

How Essiac Tea may affect tumor formation



The use of complementary and alternative medicines is growing in the U.S.

Complementary Medicine: used with conventional medicine
Alternative Medicine: used in place of conventional medicine

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Cancer patients often choose to use complementary and alternative medicines to prevent recurrence

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The products are widely available on the internet and their use is spread by word-of-mouth

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Counseling is prevented by lack of information about safety, efficacy and drug interactions

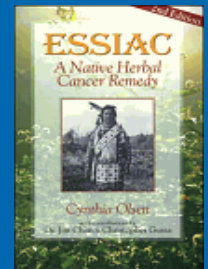
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Essiac Herbal Tonics are widely used dietary supplements



Renee Caisse, a Canadian nurse, obtained the original 4 herb formula from an Ojibwa healer (?) in the 1920's-- she treated cancer patients with the tonic for 50 years



**Essiac = Caisse
backwards!**

At the time of her death, she sold the formula to the Reserpin Corp. of Ontario. Many other "like products" use the "Essiac" name



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Little was known about how the herbal tonic actually works:



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"The progress obtainable and the actual results from ESSIAC... and the rapidity of repair were absolutely marvelous, and must have been seen to be believed"

Dr. Emma Carson, 1993.

How Caisse thought Essiac worked: "Often patients would report an enlarging and hardening of the tumor after a few treatments; then the tumor would begin to soften, and if it was located in any body system with a route to the exterior, the patient would report discharging large amounts of pus and fleshy material. After this, the tumor would be gone". Rene reasoned that Essiac somehow caused all the cancerous cells to retreat to the site of the original tumor, then to shrink and discharge -- often to vanish altogether.



And advice about taking it may come with risks:

The patient information recommends that no other treatment, including chemotherapy and radiation, should be used while taking Essiac. "Any other treatment which causes change in the human immune system will prevent Essiac from doing its job." If other medication must be taken, however, Essiac "will not conflict," it just won't "work as fast".

Flor-Essence® is a popular Essiac-type tonic



Flor-Essence®, marketed by the Flora Company, has the original 4 herbs, plus 4 more



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These products are widely used among breast cancer patients. A recent study of recommendations by employees at health food stores showed that Flor-Essence® was suggested most frequently as a “treatment” for breast cancer Mills, et.al. Breast Cancer Research, 5:170



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As a treatment the herbal tonics are unproven, (unsubstantiated claims are illegal), but as a dietary food supplement it is not a medical treatment.


































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Herbal Tonics are expensive products. Before our studies were initiated, no clinical trials, animal studies or peer-reviewed basic science reports existed evaluating these products

The herbs used in the tonics have a history of use in Asian medicine



Herb	Anti-carcinogen	Anti-tumor	Anti-oxidant	Anti-inflammatory	Estrogen-like
 Burdock Root					
 Sheep Sorrel					
 Slippery Elm					
 Turkish Rhubarb					
 Red Clover					
 Blessed Thistle					
 Kelp					
 Watercress					

All eight are in Flor-Essence®
 These are in Essiac®

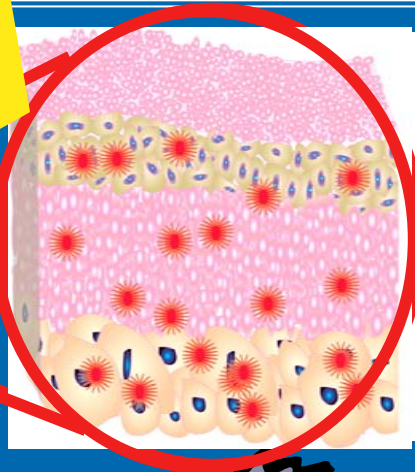
We are investigating the effect of Essiac® and Flor-Essence® on tumor development



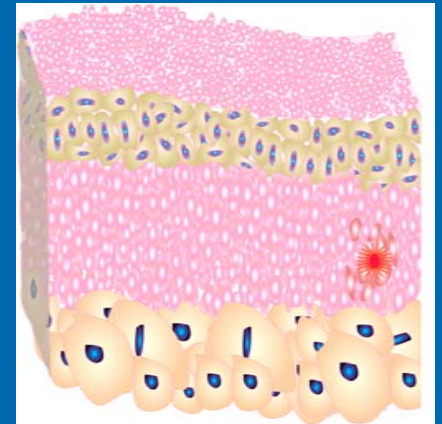
GOAL: Determine if these herbal tonics can prevent tumor formation

To determine if a compound can prevent cancer, it is necessary to use a model system that is believed to cause cancer.

