



# Kaleidoscope

Working for a Better Tomorrow



## From the Directors Desk



Hi and welcome back once again to the third issue of Naprod's Kaleidoscope.

By the time, you read this, the results of the general elections of the world's largest democracy would have been declared. An Herculean task in itself, Indian elections are being closely watched by the entire world because, the results will determine the future course of decisions that will impact the economic growth, healthcare, infrastructure, education, service/manufacturing industries etc. The tax regime, the EXIM policies that will determine the way we do business also depends on these results. Overall an exciting time here! We are all hoping for the best!

The excitement continues in Naprod too. We have initiated **BE (Bio-Equivalence) studies** for 5 of our blockbuster oral solid products and soon we will be in a position to offer them to you for sales. Our business development teams will keep you abreast of further developments.

Looking at the growth objectives that we have set for ourselves in the next 3 years, we have also decided to start a full-fledged "**Medical Services Department**" with highly qualified full time professionals to cater to the growing needs of the organization.

Similarly, a full-fledged "**Department of Corporate Strategy & Planning**" is also on the anvil.

To ensure that the final finished formulation that reaches you and eventually to the hospital pharmacy and gets administered to the patient meets the stringent quality expectations that is always expected from us, we have installed a "**Semi-Automatic Visual Examination Machine**" and it is in the evaluation stage.

With the best of intentions that our mutual partnership is blossoming, I sincerely hope that this financial year 2019-20, together we will be able to surpass all the previous milestones and set a new benchmark in business.

Best wishes to you, your families and your staff.

**Mohan B. Jain**  
 Managing Director  
 Naprod Life Sciences.



## News from around the world of Medicine



### **A new way of diagnosing and treating disease -- without cutting skin**

Researchers have developed a new laser microscope that could be 'revolutionary' for treatment of diseases such as **skin cancer**

University of British Columbia researchers have developed a specialized microscope that has the potential ability to both diagnose diseases that include skin cancer and perform incredibly precise surgery -- all without cutting skin.

"Our technology allows us to scan tissue quickly, and when we see a suspicious or abnormal cell structure, we can perform ultra-precise surgery and selectively treat the unwanted or diseased structure within the tissue -- without cutting into the skin," said Yimei Huang, co-lead author of the study and a former postdoctoral fellow at the department of dermatology and skin science at UBC and BC Cancer. The device is a specialized type of multiphoton excitation microscope that allows imaging of living tissue up to about one millimeter in depth using an ultrafast infrared laser beam. What sets the researchers' microscope apart from previous technology is that it's capable of not only digitally scanning living tissue, but also treating the tissue by intensifying the heat produced by the laser.

When applied to treating diseases of the skin, the microscope allows medical professionals to pinpoint the exact location of the abnormality, diagnose it and treat it instantly. It could be used to treat any structure of the body that is reached by light and that requires extremely precise treatment, including nerves or blood vessels in the skin, eye, brain or other vital structures.



### **Personal mobile device-based pocket echocardiograph—The diagnostic value and clinical utility**

Recently a new class of pocket-size imaging devices (PSID) has been introduced - the ultrasound probe that can be plugged directly into a personal mobile device, such as mobile phone or tablet with dedicated application. The major advantage is the ability to provide immediate information regarding cardiac morphology and function in virtually every possible clinical setting. Echocardiographic examination performed at bedside with the use of PSID can instantaneously supplement findings of physical examination and improve its diagnostic accuracy. Weijner-Mik P et al from Medical University of Lodz, Poland conducted a study to assess the feasibility and diagnostic value of brief transthoracic echocardiographic examination (bTTE) performed with the use of such equipment. 87 patients underwent bTTE performed by cardiologist with the use of personal mobile device-based PSID. Within 18 h of bTTE all subjects underwent a standard TTE (sTTE) using a full sized echocardiograph by expert echocardiographer. It was concluded that personal mobile device-based PSID allows for performing bTTE. The diagnostic value of such PSID in basic assessment of cardiac morphology and function as compared to standard echocardiography is very good.

