

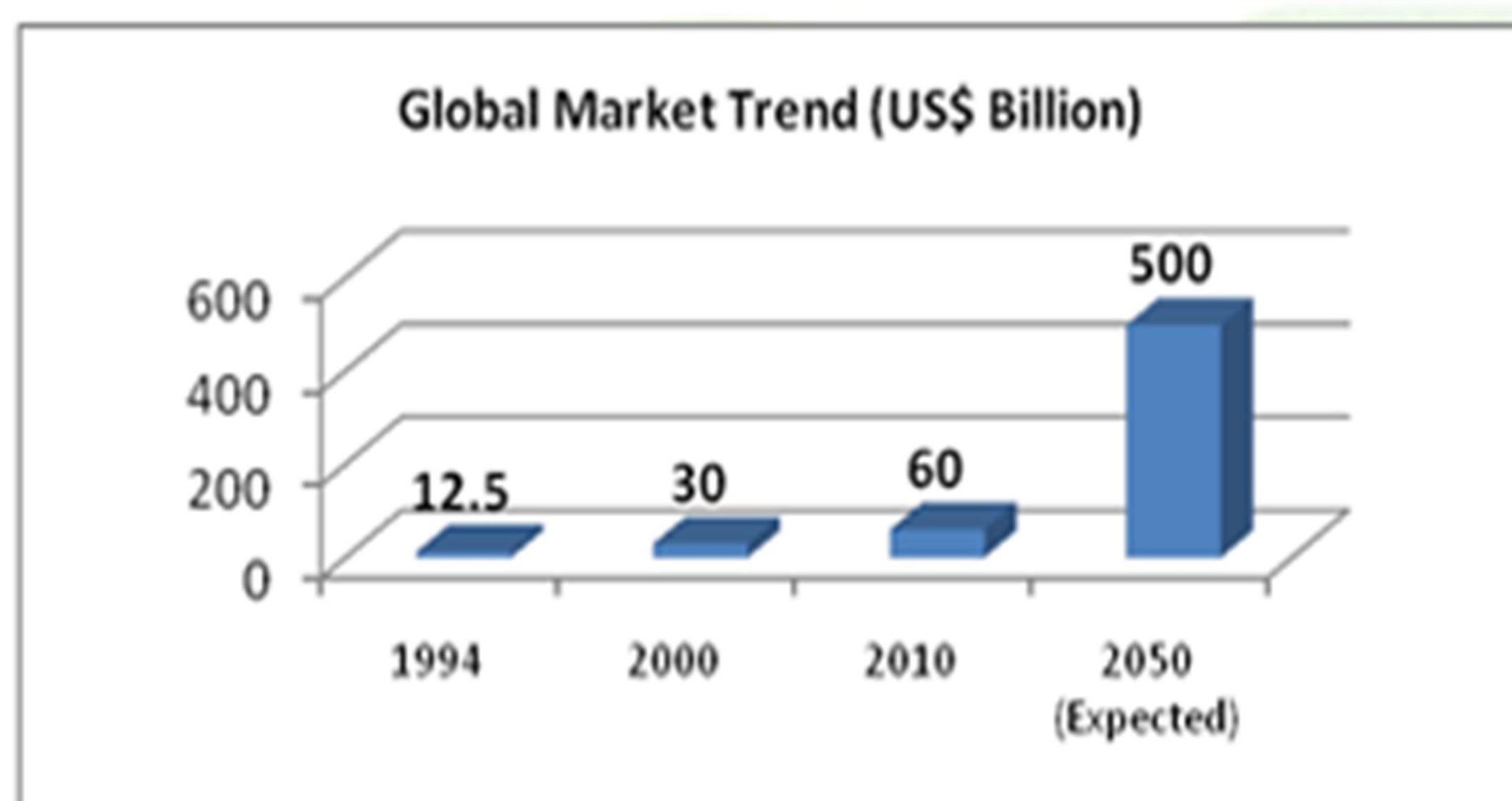
DS FACTOR ~ A REMEDY FROM NATURE

PI2012003490



BACKGROUND

