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HMT Newsletter

The Science Behind our Favorite Fall Treats

As Fall approaches in the Northern hemisphere, we're getting ready to welcome back our comforting favorites: carving pumpkins, sacks of candy, and pumpkin spice everything. While this delightful concoction of spices is evocative of changing leaves and colder weather, the research that has gone into the physiologic effects of its substances has been anything but 'basic'. In this newsletter, we're taking a look at the Science behind Pumpkin Spice.

Lets take a look at some of the science behind our favorite fall spices

Nutmeg

Key Points:

- Nutmeg has long been used in traditional Chinese medicine to treat various gastrointestinal disorders
- Metabolites found in nutmeg extract, particularly lignan compounds, have been shown to decrease oxidative stress as well as lower hepatic inflammation
- This ameliorative effect is achieved through modulation of PPARα, which effects the expression of genes involved in fatty acid oxidation and ketogenesis
- Read more HERE

Cinnamon

Key Points:

- Though there have been conflicting reports in recent years, cinnamon has been reported to lower hyperlipidemia and reduce fasting blood glucose levels in patients with type 2 diabetes
- A randomized trial with 66 Chinese patients taking either a placebo, low dose (120mg/d), or high dose (360mg/d) of cinnamon extract was performed, and Hemoglobin A_{1c} (HbA_{1c}), fasting blood glucose, cholesterol, and a suite of other markers were measured
- While HDL and LDL showed no changes in any of the groups, post-treatment: HbA_{1c}, fasting blood glucose, and triglyceride levels showed a significant decrease in the post-treatment groups for both the low and high doses, while remaining unaffected in the control group
- Read more HERE

Ginger

Key Points:

- Due to the high density of phytochemicals in ginger, it has been widely been used as a supplement in various disease treatments, particularly: cancer
- Not only are there a myriad of studies looking at the ameliorative effects of these phytochemicals, including ROS scavenging and anti-inflammatory effects, the authors find that [6]-Gingerol exhibits cytotoxic effects in cancer cell lines and and anticancer effects in mouse models
- While this review thoroughly documents the wide range of secondary metabolites found in ginger and their medicinal effects, a concerted effort is needed to research the pathways these secondary metabolites are modulating
- Read more HERE

Cardamom

Key Points:

- Cardamom is an important resource and tool for schools of traditional Indian medicine, and its application has been used for hundreds of years
- Significant reduction of atherogenicity occurred in normally fed ratsonly in conjunction with administration of cardamom oil, however...
- In hypercholesterolemic rats, all forms of dietary cardamom supplementation showed significant reductions in total cholesterol, low density cholesterol, and atherogenicity. These effects were especially pronounced in the group to which cardomom oil was administered
- Read more HERE

HMT is a leading company providing metabolomic profiling based on unique and high performance CE-MS technology. We complete over 400 projects a year and our technology has contributed to the advancement of research in a variety of scientific areas.

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