### **Thinking outside the box: 'Seeing' clearer and deeper into live organs**

Scientists using a unique approach have developed a new biomedical imaging contrast agent. They say the breakthrough overcomes a



major challenge to "seeing" deeper into live tissue and opens the way for significant improvements in optical imaging technology. The development, a result of international collaboration between Fudan University in China and the University of Technology Sydney (UTS), has the potential to take bio-imaging resolution beyond what is currently possible with CT and PET imaging technology. The combined use of high density of ytterbium emitters and time-resolved approach meant it was possible to maximise the number of emitters, the light conversion efficiency and the overall brightness of the contrast agent, and thereby significantly improving detection sensitivity, resolution and depth.

### Putting cancer to bed



Would putting cancer cells "to sleep" work? Apparently so, according to researchers from Australia, who developed a new class of compounds that appear to block the activity of cancer cells.

Study author Anne Voss, from the Walter and Eliza Hall Institute in Parkville, Australia, explained how the compounds inhibit KAT6A and KAT6B, which are two proteins associated with certain cancers.

"Rather than causing potentially dangerous

DNA damage," she says, "as chemotherapy and radiotherapy do, this new class of anticancer drugs simply puts cancer cells into a permanent sleep. This new class of compounds stops cancer cells dividing by switching off their ability to 'trigger' the start of the cell cycle. The technical term is cell senescence. The cells are not dead, but they can no longer divide and proliferate. Without this ability, the cancer cells are effectively stopped in their tracks."

She continues, "There is still a lot of work to be done to get to a point where this drug class could be investigated in human cancer patients. However, our discovery suggests these drugs could be particularly effective as a type of consolidation therapy that delays or prevents relapse after initial treatment."

### Natural compound found in broccoli reawakens the function of potent tumor suppressor



Your mother was right; broccoli is good for you!! Long associated with decreased risk of cancer, broccoli and other cruciferous vegetables -- the family of plants that also includes cauliflower, cabbage, collard greens, Brussels sprouts and kale -- contain a molecule that inactivates a gene known to play a role in a variety of common human cancers. In a new paper





published today in Science, researchers, led by Pier Paolo Pandolfi, MD, PhD, Director of the Cancer Center and Cancer Research Institute at Beth Israel Deaconess Medical Center, demonstrate that targeting the gene, known as WWP1, with the ingredient found in broccoli suppressed tumor growth in cancer-prone lab animals.

### PDIA1 enzyme levels could help diagnose individuals' predisposition to cardiovascular disease

Measuring the blood plasma levels of an enzyme called PDIA1 could one day become a method of diagnosing a person's predisposition to cardiovascular disease even if they are healthy i.e., not obese, diabetic or a smoker and with normal cholesterol.

This is suggested by a study published in the journal Redox Biology by Brazilian researchers affiliated with the University of São Paulo (USP), the University of Campinas (UNICAMP), and Butantan Institute

"This molecule belongs to the protein disulfide isomerase [PDI] family. Our study showed that people with low plasma levels of PDIA1 have a more inflammatory protein profile and hence run a higher risk of thrombosis. On the other hand, people with high levels of PDIA1 have more 'housekeeping' proteins associated with cell adhesion, homeostasis and the organism's normal functioning," said Francisco Rafael Martins Laurindo, a professor at the University of São Paulo's Medical School (FM-USP) and principal investigator for the study.

