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Letter to the Editor

Antiproliferative activity of yellow pigment from forest soil *Streptomyces* sp SFA5 against breast cancer cell line MCF-7

Sir,

Cancer is a dreadful non-communicable human disease, increasing with changing life style, nutrition and global warming. Cancer treatments do not have potent medicine as the currently available drugs are causing adverse effects in some instances. In this context, the natural products derived from medicinal plants have gained significance in the treatment of cancer (Sithranga Boopathy and Kathiresan, 2010). Actinobacteria are the promising source for bioactive metabolites including anticancer agents (Berdy, 2012). Present study is aimed to determine the antiproliferative activity of yellow pigment isolated from forest soil *Streptomyces* sp SFA5 against breast cancer cell line.

Soluble yellow pigment from forest soil *Streptomyces* sp SFA5 was produced by agar surface fermentation using yeast extract malt extract (YEME) broth. After 10 days of incubation at 28°C, soluble pigment from the agar medium was extracted by solid liquid extraction method using ethyl acetate (1:2 ratio) (Radhakrishnan et al., 2014). Antiproliferative activity of crude pigment against breast cancer cell line MCF-7 was determined by MTT assay described by Carmichael et al., (1987). Pigment as well as the standard drug doxorubicin were tested in triplicate at concentrations such as 1, 10, 50, 100 and 250 µg/mL. Cell viability was calculated by adopting the following formula:

$$\% \text{ of cell viability} = \frac{\text{Treated cells}}{\text{Control cells}} \times 100$$

Antiproliferative activity of yellow pigment produced from *Streptomyces* sp SFA5 and the standard drug doxorubicin on MCF-7 breast cancer cell line was given in Table I. Among the concentrations tested, maximum reduction in viability (Figure 1) was observed at 250 µg/mL concentration of crude pigment (10% viability) and doxorubicin (2% viability).

Shekar Ponnuswamy¹, Sathishkumar Kannaiyan¹, Gopikrishnan Venugopal² and Radhakrishnan Manikkam²

¹Department of Chemical Engineering, SSN College of Engineering, Tamil Nadu, India; ²Centre for Drug Discovery and Development, Sathyabama University, Tamil Nadu, India.

Corresponding author:
email: mrkactinos@yahoo.com

Table I

Antiproliferative activities yellow pigment and doxorubicin on MCF-7 cell lines by the MTT assay		
Concentration (µg/mL)	% of cell viability	
	Yellow pigment SFA5	Doxorubicin
1	98.0 ± 2.0	91.3 ± 1.5
10	79.0 ± 3.6	60.0 ± 4.0
50	35.3 ± 5.1	23.6 ± 4.0
100	24.0 ± 5.2	17.3 ± 4.7
250	13.6 ± 3.2	1.6 ± 0.5

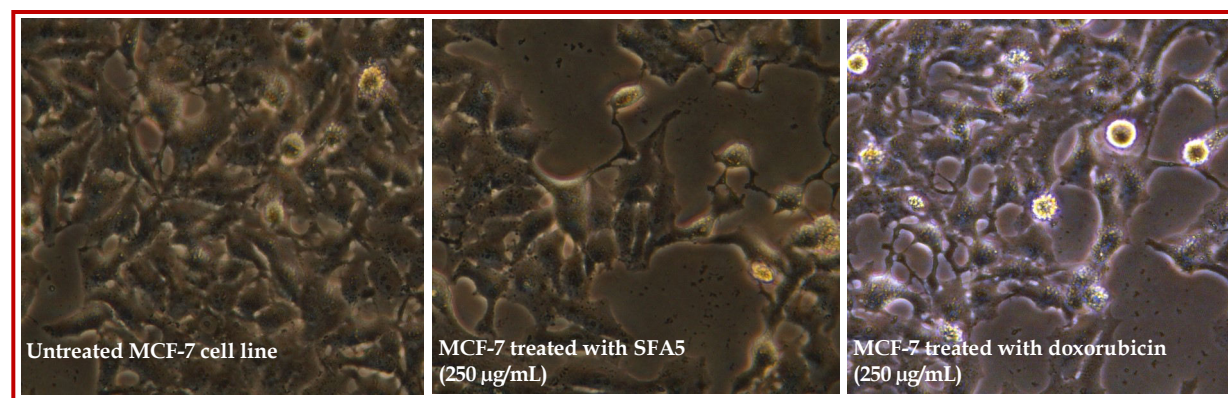


Figure 1: Antiproliferative activity of yellow pigment SFA5 and standard drug doxorubicin on MCF-7 cells



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