

## ALDARA<sup>®</sup>

[al dar' a]

(imiquimod)

Cream, 5%

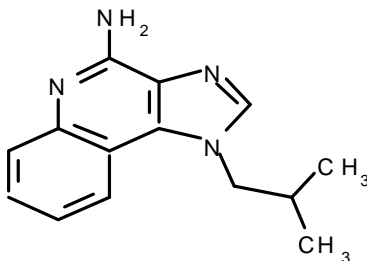
**For Dermatologic Use Only -**

**Not for Ophthalmic Use.**

### DESCRIPTION

Aldara<sup>™</sup> is the brand name for imiquimod which is an immune response modifier. Each gram of the 5% cream contains 50 mg of imiquimod in an off-white oil-in-water vanishing cream base consisting of isostearic acid, cetyl alcohol, stearyl alcohol, white petrolatum, polysorbate 60, sorbitan monostearate, glycerin, xanthan gum, purified water, benzyl alcohol, methylparaben, and propylparaben.

Chemically, imiquimod is 1-(2-methylpropyl)-1*H*-imidazo[4,5-*c*]quinolin-4-amine. Imiquimod has a molecular formula of C<sub>14</sub>H<sub>16</sub>N<sub>4</sub> and a molecular weight of 240.3. Its structural formula is:



### CLINICAL PHARMACOLOGY

#### Pharmacodynamics

##### Actinic Keratosis

The mechanism of action of Aldara Cream in treating actinic keratosis (AK) lesions is unknown. In a study of 18 patients with AK comparing Aldara Cream to vehicle, increases from baseline in week 2 biomarker levels were reported for CD3, CD4, CD8, CD11c, and CD68 for Aldara Cream treated patients; however, the clinical relevance of these findings is unknown.

## External Genital Warts

Imiquimod has no direct antiviral activity in cell culture. A study in 22 patients with genital/perianal warts comparing Aldara Cream and vehicle shows that Aldara Cream induces mRNA encoding cytokines including interferon- $\alpha$  at the treatment site. In addition HPVL1 mRNA and HPV DNA are significantly decreased following treatment. However, the clinical relevance of these findings is unknown.

## Pharmacokinetics

Systemic absorption of imiquimod was observed across the affected skin of 12 patients with genital/perianal warts, with an average dose of 4.6 mg. Mean peak drug concentration of approximately 0.4 ng/ml was seen during the study. Mean urinary recoveries of imiquimod and metabolites combined over the whole course of treatment, expressed as percent of the estimated applied dose, were 0.11 and 2.41% in the males and females, respectively.

Systemic absorption of imiquimod across the affected skin of 58 patients with AK was observed with a dosing frequency of 3 applications per week for 16 weeks. Mean peak serum drug concentrations at the end of week 16 were approximately 0.1, 0.2, and 3.5 ng/mL for the applications to face (12.5 mg imiquimod, 1 single-use packet), scalp (25 mg, 2 packets) and hands/arms (75 mg, 6 packets), respectively.

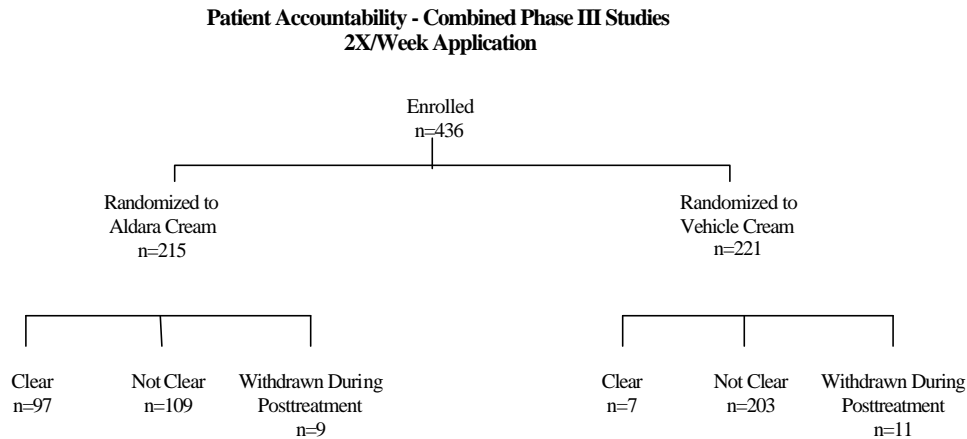
| <b>Mean Serum Imiquimod Concentration Following Administration of the Last Topical Dose During Week 16</b> |  |
|--|--|
| <b>Amount of Aldara Cream applied</b>  | <b>Mean peak serum imiquimod concentration [C<sub>max</sub>]</b> |
| 12.5 mg (1 packet)   | 0.1 ng/mL  |
| 25 mg (2 packets)  | 0.2 ng/mL  |
| 75 mg (6 packets)  | 3.5 ng/mL  |