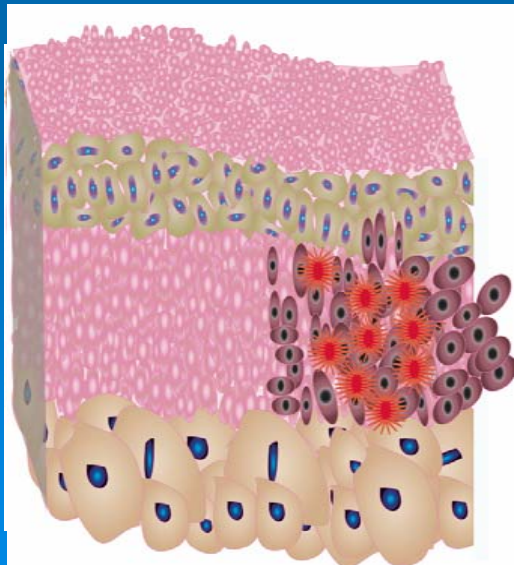
How do tumors form?



Initiation



DNA Repair, cell death



10 years???



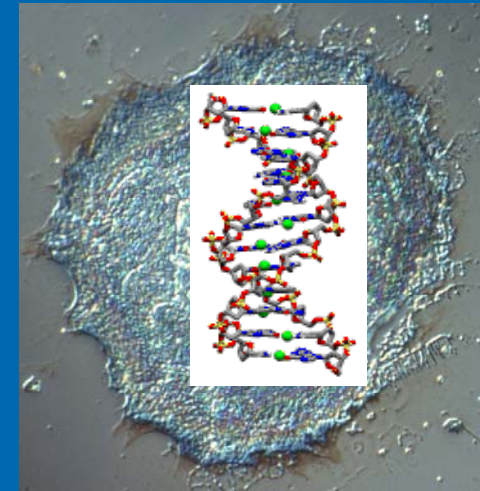
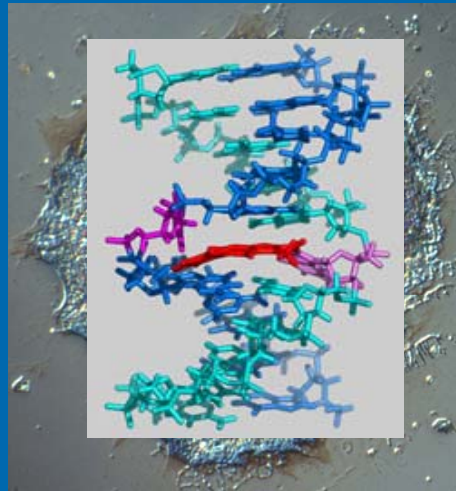
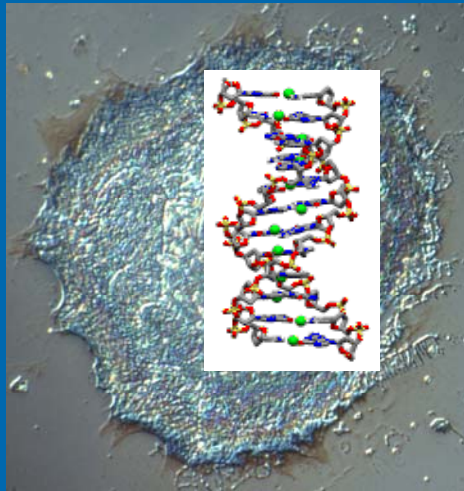
Initiation: Damage to a cell's DNA

