

# NATURAL MEDICINES COMPREHENSIVE DATABASE



3120 West March Lane - Stockton, California 95219  
www.naturaldatabase.com - Email: mail@naturaldatabase.com  
PH (209) 472-2244 - Fax (209) 472-2249

## THYMUS EXTRACT

### Also Known As:

Complexe de Peptides Thymiques, Extracto de Timo, Extrait de Thymus, Extrait Thymique, Polypeptides Dérivés de Thymus, Predigested Thymus Extract, Protéine Thymique, Pure Thymic Extract, Thymic Extract, Thymic Peptide, Thymic Protein, Thymic Protein A, Thymomodulin, Thymosin, Thymosine, Thymostimulin, Thymostimuline, Thymus, Thymus Acid Lysate Derivative, Thymus Complex, Thymus Concentrate, Thymus-Derived Polypeptides, Thymus Factors, Thymus Polypeptides, Thymus Substance.

### Scientific Name:

None.

### People Use This For:

Orally, thymus extract is used for infectious diseases including recurrent respiratory infections, colds, flu, swine flu, hepatitis B, hepatitis C, Epstein-Barr virus (EBV), mononucleosis, herpes and shingles, sinusitis, and AIDS/HIV. It is also used orally for asthma, hay fever, food allergies, cancer, rheumatoid arthritis, chronic fatigue syndrome (CFS), and systemic lupus erythematosus (SLE). It is also used orally for maintaining white cell production in cancer patients treated with radiation or chemotherapy, and preventing the effects of aging.

### Safety:

**POSSIBLY SAFE** ...when used orally and appropriately. No adverse effects have been reported in human studies with purified thymus extract (938, 1010, 1175, 1176, 1177, 1178, 6691, 6694, 6696, 6697, 6698, 6699). Although some evidence suggests these products are safe, since they are derived from animals, there is concern about contamination with diseased animal parts (1825). However, so far there are no reports of disease transmission to humans due to use of contaminated thymus extract.

**PREGNANCY AND LACTATION:** Insufficient reliable information available; avoid using.

### Effectiveness:

#### POSSIBLY EFFECTIVE

**Allergic rhinitis (hayfever).** There is some evidence that treatment for 4 months with thymomodulin (calf thymus extract) might reduce the frequency of allergic episodes in patients with allergic rhinitis (1010).

**Asthma.** Taking thymus extract orally may reduce acute asthma attacks in children with asthma. Thymomodulin (calf thymus extract) seems to improve immune function and reduce the number of asthma attacks up to one year after discontinuing intermittent treatment in children with asthma (6694).

**Cardiomyopathy.** Preliminary clinical research suggests that receiving thymomodulin (calf thymus extract) in combination with conventional therapy

improves exercise tolerance, heart function, clinical symptoms, and survival over a 7-year follow-up period when compared with conventional therapy alone in patients with cardiomyopathy and/or myocarditis (78542, 78556, 78558).

**Food allergies.** Thymomodulin (calf thymus extract) plus an elimination diet might prevent allergic reactions to allergenic foods after completion of the elimination diet, compared to an elimination diet alone (1175, 1176).

**Respiratory tract infections.** Taking thymus extract orally may be effective for treating adults and children with recurrent respiratory infections (938, 6696, 6697, 6698, 6699). Thymomodulin (calf thymus extract) treatment seems to reduce the number of infections or coughing attacks in patients with recurrent respiratory infections (6697, 6698, 6699). Thymomodulin (calf thymus extract) alone, or in combination with vaccine, seems to be more effective than vaccine alone or antibiotics in reducing the number and duration of infections in adults with recurrent respiratory infections (938). There is insufficient reliable information available about the effectiveness of thymus extract for its other uses.

### **Mechanism of Action:**

Thymus extract is derived from bovine thymus glands (6614). Purified thymus extract induces immune response in spleen cells from athymic animals in vitro (6688). Preliminary human data suggests that a semipurified calf thymus extract might be useful for treating immunodeficiency conditions, bone marrow failure, autoimmune disorders, chronic skin diseases, recurrent viral and bacterial infections, and some cancers (6677).

Thymomodulin is a purified acid lysate derivative of calf thymus extract containing several polypeptides (6614, 6689). It induces T-lymphocyte maturation, enhances the function of mature T-cells, and has indirect effects on B-cell and macrophage functions in vitro (6689). Thymomodulin improves immune function in patients with asthma, chronic bronchitis, recurrent respiratory infections, perennial allergic rhinitis, food allergies, chronic active hepatitis B, and HIV infection (938, 1010, 1175, 1176, 1178, 6694, 6696, 6697, 6698, 6699). It reduces airway hyperresponsiveness to methacholine in atopic patients with asthma (6695). Limited human data suggest that thymomodulin might be useful for treating chronic active hepatitis B (1015, 1177) and improving symptoms in patients with HIV infection (1178). Thymomodulin demonstrates activity when administered orally in elderly patients (6691).