The application surface area was not controlled when more than one packet was used. Dose proportionality was not observed. However it appears that systemic exposure may be more dependent on surface area of application than amount of applied dose. The apparent half-life was approximately 10 times greater with topical dosing than the 2 hour apparent half-life seen following subcutaneous dosing, suggesting prolonged retention of drug in the skin. Mean urinary recoveries of imiquimod and metabolites combined were 0.08 and 0.15% of the applied dose in the group using 75 mg (6 packets) for males and females, respectively following 3 applications per week for 16 weeks.

## CLINICAL STUDIES

### Actinic Keratosis

In two double-blind, vehicle-controlled clinical studies, 436 patients with actinic keratosis (AK) were treated with Aldara Cream or vehicle cream 2 times per week for 16 weeks. Patients with 4 to 8 clinically typical, visible, discrete, nonhyperkeratotic, nonhypertrophic AK lesions within a 25 cm<sup>2</sup> contiguous treatment area on either the face or scalp were enrolled and randomized to active or vehicle treatment. The population studied ranged from 37-88 years of age (median 66 years) and 55% had Fitzpatrick skin type I or II. All imiquimod-treated patients were Caucasians. The 25 cm<sup>2</sup> contiguous treatment area could be of any dimensions e.g., 5 cm x 5 cm, 3 cm x 8.3 cm, 2 cm x 12.5 cm, etc. On a scheduled dosing day, the study cream was applied to the entire treatment area prior to normal sleeping hours and left on for approximately 8 hours. Twice weekly dosing was continued for a total of 16 weeks. Eight weeks after the patient's last scheduled application of study cream, the clinical response of each patient was evaluated. The primary efficacy variable was the complete clearance rate. Complete clearance (designated below as "clear") was defined as the proportion of subjects at the 8-week post-treatment visit with no (zero) clinically visible AK lesions in the treatment area. Complete clearance included clearance of all baseline lesions, as well as any new or subclinical AK lesions which appeared during therapy. Patient outcomes are shown in the figure below.



Complete and partial clearance rates are shown in the table below. The partial clearance rate was defined as the percentage of patients in whom 75% or more baseline AK lesions were cleared.

**Complete Clearance Rates (100% Lesions Cleared)**

| Study   | Aldara Cream | Vehicle    |
|---------|--------------|------------|
| Study A | 46% (49/107) | 3% (3/110) |
| Study B | 44% (48/108) | 4% (4/111) |

**Partial Clearance Rates (75% or More Baseline Lesions Cleared)**

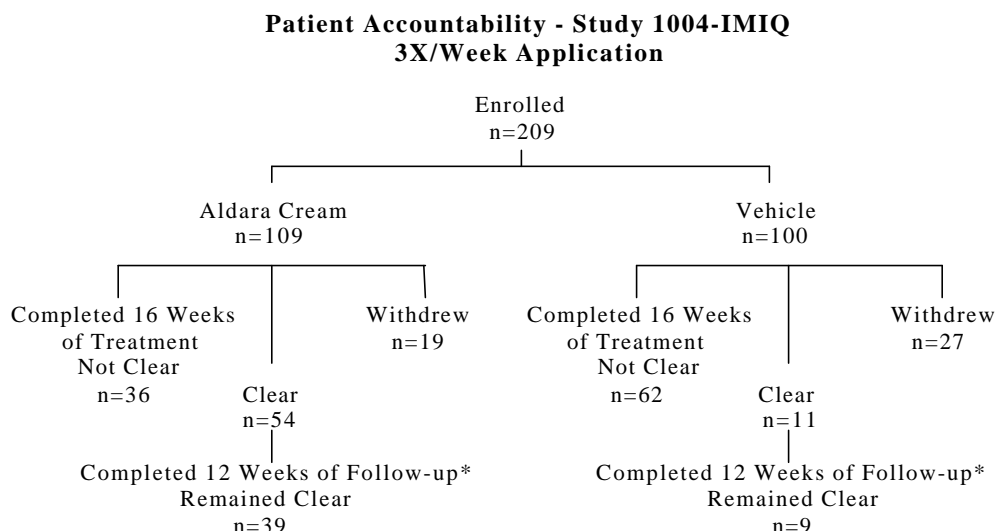
| Study   | Aldara Cream | Vehicle      |
|---------|--------------|--------------|
| Study A | 60% (64/107) | 10% (11/110) |
| Study B | 58% (63/108) | 14% (15/111) |

Sub-clinical AK lesions may become apparent in the treatment area during treatment with Aldara Cream. During the course of treatment, 48% (103/215) of patients experienced an increase in AK lesions relative to the number present at baseline within the treatment area. Patients with an increase in AK lesions had a similar response to those with no increase in AK lesions.

