# **Green Blood: A New Hope For Cancer Cure?**

Name: Rucha D. Gore

Name of college: Sinhgad Dental College and Hospital.

# **INTRODUCTION:**

Oral squamous cell carcinoma is the sixth most common cancer worldwide & is usually managed with the help of chemotherapeutic agents that are toxic not only to tumour cells but also to normal cells in many ways & are also very expensive. Moreover these agents cannot be used for the prevention of cancer. The traditional herbal medicines which are used from ancient days in India are generally known to be free of the deleterious habits and are inexpensive but effective. One of these is wheatgrass which is the young grass of the wheat plant "Triticum aestivum Linn." from the family Poeaecae (Graminae). It is also known as "green blood" because of its high chlorophyll content which is analogous to hemoglobin. This study was carried out to check the effect of wheat grass extract on oral squamous cell carcinoma (OSCC).

### **METHODOLOGY:**

OSCC cells (KB mouth) were added to 96 wells in a micro liter plate containing MEM (modified eagle's medium) supplemented with 10% fetal calf serum & a mixture of 5% Gentamycin & 100 units/ml penicillin-streptomycin.



40% cell inhibition was observed in the KB cell line after incubation with aqueous wheat grass extract (1000 µg/ml for 24 hrs.)





Six concentrations of this stock solution were made (1000, 500, 250, 100, 50, 25 $\mu$ g/ml) & added to the wells. Then they were incubated for 24 hrs. The wells without extract were considered as controls & were also incubated for same time.



Adequate quantities of organic wheat grain were soaked in water overnight. The next day the soaked wheat grain was spread over soil in a plastic tray & a thin layer of soil was spread over it.

This tray was kept on a covered balcony for 8 days. On the 9th day, wheatgrass was harvested by cutting it with clean scissors about 1/2" above the surface of the soil. Aqueous extract from the same was made using distilled water (25mg/250ml).

	Test	Well 1	Well 2	Well 3	Mean	%Viability	% Inhibition
<b>RESULT:</b>	Normal control	0.372	0.377	0.368	0.372	100	0
	25 μg/ml	0.314	0.314	0.314	0.314	84.4	15.6
	50 µg/ml	0.290	0.280	0.285	0.285	76.6	23.4
MTT ASSAY	100 µg/ml	0.285	0.274	0.280	0.280	75.1	24.6
	250 μg/ml	0.262	0.282	0.262	0.272	73.3	26.0
	500 μg/m	0.261	0.267	0.262	0.264	71.0	29.0
	1000 ug/ml	0.214	0.244	0.229	0.229	58.6	41.4

# DISCUSSION & CONCLUSION

Bioflavonoids

Chlorophyll

Zn, Ca, P, Selenium

Vit. A, B, C, E, K & Enzymes

Minerals: Carotene, Na, Al, Cu, Fe,

#### Anticancer activity:

•Enhances hemoglobin synthesis, thereby increasing O<sub>2</sub> supply to all cells, including cancer cells

•It induces mammalian phase 2 protein that protects cells against oxidant and electrophils.

•ABA (abscisic acid) in wheat extract can neutralise the effect of chronic gonadotropins, which are produced by cancer cells.
•It has antioxidant properties.
•It is alkaline (7.4) in nature.



Conclusion: At 1 mg/ml, cell growth inhibition was 41.4% in 24 hrs; thus, it can be stated that wheatgrass has anticancer properties.

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