

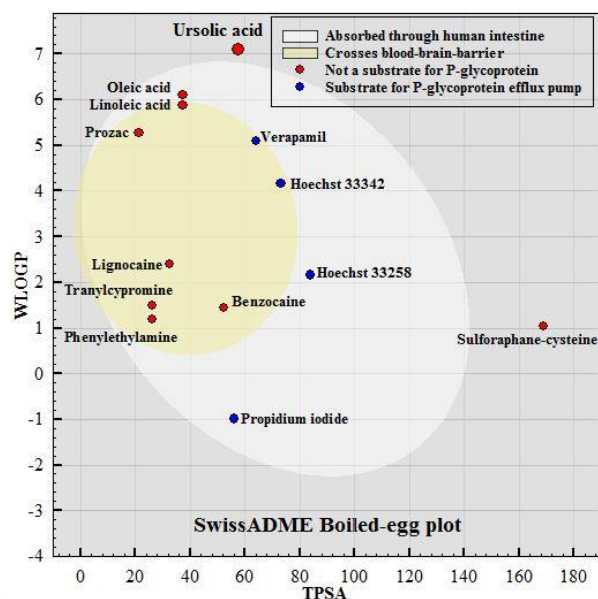
OliveNet™ Newsletter

Molecule of the month

Ursolic acid

Ursolic acid, a pentacyclic triterpenoid, has been mostly associated with the outer waxy layer of apples and the peels of various fruits, herbs and spices including, rosemary and thyme, and has been identified in significant amounts in olive oil. It has been purported to have numerous beneficial health effects, and is of particular interest as a supplement for bodybuilding.

Numerous studies have shown the effect of ursolic acid on increased muscle mass, and as an example, using an animal study the beneficial metabolic effects of the compound have been highlighted (Kunkel et al. Ursolic Acid Increases Skeletal Muscle and Brown Fat and Decreases Diet-Induced Obesity, Glucose Intolerance and Fatty Liver Disease, PLoS One. 2012; 7(6): e39332).



We analysed ursolic acid using SwissADME. The results indicate that ursolic acid is poorly absorbed through human intestines, and not predicted to cross the blood-brain-barrier, in-line with experimental findings (Hirsh et al. A single ascending dose, initial clinical pharmacokinetic and safety study of ursolic acid in healthy adult volunteers (1044.6), Faseb J. 2014; 28 (1)).

Metabolism by the gut microbiome has been implicated in the absorption of the compound, and interestingly, emerging evidence indicates of the effects of ursolic acid may, at least in part, be due to altering the gut microbiome.

Julia Liang's recipe of the month

Olive oil ice-cream

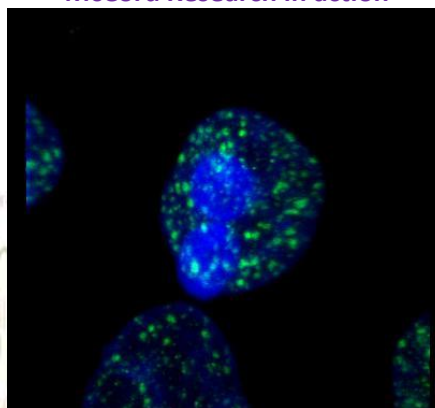
Apart from being a talented McCord Research molecular modelling scholar, Julia Liang is an avid "foodie". This month Julia has prepared Olive oil ice-cream – tasty, smooth, and creamy! For further details please see our [OliveNet Library Facebook page](#) and visit [Julia's Cooking Revista](#).



[Approximate calculations: Total EVVO = 125 mL (116 g); Serves 8. Per serve = 240 calories (or 12% of 2,000 calorie diet), 14.5 g EVVO (or 30% of typical daily recommendation), ~3.6 mg olive polyphenols (assuming 250 mg/kg in average EVOO)].

* All of Julia's recipes are tried and tested.

McCord Research in action



Research from our Melbourne laboratory performed by Katherine Ververis shows that the key olive polyphenol hydroxytyrosol in combination with the conventional chemotherapeutic, doxorubicin, induce DNA-doubled strand breaks in human erythroleukemic K562 cells (green foci), with minimal effects on normal peripheral blood mononuclear cells. Note the lack of DNA damage in the smaller peripheral blood mononuclear cells (no green foci), which are attacking the larger malignant K562 cell.