Promotion: Cell division that multiplies the mistake

1) Effect of Essiac® and Flor-Essence® on tumor initiation



Understand effect of tonic on DNA damage formation and repair



Carcinogen exposure;
Measure amount of
DNA damage

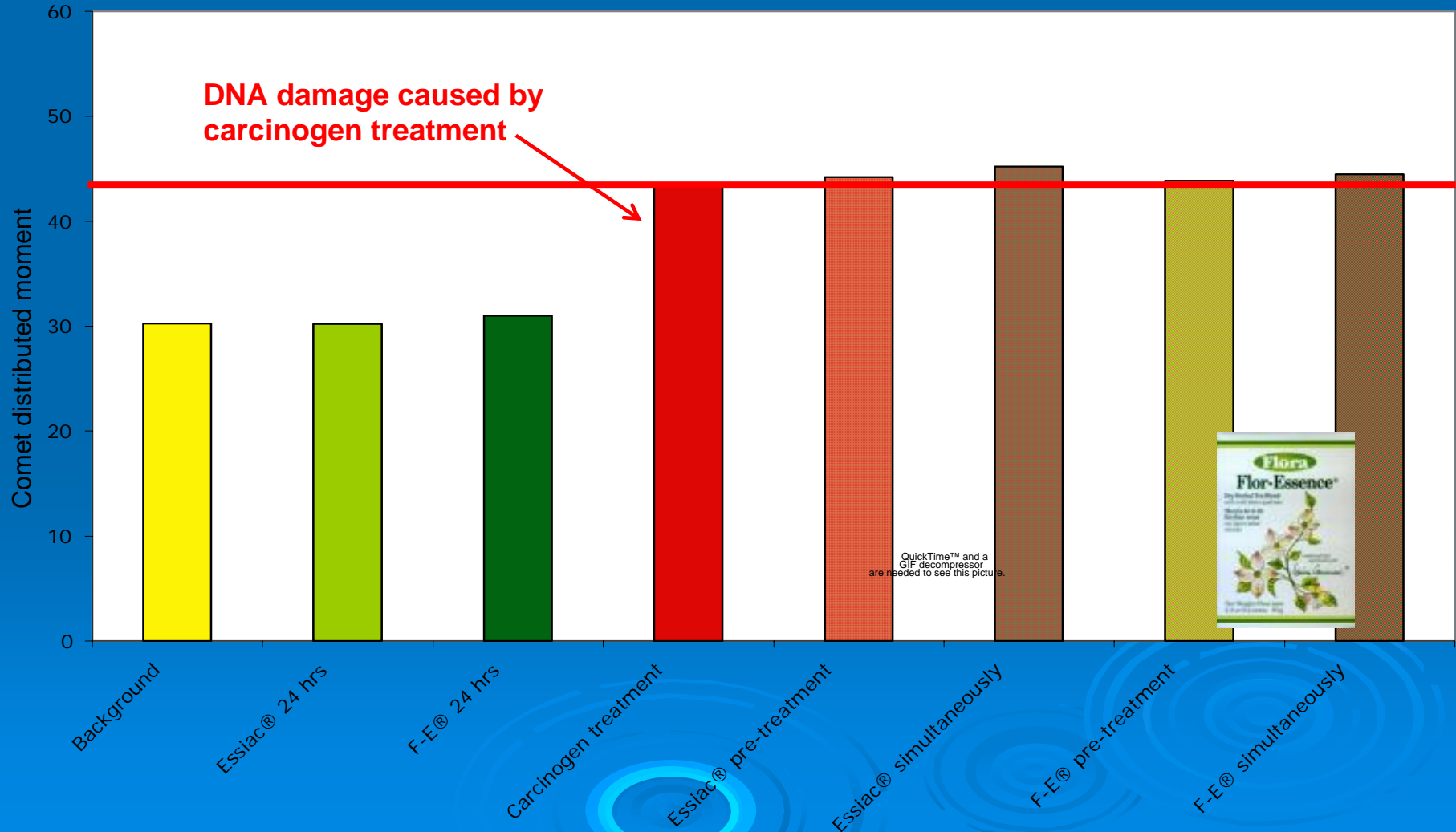
DNA Repair;
Measure
speed and
efficiency of
repair

Flor-Essence® and Essiac® exposure

Essiac® and Flor-Essence® do not affect formation of DNA damage











Representative results of 3 human breast cancer cell lines



2) PROMOTION: Effect of Essiac® and Flor-Essence® on human breast cancer cell growth

