

Mississippi biologist uncovering kale's cancer-killing effects

Press Release

Belhaven University's Associate Professor of Biology Dr. Elizabeth Brandon and a team of student researchers are discovering foundational research toward a breakthrough in the fight against cancer.

The university's team is revealing preliminary data that shows a low concentration of kale juice can actually kill a type of liver cancer cell, called HepG2.

"It's a different way of looking at food," said Dr. Brandon, who started this type of research 10 years ago. A student, interested in working with kale juice and its effects on melanoma cells, gave her the idea. Since then, she and other biologists have studied cava, mimosa, green tea, pomegranate, blueberries, and many other plants.

According to Dr. Brandon, plants are already being used for modern cancer treatments. Taxol, extracted from the Pacific Yew tree, is one of the most popular and effective modern anti-cancer drugs. "There are thousands of species of plants that have never been researched, many of which may have great potential as treatments for disease."

Scientist who are doing natural product research focus on the compounds that could have some anticancer effects. "They do this based on what is already known about the compounds that interfere with cancer cell division or DNA replication," noted Dr. Brandon. "They try to isolate the molecules that have similar structures and then test out these chemicals individually on the cancer cells."

Belhaven's researchers are taking a different approach. They are using these chemicals in their natural forms. "We are studying the effects of whole forms rather than trying to isolate bioactive compounds to discover potential drug therapies."

The experiments begin with growing cancer cells in petri dishes. Dr. Brandon and her team then make different extracts and whole juices, or ethanol extracts from boiling the plants. "We have to pair cancerous cells with the same type of cells that are noncancerous to try to understand the mechanism by which the chemicals in kale juice work," said Dr. Brandon. "If we see that both kinds of cells are killed by

a whole juice or a plant extract, then we move on to the next plant."

Kale isn't the only plant yielding interesting results. One of the compounds being researched by the team is derived from a species of shrub native to South America, called *Mimosa tenuiflora*. "Mimosa bark has been used for thousands of years as a remedy for several ailments and has very little scientific

Governor signs GAP Act to protect children and vulnerable adults

Gov. Phil Bryant on Wednesday, May 29, signed the Mississippi Guardianship and Conservatorship Act, which will provide stronger protections for children and vulnerable adults.

The Governor held several bill signing ceremonies, signing the Criminal Justice Reform Act, the School Safety Act of 2019 and others.

"The purpose is to protect the most vulnerable," said Supreme Court Justice Dawn Beam, co-chair of the Commission on Guardianship and Conservatorship.

"It has been a long time coming," Gov. Bryant said before he ceremonially signed the bill. He officially signed the legislation into law on April 16. The changes will go into effect Jan. 1, 2020.

Mississippi's laws governing guardianships and conservatorships had not been substantially changed in more than 30 years. The old laws lacked provisions for oversight, monitoring and accountability, and there had been incidents of fraud and abuse of vulnerable people. The Supreme Court on April 13, 2017, created the Mississippi Commission on Guardianship and Conservatorship to develop recommendations to improve the way the courts protect children, vulnerable adults and estates.

Senate Bill 2828, introduced by Sen. Joey Filligane, is also known as the GAP Act, for "guard and protect." It is based on recommendations the Commission made after nearly two years of intensive study. The GAP Act aims to improve court processes for protecting children and vulnerable adults and their assets. The Commission made recommendations to create a clear and workable statutory framework, modern and enforceable reporting requirements, comprehensive court monitoring procedures, state driven accountability measures, protection of the ward's fundamental rights, and transparency from all parties.

The old statutes are confus-

literature regarding its medicinal properties, and no known literature investigating its anti-cancer properties," said Lawrence Martin, a junior biology major from Cleveland, Ohio.

"The research we are conducting is significant due to the fact that we are working with natural products of which there is no known anti-cancer literature, and we are gathering data that is new to the scientific community. In fact, our data suggests that certain extracts of *Mimosa tenuiflora* have cytotoxic effects on cancer cells," ob-

served Martin.

In addition to liver cells, the team is now growing a breast cancer cell line, called MDA-MB436, that they will test with low concentrations of kale juice extract to measure any cytotoxic effects. They have also conducted the kale experiment on colon cancer cells and found that the concentration for liver cancer cells was not toxic for their colon cancer samples.