Of the 206 imiquimod subjects with both baseline and 8-week posttreatment scarring assessments, only 6 (2.9%) had a greater degree of scarring scores at 8-weeks posttreatment than at baseline.

**External Genital Warts**

In a double-blind, placebo-controlled clinical study, 209 otherwise healthy patients 18 years of age and older with genital/perianal warts were treated with Aldara Cream or vehicle control 3X/week for a maximum of 16 weeks. The median baseline wart area was 69 mm<sup>2</sup> (range 8 to 5525 mm<sup>2</sup>). Patient accountability is shown in the figure below.



\*The other patients were either lost to follow-up or experienced recurrences.

Data on complete clearance are listed in the table below. The median time to complete wart clearance was 10 weeks.

#### Complete Clearance Rates - Study 1004-IMIQ

| Treatment             | Patients with Complete Clearance of Warts | Patients Without Follow-up | Patients with Warts Remaining at Week 16 |
|-----------------------|---|----------------------------|--|
| Overall               |   |                            |  |
| Aldara Cream (n =109) | 50%                                       | 17%                        | 33%                                      |
| Vehicle (n =100)      | 11%                                       | 27%                        | 62%                                      |
| Females               |   |                            |  |
| Aldara Cream (n =46)  | 72%                                       | 11%                        | 17%                                      |
| Vehicle (n =40)       | 20%                                       | 33%                        | 48%                                      |
| Males                 |   |                            |  |
| Aldara Cream (n =63)  | 33%                                       | 22%                        | 44%                                      |
| Vehicle (n =60)       | 5%  | 23%                        | 72%                                      |

## INDICATIONS AND USAGE

Aldara Cream is indicated for the topical treatment of clinically typical, nonhyperkeratotic, nonhypertrophic actinic keratoses on the face or scalp in immunocompetent adults.

Aldara Cream is indicated for the treatment of external genital and perianal warts/condyloma acuminata in individuals 12 years old and above.

## CONTRAINDICATIONS

This drug is contraindicated in individuals with a history of sensitivity reactions to any of its components. It should be discontinued if hypersensitivity to any of its ingredients is noted.

## WARNINGS

Aldara Cream has not been evaluated for the treatment of urethral, intra-vaginal, cervical, rectal, or intra-anal human papilloma viral disease and is not recommended for these conditions.

## PRECAUTIONS

### General

The safety and efficacy of Aldara Cream in immunosuppressed patients have not been established.

Aldara Cream administration is not recommended until the skin is completely healed from any previous drug or surgical treatment.

Aldara Cream has the potential to exacerbate inflammatory conditions of the skin.

Exposure to sunlight (including sunlamps) should be avoided or minimized during use of Aldara Cream because of concern for heightened sunburn susceptibility. Patients should be warned to use protective clothing (hat) when using Aldara Cream. Patients with sunburn should be advised not to use Aldara Cream until fully recovered. Patients who may have considerable sun exposure, e.g., due to their occupation, and those patients with inherent sensitivity to sunlight should exercise caution when using Aldara Cream. Phototoxicity has not been adequately assessed for Aldara Cream. The enhancement of ultraviolet carcinogenicity is not necessarily dependent on phototoxic mechanisms. Despite the absence of observed phototoxicity in humans (*see ADVERSE REACTIONS*), Aldara Cream shortened the time to skin tumor formation in an animal photoco-carcinogenicity study (*see Carcinogenesis, Mutagenesis, Impairment of Fertility*). Therefore, it is prudent for patients to minimize or avoid natural or artificial sunlight exposure.

Safety and efficacy have not been established for Aldara Cream in the treatment of actinic keratosis with repeated use, i.e. more than one treatment course, in the same 25 cm<sup>2</sup> area.

The safety of Aldara Cream applied to areas of skin greater than 25 cm<sup>2</sup> (e.g. 5 cm x 5 cm) for the treatment of actinic keratosis has not been established (*see CLINICAL PHARMACOLOGY; Pharmacokinetics* section regarding systemic absorption).