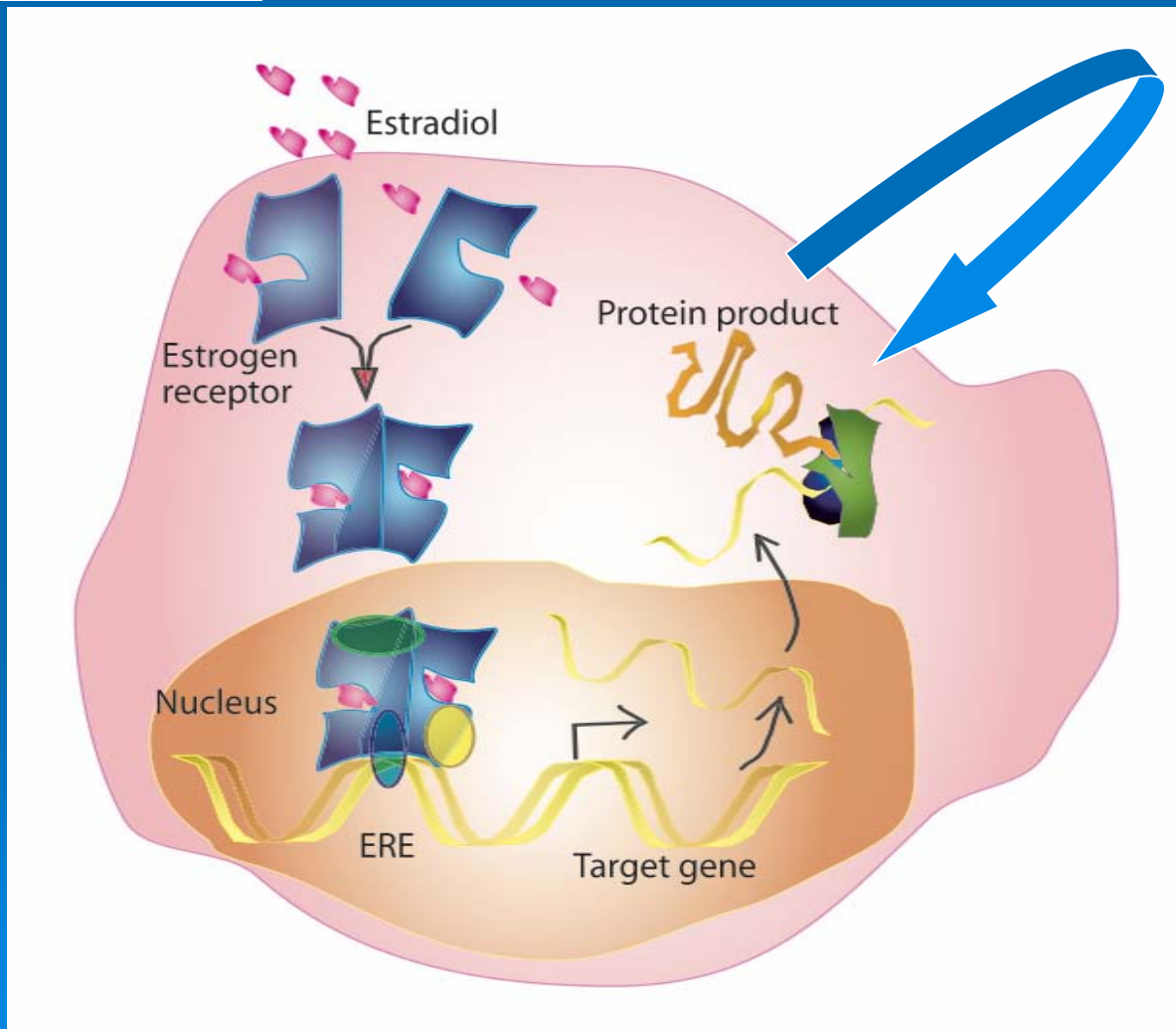
Estrogen and estrogen-like compounds are known promoters



	Herb	Anti-carcinogen	Anti-tumor	Anti-oxidant	Anti-inflammatory	Estrogen-like
These are in Essiac®	 Burdock Root	↓	↓	↓	↓	+
	 Sheep Sorrel		↓	↓	↓	+
	 Slippery Elm		↓	↓	↓	
	 Turkish Rhubarb	↓	↓			
All eight are in Flor-Essence®	 Red Clover	↓		↓		+
	 Blessed Thistle		↓		↓	
	 Kelp	↓	↓		↓	+
	 Watercress	↓				+