This process of trial and error is paving the way to new discoveries and giving researchers a way to document these largely undocumented

experiments.

When the research team finds certain plants that kill or slow the growth of cancer cells, they make that information available to the public.

"Since we are the first to research the anti-cancer properties of the *Mimosa tenuiflora* plant, it will be important to publish our data in an effort to gather attention from other researchers," Martin noted. "Our data will be publicly available, and we hope that other scientists will be able to build off of what we have found."

together to protect the most vulnerable."

Members of the Commission on Guardianship and Conservatorship include: Justice Dawn Beam of Sumrall and Mississippi Judicial College Executive Director Randy Pierce of Oxford, co-chairs; Chancellor Catherine Farris-Carter of Cleveland; Chancellor Deborah Gambrell of Hattiesburg; Chancellor Joseph Kilgore of Philadelphia; Chancellor Lawrence Primeaux of Meridian; Chancellor George Ward of Natchez; former Chancellor Sanford Steckler of Biloxi; Resident Jurist John Hudson of Natchez; Commissioner of Child Protection Services Jess H. Dickinson; attorney Anna Claire Steel of the Department of Child Protection Services; attorney Richard Courtney of Jackson; attorney Gray Edmondson of Oxford; attorney Tiffany Graves of Jackson; State Board of Education member Johnny Franklin of Bolton; Special Assistant Attorney General Joe Hemleben; Department of Mental Health Community Services Bureau Director Jake Hutchins; Dr. Luke Lampton of Magnolia; attorney and Mississippi Bankers Association member Nicole Lewellyn of Magee; Disability Rights Mississippi Executive Director Micah Dutro of Jackson; attorney David Marchetti of Jackson; Department of Mental Health Division of Children and Youth Services Director Sandra Parks; Rankin County Chancery Clerk Larry Swales; Amie Mondello of the Rankin County Chancery Clerk's Office; former Coahoma County Chancery Clerk Ed Peacock III; attorney John Smallwood of Hattiesburg; and attorney Bob Williford of Ridgeland. Staff members to the Commission include attorney Whitney Griffin of Madison, counsel to the Commission; Supreme Court Central Legal Staff Attorney Gabe Goza of Brandon; and Administrative Office of Courts Youth Court Programs Director Mary Fuller of Florence.

MEC is working to develop and implement a management information system that will automate many of the notifications for annual well-being reports and accountings required under the GAP Act. Pilot programs utilizing the management information system are underway in the Sixth Chancery and Tenth Chancery Courts. The Sixth Chancery includes Atala, Carroll, Choctaw, Kemper, Neshoba and Winston counties. The Tenth Chancery is made up of Forrest, Lamar, Marion, Pearl River and Perry counties.

sets out a process for ending legal restrictions when the ward recovers from an impairment.

Chancellor Farris-Carter said, "The thing that I am most excited about is that we finally have a process in place wherein consideration has to be given to the desires and wants of the ward. Just because they have a physical limitation doesn't mean they have mental limitations."

Mississippi Electronic Courts, MEC, the electronic filing system utilized by 62 of the state's 82 Chancery Courts, provides chancellors, court staff and clerks of court with a mechanism for monitoring and tracking guardianships and conservatorships. With the GAP Act set to go into effect in January 2020, "we will have plenty of time to train court personnel on how the court's computer system will assist judges in overseeing the care of our citizens," Justice Beam said.

Justice Beam thanked the Governor, legislators and members of the Commission for their work on the GAP Act. She also thanked the Mississippi Medical Association, the Bankers Association, AARP and disability advocates whose help was vital to formulating this new approach.

Randy Pierce, executive director of the Mississippi Judicial College and co-chair of the Commission, said, "This is a perfect example of how the private sector and the public sector can come

together to protect the most vulnerable."

Senate Bill 2828 can be read here: <http://billstatus.ls.state.ms.us/documents/2019/pdf/SB/2800-2899/SB2828SG.pdf>.

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Please include all pertinent details, dates, location, name of the event or occasion, all associated people, organizations or groups, reason for event or occasion and **NAMES OF ALL PEOPLE PICTURED IN ANY PHOTOGRAPH.** We look forward to hearing from you!

-Holmes County Herald Staff