THYMIC PEPTIDE · IMMUNE MODULATION · ANTIVIRAL · ONCOLOGY

THYMOSIN ALPHA-1

Immunity · Infection Defence · Longevity

The thymic peptide that amplifies your immune system's precision — approved in 35+ countries for critical infections.

28	35+	FDA	~2h
Amino Acids	Countries Approved	Orphan Drug	Half-life

01

What is Thymosin Alpha-1?

A 28-amino-acid thymic peptide that amplifies innate and adaptive immune precision

Thymosin Alpha-1 (TA-1) is a 28-amino-acid peptide naturally produced by the thymus gland, first isolated and sequenced by Allan Goldstein at George Washington University in 1972.

As the biologically active fragment of prothymosin alpha, TA-1 acts on dendritic cells, macrophages, and T-lymphocytes to enhance antigen presentation, cytokine production, and adaptive immune responses.

Its mechanism is distinctly immune-modulatory rather than immunostimulatory — TA-1 enhances precision targeting and memory formation in immune responses rather than producing non-specific inflammation.

Approved under the brand name Zadaxin in over 35 countries, Thymosin Alpha-1 is a front-line treatment for hepatitis B and C, and an adjunct in cancer immunotherapy and sepsis management.

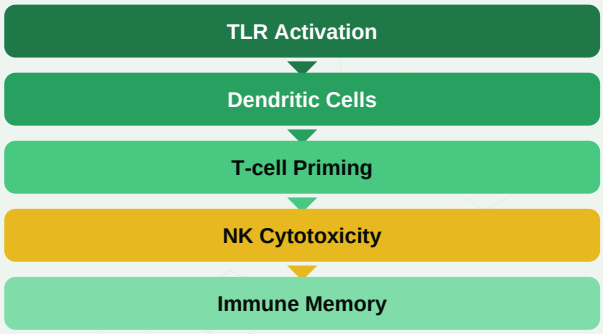
28-AMINO ACID N-TERMINAL SEQUENCE

Ac-Ser-Asp-Ala-Ala-Val-Asp-Thr-Ser-Ser-
Glu-Ile-Thr-Thr-Lys-Asp-Leu-Lys-Glu-Lys...×18

TA-1 operates at the intersection of innate and adaptive immunity.

Through toll-like receptor (TLR) signalling on dendritic cells, TA-1 triggers a cascade that enhances MHC-II antigen presentation, IL-2 and IFN-gamma production, natural killer (NK) cell cytotoxicity, and T-helper cell differentiation.

These effects collectively amplify both the speed and specificity of immune responses — making TA-1 particularly valuable in states of immune deficiency, chronic viral infection, and cancer.



Key Benefits

Approved in 35+ countries — the immune peptide backed by decades of clinical evidence

Hepatitis B & C Treatment

Approved as Zadaxin for chronic hepatitis B and C infections, TA-1 enhances antiviral T-cell responses and IFN-gamma production — producing sustained virological response rates comparable to pegylated interferon with superior tolerability.

Cancer Immunotherapy Adjunct

TA-1 potentiates the efficacy of chemotherapy, radiotherapy, and checkpoint inhibitors by restoring T-cell function in immunosuppressed cancer patients — enhancing tumour antigen recognition and NK cell activity.

Sepsis & Critical Illness

Multiple randomised trials in septic ICU patients demonstrate TA-1 reduces 28-day mortality, accelerates immune reconstitution, and shortens ICU stay — making it a recognised adjunct in sepsis management protocols.

Vaccine Enhancement

TA-1 significantly potentiates antibody responses to influenza, hepatitis B, and COVID-19 vaccines — particularly in elderly and immunocompromised individuals with blunted vaccine responses.

HIV & Immunodeficiency

In HIV and other immunodeficiency states, TA-1 restores CD4+ T-cell function, NK cell activity, and cytokine production — used clinically in combination with antiretroviral therapy in China and Southeast Asia.

Anti-Ageing & Longevity

By maintaining thymic output and T-cell regeneration capacity, TA-1 addresses immunosenescence — the age-related decline in adaptive immunity that drives increased cancer, infection, and inflammatory disease risk.

Thymosin Alpha-1 vs. Interferon vs. Checkpoint Inhibitors

Research & Dosing

From thymus discovery to global approval — five decades of immune science

1972 — **Isolation & Sequencing**

Allan Goldstein isolated Thymosin Alpha-1 from thymus extracts at GWU, sequencing the 28-amino-acid peptide and demonstrating its capacity to restore T-cell function in thymectomised animals — founding a new field.

1985 — **First Clinical Trials**

Phase I/II trials in immunodeficient patients and cancer subjects confirmed safety and biological activity of synthetic TA-1. Measurable T-cell and NK cell enhancement was observed at doses as low as 0.8 mg.

1996 — **Hepatitis B Approval (Asia)**

Zadaxin (SciClone Pharmaceuticals) received regulatory approval in China, Italy, and several Asian and Middle Eastern countries for chronic hepatitis B — becoming the first thymic peptide approved for antiviral use.

2008 — **Sepsis RCT Evidence**

Large randomised controlled trials in septic ICU patients showed TA-1 reduced 28-day all-cause mortality by up to 30% — establishing it as a meaningful immunotherapy in critical care.

2015 — **Cancer Immunotherapy**

Meta-analyses of TA-1 in oncology confirmed significant improvements in chemotherapy tolerability, reduced infection rates, and enhanced antitumour immune responses — positioning it as a mainstream cancer immunology adjunct.

2021 — **COVID-19 Severe Disease**

Studies from China demonstrated TA-1 administration in severe COVID-19 patients reduced mortality and ICU duration, accelerated lymphocyte recovery, and reduced inflammatory cytokine storm severity.

Dosing Protocol

Route	Subcutaneous injection	**Sepsis**	1.6 mg/day for 4 days	**Onset**	24-48 hours
Standard Dose	1.6 mg twice weekly	**Cancer adjunct**	1.6 mg twice weekly	**Duration**	Cycle-dependent
Hepatitis B	1.6 mg SC 2x/week x 6mo	**Vaccine prime**	1.6 mg x2 doses	**Storage**	2-8°C lyophilised

For research use only. Zadaxin approved in 35+ countries. FDA orphan drug status. Physician supervision required for all clinical applications.

Strengthen What Protects You.

Thymosin Alpha-1 does not suppress your immune system or overwhelm it — it trains it. By restoring the thymic signals that decline with age and disease, TA-1 gives your immune system back its precision, speed, and memory.

FORTIFY
& precision enhancement
Immune cell activation

DEFEND
& anticancer response
Antiviral, antibacterial

PREVAIL
immune resilience
Longevity through

ORDER NOW | LEARN MORE | FREE SAMPLE

THYMOSIN ALPHA-1

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For research purposes only. Thymosin Alpha-1 (Zadaxin) is approved in 35+ countries. Use under physician supervision.

Always consult a licensed healthcare professional before beginning any peptide protocol.