STANDARDIZED CAT HAIR- cat hair injection
Allermed Laboratories, Inc.

Standardized Cat Hair Allergenic Extract

WARNINGS

This allergenic product is intended for use by physicians who are experienced in the administration of allergenic extracts and the emergency care of anaphylaxis, or for use under the guidance of an allergy specialist.
Standardized Cat Hair Extract is not directly interchangeable with Standardized Cat Pelt Extract or Cat Extracts labeled in Allergy Units (AU/mL) The initial dose must be based on skin testing as described in the dosage and administration section of this insert. Patients being switched from other types of cat extracts to Standardized Cat Hair Extract should be started as though they were coming under treatment for the first time Patients should be instructed to recognize adverse reaction symptoms and cautioned to contact the physicians office if reaction symptoms occur. As with all allergenic extracts, severe systemic reactions may occur. In certain individuals these reactions may result in death. Patients should be observed for at least 20 minutes following treatment and emergency measures as well as personnel trained in their use should be immediately available in the event of a life threatening reaction.
This product should not be injected intravenously (see Dosage and Administration). Refer also to the warnings, precautions, adverse reactions and overdosage sections below.
Serious adverse reactions to this product should be reported to MEDWATCH, Food and Drug Administration, 5600 Fishers Lane, MD 20852-9787. Telephone 1-800-822-7967 or www.vaers.hhs.gov.

DESCRIPTION

Standardized Cat Hair Extract is a clear, light yellow to amber solution of the allergens of cat hair, extracted in buffered saline containing sodium chloride, sodium bicarbonate and 50% glycerol by volume. Phenol at 0.4% w/v is added as a preservative.
Source material for the extract is obtained from the hair of the domestic cat. The importance of surface allergens in cat allergy has been shown in several investigations [1,2,3].

Standardization

The potency of Standardized Cat Hair Extract is based on the amount of Fel d $_1$ allergen in the extract. Extract containing 5-9.9 units per mL is assigned a potency of 5,000 Bioequivalent Allergy Units (BAU/mL). Extract containing 10-19.9 Fel d $_1$ units is assigned a potency of 10,000 BAU/mL. BAU/mL values are based on quantitative skin testing. The primary allergen of Standardized Cat Hair Extract is Fel d $_1$. Standardized Cat Pelt Extract contains Fel d $_1$, as well as non-Fel d $_1$ allergens. The latter are believed to be components of cat serum, such as albumin. Pelt extracts have a higher protein content than hair extracts, and the isoelectric focusing (IEF) pattern of the pelt extract reveals protein bands that are not present in cat hair extracts. The IEF pattern of cat hair extracts shows primarily Fel d1 allergen without serum components. The importance of Fel d $_1$ as a means of standardizing the potency of cat extract is based on the following observations:

1. The intensity of skin reactions to cat extract correlates with the Fel d1 content of the extract in most cat sensitive patients [1].
2. The absorption of cat extract with monospecific antisera to Fel d1 causes a reduction in the allergenic activity of cat extract [1].
3. The precipitin arc of Fel d $_1$ in cat extract binds most of the IgE antibody in sera obtained from cat-allergic individuals [2].

CLINICAL PHARMACOLOGY

Positive skin tests with allergenic extract are the result of histamine release from mast cells sensitized with allergen specific IgE. The exact mechanisms by which immunotherapy relieves symptoms of allergy are still under investigation. Elevations in allergen-specific IgG antibodies and an increase in the activity of T suppressor lymphocytes appear to be some of the immunologic changes that occur from hyposensitization [4, 5, 6].