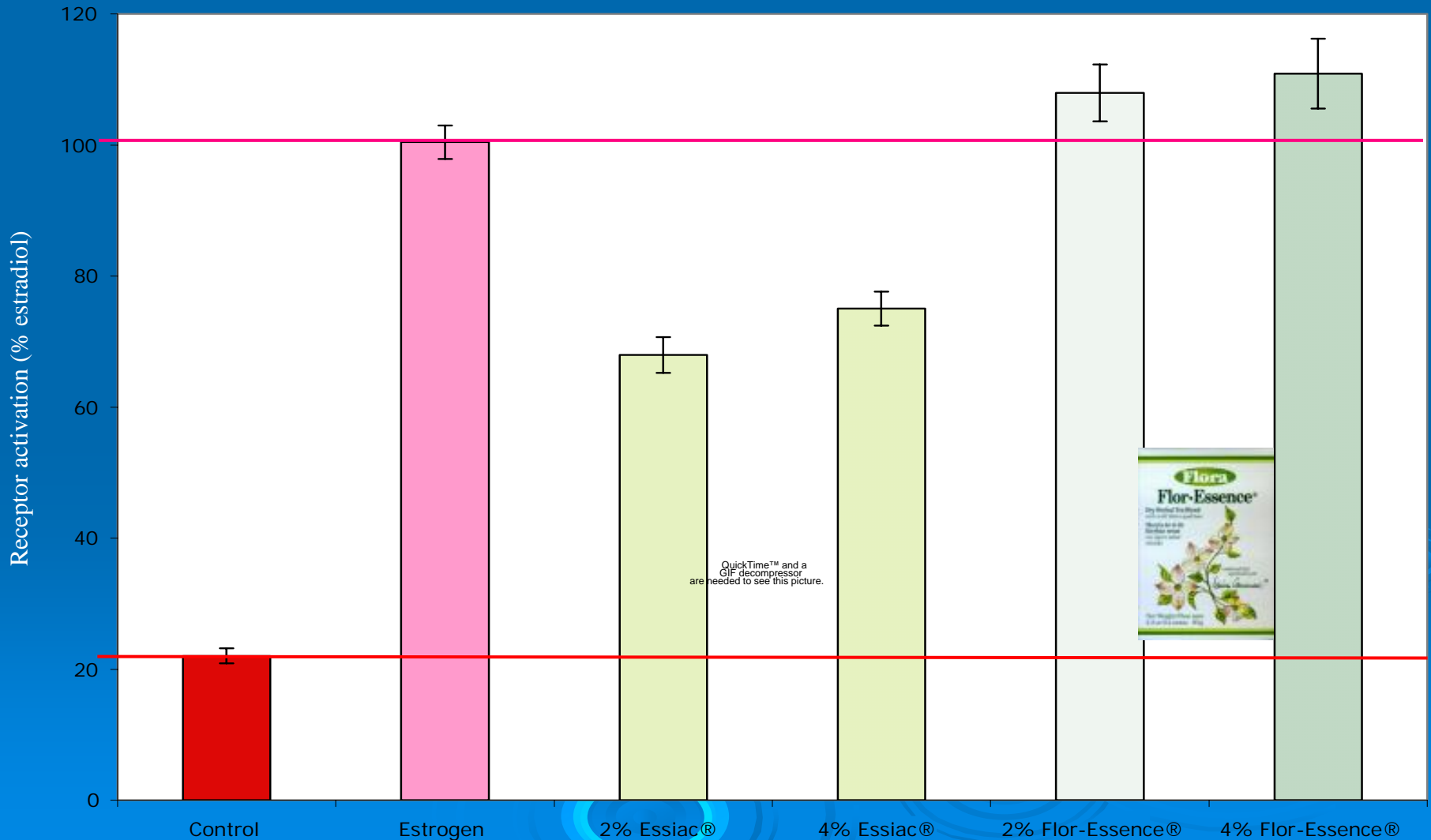
Adapted from Tamayo et.al., Phytotherapy Research, 2000

