

# Oncozac

安固生  
雲芝膠囊

## A NEW GENERATION OF ADJUVANT THERAPY

FOR SERIOUS ILLNESS WITH  
EXTENSIVE CLINICAL EVIDENCE

All-round improvement  
in treatment journey



The world's first Chinese medicine (Yunzhi) extract verified by the  
United States Pharmacopeia (USP)\*

USP=United States Pharmacopeia.

\* Oncozac's only ingredient ONCO-Z® (*Coriolus versicolor* extract) is the first Chinese medicinal ingredient verified in the dietary ingredient verification program of U.S. pharmacopeia. Ver ref. no.: 1080100301. As of November 2021.

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 <sup>®</sup>  
PuraPharm

# Oncozac® is a new generation Yunzhi-derived adjuvant therapy

Research has revealed an array of benefits associated with Yunzhi, including:



Activation of immune cells<sup>1</sup>



Increase of antibodies and a variety of cytokines<sup>1</sup>



Restoration of immunological responses<sup>1</sup>



Enhancement of resistance to infection<sup>1</sup>



Reduction of side effects of the treatment of serious illnesses<sup>2</sup>

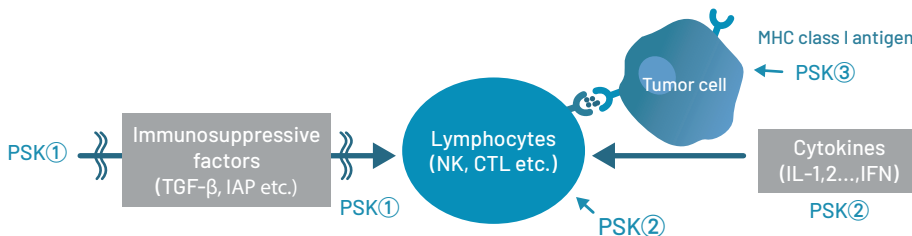


Inhibition of cell proliferation *in vitro* and *in vivo*<sup>3</sup>

**Over 65% of patients with serious illness in Hong Kong preferred a combination of Chinese and Western medicine to reduce side effects of treatment<sup>4</sup>**

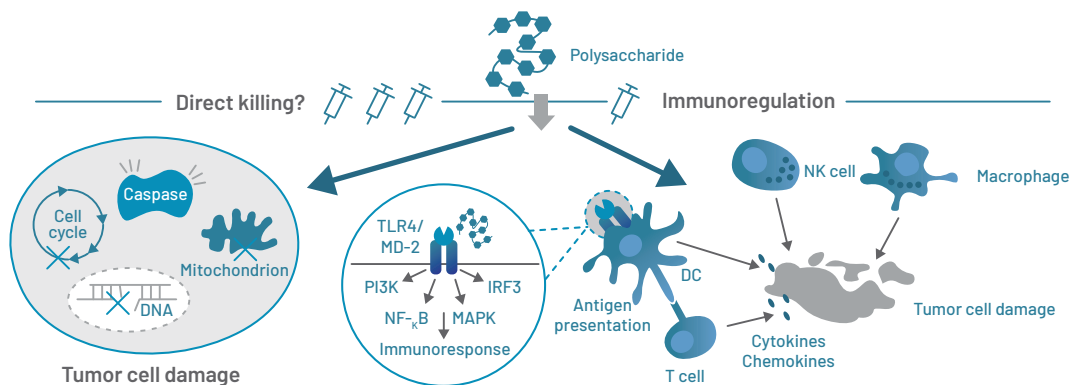
**Yunzhi contains bioactive compounds with proven immunomodulatory and/or anti-tumor activity:<sup>5-7</sup>**

PSK in activating immune cells<sup>5</sup>



- ① Suppressed production or neutralization of immunosuppressive factors.
- ② Activation of immune cells and regulation of cytokine production.
- ③ Direct action on tumor cells (induction of apoptosis, enhanced expression of major histocompatibility complex [MHC] class I antigen).