INDICATIONS AND USAGE

Studies have shown that skin tests with cat extract are useful in the diagnosis of cat allergy. As a rule, persons with cat allergy have positive skin reactions when tested with cat extract, and non-allergic individuals rarely react [7, 8, 9]. However, the relationship between a positive skin test and the appearance of clinical symptoms after exposure to a cat is not absolute, i.e., some skin-test positive persons do not experience allergic symptoms after exposure [10]. Failure to experience symptoms may be dose related, since it is known that cats vary significantly in the amount of Fel d $_1$ they produce [11].
The efficacy of cat extract immunotherapy in the treatment of bronchial asthma has been shown in two studies [12, 13]. A reduction in bronchial sensitivity was observed in five patients with cat allergy, whereas no reduction was observed in placebo treated, cat-allergic patients.

CONTRAINDICATIONS

Standardized Cat Hair Extract should not be used for immunotherapy in persons who do not have cat-related allergic symptoms and a positive skin test to the extract.

WARNINGS

Standardized Cat Hair Extract may cause local or severe life-threatening reactions when administered to highly sensitive individuals. Physicians who use this product should be familiar with the clinical use of allergenic extract and have the necessary emergency equipment and medications available to treat systematic allergic reactions. See Precautions, Adverse Reactions and Overdosage.
Standardized Cat Hair Extract should not be used interchangeably with Standardized Cat Pelt Extracts or previously standardized cat extracts labeled in Allergy Units per mL. Cat hair extracts labeled in BAU/mL made by other manufacturers should be tested for bioequivalency by serial titration skin testing before these products are used in patients who have previously received Allermed Standardized Cat Hair Extract.
The dosage of Standardized Cat Hair Extract must be reduced when starting a patient on a new lot of Standardized Cat Hair Extract containing the same amount of Fel d $_1$ units per mL. This is necessary due to a possible loss of potency during storage in the physician's office. The dose of the new lot of extract should not exceed 1/4 the last dose given from the old lot of extract.
Any evidence of a strong local reaction or systemic reaction following the administration of Standardized Cat Hair Extract requires a reduction in dosage during the initial stages of immunotherapy, as well as during maintenance therapy.

PRECAUTIONS

GENERAL: Do not inject intravenously. After the needle is inserted subcutaneously, the plunger should be withdrawn slightly to check for the presence of blood in the syringe. If blood is observed, a new injection should be prepared and given at another site, observing the same precautions.
The extract should be stored at 2°C-8°C. Dilutions of the 10,000 BAU/mL concentrate should be made with buffered saline containing human serum albumin for maximum stability. However, regardless of diluent type, diluted extract should be checked by skin test on a known cat-allergic individual if loss of

potency is suspected.

PREGNANCY CATEGORY C: Animal reproduction studies have not been conducted with Standardized Cat Hair Extract. It is also not known whether allergenic extract can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Standardized Cat Hair Extract should be given to a pregnant woman only if clearly needed.

PATIENT INSTRUCTIONS: Patients should be instructed to remain in the physician's office for at least 20 minutes after skin testing and after each treatment injection, and immediately notify the physician if symptoms of a generalized reaction or shock occur.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: Long term studies have not been conducted with Standardized Cat Hair Extract to determine their potential for carcinogenesis, mutagenesis, and impairment of fertility.

NURSING MOTHERS: Data are not available on the secretion of Standardized Cat Hair Extract in human milk and it is not known what effect this might have on the nursing infant.

PEDIATRIC USE: The dose of Standardized Cat Hair Extract recommended for children is the same as that used for adults, except in the injection of large doses of extract for treatment. In this case, the amount of extract given to a child may be modified so that the discomfort of the injection is minimized.

DRUG INTERACTION: The skin test response to Standardized Cat Hair Extract in sensitive persons may be suppressed by previous treatment with antihistamines and drugs with antihistamine activity. Treatment with beta-blocking drugs may make patients refractory to the usual dose of epinephrine, in the event epinephrine is required to control an adverse allergic reaction.

Caution should be observed in the following circumstances:

EXTREME SENSITIVITY TO CATS: Determined from previous anaphylaxis following skin testing or natural exposure.

AUTOIMMUNE DISEASE: Individuals with autoimmune disease may be at risk, due to the possibility of routine immunizations exacerbating symptoms of the underlying disease.