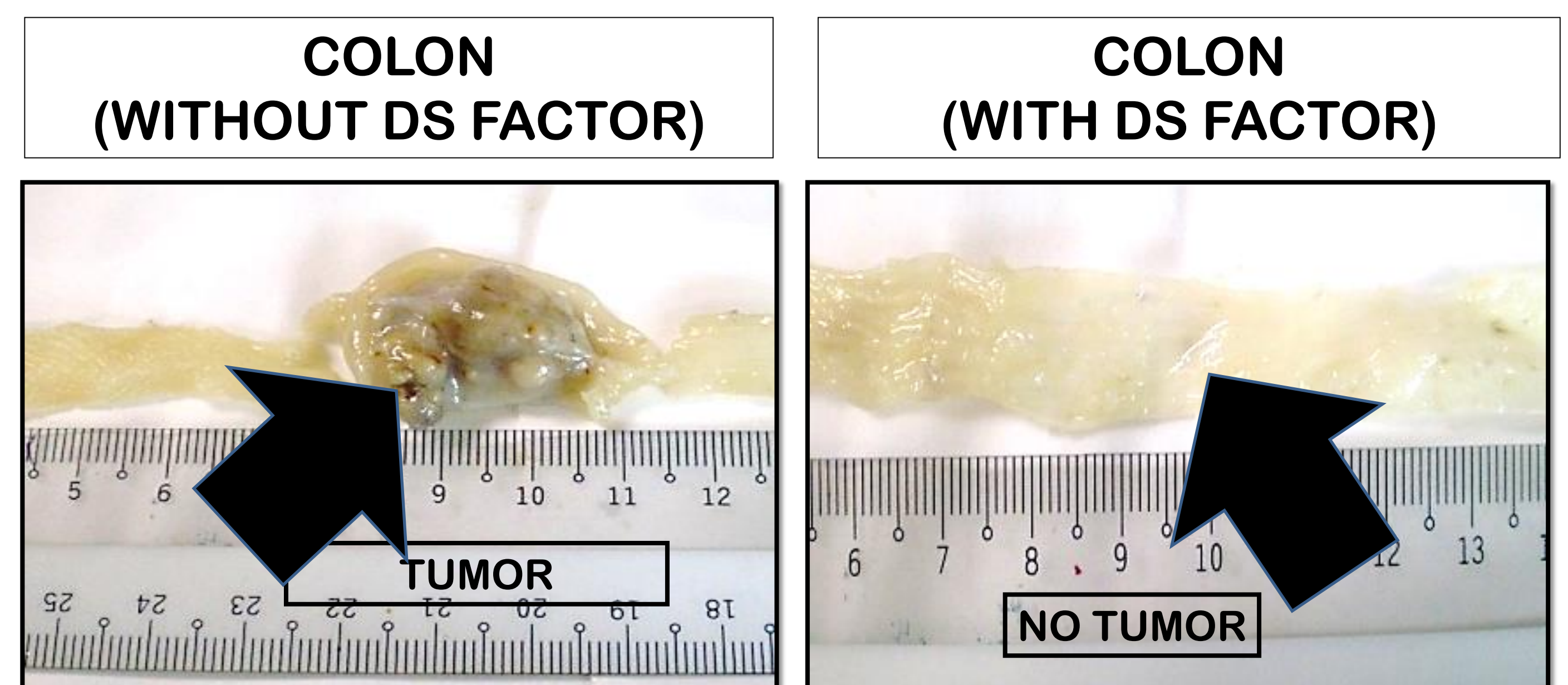
A significant worldwide increase in the general use of herbal medicine for primary health care.