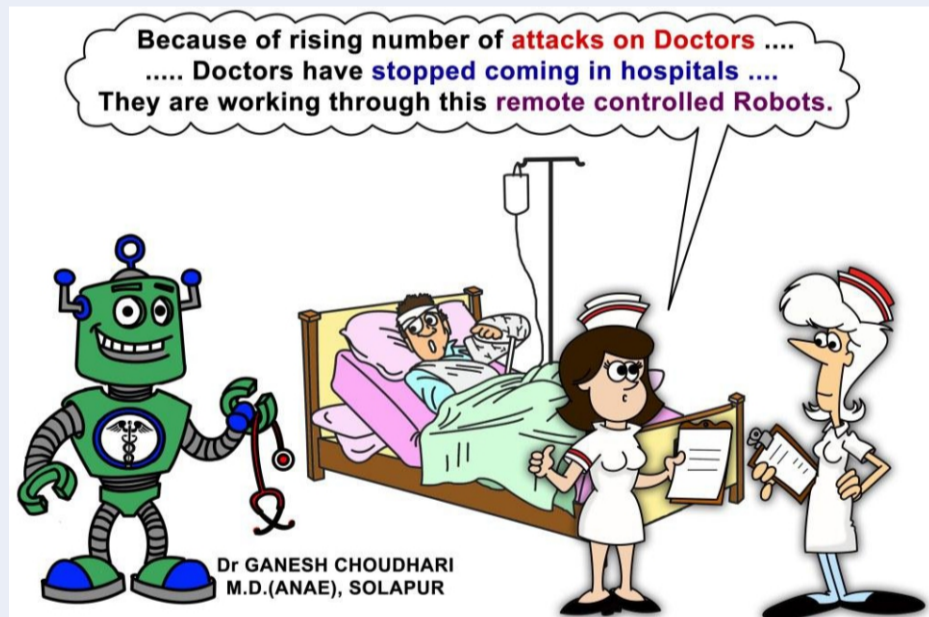
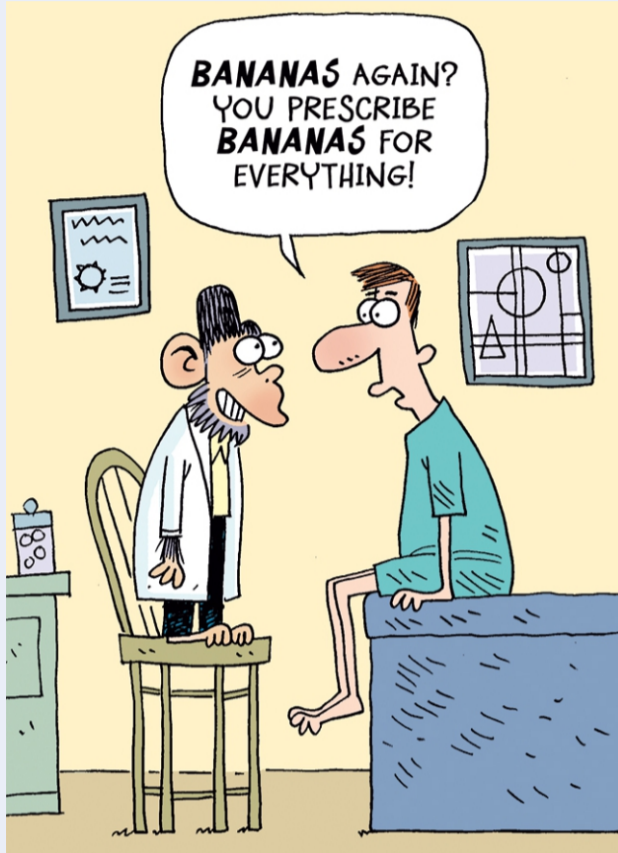
### Flu virus' best friend: Low humidity

Yale researchers have pinpointed a key reason why people are more likely to get sick and even die from flu during winter months: low humidity. The researchers found that low humidity hindered the immune response of the animals in three ways. It prevented cilia, which are hair-like structures in airways cells, from removing viral particles and mucus. It also reduced the ability of airway cells to repair damage caused by the virus in the lungs. The third mechanism involved interferons or signaling proteins released by virus-infected cells to alert neighboring cells to the viral threat. In the low-humidity environment, this innate immune defense system failed. While the researchers emphasized that humidity is not the only factor in flu outbreaks, it is an important one that should be considered during the winter season. Increasing water vapor in the air with humidifiers at home, school, work, and even hospital environments is a potential strategy to reduce flu symptoms and speed recovery, they said.





## Humor is the best medicine!!



Sovereign in Oncology

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