PSK/PSP stimulate anti-tumor response either directly or through immunoregulation<sup>6</sup>

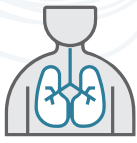


The main bioactive components of Yunzhi are Polysaccharopeptides (PSPs), Polysaccharide-K (PSK), **Absorbable Peptidoglycan (APG)**

APG=absorbable peptidoglycan; CTL=cytotoxic T lymphocyte; DC=dendritic cell; DNA=deoxyribonucleic acid; IAP=inhibitor of apoptosis; IFN=interferon; IL=interleukin; IRF3=interferon regulatory factor 3; MAPK=mitogen-activated protein kinase; MD-2=myeloid differentiation factor 2; MHC=major histocompatibility complex; NF-κB=nuclear factor kappa B; NK=natural killer; PI3K=phosphatidylinositol 3-kinase; PSK=polysaccharide-K; PSP=polysaccharopeptide; TGF=transforming growth factor; TLR4=toll-like receptor 4.

# Yunzhi PSP clinically demonstrated immunomodulatory effects and slowing of disease progression<sup>8</sup>

Significant improvement in immunomodulatory parameters in patients receiving PSP treatment\*<sup>8</sup>



NSCLC stage III or IV (II) (n=68)

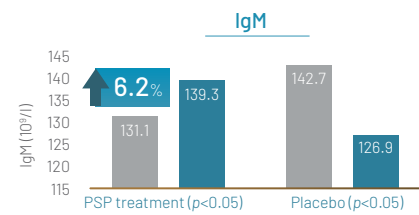
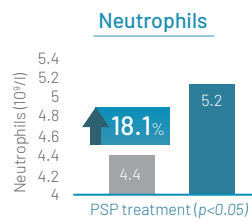
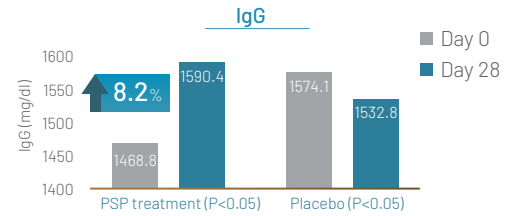
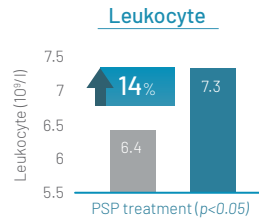
4 weeks (28 days)

PSP treatment (n=34)

X 3 times daily (340 mg Yunzhi PSP each)

Placebo (n=34)

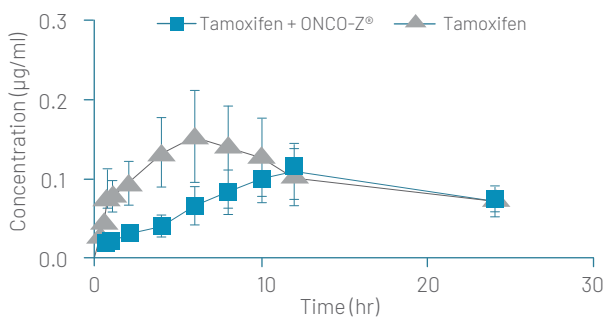
X 3 times daily (350 mg crystallized sucrose each)



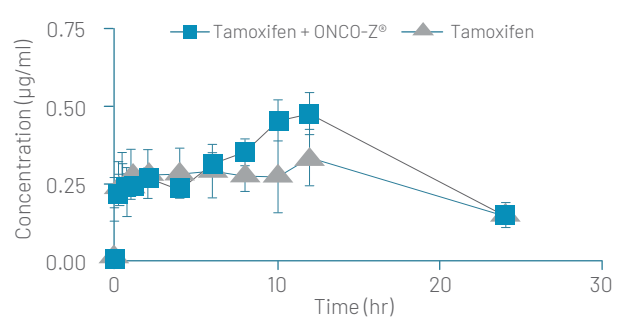
Significantly fewer PSP patients withdrew due to disease progression compared to control (5.9 and 23.5%, respectively; P=0.04; OR 4.00)<sup>8</sup>

