

#RESEARCH

Reversing Pancreatic Cancer

Scientists have shown it is possible to reverse a key process that allows pancreatic cancer cells to grow and spread around the body.



Mechanism controlling spread of pancreatic cancer. Key protein identified that helps turn pancreatic cancer cells into more aggressive form. Pattern of cells in pancreatic tumours follows mathematical law first proposed by Alan Turing. Fundamental discovery could pave way for new pancreatic cancer treatments. Scientists have shown it is possible to reverse a key process that allows pancreatic cancer cells to grow and spread around the body.

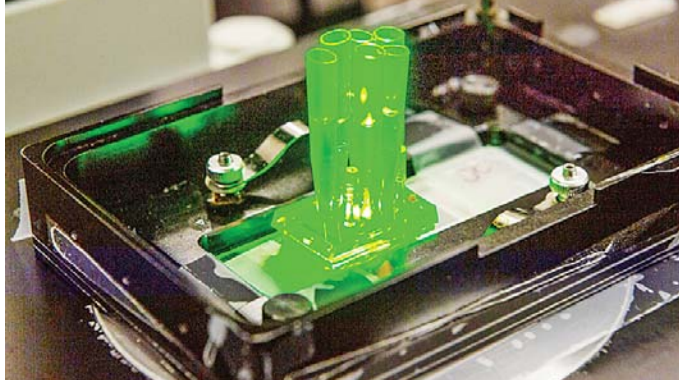
These findings show that a protein called GREM1 is key to regulating the type of cells found in pancreatic cancer - and manipulating its levels can both fuel and reverse the ability of these cells to change into a more aggressive subtype. The researchers believe this fundamental discovery could ultimately pave the way for new pancreatic cancer treatments. Researchers from The Institute of Cancer Research, London, studied pancreatic cancer with the gene that makes the GREM1 protein switched off in mice and in pancreatic 'mini-tumours', which are also known as organoids.

Switching off GREM1 caused the tumour cells to rapidly change shape and develop new properties that help them invade new tissues and migrate around the body. Within just 10 days, all the tumour cells changed their identity into a dangerous, invasive cell type. Switching off the gene also made tumours in mice more likely to spread. The researchers studied a mouse model of pancreatic ductal adenocarcinoma (PDAC) - the most common and aggressive form of the disease. Around 90 per cent of mice without functioning GREM1 developed tumours which had spread to their liver, compared to 15 per cent of mice where GREM1 was working normally.

Crucially, the scientists, who were largely funded by The Institute of Cancer Research (ICR), which as well as being a research institute is also a charity then showed that boosting GREM1 levels could reverse this process and cause invasive cell types to revert into a less dangerous form. Researchers hope in the future to use this knowledge to find ways to reverse more advanced pancreatic cancer into a less aggressive form which is easier to treat.

The researchers who work in the Breast Cancer Now Toby Robins Research Centre at the ICR, stress that the science is early stage and significant amounts of research would be required to discover and develop treatments that change PDAC cell fates and make the tumour respond better to therapies. However, fundamental discoveries such as this are crucial in directing efforts to find new cancer drugs and treatments. The researchers also discovered that another protein, called BMP2 is involved in regulating GREM1, and that these two proteins regulate the form PDAC cells ultimately take according to a mathematical model first proposed by Alan Turing in 1952. These 'Turing patterns' are found in nature - and the patterns on the skin of the giant puffer fish to seashells - and strikingly the same sort of patterns are seen in the different types of cells found in pancreatic cancer. Further studies are needed to determine whether this model is also applicable in other forms of cancer.

Professor Axel Behrens, Leader of the Cancer Stem Cell Team at The Institute of Cancer Research, London, and senior author of the study, said: "This is an important and fundamental discovery that opens up a new avenue for uncovering treatments for pancreatic cancer. We have shown that it is possible to reverse cell fate in pancreatic cancer in the lab - turning back the clock on aggressive tumours and switching them to a state that makes them easier to treat." "By better understanding what drives the aggressive spread of pancreatic cancer, we hope to now exploit this knowledge and identify ways to make pancreatic cancer less aggressive, and more treatable." Professor Kristian Helin, Chief Executive of The Institute of Cancer Research, London, said: "Pancreatic cancer is one of the most devastating of all cancers - the most common form of the disease spreads aggressively, making it hard to treat and a terrifying diagnosis for patients and their loved ones." "This new finding has broadened our understanding of the molecular basis of how pancreatic cancer gains the ability to grow and spread around the body. Although more work is required, this type of fundamental research is essential for developing concepts for new and more effective treatments for cancer."



