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CANNABINOID CHRONICLES

Medical Cannabis News and Information

Flavonoids and Cannabis

Flavonoids are a diverse group of plant chemicals (phytochemicals) that are common throughout plants. They are the largest group of phytonutrients in fruits and vegetables. There are over 5,000 different flavonoids and they are considered an important part of a healthy diet due to their antioxidant properties.

Flavonoids are abundant in plants, in which they perform several functions. They are essential pigments for producing the colours needed to attract pollinating insects and also seem to protect the plant from diseases and pests. In higher order plants, flavonoids are also required for UV filtration, nitrogen fixation, cell cycle inhibition, and as chemical messengers. On a cellular level, flavonoids act as regulators of the cellular cycle. Some of them are synthesised in the plant's roots and have crucial roles in establishing symbiotic fungi or mycorrhizas, while at the same time they fight the infections caused by pathogenic fungi. Most flavonoids are soluble in water.

Flavonoids molecules are also found in cannabis. While cannabis cannabinoids are found primarily in the flowers of the plant, flavonoids are found throughout the flowers, leaves, and stems. It is estimated that the total content of flavonoids in the leaves and flowers can reach 2.5% of its dry weight, while it is almost non-existent in seeds and roots.

The unique smell and flavour of a cannabis strain is produced in part by its flavonoids. And, like terpenoids, flavonoids may enhance the effects of cannabinoids or reduce unwanted side effects.

There are 23 flavonoids in cannabis, and some - cannaflavin A and cannaflavin B - are unique to the plant. Some flavonoids are volatile (vaporize easily) and can be effectively ingested by smoking, or preferably vaporizing, plant material.

Some flavonoids found in cannabis:

Apigenin - (found in nearly all vascular plants) associated with overall antioxidant benefits and delaying the metabolizing of drugs; binds effectively to estrogen receptors and slows down the proliferation of breast cancer caused by hormone estradiol; anti-inflammatory.

Cannaflavin A - found to reduce inflammation 30 times more effectively than aspirin.

Kaempferol - antioxidant, anti-inflammatory, anti-depressant

Luteolin - antioxidant, anti-inflammatory, antibiotic and as agent against cancer

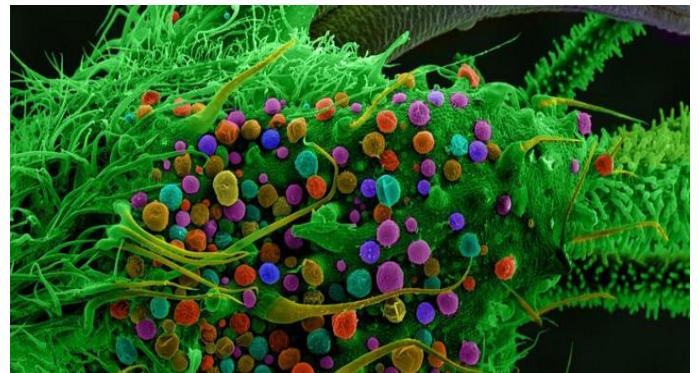
Orientin - antioxidant, anti-inflammatory, antibiotic and as agent against cancer

Quercetin - (found in nearly all vascular plants) antioxidant, antihistamine associated with helping to relieve hay fever and hive, anti-inflammatory, anti-mutagenic, antiviral.

Source: Russo, Ethan, and Franjo Grotenhermen, Editors (2006). *Handbook of Cannabis Therapeutics - From Bench to Bedside*. Binghamton, NY. The Haworth Press, Inc.

Werner, Clint (2011). *Marijuana, Gateway to Health*. San Francisco, CA: Dachstar Press. pp. 52-54

www.fundacion-canna.es/en/flavonoids



CANNABIS PLANT FLOWER. From *Cannabis Under The Microscope: A Visual Exploration of Medicinal Sativa and C. Indica* by Ford McCann.

International Association for Cannabinoid Medicines (IACM) Bulletin

Human: Cannabis spray reduces withdrawal in cannabis users

In an eight-week placebo-controlled trial, the cannabis spray Sativex in a dose up to 108 mg THC reduced cannabis withdrawal in cannabis users during abstinence, but was associated with less psychological effects.

Centre for Addiction and Mental Health, Toronto, Canada.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26925704>

Human: People with posttraumatic stress disorder have lower levels of endocannabinoids in their hair

Research with 38 rebel war survivors from Uganda, who suffered from posttraumatic stress disorder (PTSD), and 38 rebel war survivors without PTSD, showed that those with PTSD had lower levels of endocannabinoids in their hair. Authors wrote that “the observed reductions in endocannabinoids might account for the increased inflammatory state as well as for the failure to extinguish fear memories observed in PTSD. Our findings add to the accumulating evidence suggesting the endocannabinoid system as a target for pharmacological enhancement of exposure-based psychotherapy for PTSD.”