Estrogen receptor activation pathway

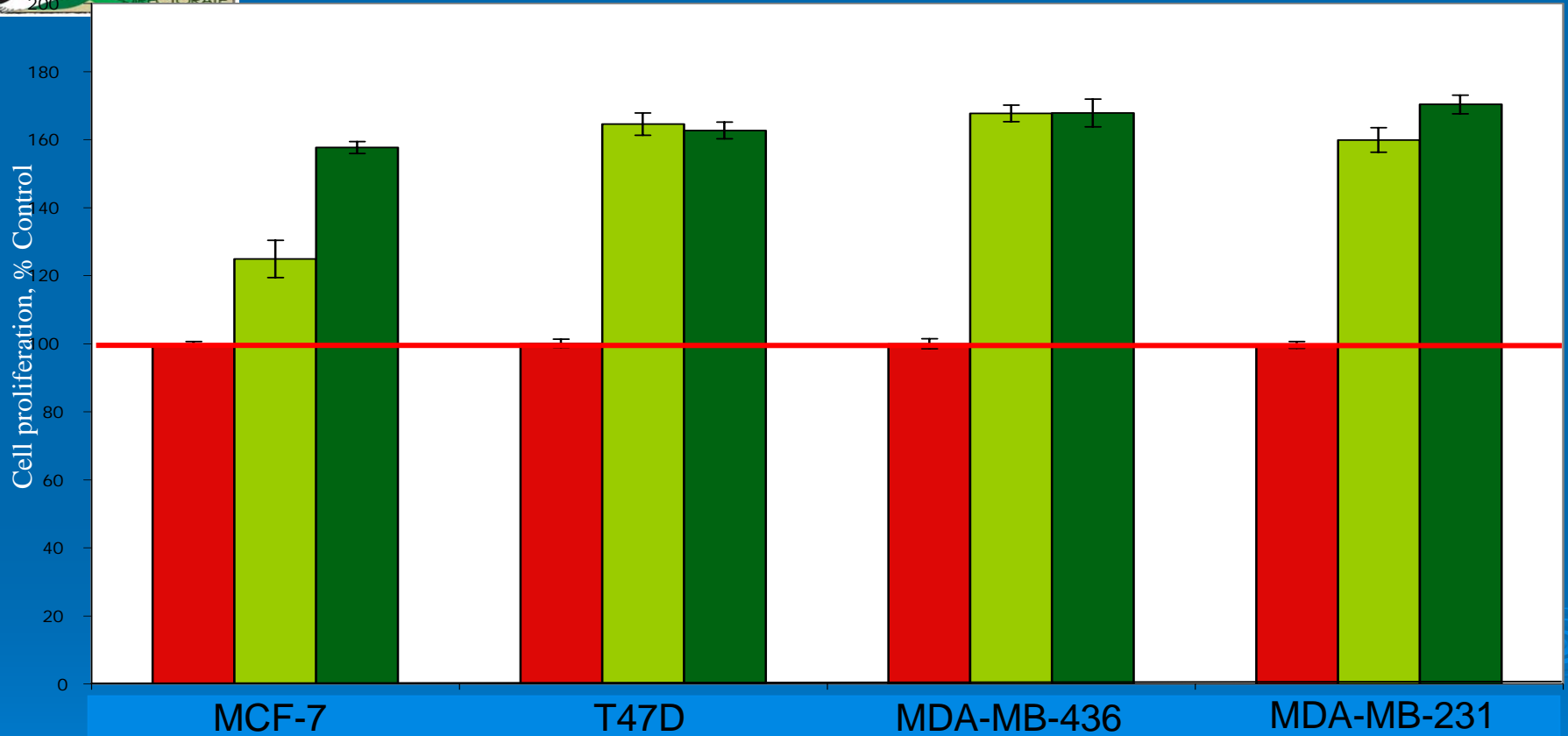


Activation of the estrogen receptor leads to a change cell behavior; one example is increased cell proliferation

Both Flor-Essence® and Essiac® Herbal Tonics activate the estrogen receptor



Both Flor-Essence® and Essiac® Herbal Tonics dramatically increase breast cancer cell growth



