



# Complementary and Alternative Medicine Patients Are Talking About: PC-SPES

CDR Colleen O. Lee, RN, MS, AOCN®

PC-SPES is an herbal supplement containing eight Chinese herbs (see Table 1). PC stands for prostate cancer, and *spes* is Latin for hope. PC-SPES was formulated according to traditional Chinese medicine principles involving ingredients that may counteract cytotoxic agents, minimize toxicity, and reduce the development of drug resistance in target cells (Hsieh, Lu, Chea, & Wu, 2002). PC-SPES experienced widespread use from 1996 until 2002, when the California Department of Health Services Food and Drug Branch discovered warfarin (Coumadin®, Bristol-Myers Squibb Company, New York, NY) and alprazolam in PC-SPES samples (U.S. Food and Drug Administration [FDA], 2002). Separate independent laboratory analyses also discovered diethylstilbesterol (also known as DES) in some samples. At that time, PC-SPES was active in clinical trial until it was recalled by the FDA and voluntarily withdrawn from the market.

## Route of Administration

PC-SPES is taken orally in capsule form.

## Dosing and Cost

Each capsule is 320 mg and is taken two to three times each day. The approximate cost is \$162 per month, which is not covered by most prescription plans.

## Indications

PC-SPES is marketed commercially for prostate health and strengthening of the immune system. Current scientific inquiry involves the use of PC-SPES in the setting of androgen-independent prostate cancer and androgen-dependent prostate cancer.

TABLE 1. INGREDIENTS OF PC-SPES

COMMON NAME	SCIENTIFIC NAME	CHINESE NAME	DOSE (MG)	PLANT PART USED
Baikal skullcap	<i>Scutellaria baicalensis</i>	Huang-chin	51.2	Root
Chrysanthemum	<i>Dendranthema morifolium</i>	Chu-hua	25.6	Flower
Da qing ye	<i>Isatis indigotica</i>	Ta-ching-ye	32.0	Leaf
Licorice	<i>Glycyrrhiza glabra</i>	Gan-zao	3.2	Root
Rabdosia	<i>Rabdosia rubescens</i>	Don-ling-cao	35.2	Leaf
Reishi mushroom	<i>Ganoderma lucidum</i>	Ling-zhi	99.2	Stem
San qi ginseng	<i>Panax pseudoginseng</i>	San-chi	25.6	Root
Saw palmetto	<i>Serenoa repens</i>	Ju-zhong	19.2	Berry

Note. Based on information from Natural Medicines Comprehensive Database, 2005; Thomson™ Micromedex, 2005.

## Regulation

As a dietary supplement as defined by the Dietary Supplemental Health and Education Act of 1994, PC-SPES does not fall under postmarket regulation by the FDA. The FDA is responsible, however, for taking action against any unsafe products once reported.

## Efficacy

Researchers report that PC-SPES induces apoptosis in prostate cancer cells in vitro, suppresses the growth of prostate cancer cell lines in vivo, and possesses estrogenic activity in yeast assays and mice. In published studies, the majority of patients experienced decreased prostate-specific antigen (PSA) and testosterone levels. Further studies indicated that the use of PC-SPES is associated with significant improvement in quality of life, reduction in pain ratings, and decline in PSA levels. Table 2 offers a summary of these studies.

## Interactions

Because PC-SPES has estrogenic effects, some healthcare professionals are concerned that it might interfere with conventional hormone therapies for prostate cancer if used concurrently.

## Adverse Reactions

Serious adverse events involving thrombosis, hemorrhage, and acute renal failure

CDR Colleen O. Lee, RN, MS, AOCN®, is a practice assessment program manager in the Office of Cancer Complementary and Alternative Medicine at the National Cancer Institute in Bethesda, MD. (Mention of specific products and opinions related to those products do not indicate or imply endorsement by the Clinical Journal of Oncology Nursing or the Oncology Nursing Society.)

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