Not only do we find mentions of the use of this commodity, we also find detailed accounts and recipes of various wines that were brewed and consumed in Ancient India. Chief among these strong drinks is Soma, the origins of which are said to be mythical and yet there are accounts of it being produced in copious quantities. Other various kinds of wines were drunk viz., Madhvi, Maireya, Sura, Asava, which were mixed with various kinds of salts, fruits, vegetables and condiments have been detailed in the books of Ayurveda. (Book I. IV. 37-39)



Shubham Agarwal
BhukkadBaniya,
Food Blogger and
Freelance writer

In the past few months, Jaipurites have noticed a sharp rise in the number of liquor stores opening. While this opening statement might sound a bit foreboding to the majority of our city's population which is said to refrain from alcohol consumption, this article aims at mitigating the stigma surrounding the stores and what they offer. Liquor, as a consumer commodity has ever been shrouded in social stigma and this stigma boils down to the availability of it. Or rather the circumstances of its availability which for the better part of the last two decades have remained the same.

A small barricaded store with no entrance and more often than not, a sour person to attend to you with little-to-no knowledge of what he is selling. The fact that these shops have usually been tucked into shady little corners was an added bane. In stark contrast were the bars, clubs and discos, which, while providing a more pleasant purchasing experience were riddled with the same problem, lack of knowledge and carried an added cost. All these factors combined to create a bottleneck for those who wanted to begin their liquor journey and those who had already started it but needed a better, more nuanced exposure to it, whatever their choice of drink may be. This bottleneck, having the sanctity of age old taboos, is something that has been in place for some time.

Although India, as a country, since ancient times, had always celebrated liquor in all its forms, from wine to beer and other



Liquor Pur!! Jaipur embraces its drinks!!

#MY CITY

One can find their heritage liqueurs that carry the flavours of mythical Soma, floral notes of rose in Shahi Gulab and even refreshing aroma of Mint flavoured liqueurs.



stronger spirits.

Liquor in Ancient India

Wines have not only been celebrated in India since ancient times, they were revered as elixirs. In Rig Veda we find mention of wine and grog shops which sold them. Wine or beer was stored up in leather vats for the public use and special sacrifices were made around brewing and drinking wines such as Sautramoni-Yajna. Yjurveda, the glossary of all Hindu religious activities, clearly specifies where the offerings of Somras for the deities may be placed for the yagya preparations, and when this should be consumed by the yagyakarta Brahmins for the beneficiary needs of the success of the ritual. Not only the Vedas, the ever popular epics of Ramayana and Mahabharata carry multiple mentions of wine being offered to Gods and deities during worship, and its consumption as a way of merit and indulgence. We see the great sages and hermits like Vasistha and Vishvamitra, honouring guests with many kinds of foods and wines. (Balya Kanda. 53) Similarly, when Bharata was a guest of Varadwaj, another sage, he too was treated with enough wine. (Ayodhya Kanda. 91) In Mahabharata, almost all chief characters were frequent indulgers of strong drinks. Ladies of high families used wines as we find the Queen of Birat, sending her maid to fetch wine. (Birat 16)

The great King Yudhishthira celebrated his horse sacrifice in great pomp and exaggeration and there were seas of wine, lakes of butter, mountains of rice etc. (Aswamedha 89) Not only do we find mentions of the use of this commodity, we also find detailed accounts and recipes of various wines that were brewed and consumed in Ancient India. Chief among these strong drinks is Soma, the origins of which are said to be mythical and yet there are accounts of it being produced in copious quantities. Other various kinds of wines were drunk viz., Madhvi, Maireya, Sura, Asava, which were mixed



BABY BLUES

By Rick Kirkman & Jerry Scott



World Watercolour Month



Art has been an expression of the human soul, and a salve for the same since time out of mind. One of the most ancient art forms is watercolour painting, and World Watercolour Month celebrates it and encourages everyone to give it a try which has a pre-history with the earliest examples gracing the cave walls where ancient man used to live. Since that time art has played an important role in our society bringing us together, inspiring us and lifting our hearts during our darkest days.

#CLIMATE-CHANGE

A Bite Out Of Tomatoes



By 2050, the global supply of processing tomatoes is expected to decrease by 6% compared to the study's baseline of 1990-2009, with Italy's crop being among the hardest hit. "The processing tomatoes are grown in the open fields, which means that we cannot control the environment in which they grow," says lead author Davide Cammarano, a professor at Aarhus University. "This makes the production vulnerable to climate change."

While the climate's impact on the food supply is widely researched, most of the focus has been on staples such as wheat and rice. The current study in Nature Food is among the first to take a global look at climate change's impact on tomatoes, says coauthor Dev Niyogi, a professor at the University of Texas at Austin Jackson School of Geosciences and Cockrell School of Engineering.

The researchers used five different climate models to inform three different scenarios projecting how rising temperatures will influence tomato yield, focusing in the world's top three tomato-growing countries: the United States (California in particular), Italy and China. Together these countries produce about 65% of the world's processing tomatoes.

Although the outcomes varied in degree, the projected scenarios all pointed to a future where tomato production will dramatically change within the coming decades.



Most scenarios show the three countries experiencing steady yield declines over the next 30-40 years. In the paper, the researchers detail different factors that might worsen or mitigate the situation depending on the country. For example, both southern California and Italy face water access issues in addition to rising temperatures, with Italy projected to only become drier over time. This combination of warmer temperatures and lack of water doesn't bode well for the Italian tomato industry as a whole, states Cammarano. "A significant number of the processing tomato industries currently are placed in Italy, and they need to prepare for a future with a limited supply of tomatoes from local regions," he says.