MYOCARDIAL INFARCTION: Patients who have experienced a recent myocardial infarction may not be able to tolerate immunotherapy. As in all of the above circumstances, the benefit to risk ratio must be carefully evaluated.
Standardized Cat Hair Extract should be temporarily withheld from patients if any of the following conditions exist: (1) severe symptoms of rhinitis and/or asthma; (2) infection or flu accompanied by fever; and (3) exposure to excessive amounts of clinically relevant allergen prior to a scheduled injection.

ADVERSE REACTIONS

Local Reactions From Skin Testing

Large local reactions may result from skin tests with Standardized Cat Hair Extract. To help prevent this, a patient should be skin tested initially by the prick or scratch method. If a positive response is NOT observed, an intradermal skin test may be performed with a more dilute solution of the extract. Oral antihistamines and topical corticosteroids may be administered to relieve itching and swelling resulting from large skin test reactions.

Local Reactions From Subcutaneous Injections

The occurrence of a hive 5 to 15 minutes after the subcutaneous injection of extract is usually due to leakage of extract into the skin along the needle tract. Firm pressure (not rubbing) at the site of injection immediately after withdrawal of the needle will usually prevent this reaction. It does not require a reduction in dosage. However, a strong local reaction with erythema and edema which persists at the injection site for several hours indicates that too much extract has been given. Failure to note this response may result in a serious generalized reaction. Treatment should be altered as follows:

1. Additional injections should not be given until all evidence of the reaction has disappeared.
2. The next injection administered should be 50% of the last nonreacting dose or less, depending upon the size and severity of the local reaction.
3. Subsequent injections should be continued at the reduced dosage unless the physician responsible for treatment believes that it is safe to increase the dose, and that possible clinical improvement would result from the administration of a larger dose of extract.

Systemic Reactions
Systemic reactions may range from a mild exacerbation of the patient's allergic symptoms to hives, anaphylactic shock, or even death from anaphylaxis. The reaction usually occurs 5 to 20 minutes after injection. As a rule, the more quickly a reaction develops, the more serious it is likely to become. Symptoms may include sneezing, coughing, itching, shortness of breath, abdominal cramps, vomiting, diarrhea, tachycardia, hypotension and respiratory failure in severe cases. The reaction is usually stopped by the subcutaneous injection of Epinephrine HCL 1:1,000 (See Overdosage below). The oral administration of antihistamines and the placement of a tourniquet proximal to the injection site are helpful adjuncts. In the event that additional measures are required, it may be necessary to treat the patient for BRONCHOSPASM with intravenous aminophylline, intravenous fluids and corticosteroids; for HYPOTENSION with vasopressors, volume repletion, isoproterenol and corticosteroids; for LARYNGEAL OBSTRUCTION with oxygen and tracheotomy and for CARDIAC ARREST with cardiopulmonary resuscitation and other appropriate measures.

OVERDOSAGE

Severe generalized symptoms or anaphylaxis following an injection must be treated immediately with Epinephrine HCL 1:1,000 as follows: Usual Dosage-Infants under 2 years 0.05 to 0.1 cc; children under 12 years 0.1 to 0.2 cc; persons over 12 years 0.3 to 0.5 cc, repeated as necessary every 10 to 15 minutes. Placement of a tourniquet above the site of injection may be helpful in controlling the absorption of the extract. It should be released every 10 minutes and reapplied as needed. Intravenous antihistamines and hydrocortisone also may be used, but only after sufficient epinephrine has been given (See Adverse Reactions).

DOSAGE AND ADMINISTRATION

Diagnosis: Concentrated extract (10,000 BAU/mL) may be used for scratch or prick-puncture testing. Puncture tests performed with a bifurcated needle in ten cat allergic persons showed a mean wheal diameter of 6.6 mm (S.D. 1.3) with a mean sum of erythema of 57.3 mm (S.D. 10.4).