### Information for Patients

#### General Information

Patients using Aldara Cream should receive the following information and instructions:

1. This medication is to be used as directed by a physician. It is for external use only. Eye contact should be avoided.
2. The treatment area should not be bandaged or otherwise covered or wrapped as to be occlusive.
3. Some reports have been received of localized hypopigmentation and hyperpigmentation following Aldara Cream use. Follow-up information suggests that these skin color changes may be permanent in some patients.

### **Patients Being Treated for Actinic Keratosis (AK)**

1. It is recommended that the treatment area be washed with mild soap and water 8 hours following Aldara Cream application.
2. It is common for patients to experience local skin reactions (can range from mild to severe in intensity) during treatment with Aldara Cream, and these reactions may extend beyond the application site onto the surrounding skin. Skin reactions generally decrease in intensity or resolve after cessation of Aldara Cream therapy. Potential local skin reactions include erythema, edema, vesicles, erosion/ulceration, weeping/exudate, flaking/scaling/dryness, and scabbing/crusting. Most patients using Aldara Cream for the treatment of AK experience erythema, flaking/scaling/dryness and scabbing/crusting at the application site with normal dosing. Patients may also experience application site reactions such as itching and/or burning. Local skin reactions may be of such an intensity that patients may require rest periods from treatment. Treatment with Aldara Cream can be resumed after the skin reaction has subsided, as determined by the physician. Patients should contact their physician promptly if they experience any sign or symptom at the application site that restricts or prohibits their daily activity or makes continued application of the cream difficult.
3. Because of local skin reactions, during treatment and until healed, the treatment area is likely to appear noticeably different from normal skin. The skin surrounding the treatment area may also be affected, but less intensely so.
4. Contact with the eyes, lips and nostrils should be avoided.
5. Use of sunscreen is encouraged, and patients should minimize or avoid exposure to natural or artificial sunlight (tanning beds or UVA/B treatment) while using Aldara Cream.
6. During treatment, sub-clinical AK lesions may become apparent in the treatment area and may subsequently resolve.
7. Partially-used packets should be discarded and not reused.
8. Dosing is twice weekly for the full 16 weeks, unless otherwise directed by the physician. However, the treatment period should not be extended beyond 16 weeks due to missed doses or rest periods.

### **Patients Being Treated for External Genital Warts**

1. It is recommended that the treatment area be washed with mild soap and water 6-10 hours following Aldara Cream application.
2. It is common for patients to experience local skin reactions such as erythema, erosion, excoriation/flaking, and edema at the site of application or surrounding areas. Most skin reactions are mild to moderate. Severe skin reactions can occur and should be promptly reported to the prescribing physician. Should severe local skin reaction occur, the cream

should be removed by washing the treatment area with mild soap and water. Treatment with Aldara Cream can be resumed after the skin reaction has subsided.

3. Sexual (genital, anal, oral) contact should be avoided while the cream is on the skin.
4. Application of Aldara Cream in the vagina is considered internal and should be avoided. Female patients should take special care if applying the cream at the opening of the vagina because local skin reactions on the delicate moist surfaces can result in pain or swelling, and may cause difficulty in passing urine.
5. Uncircumcised males treating warts under the foreskin should retract the foreskin and clean the area daily.
6. Patients should be aware that new warts may develop during therapy, as Aldara Cream is not a cure.
7. The effect of Aldara Cream on the transmission of genital/perianal warts is unknown.
8. Aldara Cream may weaken condoms and vaginal diaphragms, therefore concurrent use is not recommended.

### **Carcinogenesis, Mutagenesis, and Impairment of Fertility**

Note: The Maximum Recommended Human Dose (MRHD) was set at 2 packets per treatment of Aldara Cream (25 mg imiquimod) for the animal multiple of human exposure ratios presented in this label. If higher doses than 2 packets of Aldara Cream are used clinically, then the animal multiple of human exposure would be reduced for that dose. A non-proportional increase in systemic exposure with increased dose of Aldara Cream was noted in the clinical pharmacokinetic study conducted in actinic keratosis subjects (*see Pharmacokinetics*). The AUC after topical application of 6 packets of Aldara Cream was 8 fold greater than the AUC after topical application of 2 packets of Aldara Cream in actinic keratosis subjects. Therefore, if a dose of 6 packets per treatment of Aldara Cream was topically administered to an individual, then the animal multiple of human exposure would be either 1/3 of the value provided in the label (based on body surface area comparisons) or 1/8 of the value provided in the label (based on AUC comparisons). The animal multiples of human exposure calculations were based on weekly dose comparisons for the carcinogenicity studies described in this label. The animal multiples of human exposure calculations were based on daily dose comparisons for the reproductive toxicology studies described in this label.