## ONCO-Z<sup>®</sup> PSP extract did not inhibit with common breast disease drug tamoxifen's metabolism *in vivo*<sup>9</sup>

Mean serum concentration-time profiles of tamoxifen after **single dose** of tamoxifen with or without ONCO-Z<sup>®</sup> PSP extract



Mean serum concentration-time profiles of tamoxifen after **repeated dose** of tamoxifen with or without ONCO-Z<sup>®</sup> PSP extract



No concomitant changes to C<sub>max</sub> and AUC in both single and repeated dose tamoxifen experiments<sup>9</sup>

\* Study design: A double-blind placebo-controlled randomized study evaluated the effects of 28-day administration of Yunzhi PSP on patients, who had completed conventional treatment for lung-related disease completed at least 4 weeks prior to study.<sup>8</sup>

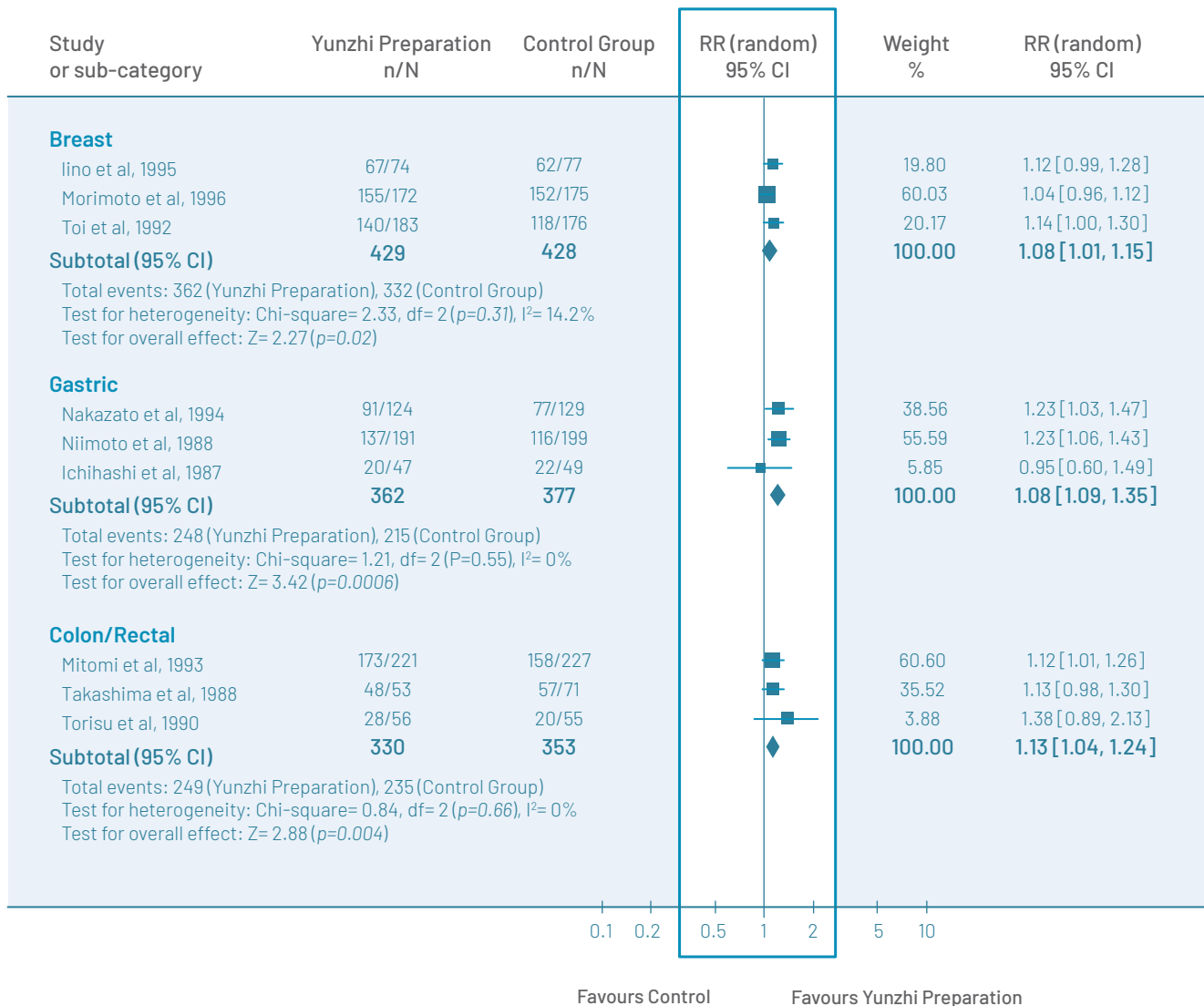
<sup>9</sup> Study design: The pharmacokinetic and biochemical parameters of tamoxifen (20 mg/mL oral single dose and repeated dosing for 12 days) was investigated in female Sprague Dawley rats with or without ONCO-Z<sup>®</sup> PSP extract (340 mg/kg orally for 7 days) (n = 5 per group). Tamoxifen (5 µM) depletion rate with PSP (10-100 µg/mL) was measured in female rat hepatic microsomes *in vivo*.<sup>9</sup>

