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Efficacy of anti-oxidation potential of homoeopathic medicine *Hydrastis canadensis* 6C and 200C

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Abstract
The study was intended to investigate the anti-oxidation potential of homoeopathic medicine Hydrastis canadensis 6c and 200c. The anti-oxidation potential of each medicine were evaluated using DPPH method by calculation from absorbance observed using calorimeter. Ascorbic acid and ethanol were taken as standard for comparison.
It was observed that *Hydrastis canadensis* 200c had 81.8% anti-oxidation property and *Hydrastis canadensis* 6c had 100% anti-oxidation property in comparison to ascorbic acid. Whereas in case of ethanol anti-oxidation potential were 54%.

Keywords: free radicals, anti-oxidants, anti-oxidation potential, homoeopathic medicine, *Hydrastis canadensis* 6C and 200C

1. Introduction
World Health Organization states, "Cancer is a large group of diseases that can start in almost any organ or tissue of body when abnormal cells grows uncontrollably, go beyond their usual boundaries to invade adjoining part of body/spread to other distant organs" [1]. Globally in 2018, malignancies stands as a 2nd leading cause of death with 9.6 million/year. Also patients, families, communities and health system are imposed with high physical, emotional, and financial strain.
Free radicals can be hazardous at higher concentration and can damage all major components of cells including DNA, protein and cell membranes by exposure to ionizing radiation and other environmental toxins resulting in diseases like cancer [2, 3].
Anti-oxidants, the free radical scavengers, are chemicals that interact with and neutralize free radicals thus preventing them from causing damage, which is associated by animal studies by the presence of increased level of exogenous antioxidants has been shown to prevent free radical damage that has been associated with cancer development.
In homoeopathic system of medicine, after years of clinical experience, several homoeopaths has well proved about utility of *Hydrastis canadensis* in cancer but the reason behind their action in cancer cases is not studied.
So this study is intended to find the presence of antioxidant potential in *Hydrastis canadensis* 6c and 200c.

2. Materials and Method
2.1 Materials
Homoeopathic medicine *Hydrastis canadensis* 6c, 200c (Procured from Dr. William Schwabe India Pvt. Ltd.) and Chemicals including DPPH (Sisco Research Laboratories; Batch no: 3592381; Procured from Sri Durga Laboratory), Methanol (Procured from Sri Durga Laboratory) and Ascorbic acid (Procured from Sri Durga Laboratory) were procured.

2.2 Method
DPPH Solution was prepared by adding 1 particle of DPPH powder to 6 ml of methanol. Control solution was prepared using ascorbic acid by adding 5ml of DPPH solution to 0.005g of ascorbic acid.
To a clean test tube 90 microliter of DPPH solution, 20 microliter of medicine and 3ml of distilled water were added, whereas in case of control ethanol 20 microliters was added to 3ml of distilled water. The test tube was covered using an aluminium foil and stored in a dark room for 30 minutes.

The absorbance of control and medicine were measured using a photoelectric calorimeter after calibration. The readings were recorded and calculated using following formula.

DPPH radical scavenging activity was measured by

$$\frac{\text{Absorbance (sample) - absorbance (blank)}}{\text{Absorbance (blank)}} \times 100$$

3. Result

The recorded results were tabulated as on table 1.

Table 1: Absorbance and anti-oxidant action of study and control groups

		Absorbance	DPPH Radicle scavenging action (%)
Ascorbic acid		0.11	
Ethanol		0.05	$\frac{0.11 - 0.05}{0.11} \times 100 = 54\%$
Hydrastis canadensis 6c		0.00	$\frac{0.11 - 0.00}{0.011} \times 100 = 100\%$
Hydrastis	canadensis	0.02	$\frac{0.11 - 0.02}{0.11} \times 100 = 81.8\%$
200c			

Fig 1: Calorimeter reading of ethanol

Fig 2: Calorimeter reading of *Hydrastis canadensis* 6c

Fig 3: Calorimeter reading of *Hydrastis canadensis* 200c

4. Discussion

Hydrastis canadensis 200 showed 81.8% anti-oxidation property and *Hydrastis canadensis* 6c showed 100% anti-oxidation property in comparison to ascorbic acid. The differences between both the potencies were about 18.2%, which does not make a significant difference. Whereas, in case of ethanol, anti-oxidation property was 54%.

The studies done by Tayyeba Rehman and Saeed Ahmad in the year 2019 on *Pulsatilla nigrican* mother tincture and *Cinchona officinalis* mother tincture showed 85% and 89% of anti-oxidation property respectively [4]. Another study conducted in the year 2017 among Syzigium jambolanum tincture, Damiana tincture, *Cinchona officinalis* tincture, Chelidonium tincture, and coca tincture showed highest anti-oxidation property in Syzigium jambolanum tincture among the other tinctures.

5. Conclusion

As mentioned earlier, 100% anti-oxidation property is present in *Hydrastis canadensis* 6c and 81.8% anti-oxidation property present in *Hydrastis canadensis* 200c. This raises a research question on the relation of antioxidant property of *Hydrastis canadensis* in treatment of malignancies. Further researches are required to investigate the role of anti-oxidants of *Hydrastis canadensis* in efficient treatment of Cancers.

6. Reference

1. Cancer [internet]. World health organization 2021.
2. Satyanarayana U, Chakrapani U. Biochemistry. 4th edition. New Delhi: Elsevier 2013, 685-695.
3. Pankaja Naik. Biochemistry. 4th edition. New Delhi: Jaypee brother's medical publishers 2016, 823-871.
4. Tayyeba Rehman, Saeed Ahmad. Evaluation of anti-bacterial and antioxidant potential of some homoeopathic mother tinctures. Indian journal of research in homoeopathy 2019;13(2):100-106.
5. Rachel Nall. What to know about cancer [internet]. Brighton: Health line media UK 2004. [cited 2020 Jan 6].
6. Lynne Eldridge. Free radicals: definition, causes, antioxidants and cancer. New York: Dotdash 2021. [Updated 2020 Feb 2; cited 2019 Nov 1].
7. Clarke JH. A dictionary of practical material medica 2nd edition. Noida: Bjain publication 2005;1:919.
8. Dr. Phatak S. Materia medica of homoeopathic medicines. Noida: Bjain publications 2007, P349.
9. Susmita, Yugal Kishore, Sujogya. Methods to study

antioxidant properties with special reference to medicinal plants. International journal of pharmacy 2013;3(1):91-97.
10. Sharma Pravesh, Sisodia Sidhraj, Narua Puspendra, Porwal Mayur. *In vitro* anti-oxidant activity of *Gossypium Herbaceum* Linn. International research journal of pharmacy 2011;2(7):166-170.
11. Arun Athvale, Nikhil Jirankalgikar, Pankaj Subrata. Evaluation of *In vitro* Anti-oxidant activity of Panchagavya. International journal of pharmaceutical science and research 2012;3:2543-2549.
12. Megan Ware. How can antioxidants benefit our health? Brighton: Health line media UK 2004. [Cited 2020 Jan 6].
13. 273 questions with answers in DPPH assay. DDPH antioxidant assay/test. Learner's big book 2020. Available from http://www.researchgate.net