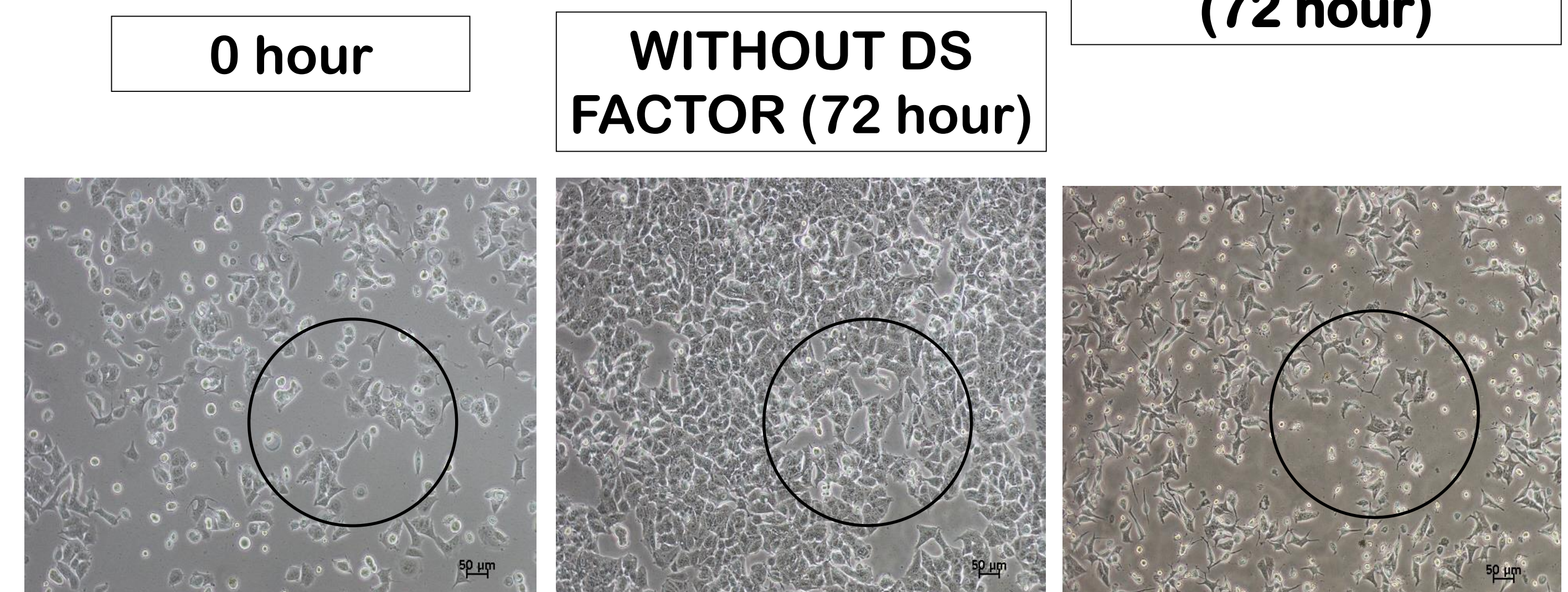
Dillenia suffruticosa

- ✚ Treatment of cancer (traditional use)
- ✚ Exhibit strong anti-cancer properties without toxic effects
- ✚ Posses strong anti-oxidant properties
- ✚ Active compound: betulinic acid (very potent anti-cancer agent)

EFFECTS IN RATS WITH COLON CANCER



CYTOTOXICITY IN MCF-7 BREAST CANCER CELL LINE WITH DS FACTOR



Award Finalist Anugerah Harta Intelek Negara 2013 (Kategori Paten)

Publication ✚ Armania N *et al.* (2013). *Dillenia suffruticosa* exhibited antioxidant and cytotoxic activity through induction of apoptosis and G₂/M cell cycle arrest. *Journal of Ethnopharmacology*, 146(2013): 525-535.
✚ Armania N *et al.* *Dillenia suffruticosa* extract inhibits proliferation of human breast cancer cell lines (MCF-7 and MDA-MB-231) via induction of G₂/M arrest and apoptosis. *Molecules* (In press)
✚ Armania N and Latifah SY. *Dillenia* species: A review of the traditional uses, active constituents and pharmacological properties from pre-clinical studies. *Pharmaceutical Biology* (Accepted)

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BENEFITS

DS FACTOR	COMPETITORS
Lower cost of treatment (US\$ 937 per patient)	Higher cost of treatment. From US\$ 1200 for other herbal remedies, and up to US\$ 14,584 for clinical regimens (Ayyvacı <i>et al.</i> , Medical Decision Making, 2013).
Less side effects	Various side/adverse effects. • Other herbal remedies: headache, dizziness, liver damage (http://www.cancerresearchuk.org, retrieved 23 rd Sept 2013.) • Chemotherapy: alopecia, immunosuppression (Cancer Chemotherapy and Biotherapy, 2011).
Simple preparation (tea-like preparation)	Prescription of drug and restrictive drug monitoring are required (National Synthetic Drugs Action Plan, 2004).

POTENTIAL CUSTOMER: Cancer patients



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