

BioActives LLC. Research Note:

### Comparison of Active Ingredients in Cardio HB to Water Extractions and Hibiscus Teas

A number of clinical studies using hibiscus tea as a treatment have provided evidence that Hibiscus sabdariffa can help in reducing blood pressure and cholesterol levels.<sup>1</sup> This note compares the ingredients between the tea, water extract and Cardio HB, to determine if the results achieved by administering the tea, support the claims made by Cardio HB that also draws support from direct clinical testing. The note concludes with a dosage and practicality comparison.

H. Sabdariffa tea contains several inactive constituents and also has a sour unpleasant taste because of high levels of organic acids such as citric acid, malic acid etc. To get an effective dose, the tea needs to be prepared with at least 10g of the powder in 0.5L of water.

The minimum effective dose for a dry water extract is 2g per day, again not practical for routine consumption. The dry water extract also has the sour taste and is very hygroscopic.

CardioHB is a refined extract of H. Sabdariffa that contains the active components in a concentrated form. The extract is tasteless as the organic acids have been removed making it suitable for incorporation into a variety of functional foods, drinks in addition to use in solid dosage forms. The effective dose based on the concentration of active constituents is 300 mg powder per day in 1-2 capsules.

The chart below shows that the active components responsible for cholesterol and blood pressure reduction are all present in Cardio HB. This comparison provides support for concluding that clinical trials conducted using hibiscus tea as the treatment provide evidence as to the efficacy of Cardio HB.

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<sup>1</sup> McKay, D. *et. al.*, Hibiscus Sabdariffa L. Tea (Tisane) Lowers, Blood Pressure in Prehypertensive and Mildly Hypertensive Adults, Journal of Nutrition Nutrition and Disease, 2009, 109.115097

Comparison of Active Constituents In  
Hibiscus Tea, Water Extraction and Cardio HB

<b>Compounds</b>	<b>H. Sabdariffa tea</b>	<b>H. Sabdariffa dry water extract</b>	<b>CardioHB extract</b>	<b>Biological activity</b>
MucoPolysaccharides	Present	Present	Absent	Not active
Pectin	Present	Present	Absent	Not active
Simple sugars	Present	Present	Absent	Not active
Organic acids (citric acid, malic acid etc)	Present	Present	Absent	Not active
Phenolic acids (chlorogenic acid, ferulic acid etc)	Present	Present	Present	Active
Flavonoids	Present	Present	Present	Active
Anthocyanins	Present	Present	Present	Active
Tannins	Present	Present	Present	Active