Institute of Psychology & Education, Ulm University, Germany.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26923850>

Human: Regular cannabis use nearly halves metabolic syndrome in patients with psychosis

In a study based on 1813 adults with psychotic illness, frequent use of cannabis was associated with a reduction of 44% in metabolic syndrome (OR = 0.56). Metabolic syndrome consists of at least three of five of the following medical conditions: abdominal obesity, elevated blood pressure, elevated fasting blood glucose, high blood triglycerides, and low HDL levels.

School of Psychiatry and Clinical Neurosciences, The University of Western Australia, Perth, Australia.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26965714>

Animal: THC may be beneficial in HIV infection by modulating the immune system

In an HIV model of monkeys (macaques), which were infected with the SI virus, THC induced some beneficial effects on the disease. For example, it blocked CD8+ T-cell activation and proliferation. CD8+ T-cells are also called cytotoxic T-cells or killer T-cells. Authors wrote that their research suggests a “potential for targeted immune modulation in HIV infection.” Tulane National Primate Research Center, Covington, USA.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26937033>

Human: CBD extract effective in treating children with Dravet syndrome in controlled clinical trial

A cannabis-based drug has successfully treated children with a rare form of severe epilepsy in a clinical trial. The study of Epidiolex in Dravet syndrome is the first of four final-stage Phase III epilepsy trials, with results expected this year, that the pharmaceutical company GW Pharmaceuticals hopes will confirm the therapeutic benefits of cannabidiol, the major cannabinoid of Epidiolex.

GW said on March 14 the 120-patient trial showed patients taking Epidiolex achieved a median reduction in monthly convulsive seizures of 39% compared with a reduction on placebo of 13%. The difference was highly statistically significant and optimism about the drug's future sales increased share prices of GW by 125%. There are currently no approved therapies for Dravet syndrome. Epidiolex, which is given as a child-friendly syrup, is also being tested in Phase III trials for another rare type of epilepsy, Lennox-Gastaut syndrome, with results due this year.

Source: <http://www.gwpharm.com/news.aspx>

Animal: THC can enhance the pain relieving effects of opioids without increasing dependence

In a study with four monkeys, a combination of morphine and THC was more effective in reducing pain than morphine alone. Authors wrote that “THC can enhance some (antinociception, tolerance) but not all (dependence) effects of morphine.”

University of Texas Health Science Center, USA.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26937020>

Human: Cannabis use in adolescents had negative effects on brain function

In an 18-month study with 22 adolescent cannabis users and 43 non-users, cannabis use resulted in a decrease in functional connectivity between certain brain regions. Authors wrote that their results suggest “that repeated exposure to cannabis during adolescence may have detrimental effects on brain resting functional connectivity, intelligence, and cognitive function.”

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26912785>

Animal: Cannabinoids, which activate the CB2 receptor, may reduce bone cancer pain

In female rats, a synthetic cannabinoid (JWH-015), which only activates the CB2 receptor, reduced bone cancer pain. Affiliated Drum-Tower Hospital of Medical College of Nanjing University, China.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26935064>

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For more info visit: www.cannabis-med.org/

Cannabinoids and Autoimmune Diseases - A Review

Cannabinoids have shown to have a variety effects on body systems. Through CB1 and CB2 receptors, amongst other, they exert an effect by modulating neurotransmitter and cytokine release.

Current research in the role of cannabinoids in the immune system shows that they possess immunosuppressive properties. They can inhibit proliferation of leucocytes, induce apoptosis (cell death) of T cells and macrophages and reduce secretion of pro-inflammatory cytokines.

In mice models, they are effective in reducing inflammation in arthritis, multiple sclerosis, have a positive effect on neuropathic pain and in type 1 diabetes mellitus. They are effective as treatment for fibromyalgia and have shown to have anti-fibrotic effect in scleroderma. Studies in human models are scarce and not conclusive and more research is required in this field.

Cannabinoids can be therefore promising immunosuppressive and anti-fibrotic agents in the therapy of autoimmune disorders.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26876387>

Judges Question Prosecution

Why are people still being busted for cannabis possession given the Liberal's promise to turn cannabis consumption into a legal, regulated recreational activity? Some criminal judges are asking exactly that question in light of pending legalization, the country's most senior prosecutors told parliamentarians on March 10.

The House of Commons justice committee heard that one magistrate is even considering whether to continue with a simple-possession case before the court.

Meanwhile, the federal government is spending upwards of \$4 million a year prosecuting those caught with small amounts of the drug.

"People in my community, I'm talking the police and others, they don't know what's going on," NDP MP (Victoria) Murray Rankin said.

"These people have talked about reform, why can't they decriminalize in the near term, why can't they show us a road map of where we're going in marijuana?"

The government still maintains that it has a duty to maintain a hard line on continuing federal prosecutions for minor offences until cannabis is on the same legal footing as alcohol and tobacco. A federal-provincial-territorial task force, to consult experts and others on a framework for the proposed legislation, is supposed to be announced soon.

Rankin said the government needs to move faster.

