



RADIANZA

A quarterly Pharmacy Practice update for all health care professionals

Department of Pharmacy Practice , KVM College of Pharmacy, Cherthala.

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New Drug

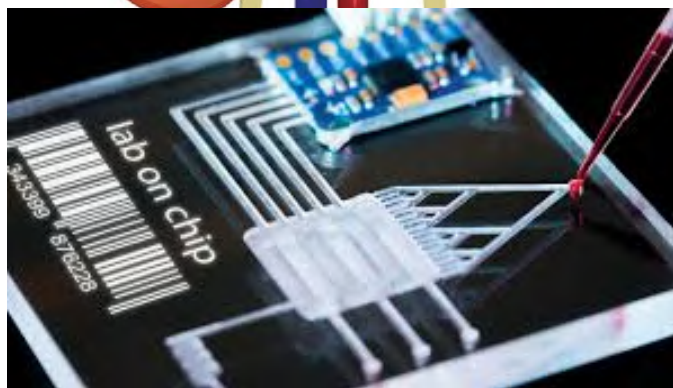
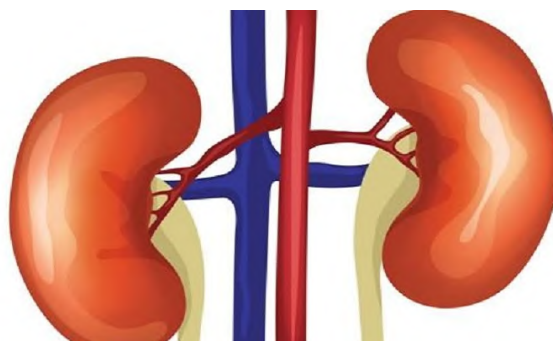
Plitidepsin is a cytotoxic peptide originally found in the sea squirt *Aplidium albicans*. Synthetically produced plitidepsin has been found to have antiproliferative effects on cancer cells.

Approved indication: multiple myeloma

New Drug

Lumacaftor/ivacaftor is a new fixed-dose combination product for patients with cystic fibrosis from two years of age. It is specifically indicated for those who are homozygous for the F508del mutation, which accounts for about 45% of affected patients.

IIT RESEARCHERS DEVELOPED BIOSENSOR TO DETECT KIDNEY DISORDERS IN LESS THAN 8 MINUTES



Researchers from IIT Bombay and Indore, have jointly developed a biosensor that makes it possible to detect kidney disorder in less than 8 minutes.

Biosensor can accurately measure both the pH and urea concentration with a single drop of urine. It help to determine whether the kidneys are functioning normally.

BIOSENSOR TEST

It is made by encapsulating an enzyme urease and molecule FITC-dextran in alginate microspheres. The combination glows in fluorescence colour in response to chemical reaction with urea and changes in pH when urine is added. The fluorescence reduces when the pH is acidic and increases when it is alkaline. The change in intensity of fluorescence helps to calculate the value of pH and urea.

The biosensor made using alginate is safe and non toxic to handle. It can work in the ideal pH range of 4-8. It is able to detect even low concentration of urea up to 50millimolar. It has showed accuracy of more than 97% . Moreover , it is stable for up to a month in refrigerator and gives results unaffected by other components in urine samples. It can help to make rapid and accurate point of care diagnostic test for kidney disorders.

SIGNIFICANCE

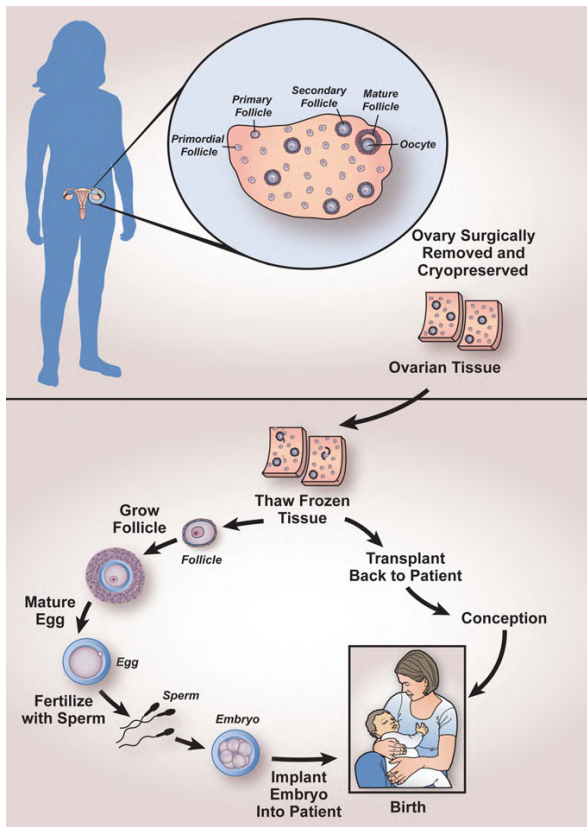
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Contributed by

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Ovarian Tissue Cryopreservation



It's a medical procedure that has been used to freeze a woman's ovaries in order to delay menopause by 20 years. This procedure involves removing a portion of a woman's ovary by key hole surgery and then cryogenically freezing it. As the woman get closer to menopause, the tissue may be thawed and placed back into the woman's body, usually on the remaining ovary. Ovarian tissue cryopreservation is a type of fertility preservation.

