

Thymus Extracts and Thymus Peptides for Practical and Clinical Application

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For nearly 30 there has been an ongoing discussion about which thymus extracts and thymus peptides are the most effective and – casually speaking – the best.

This question is wrong. Instead, it should be:

Which Thymus preparation should I use for a systematic treatment?

and

What dosage should I use to get the best possible effect from the preparation?

To answer the first question, the therapist has to know what thymus preparations there are:

- **Low molecular peptides**
- **Total thymus extracts**
- **Synthetic thymus extracts**

When choosing the preparations, the therapist should take into consideration whether

- **Modulation,**
- **Stimulation, or**
- **Suppression**

of the immune system is intended.

The answer to the dosage question is:
As a rule, the preparation should be given

- **5 times weekly,**
- **3 times weekly, or**
- **Twice weekly.**

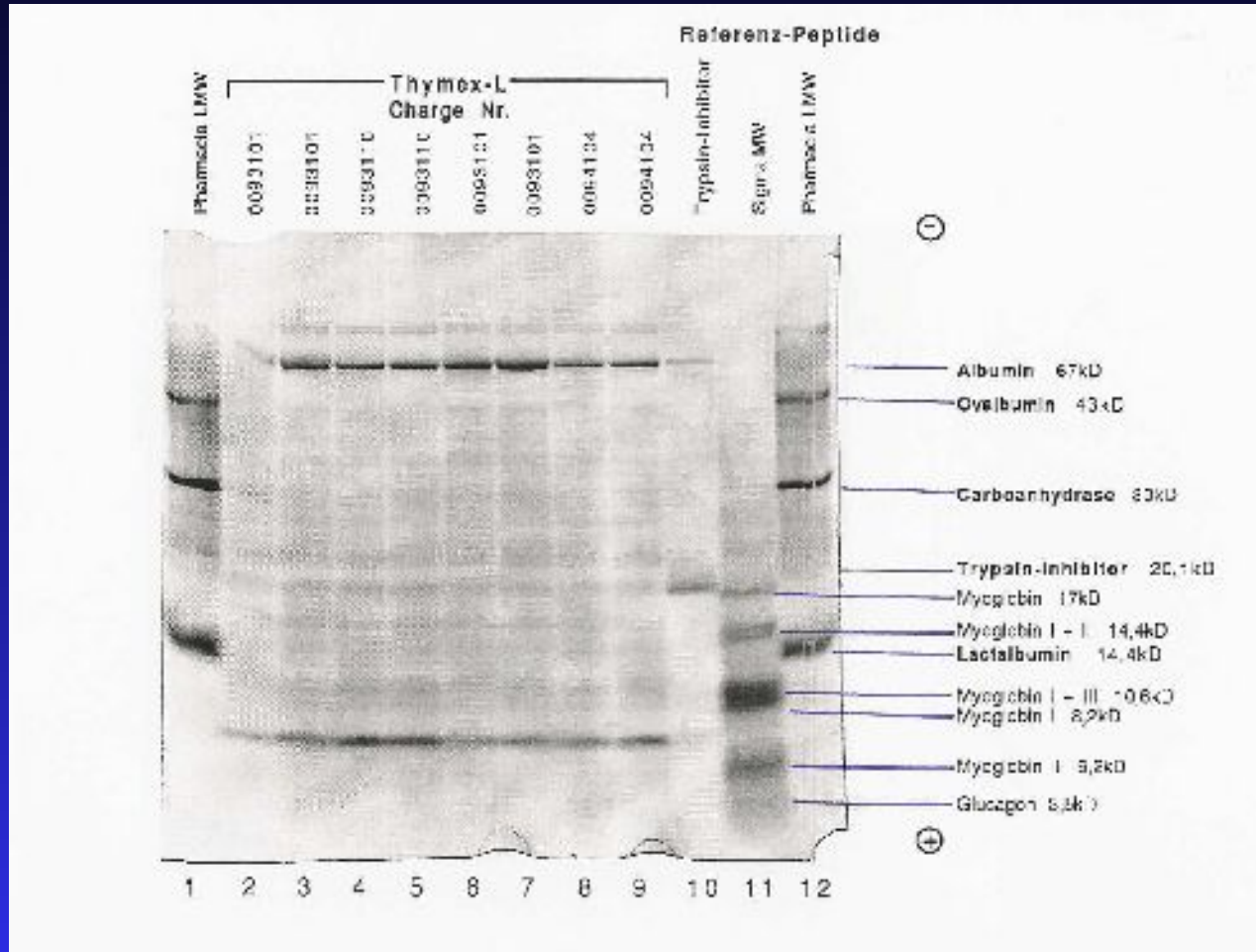
The dosage should be adjusted individually, depending on the condition and the illness of the patient.