AUC=area under the curve; C<sub>max</sub>=maximum concentration; IgG=immunoglobulin G; IgM=immunoglobulin M; OR=odds ratio; NSCLC=non small cell lung cancer; PSP=polysaccharopeptide.

# Oncozac<sup>®</sup> contains Yunzhi which has demonstrated survival benefits in patients receiving anti-cancer treatment and Yunzhi<sup>10</sup>

Systematic review and meta-analysis of 13 randomized controlled trials show that Yunzhi results in a significant survival advantage compared with standard conventional treatment alone\*<sup>10</sup>

- A total of 2,587 patients with serious illness were involved
- Types of disease related to esophagus, stomach, colon/rectum, breast and nasopharynx



**9% absolute reduction in 5-year mortality**



# Patients with serious illness receiving herbal therapies containing Yunzhi experience better quality of life with their treatment<sup>11</sup>

## Significant improvement in QoL



**+6.8%**  
Physical function  
(P<0.001)



**+21.8%**  
Role emotion  
(P=0.008)



**+17.6%**  
Role-physical  
(P=0.029)



**+27.8%**  
Health transition  
(P<0.001)



**+15.9%**  
Better quality of sleep  
(P<0.001)

## Better vitality



**-42.6%**  
Fatigue level  
(P<0.001)



**+7.6%**  
Better appetite  
(P<0.001)



**+11.4%**  
Bowel movements  
(P<0.001)



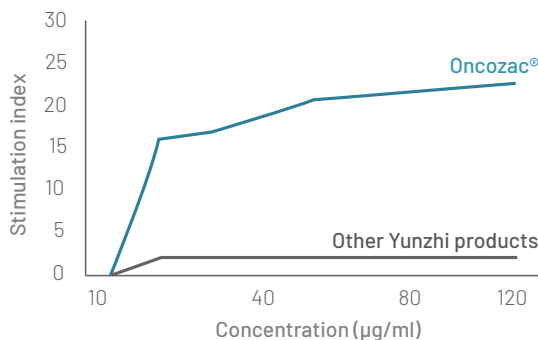
**+11.0%**  
Emotional status  
(P<0.001)

A combination of **Chinese and Western medicine** is highly recommended as an auxiliary of treatment for serious diseases

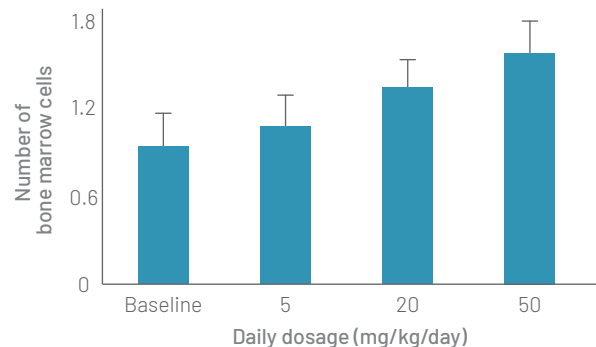
## Freeze-drying concentration technology was adapted to extract ONCO-Z<sup>®</sup> containing Absorbable Peptidoglycan (APG)