However, for California and China, there might be a silver lining when it comes to northernmost areas which are cooler. Temperature increases in these areas may lead to an increase in yields with the study projecting steadily increasing tomato yields for the northern Chinese province of Gansu and the neighbouring country of Mongolia. The climate projections provided in the study raise important questions for the future of tomato production worldwide that could help the agricultural and production industries prepare for the impacts of climate change, Niyogi says.

#J'ADORE

The headscarf is hardly a new trend, but it is a fun way to shake up your use of the rainy-weather accessory.

Head Scarf Styles For Bad Hair Days & Beyond

Some days your hair feels gorgeous, clean and beautiful enough to star in a hair-care campaign. Other days, not so much. It's dirty, frizzy or simply seems to have developed a new cowlick that you just can't be bothered to deal with. Whether you're trying to hide a bad hair day hoping to protect your strands from wind or rain or you're just bored and looking to try a new 'do', a headscarf can help.

The headscarf is hardly a new trend, but it is a fun way to shake up your use of the rainy-weather accessory. The benefit of this particular hair accessory is how versatile it can be. There are tons of different looks you can achieve with just one scarf, ranging from super-simple to intricately detailed. Whatever look you're going for we've gathered together the best tips and tricks for achieving the headscarf style you want.



The Twisted Headband

If you're using a square scarf, start by folding it in half diagonally, then begin to roll or fold the scarf starting at the widest side and working your way toward the pointed corners. If you're using a rectangular scarf, just start folding along the long side. Tie the loose ends under your hair at the nape of your neck and voilà! You can also knot the scarf at the middle after rolling it up to help it stay folded and add a bit more volume up top.

The Pony Tie



The Scarf Braid

There are multiple ways to incorporate a scarf into a braid and the easiest is simply to pull your hair back into a ponytail, tie one end to the elastic and then use it as one third of your braid, tying the other end off with a second elastic or by wrapping and knotting the scarf itself. But you can also weave your accessory through a more complicated 'do, like a French or fishtail braid.

The Low Bun



Both a square or long scarf will work here, but a long scarf will give you more fabric to wrap around your bun, so if you have a lot of hair or want a voluminous bun, we suggest using a rectangular style. Start by folding the top quarter of the scarf down before placing it on top of your head. Make sure the two ends are equal in length, then secure them in a knot at the base of your neck, just like you would for a bandanna look. Cross each loose end up and around the bun and tie once more underneath the bun. Tuck in any loose ends or extra hanging fabric and there you have it.

One of the absolute easiest ways to incorporate a scarf into your look is by simply tying it around a ponytail. This works with pretty much any size or shape, so long as you can secure it in a knot. If you're really worried about the silk fabric slipping down your pony, loop your scarf through a hair elastic before tying it to give some extra staying power.

The Bandanna Cap

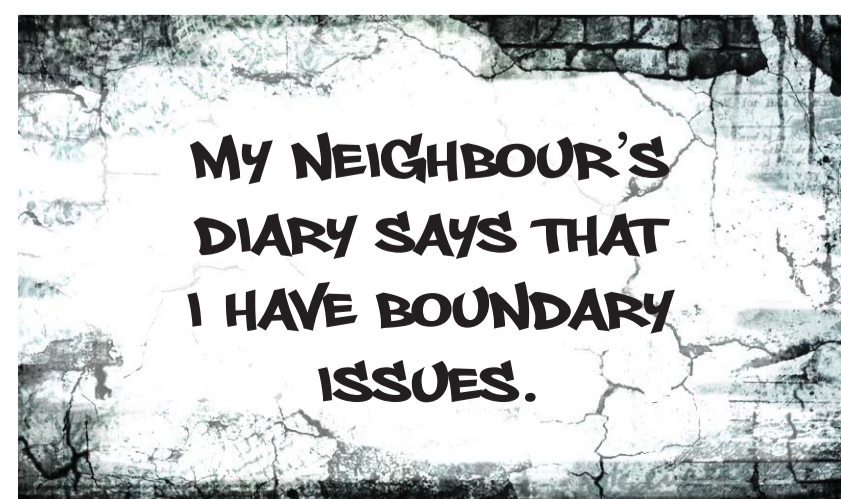


Very similar to the above, but rather than give off an early 2000s or summer camp vibe, the bandanna cap feels much more '70s and really only requires one small tweak in execution. Instead of knotting your scarf below your hair, tie it on top of your strands and over the loose corner as well. Then tuck the excess fabric under the knot to neaten things up.

The Bandanna

If you're really not feeling your hair or just want to cover up a third-day blowout that probably should've retired after being a two-day blowout, this is your easiest option. Simply fold a square scarf in half diagonally, then tie the two opposite ends under your hair and leave the third corner loose.

THE WALL



ZITS

By Jerry Scott & Jim Borgman

