased inflammation and

pain. It is known that whenever there is trauma or injury, there is an increase in the production of PGE2 at the site in response to the body's immunological defense to the damage.

In 1991, researchers identified two isoforms of the cyclooxygenase enzymes, COX-1 and COX-2. Of these, COX-1 is reported to be responsible for the physiological housekeeping functions. COX-1 is produced in most tissues, and it is involved in the maintenance of normal cellular functions such as in maintaining the integrity of gastrointestinal tissues including the stomach lining and circulatory functions such as the flow of blood to the kidneys and the functioning of the platelets. COX-2 is an inducible isoform of cyclooxygenase, expressed in response to proinflammatory stimuli and is found in the brain cells, reproductive tissues, kidneys and bone-forming cells (osteoblasts).

Nonsteroidal anti-inflammatory drugs (NSAIDs), which inhibit both COX-1 and COX-2, are widely used to effectively treat acute and chronic inflammation and pain. These include the OTC drugs such as aspirin, ibuprofen and naproxen. As they are not selective to COX-2, inhibition of COX-1 as well, causes undesirable effects such as gastric ulceration. For example Aspirin has been reported to induce aspirin-sensitive asthma, potentially linked to its effects on COX-1.



The introduction of celecoxib (Celebrex) and rofecoxib (Vioxx), COX-2 selective inhibitors was effected to decrease the adverse effects that are typically associated with inhibition of COX-1. The recent concerns about the safety of COX-2 selective inhibitors pertain to a possible increase in the risk of cardiovascular events such as myocardial infarction associated with the 'coxibs'. It is postulated, but not proven, that inhibition of prostacyclin synthesis by selective COX-2 inhibitors, may increase the risk of thrombosis in some patients.



## The Natural Approach:

Natural alternatives such as herbal extracts of turmeric, ginger, rosemary, green tea and their active phytochemical constituents are reported to be effective COX-2 inhibitors. Others such as *Boswellia serrata* extract (boswellic acids) inhibit the formation of inflammatory leukotrienes. Some of these herbal extracts such as curcuminoids from turmeric are known to also inhibit other inflammatory molecules such as cytokines.

- Boswellic acids are specific nonredox inhibitors of 5-lipoxygenase the enzyme which catalyzes conversion of arachidonic acid to inflammatory leukotrienes. Boswellic acids also inhibit the enzyme human leukocyte elastase (HLE), matrix metalloprotease enzyme (MMP) which catalyzes connective tissue breakdown. Boswellic acids show anti-complementary activity. Complement proteins are known to trigger inflammatory mediators.<sup>2</sup>

- Curcuminoids from turmeric roots exhibit an inhibitory effect on COX-2 and on the production of other inflammatory mediators such as interleukins and TNF-alpha (that generates inflammatory cytokines). Such effects are believed to be responsible for the beneficial role of curcuminoids in colorectal cancer.<sup>3</sup>
- Green tea polyphenols are also reported to inhibit COX-2 and TNF-alpha. Similarly, ginger extract (6-gingerol and gingerdiones) is a dual inhibitor of inflammation, acting by inhibiting the formation of both prostaglandins and leukotrienes.<sup>4</sup>
- Ursolic acid (a natural constituent of Rosemary extract and Tulsi extract), its isomer, oleanolic acid (found in olive leaf extract) and rosmarinic acid (found in sage, rosemary, Tulsi, lemon balm and other medicinal plants) also inhibit COX-2. Ursolic and oleanolic acids also inhibit HLE activity. A study that compared the COX-2/COX-1 selectivity ratios of ursolic acid and oleanolic acid to those of the traditional NSAIDs, ibuprofen, naproxen, and indomethacin, and NS-398 (a synthetic selective COX-2 inhibitor), reported the following rank order: NS-398 > ursolic acid > oleanolic acid > ibuprofen > naproxen > indomethacin.<sup>5</sup>

### References:

1. [www.ibuprofen-foundation.com](http://www.ibuprofen-foundation.com);
2. [www.boswellin.com](http://www.boswellin.com);
3. [www.curcuminoids.com](http://www.curcuminoids.com),
4. Free Radic Biol Med . 2002 Oct 15;33(8):1097-105.;
5. J. Nat. Prod. 61: 1212-1215.

Contact Sabinsa Corporation for more information on these and other natural COX-2 inhibitors.

## COSMETIC CORNER - 2005 Preview

2004 has been an exciting year for Sabinsa Cosmeceuticals. In the last year alone Sabinsa has introduced 4 new cosmeceuticals - Galanga Extract, Policosanol CG, and SabiWhiteT. We also joined in partnership with InVitro International, California , USA giving us the in-house capability to perform alternatives to Animal testing.

This upcoming year look for new products added to our line including Ellagic Acid and Grape Seed Extract. We will focus on applications such as skin tanning and cellulites support, with intense research driven products forthcoming.

In 2005 Sabinsa will expand its reach into Europe with our newly appointed cosmetic agents in France and Germany - look for the announcement in late January. We are also excited about our new cosmetic website, which we will be launched next quarter. Visit the Sabinsa Cosmeceuticals Booth at In-Cosmetics in Berlin , NYSCC in Secaucus and the IFSCC in Florence . Our products will be advertised in Happi magazine, Cosmetics & Toiletries, GCI, CTMW and Nutracos as well as on [www.chemidex.com](http://www.chemidex.com) and [www.cosmeticsdesign.com](http://www.cosmeticsdesign.com) . As usual our product listings will be in the CTFA and this year in the Allured Cosmetic Bench Reference also.

## **TRADESHOWS:**

Sabinsa Corporation will participate in the following upcoming industry events:

InCosmetics 2005,  
April 12-14, Messe Berlin ,  
Germany , Stand# D42.

## **PRODUCT ADS**

Look for new product advertisements in the following publications:

HAPPI, Soap Perfumery & Cosmetics, Cosmetics & Toiletries, Natural Products Insider, Whole Foods Magazine, Functional Foods & Nutraceuticals, Nutraceuticals World