APG is highly water soluble and it is readily adsorbed by the body to provide better effects

The mitogenic activity level of Oncozac<sup>®</sup> is **6 times more** than other Yunzhi products in the market<sup>12</sup>



**Just 7 consecutive days** with optimal dosage of Oncozac<sup>®</sup> shown to boost immune cells and thus reduce the risk of infection<sup>13</sup>



## Evidence-based effectiveness of Oncozac<sup>®</sup> for better treatment responses

Study design: A multicenter, longitudinal, and self-control study was used. Eighty-two patients with breast disease were given combined Yunzhi and DanShen capsules for six months on a daily basis. Data collection including quality of life, vitality status and adverse effects was taken.<sup>11</sup>

APG=absorbable peptidoglycan; QoL=quality of life.

# Maximizes the benefits at various stages for better treatment responses



Early stage	<ul style="list-style-type: none"> <li>Helps to prevent mutated cells from forming a group</li> </ul>
After surgery	<ul style="list-style-type: none"> <li>Immunomodulation, destruction of tumor cells, avoidance of infections<sup>2</sup></li> </ul>
During radio or chemotherapy	<ul style="list-style-type: none"> <li>Increased efficacy of treatments<sup>8,10</sup></li> <li>Reduction of side effects of therapy<sup>14</sup></li> </ul>
Post surgery or convalescent patients	<ul style="list-style-type: none"> <li>Restoration of immune responses, avoidance of infections<sup>2</sup></li> <li>Helps to minimize the chance of recurrence<sup>15</sup></li> </ul>
Unable to undergo radio or chemotherapy	<ul style="list-style-type: none"> <li>Potential anti-tumor activity may improve well-being<sup>4</sup></li> </ul>

## Complying with the highest internationally recognized standards to ensure safety and high quality product

**usp**<sup>®</sup> Ingredient verified by the U.S. Pharmacopeia



Compliant with Therapeutic Goods Administration (TGA) Production Standards

**SGS** The world-renowned independent testing laboratory



Compliant with Good Manufacturing Practice (GMP)



Laboratory Accreditation Certificate from China National Accreditation Service for Conformity Assessment



Research and developed by CUHK

CUHK=The Chinese University of Hong Kong; GMP=Good Manufacturing Practice; TGA=Therapeutic Goods Administration.