Intradermal tests with serial three-fold dilution of the 10,000 BAU/mL showed the following results:

Serial 3-Fold Dilutions of 10,000 BSU/mL Extract

Subject	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1												X			
2														X	
3													X		
4									X						
5								X							
6								X							
7														X	
8										X					
9									X						
10											X				

The mean three-fold dilution eliciting a response of 50 mm sum of erythema diameters was 11.120 (S.D. 2.38). The number of BAU/mL required to elicit this response was 0.05 (range 0.0003 to 9.24 BAU/mL). This concentration is approximately a 1:200,000 v/v dilution of the 10,000 BAU/mL extract.

Extract for intradermal testing should be used as follows:

a. *Patients with a positive scratch or prick test to Standardized Cat Hair Extract.* It is not advisable to perform an intradermal skin test in these patients.
b. *Patients with a negative scratch or prick test to Standardized Cat Hair Extract.* Patients who do not react to a scratch or prick test with the 10,000 BAU/mL concentrate maybe tested intradermally with 0.05 mL of a 1:2,000 v/v dilution of the concentrate (5 BAU/mL). If the test is negative, a second test should be performed with 0.05 mL of a 1:200 v/v dilution of concentrate (50 BAU/mL).
c. *Patients tested only by the intradermal method with Standardized Cat Hair Extract.* Patients suspected of being highly allergic to cats should be tested with 0.05 mL of a 1:200,000 v/v dilution (0.05 BAU/mL) of the concentrate. A negative test should be followed by repeat tests using 10 fold stronger concentrations until the maximum dose of 0.05 mL of a 1:200 v/v dilution (50 BAU/mL) is reached.

Interpretation Of Skin Tests:

The interpretation of skin tests should be based on the size of the erythema and wheal response to the allergen compared to a negative saline control. A suggested method of scoring skin tests is shown below. Measurements refer to the longest (single), diameter of erythema and wheal response.

Scratch and Prick Test
A negative test shows only a slight red area at the site of scarification or prick penetration. Positive tests are scored as follows:
1 + Erythema with a 5 mm wheal
2 + Erythema with a 5 -10 mm wheal
3 + Erythema with a 10 - 15 mm wheal
4 + Erythema with a wheal 15 mm (or larger) with pseudopodia

Intradermal Test
A negative test shows no change in the appearance and size of the 5mm wheal created by the I.D. injection of 0.05 mL of extract. Positive tests are scored as follows:
1 + Erythema 10 - 20 mm with a 5 -10 mm wheal
2 + Erythema 20 - 30 mm with a 5 -10 mm wheal
3 + Erythema 30 - 40 mm with a 10 - 15 mm wheal
4 + Erythema greater than 40 mm with a 15 mm wheal (or larger) with pseudopodia

Immunotherapy

Allergenic extract should be administered subcutaneously in the outer aspect of the upper arm using a sterile tuberculin syringe and needle. The skin should be cleaned with 70% alcohol and aseptic technique should be observed in removing the extract from the vial. Care must be taken to avoid injecting the extract into a blood vessel because of the potential hazard of anaphylaxis.
Standardized Cat Hair Extract must be diluted before administration to new patients. As a precaution against overdose, a skin test with the intended starting dose should be done to help evaluate the patient's sensitivity to the product. If the skin response is larger than 5/15 mm (edema/erythema), the extract should be diluted before it is given subcutaneously. The doses shown in the Dosage Schedule may be followed unless the patient's skin test response and allergic history indicate that more dilute extract should be used.
Little is known about the required accumulated dosage of Fel d_1 (and other allergens that may be present in cat extract) that is needed to relieve symptoms. However, studies with other allergenic substances have shown that high dose immunotherapy is most efficacious in the treatment of allergic rhinitis and asthma. The amount of cat extract that is tolerated during immunotherapy depends upon the

sensitivity of the patient. In one study in which patients with cat asthma were treated for a period of one year, the accumulated dose of Fel d_1 varied from 3.6 to 115.8 (median 46.2) units [13]. A burning sensation immediately following the injection of extract from the concentrate is due to the glycerol in the extract. It should not be interpreted as an adverse allergic response.
Patients who have received allergenic extract for maintenance therapy SHOULD NOT be given the same dose from a fresh vial of extract. IT IS ADVISABLE TO REDUCE THE DOSAGE OF FRESH EXTRACT TO ONE-FOURTH THE AMOUNT GIVEN FROM A PREVIOUS LOT.