"I'm told in other communities in Canada, (the law against simple possession) is being used to as a tool to harass young people, sometimes people of visible minorities, indigenous people. Having opened the door to a reform proposal, there needs to be a cost-benefit analysis, the status quo obviously isn't working."

Source: <http://news.nationalpost.com/news/canada/canadian-politics/judges-question-simple-marijuana-possession-cases-as-legality-remains-in-limbo>

Majority Favour Cannabis Legalization

A recent poll indicates that a strong majority (68%) of Canadians support or somewhat support legalizing the recreational use of cannabis. Half of those polled feel that people should also be allowed to grow their own.

Of those in favour for legalization, British Columbia has the greatest support (75%) while the prairie provinces have the least (54.6%).

The poll also found that Canadians would prefer to see cannabis sold at a dispensary (43.7%) or a pharmacy (42.6%). Liquor store sales came in third at 35.6%, and grocery and convenience stores were preferred by roughly 3% each.

Source: www.theglobeandmail.com/news/politics/majority-of-canadians-agree-pot-should-be-legal-poll/article28944411/

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Conroy Discusses the Future of Medical Cannabis

Lawyer John Conroy, lead counsel for the four BC plaintiffs that allows them to continue growing their own medical cannabis in a landmark ruling (Allard), says the ruling gives the government an opportunity to also look at the issue of cannabis dispensaries.

“This is their opportunity to change the regulations but deal with dispensaries as well,” explains Conroy, who has been fighting Canada’s marijuana laws nearly 40 years.

“We’ve had (pot) compassion clubs and dispensaries in Vancouver going on 20 years,” he points out. “Do we have a fallout in terms of medical use? No, the evidence is virtually non-existent.”

“The next fight is making sure the dispensaries are legal,” he said. “The great majority of patients would like to be able to go to something like that. And that needs to happen as the government needs to look at the [medical marijuana rules] and the [licensed producers] and the dispensaries and come up with a regime that takes all them into account.”

Justice Phelan concluded that the updated cannabis regulations introduced by the previous Conservative government in 2014 are “overbroad and arbitrary” because they effectively force patients to choose between their medicine and prison.

In the decision, he said that “dispensaries are at the heart of cannabis access,” and he suggested the growth of such illegal storefront shops is connected to the restrictive nature of the current medical marijuana system.

Conroy points out the federal government under new Prime Minister Trudeau, who has promised to legalize cannabis, could do so today with the stroke of a pen.

“Mr. Trudeau’s government could simply pass an order-in-council by cabinet, removing cannabis from Schedule 2 of the Controlled Drugs and Substances Act. The minute the government did that, arguably the natural health care producers regulations would cover cannabis for medical purposes.”

“You need to remember,” he adds, “that doctors prescribe all sorts of drugs that kill people. We have a serious problem in relation to opiates. And when they cut those people off, they go to the streets and end up dying from overdoses of fentanyl.”

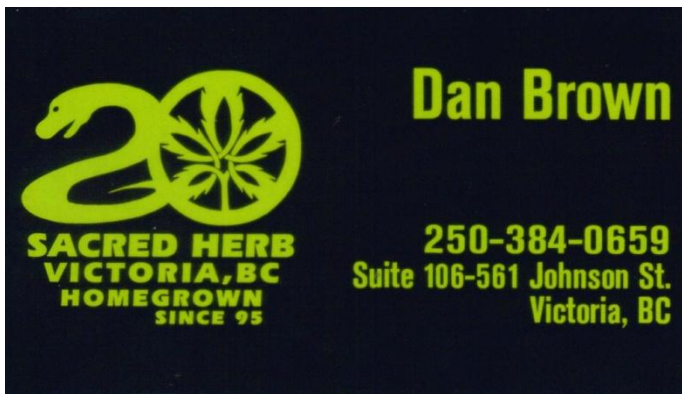
Cannabis is not a drug that kills people like alcohol and tobacco, he says.

Conroy says when the case was heard last year, the Conservative government’s expert witnesses on the risks of marijuana cultivation were found to be so biased against cannabis that their evidence was deemed unreliable by the judge.

“It’s not that complicated to have a legal regime. You don’t need to have a huge team of inspectors to go in and inspect everybody’s premises constantly. You have municipalities and cities that have inspectors who check for all sorts of things, so there’s no need to reinvent things in order to reasonably regulate the production of cannabis.”

[As an aside, Health Minister Jane Philpott announced on March 24th that the federal government will not appeal the Allard decision.]

Source: www.theglobeandmail.com/news/british-columbia/marijuana-advocates-say-next-fight-is-legalizing-storefront-dispensaries/article28923818/



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250-383-4105

MS Society of Canada
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(250) 388-6496

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BC Cancer Agency
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Health Canada
<http://www.hc-sc.gc.ca/dhp-mps/marihuana/index-eng.php>

Drug Policy Alliance
www.drugpolicy.org

Media Awareness Project
www.mapinc.org

Together Against Poverty Society
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250-361-3521

“It’s always time to question what has become standard and established.”

-- David Bowie (musician, painter, and actor, 1947 - 2016)