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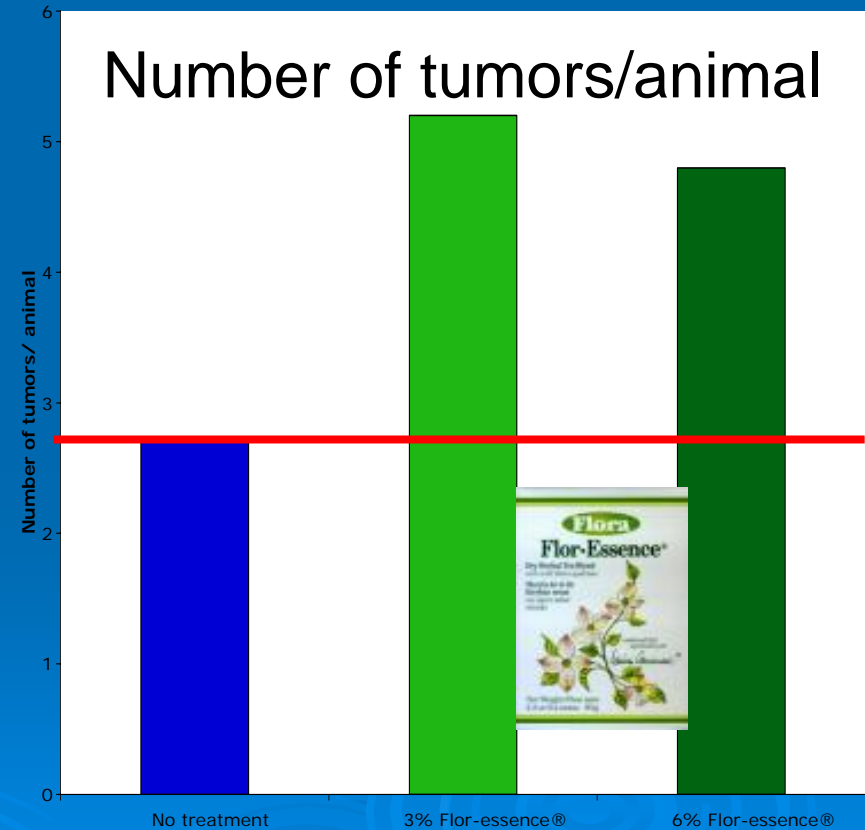
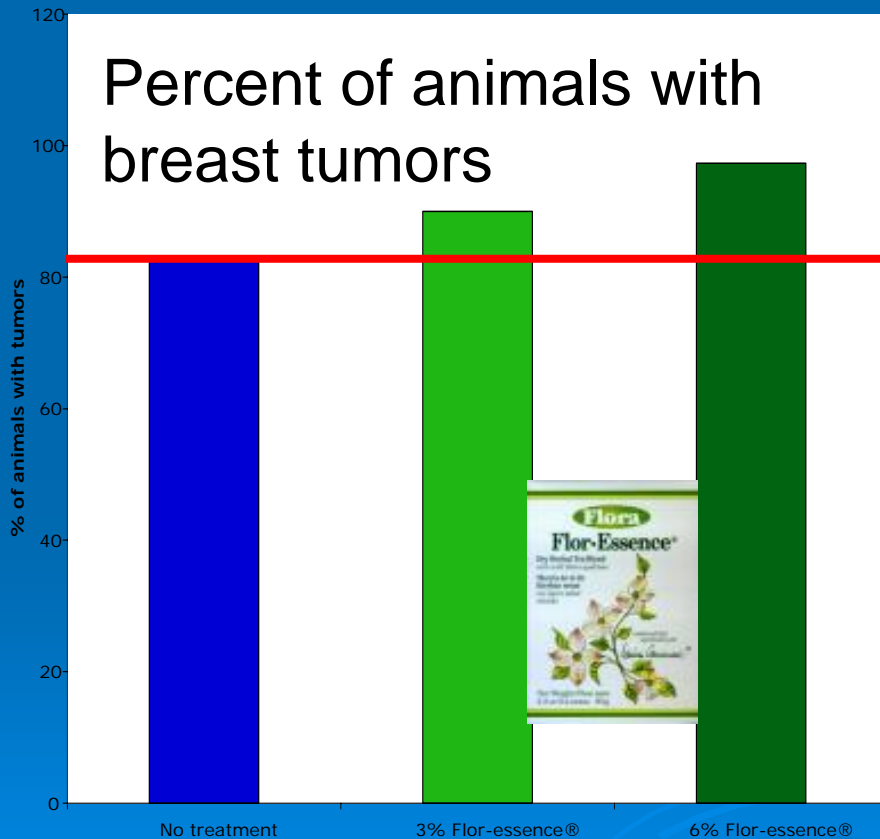


3) In vivo assays: Effect of Flor-Essence® and Essiac® on tumor formation in rodent models