Dosage Schedule for Standardized Cat Hair Extract (The safety and efficacy of this schedule has not been determined by well-controlled clinical trials.) [BAU = Bioequivalent Allergy Units per mL]

	Vial #1	**Vial #2**	**Vial #3**	**Vial #4**	**Vial #5**	**Vial #6**
	0.05 BAU	**0.5 BAU**	**5 BAU**	**50 BAU**	**500 BAU**	**5,000 BAU**
			frequency twice weekly			
No.	**mL**	**mL**	**mL**	**mL**	**mL**	**mL**
1	0.05	0.05	0.05	0.05	0.05	0.05
2	0.1	0.1	0.1	0.1	0.1	0.1
3	0.2	0.2	0.2	0.2	0.2	0.2
4	0.3	0.3	0.3	0.3	0.3	0.3
5	0.4	0.4	0.4	0.4	0.4	0.4

v/v dilutions of concentrate containing 10,000 BAU per mL required to make the above concentrations.

BAU per mL	**v/v Dilutions of Concentrate**
0.05	1:200,000
0.5	1:20,000
5.0	1:2,000
50.0	1:200
500.0	1:20
5,000.0	1:2

HOW SUPPLIED

Standardized Cat Hair Extract containing 10,000 BAU per mL is supplied in 5 mL dropper vials for scratch or prick testing and in 10 mL, 30 mL and 50 mL vials as concentrate.

STORAGE AND HANDLING

Extract should be stored at 2°C to 8°C since higher temperatures may adversely affect stability. Do not freeze.

REFERENCES

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STANDARDIZED CAT HAIR

cat hair injection

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	**Item Code (Source)**	NDC:49643-705
Route of Administration	CUTANEOUS, INTRADERMAL, SUBCUTANEOUS		

Active Ingredient/Active Moiety		
Ingredient Name	**Basis of Strength**	**Strength**
FELIS CATUS HAIR (UNII: 1564HD0N96) (FELIS CATUS HAIR - UNII:1564HD0N96)	FELIS CATUS HAIR	10000 [BAU] in 1 mL

Inactive Ingredients	
Ingredient Name	**Strength**
SODIUM BICARBONATE (UNII: 8MDF5V39QO)	0.00125 g in 1 mL

GLYCERIN (UNII: PDC6A3C0OX)	0.53 mL in 1 mL
WATER (UNII: 059QF0KO0R)	
PHENOL (UNII: 339NCG44TV)	0.004 g in 1 mL
SODIUM CHLORIDE (UNII: 451W47IQ8X)	0.0025 g in 1 mL

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:49643-705-05	5 mL in 1 VIAL, MULTI-DOSE; Type 0: Not a Combination Product	08/15/1992	
2	NDC:49643-705-10	10 mL in 1 VIAL, MULTI-DOSE; Type 0: Not a Combination Product	08/15/1992	
3	NDC:49643-705-30	30 mL in 1 VIAL, MULTI-DOSE; Type 0: Not a Combination Product	08/15/1992	
4	NDC:49643-705-50	50 mL in 1 VIAL, MULTI-DOSE; Type 0: Not a Combination Product	08/15/1992	

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
BLA	BLA103473	08/15/1992	

Labeler - Allermed Laboratories, Inc. (073364531)

Establishment

Name	Address	ID/FEI	Business Operations
Allermed Laboratories, Inc.		073364531	manufacture(49643-705)

Revised: 9/2019 Allermed Laboratories, Inc.