In the last 10 years, this decision has been made much easier for us by extensive immunological studies.

The clinical and the laboratory results also help us to predict the reaction of the patient to the individual thymus preparations.

SDS-Polyacrylamidgel-Electrophoresis of the Thymus Preparation Thymex-L with Referential Peptides

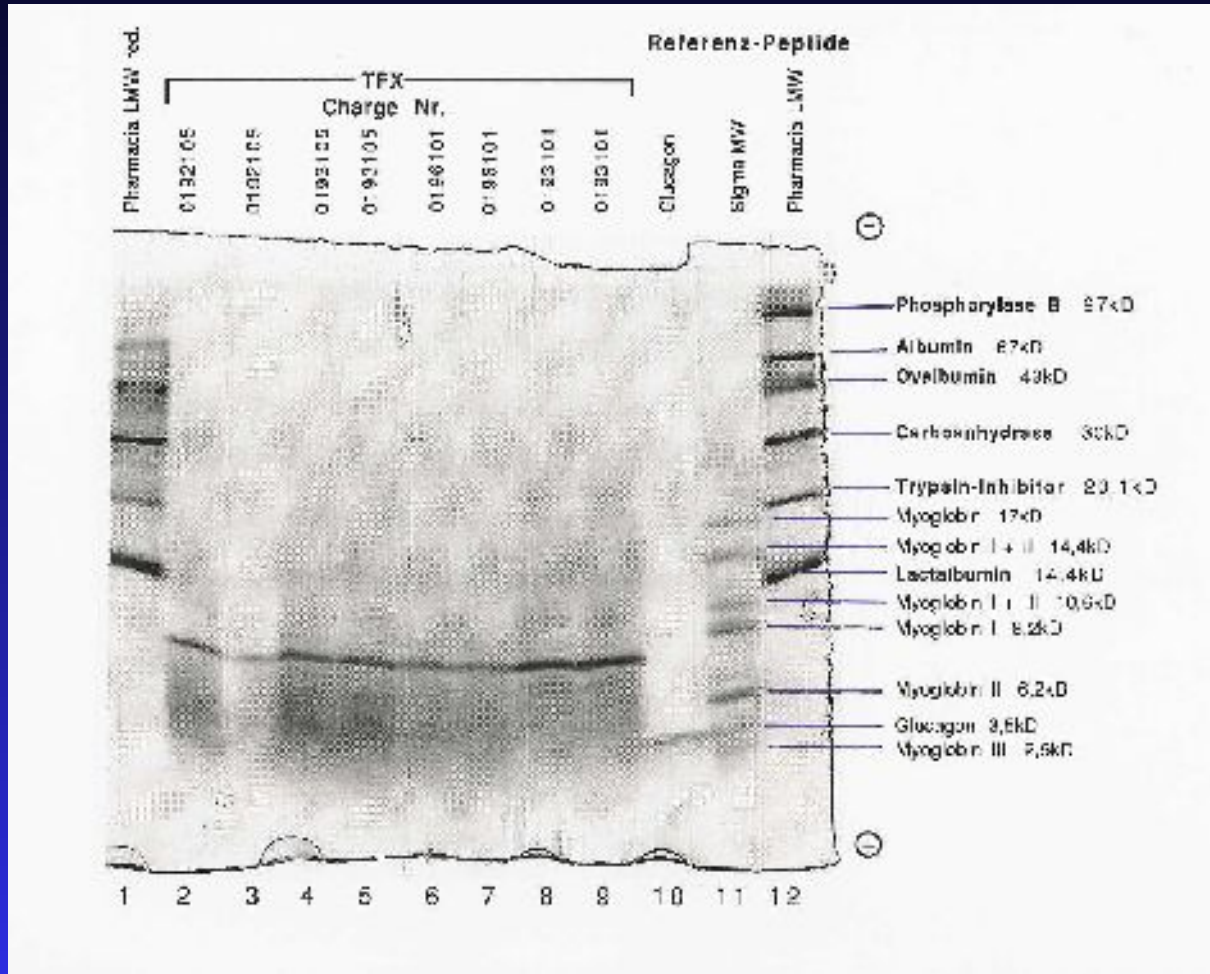
Quality and Homogeneity



Prof. Maurer
Berlin

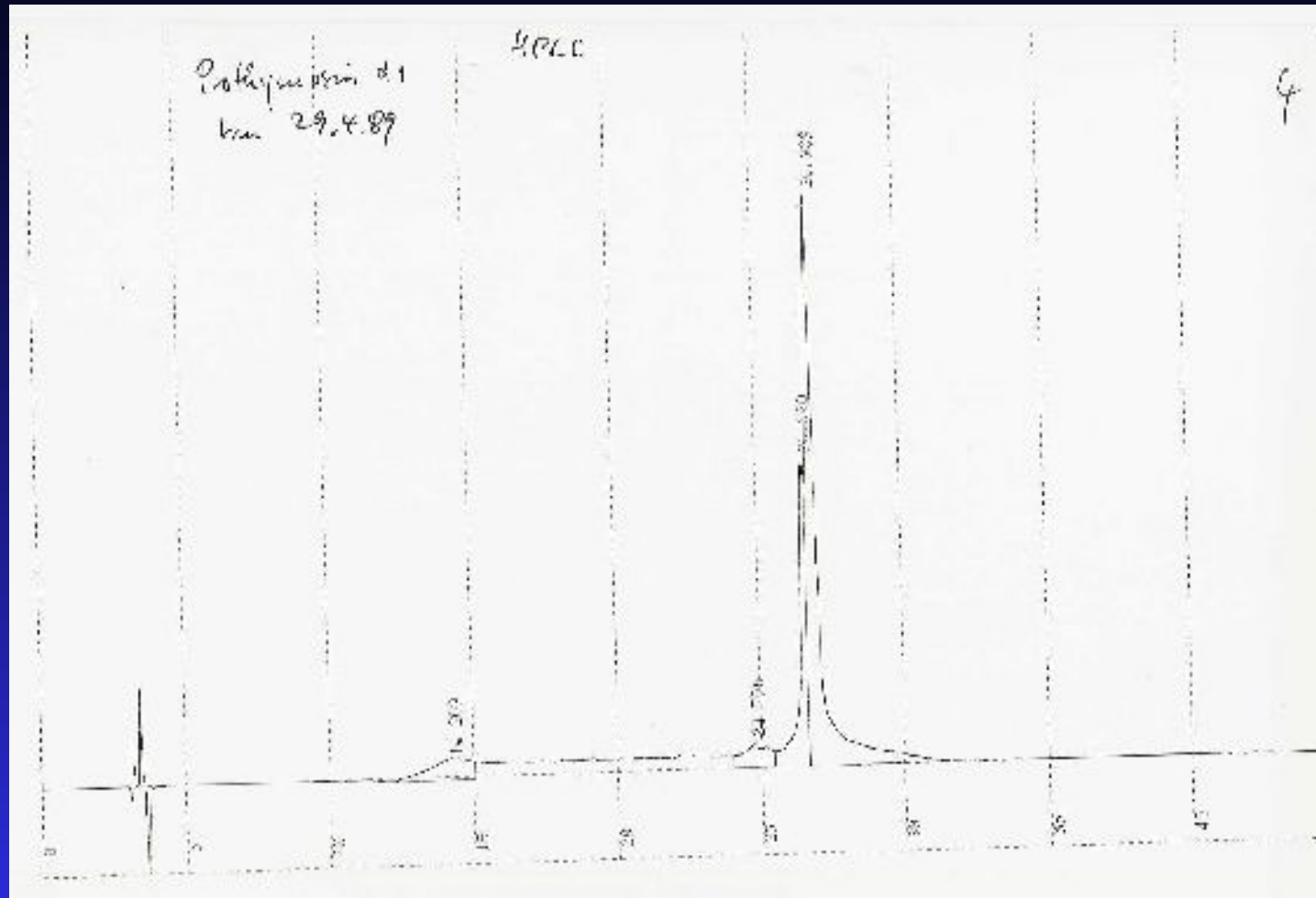
SDS-Polyacrylamidgel-Electrophoresis of the Thymus Preparation TFX with Referential Peptides