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**References:** 1. Chu KK, Ho SS, Chow AH. Coriolus versicolor: a medicinal mushroom with promising immunotherapeutic values. *J Clin Pharmacol.* 2002;42(9):976-984. 2. Lam CS, Cheng LP, Zhou LM, Cheung YT, Zuo Z. Herb-drug interactions between the medicinal mushrooms Lingzhi and Yunzhi and cytotoxic anticancer drugs: a systematic review. *Chin Med.* 2020;15:75. 3. Ho CY, Kim CF, Leung KN, et al. Coriolus versicolor (Yunzhi) extract attenuates growth of human leukemia xenografts and induces apoptosis through the mitochondrial pathway. *Oncol Rep.* 2006;18(3):609-616. 4. Lam YC, Cheng CW, Peng H, Law CK, Huang X, Bian Z. Cancer patients' attitudes towards Chinese medicine: a Hong Kong survey. *Chin Med.* 2009;4:25. 5. Maehara Y, Tsujitani S, Saeki H, et al. Biological mechanism and clinical effect of protein-bound polysaccharide K (KRESTIN<sup>®</sup>): review of development and future perspectives. *Surg Today.* 2012;42(1):8-28. 6. Pang G, Wang F, Zhang LW. Dose matters: Direct killing or immunoregulatory effects of natural polysaccharides in cancer treatment. *Carbohydr Polym.* 2018;195:243-256. 7. Habtemariam S. Trametes versicolor (Synn. Coriolus versicolor) Polysaccharides in Cancer Therapy: Targets and Efficacy. *Biomedicines.* 2020;8(5):135. 8. Tsang KW, Lam CL, Yan C, et al. Coriolus versicolor polysaccharide peptide slows progression of advanced non-small cell lung cancer. *Respir Med.* 2003;97(6):618-624. 9. Razmovski-Naumovski V, Kimble B, Laurenti D, Nammi S, Norimoto H, Chan K. Polysaccharide Peptide Extract From Coriolus versicolor Increased Tmax of Tamoxifen and Maintained Biochemical Serum Parameters, With No Change in the Metabolism of Tamoxifen in the Rat. *Front Pharmacol.* 2022;13:857864. 10. Eliza WL, Fai CK, Chung LP. Efficacy of Yun Zhi (Coriolus versicolor) on survival in cancer patients: systematic review and meta-analysis. *Recent Pat Inflamm Allergy Drug Discov.* 2012;8(1):78-87. 11. Wong LY, Wong CK, Leung PC, Lam WK. The efficacy of herbal therapy on quality of life in patients with breast cancer: self-control clinical trial. *Patient Prefer Adherence.* 2010;4:223-229. 12. University Research Findings of APGs Immunostimulatory Effect on Lymphocytes comparing with two competitors' products in the market. 2003. 13. Data on files. 14. Lam CS, Cheng LP, Zhou LM, Cheung YT, Zuo Z. Herb-drug interactions between the medicinal mushrooms Lingzhi and Yunzhi and cytotoxic anticancer drugs: a systematic review. *Chin Med.* 2020;15:75. 15. Hayakawa K, Mitsuhashi N, Saito Y, et al. Effect of krestin (PSK) as adjuvant treatment on the prognosis after radical radiotherapy in patients with non-small cell lung cancer. *Anticancer Res.* 1993;13(5C):1815-1820.

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### Hong Kong Prescribing Information

**DESCRIPTION** Ingredient: Each Capsule Contains 340mg Yunzhi extract, equivalent to 2.83g Yunzhi raw material. **PACKAGING** - 100's blister pack (10 capsules per blister) - 300's bottle pack **INDICATION** Oncozac<sup>®</sup> is an adjunct health supplement complementary to conventional serious illness treatments. Evidence indicates Oncozac<sup>®</sup> can strengthen the immune function to alleviate side-effects caused by chemotherapy and radiotherapy, enhance the host resistance to infections. It can also increase the tumoricidal effect of conventional serious illness treatments. Continuous administration of Oncozac<sup>®</sup> could improve the health status and overall quality of life of serious illness patients. **DOSAGE AND ADMINISTRATION** Oncozac<sup>®</sup> capsules should be taken with plenty of water preferably before meals. For the best effect, Oncozac<sup>®</sup> should be taken regularly in accordance with the following recommendations: **1)** Before chemotherapy, radiotherapy or surgery: 5 capsules, 2 times daily starting from 7 days before chemotherapy, radiotherapy or surgery, or under appropriate medical advice. **2)** During and after chemotherapy, radiotherapy or surgery: 5 capsules, 2 times daily continuously for 6 months, or under appropriate medical advice. **3)** Unable to undergo chemotherapy, radiotherapy or operation: 8 capsules, 2 times daily continuously for 6 months. Dosage can be adjusted according to the patient's condition or under appropriate medical advice. **4)** Convalescence after treatment: 2- 3 capsules, 2 times daily continuously during convalescent period. **DRUG ADMINISTRATION** Adverse drug interaction between Yunzhi extract and other drugs has not been reported. However, co-administration of immunosuppressants and Oncozac<sup>®</sup> is not recommended. **CONTRAINDICATIONS** History of hypersensitivity to Yunzhi and other edible mushrooms. **STORAGE** Store in a cool, dry place. Avoid direct sunlight.



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