Ovarian tissue cryopreservation and transplantation is an important option for fertility preservation in adult patients with cancer who need immediate chemotherapy or do not want to undergo ovarian stimulation. Ovarian tissue freezing is the only option for preserving the fertility of prepubertal patients with cancer. In a recent review, it was reported that frozen-thawed ovarian transplantation has lead to about 90 live births and the conception rate was about 30%. Endocrine function recovery was observed in 92.9% between 3.5 and 6.5 months after transplantation. Restoration of ovarian function, in terms of not only fertility but also endocrine function, would substantially improve the quality of life for women of reproductive age after they have survived cancer and its treatment.

There are 2 methods of ovarian tissue cryopreservation: slow freezing and vitrification. Slow freezing is known as equilibrium freezing and results in safe freezing without serious osmotic and deforming effects to cells . Samples are frozen slowly in a programmable freezer to approximately -140°C , and then the tissue is put into liquid nitrogen at -196°C for storage. Vitrification is a non-equilibrium method and is developed to minimize the risk of ice crystal formation in ovarian tissue . Vitrification requires much higher concentrations of the cryoprotectant and extremely high cooling rate compared to slow freezing . The frozen-thawed ovarian tissue can be transplanted orthotopically to the pelvis or heterotopically to subcutaneous areas such as the forearm or abdomen. As transplantation of ovarian tissue is performed without vascular reanastomosis, the ovarian graft is exposed to ischemia and potential follicular depletion during the time before tissue revascularization. Therefore, an adequate time is necessary for new blood vessels growth.

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Which Is The Best Cooking Oil?

There is nothing like best cooking oil. It is good to consume two oils which complement each other as every oil has a different profile. How to choose and use a cooking oil

- One should change oil time to time and should not consume the same oil for years
- Changing oil after every few months is recommended.
- Do not reuse oil, reheating the oil is very harmful
- Fresh oil should be stored properly in a clean container for use
- Check the composition of the oils properly before combining them

What's new in the field of medicine

Mysterious Polio-Like Illness AFM May Be Linked to Common Virus

Researchers think they've figured out why some children develop a serious condition called acute flaccid myelitis (AFM). AFM can cause lesions on the spinal cord that can result in paralysis. Often it's temporary, but some children have had symptoms for months. Scientists think a type of virus called an enterovirus may be the answer

Paralyzed man walks using brain-controlled robotic suit

A tetraplegic man has been able to move all four of his paralyzed limbs by using a brain-controlled robotic suit. The 28-year-old man from Lyon, France, known as Thibault, was paralyzed from the shoulders down after falling 40 feet from a balcony, severing his spinal cord. Researchers from the University of Grenoble in France, biomedical research center Clinatec and the CEA research center implanted recording devices on either side of Thibault's head, between the brain and skin, to span the sensorimotor cortex -- the area of the brain that controls motor function and sensation. Over a period of two years, Thibault trained the algorithm to understand his thoughts by controlling an avatar -- a virtual character -- within a video game, making it walk and touch 2D and 3D objects. Scientists have said that the technology is an experimental treatment for now, but could improve patients' lives in future.

Osteoporosis breakthrough: Bone mass increased by 800 percent

Estrogen has a wide range of functions in the human body, particularly regarding reproduction. The hormone also works in the brain, but scientists currently know little about its functions there. Recently scientists from the University of California, San Francisco and the University of California, Los Angeles ran a series of studies to learn more about estrogen in the brain. **Along the way, they made a serendipitous discovery that could change the face of osteoporosis research.**

Led by senior study author Holly Ingraham, Ph.D., the researchers were primarily interested in how estrogen's activity in the brain alters metabolism during different stages of life. In particular, they were looking at the function of estrogen-sensitive neurons in the hypothalamus. This is a part of the brain that links the nervous system to the endocrine (hormone) system. The hypothalamus plays an important role in regulating metabolic processes, such as by helping control body temperature, hunger, sleep, fatigue, and circadian rhythms. The scientists blocked the effects of estrogen in the hypothalamus of animals. When they did this, the animals gained weight and became less active. Initially, the scientists assumed that the additional weight would be accounted for by extra fat or muscle tissue. However, upon further inspection, they found that the extra weight was due to increased bone mass. Some of the animals had increased their total bone mass by 800 percent.

The researchers extended their experiments to understand how bone density changed during the lifespan of a mouse. They noticed that bone density in these mice was maintained throughout old age. Testing this mechanism further, the scientists deleted the arcuate estrogen receptors in a mouse model of osteoporosis. In mice that had lost 70 percent of their bone mass, bone density rebounded by 50 percent in just a few weeks.

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Department of Pharmacy Practice, KVM College of Pharmacy, aims to impart clinical skills so that the students can fit into the ever changing world of medicine. Our faculty provide the best professional educational opportunities by excellence in teaching, research, patient care activities which leads to best patient care.

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Clinical Pearls-

- Diclegis (doxylamine Succinate with pyridoxine hydrochloride) is the only FDA-approved prescription medication for nausea and vomiting of pregnancy that is classified as Category A.
- Magnesium 500 mg 1 to 2 PO per day, depending on weight, helps keep a patient who is taking opioid from the need to increase his or her dosage due to tolerance.

World Pharmacists day celebrations in KVM College of Pharmacy.



As designated in 2009 by the FIP Council in Istanbul, Turkey, 25 September marks the annual World Pharmacists Day. FIP encourages pharmacists to use this day to organize activities that promote and advocate for the role of the pharmacist in improving health in every corner of the world. "Safe and effective medicines for all" is the theme of this year's World Pharmacists Day. The theme for 2019 aims to promote pharmacists' crucial role in safeguarding patient safety through improving medicines use and reducing medication errors. KVM College of Pharmacy celebrated this day under the leadership of Pharmacy Practice Department. Mr. Vivek P and Dr. Sruti N U from the Pharmacy Practice Department coordinated the events.