Thymosin is a polypeptide extracted from fetal calf thymus glands that stimulates in vitro T-cell proliferation when incubated with T-lymphocytes from people with low T-cell counts (511, 6687).

Thymostimulin is a polypeptide extracted from bovine thymus glands (6680). Preliminary human evidence suggests that parenteral thymostimulin might be useful for improving immune function in infants with inadequate B-lymphocyte or T-lymphocyte function (6682, 6683), children with recurrent respiratory infections (6679, 6684), and patients with primary immunodeficiencies (6685). Limited human evidence also suggests that parenteral thymostimulin might be useful for preventing recurrent herpes simplex labialis (HSL) episodes (6678), preventing exacerbations in patients with chronic obstructive pulmonary disease (COPD) (6681), and preventing cystitis, conjunctivitis, stomatocystitis, and myelotoxicity in women with breast cancer treated with chemotherapy (6680). Thymostimulin is not beneficial for treating patients with autoimmune chronic active hepatitis (6686).

### **Adverse Reactions:**

Adverse effects have not been reported. However, there is some concern about potential contamination. Thymus extract is derived from raw bovine thymus glands gathered from slaughterhouses, possibly from sick or diseased animals (6620). Products made from contaminated or diseased organs might present a human health

hazard. There is also concern that thymus extract produced from cows in countries where bovine spongiform encephalitis (BSE) has been reported might be contaminated with diseased tissue. Countries where BSE has been reported include Great Britain, France, The Netherlands, Portugal, Luxembourg, Ireland, Switzerland, Oman, and Belgium (1825). However, there have been no reports of BSE transfer to humans from contaminated thymus extract products. Until more is known, tell patients to avoid these products unless country of origin can be determined. Patients should avoid products that are produced in countries where BSE has been found.

### Interactions with Herbs & Supplements:

None known.

### Interactions with Drugs:

#### IMMUNOSUPPRESSANTS

Interaction Rating = **Moderate** Be cautious with this combination.

Severity = High • Occurrence = Possible • Level of Evidence = D

Patients using immunosuppressive drugs are cautioned to avoid thymus extract products, unless they are certified pathogen-free. Immunosuppressant drugs include azathioprine (Imuran), basiliximab (Simulect), cyclosporine (Neoral, Sandimmune), daclizumab (Zenapax), muromonab-CD3 (OKT3, Orthoclone OKT3), mycophenolate (CellCept), tacrolimus (FK506, Prograf), sirolimus (Rapamune), prednisone (Deltasone, Orasone), and other corticosteroids (glucocorticoids).

### Interactions with Foods:

None known.

### Interactions with Lab Tests:

None known.

### Interactions with Diseases or Conditions:

**IMMUNE COMPROMISE, IMMUNOSUPPRESSION:** Patients with compromised immune systems or using immunosuppressive drugs should be cautioned to avoid thymus extract products, unless they are certified pathogen-free, to reduce their risk of infection. This includes patients with HIV/AIDS and organ transplant recipients using immunosuppressive drugs.

### Dosage/Administration:

**ORAL:** A typical daily dose is 750 mg of crude thymus polypeptide fraction or 120 mg of pure thymus polypeptides (thymomodulin) (6614).

### Editor's Comments:

The quality and potency of thymus extract products can vary greatly (6614).

This monograph was last reviewed on 03/11/2013 and last updated on 11/14/2014. Monographs are reviewed and/or updated multiple times per month and at least once per year. If you have comments or suggestions on something that should be reviewed or included, please [tell the editors](#). For details about our evidence-based approach, see our [Editorial Principles and Process](#).

[Subscribe now so you can enter the \*Natural Medicines Comprehensive Database\*](#)

[Login](#)

*Natural Medicines* disclaims any responsibility related to medical consequences of using any medical product. Effort is made to ensure that the information contained in this *Natural Medicines* monograph is accurate at the time it was published. However, we cannot guarantee the information is error-free and disclaim any liability or responsibility for any reliance on it. The information is also not intended to be a substitute for medical or other professional advice, and you should not use any product or substances reference herein without consulting a medical professional. Consumers

and medical professionals who consult this *Natural Medicines* monograph are cautioned that any medical or product related decision is the sole responsibility of the consumer and/or the health care professional. A legal License Agreement sets limitations on downloading, storing, or printing content from *Natural Medicines*. Except for any possible exceptions written into your License Agreement, no reproduction of this monograph or any content from *Natural Medicines* is permitted without written permission from the publisher. Unlawful to download, store, or distribute content from *Natural Medicines* or this site.

For the latest comprehensive data on this and every other natural medicine, health professionals should consult the **Professional Version** of *Natural Medicines*. It is fully referenced and updated daily.

© Copyright 1995-2016 Therapeutic Research Faculty, publishers of *Natural Medicines Comprehensive Database*, *Prescriber's Letter*, and *Pharmacist's Letter*. All rights reserved.



[www.naturaldatabase.com](http://www.naturaldatabase.com)  
[mail@naturaldatabase.com](mailto:mail@naturaldatabase.com)  
PH (209) 472-2244