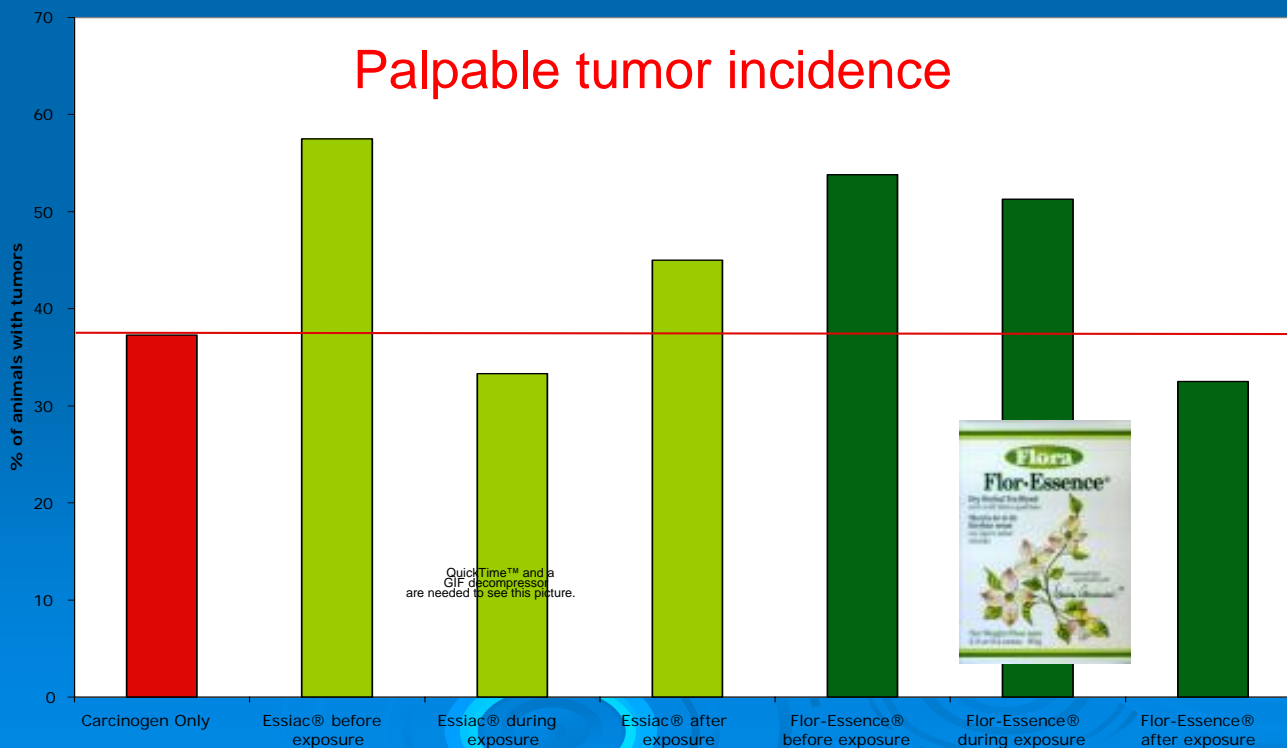
Flor-Essence® Herbal Tonic promotes DMBA-initiated tumors in Sprague-Dawley rats



Rats received a single oral dose of DMBA (a breast tumorigen) at 7 wks.
Flor-Essence® exposure was begun at birth



Essiac® and Flor-Essence® do not inhibit food carcinogen-induced tumor formation



Results of animal studies show that Essiac® and Flor-Essence® do NOT inhibit tumor formation



Limitations to the studies:

- 1) Well, they are RATS after all.....
- 2) Timing of exposure does not mimic human experience

Conclusions:



Summary of studies:

- 1) DNA damage: no protective effect
- 2) Estrogen receptor activation: receptor turned on
- 3) Cell proliferation: cell growth stimulated
- 4) Tumor formation: does not inhibit formation, may enhance

Flor-Essence® and Essiac® do not show significant protective effects in cell or animal assays

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PhIP is used as a model carcinogen



PhIP is a naturally occurring mutagen that is formed in well-cooked meats

PhIP causes breast, colon and prostate tumors in rodent models



Depending on cooking practices, people may be exposed to micrograms/ day

Human epidemiological studies link an increased risk of breast cancer with the consumption of well-done meat