Quality and Homogeneity



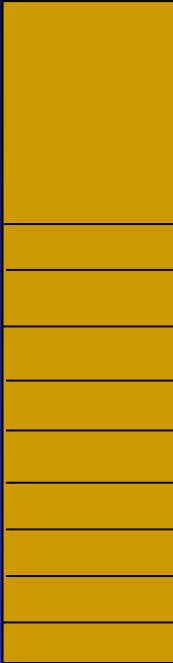
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Result of the HPLC Analysis of Prothymosin α_1

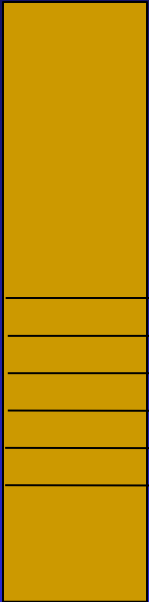


Prof. Zoch
Homburg/Saar

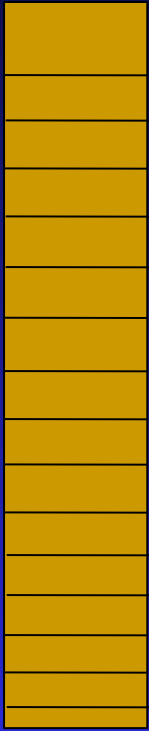
CHARACTERISTIC PARAMETERS OF THYMUS PEPTIDE C

THYMUS PEPTIDE C Vials of 2.5 ml liquid 25 mg thymus-specific peptide	Molecular weight & schematic display of the SDS Electrophoresis	Indication	Contraindication and side effects
<p><u>Status:</u></p> <ul style="list-style-type: none"> ▪ Not registered in Germany ▪ Currently in clinical provings ▪ Available for clinical provings and research 	 <p>10,000 D</p> <p>3,000 D</p>	<ul style="list-style-type: none"> ▪ Asthma, MS, RA, Arthrosis, all immune deficiency conditions ▪ Basic thymus peptide for therapy; can be combined well with other lyophilised thymus peptides ▪ All types of carcinoma ▪ Before/after surgery ▪ Before/after radiation ▪ Before/after chemotherapy 	<ul style="list-style-type: none"> ▪ Allergic reactions – very seldom ▪ Good tolerance ▪ Caution during pregnancy – do not administer! <p><u>Administration:</u> Needle No. 18 SC or IM</p>

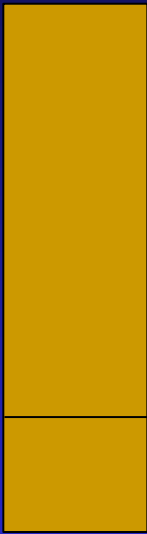
CHARACTERISTIC PARAMETERS OF TFX-THYMOMODULIN

TFX-THYMOMODULIN Vials of 10 mg lyophilised active thymus peptide	Molecular weight & schematic display of the SDS Electrophoresis	Indication	Contraindication and side effects
<p><u>Status:</u></p> <ul style="list-style-type: none"> • Registered in Poland for more than 30 years ▪ Production in Germany for 15 years ▪ Application in Germany for clinical proving only ▪ Import possible through pharmacies according to applicable Drug Law 	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">6,000 D</div>  <div style="margin-left: 10px;">3,000 D</div> </div>	<ul style="list-style-type: none"> ▪ Chronic viral hepatitis ▪ Polyneuropathy ▪ Encephalopathy ▪ Autoimmune spinal diseases ▪ Acute dermatomyositis ▪ Allergic skin diseases ▪ Lupus erythematodes ▪ Mycosis of skin and organs 	<ul style="list-style-type: none"> ▪ Allergic reactions – very seldom ▪ Good tolerance ▪ Caution during pregnancy! <p><u>Administration:</u> Needle No. 18 SC or IM</p>

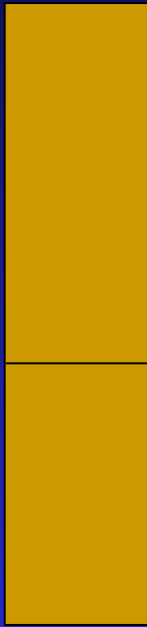
CHARACTERISTIC PARAMETERS OF THYMEX-L

THYMEX-L Vials of 150 mg lyophilised Total-thymus extract	Molecular weight & schematic display of the SDS Electrophoresis	Indication	Contraindication and side effects
<p><u>Content:</u> Various...</p> <ul style="list-style-type: none"> ▪ Thymus peptides ▪ Enzymes ▪ Neurohormones and -factors <p><u>Status:</u></p> <ul style="list-style-type: none"> ▪ Registered in Sweden under the name ENZYTHYM ▪ Import possible through pharmacies according to applicable Drug Law 	<p style="text-align: center;">90,000 D</p>  <p style="text-align: center;">3,000 D</p>	<ul style="list-style-type: none"> ▪ All immune deficiency conditions, failing cellular immunity ▪ Osteoporosis ▪ Rheumatoid Arthritis ▪ Arthrosis ▪ Microcellular bronchial-CA, mamma-, hypogastric, prostatic, colon-CA, ▪ M. Hodgkins, Kaposi-sarkoma ▪ Prophylaxis against abnomal growth of cellular tissue 	<ul style="list-style-type: none"> ▪ Allergic reactions in 2-5% of patients ▪ Internal bleeding ▪ Caution during pregnancy! ▪ High longterm doses of corticoids must be reduced ▪ High longterm doses of salicylates must be reduced <p><u>Administration:</u> Needle No. 18 SC or IM.</p>

CHARACTERISTIC PARAMETERS OF LUPEX – PEPTIDE M

LUPEX – PEPTID M Vials of 5 mg lyophilised active thymus peptide	Molecular weight & schematic display of the SDS Electrophoresis	Indication	Contraindication and side effects
<p><u>Content:</u></p> <ul style="list-style-type: none"> ▪ Low molecular mono-peptide <p><u>Status:</u></p> <ul style="list-style-type: none"> ▪ Not registered in Germany ▪ Available for clinical provings and research 	<p style="text-align: center;">500 D</p> 	<ul style="list-style-type: none"> ▪ Autoimmune diseases ▪ Lupus erythematoses ▪ Multiple Sklerosis ▪ Retrobulbar neuritis ▪ Uveitis ▪ Rheumatoid arthritis ▪ Microcellular bronchial CA, Adeno-, Mamma-CA ▪ Kaposi-sarkoma 	<ul style="list-style-type: none"> ▪ With high doses - indigestion and flush during injection (immediate recovery after a sip of water) ▪ Do not use during therapy with nonsteroid antirheumatic agents ▪ Patient should lie down during injection <p><u>Administration:</u> Needle No. 18 SC or IM.</p>

CHARACTERISTIC PARAMETERS OF PROTHYMOSIN α

PROTHYMOSIN α Vials of 2 mg lyophilised active thymus peptide	Molecular weight & schematic display of the SDS Electrophoresis	Indication	Contraindication and side effects
<ul style="list-style-type: none"> ▪ Precursor of THYMOSIN α_1 ▪ 10x more effective than THYMOSIN α_1 <p><u>Status:</u></p> <ul style="list-style-type: none"> ▪ Not registered in Germany ▪ Available for clinical provings and research 	<p style="text-align: center;">13,000 D</p> 	<ul style="list-style-type: none"> ▪ Autoimmune diseases ▪ Hepatitis B ▪ Hepatitis C ▪ Malignoma ▪ Kaposi-sarkoma ▪ Burns 	<p style="text-align: center;">Not known</p> <p><u>Administration:</u> Needle No. 18 SC or IM.</p>

Comparison of Several Thymus Preparations

PROTHYMOSIN α	TFX-THYMOMODULIN	THYMEX-L
109 Amino acids	Polypeptide	Total extract from bovine thymus
<ul style="list-style-type: none"> ▪ Monopeptide ▪ Molecular weight: 13,000 D 	<ul style="list-style-type: none"> ▪ Family of 6 peptides ▪ Molecular weight: 4-6,000 D ▪ 2 Fractions: α and β 	<ul style="list-style-type: none"> ▪ Peptides ▪ Proteins ▪ Enzymes (ADA, PNP, SOD) ▪ Oxytocin, Vasopressin ▪ Enkephalines ▪ Endorphines ▪ Thymosin α_1, Prothymosin α_1 ▪ Calcitonine
<ul style="list-style-type: none"> ▪ Isolated and produced in grams for 15 years in Germany ▪ Sterile and free from pyrogens, prions, and viruses ▪ Lyophilisate 	<ul style="list-style-type: none"> ▪ For 30 years wide range of clinical application ▪ Sterile and free from pyrogens, prions, and viruses ▪ Lyophilisate 	<ul style="list-style-type: none"> ▪ Has been applied for 30 years in Germany, wide range of clinical application ▪ Sterile and free from pyrogens, prions, and viruses ▪ Lyophilisate



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