In an oral (gavage) rat carcinogenicity study, imiquimod was administered to Wistar rats on a 2X/week (up to 6 mg/kg/day) or daily (3 mg/kg/day) dosing schedule for 24 months. No treatment related tumors were noted in the oral rat carcinogenicity study up to the highest doses tested in this study of 6 mg/kg administered 2X/week in female rats (87X MRHD based on weekly AUC comparisons), 4 mg/kg administered 2X/week in male rats (75X MRHD based on weekly AUC comparisons) or 3 mg/kg administered 7X/week to male and female rats (153X MRHD based on weekly AUC comparisons).



In a dermal mouse carcinogenicity study, imiquimod cream (up to 5 mg/kg/application imiquimod or 0.3% imiquimod cream) was applied to the backs of mice 3X/week for 24 months. A statistically significant increase in the incidence of liver adenomas and carcinomas was noted in high dose male mice compared to control male mice (251X MRHD based on weekly AUC comparisons). An increased number of skin papillomas was observed in vehicle cream control group animals at the treated site only. The quantitative composition of the vehicle cream used in the dermal mouse carcinogenicity study is the same as the vehicle cream used for Aldara Cream, minus the active moiety (imiquimod).

In a 52-week dermal photoco-carcinogenicity study, the median time to onset of skin tumor formation was decreased in hairless mice following chronic topical dosing (3X/week; 40 weeks of treatment followed by 12 weeks of observation) with concurrent exposure to UV radiation (5 days per week) with the Aldara Cream vehicle alone. No additional effect on tumor development beyond the vehicle effect was noted with the addition of the active ingredient, imiquimod, to the vehicle cream.

Imiquimod revealed no evidence of mutagenic or clastogenic potential based on the results of five in vitro genotoxicity tests (Ames assay, mouse lymphoma L5178Y assay, Chinese hamster ovary cell chromosome aberration assay, human lymphocyte chromosome aberration assay and SHE cell transformation assay) and three in vivo genotoxicity tests (rat and hamster bone marrow cytogenetics assay and a mouse dominant lethal test).

Daily oral administration of imiquimod to rats, throughout mating, gestation, parturition and lactation, demonstrated no effects on growth, fertility or reproduction, at doses up to 87X MRHD based on AUC comparisons.

## **Pregnancy**

### **Pregnancy Category C:**

Systemic embryofetal development studies were conducted in rats and rabbits. Oral doses of 1, 5 and 20 mg/kg/day imiquimod were administered during the period of organogenesis (gestational days 6 – 15) to pregnant female rats. In the presence of maternal toxicity, fetal effects noted at 20 mg/kg/day [8X MRHD based on body surface area (BSA) comparisons] included increased resorptions, decreased fetal body weights, delays in skeletal ossification, bent limb bones, and two fetuses in one litter (2 of 1567 fetuses) demonstrated exencephaly, protruding tongues and low-set ears. No treatment related effects on embryofetal toxicity or teratogenicity were noted at 5 mg/kg/day (55X MRHD based on AUC comparisons).

Intravenous doses of 0.5, 1 and 2 mg/kg/day imiquimod were administered during the period of organogenesis (gestational days 6 – 18) to pregnant female rabbits. No treatment related effects on embryofetal toxicity or teratogenicity were noted at 2 mg/kg/day (1.5X MRHD based on BSA comparisons), the highest dose evaluated in this study, or 1 mg/kg/day (407X MRHD based on AUC comparisons).

A combined fertility and peri- and post-natal development study was conducted in rats. Oral doses of 1, 1.5, 3 and 6 mg/kg/day imiquimod were administered to male rats from 70 days prior to mating through the mating period and to female rats from 14 days prior to mating through parturition and lactation. No effects on growth, fertility, reproduction or post-natal development were noted at doses up to 6 mg/kg/day (87X MRHD based on AUC comparisons), the highest dose evaluated in this study. In the absence of maternal toxicity, bent limb bones were noted in the F1 fetuses at a dose of 6 mg/kg/day (87X MRHD based on AUC comparisons). This fetal effect was also noted in the oral rat embryofetal development study conducted with imiquimod. No treatment related effects on teratogenicity were noted at 3 mg/kg/day (41X MRHD based on AUC comparisons).

There are no adequate and well-controlled studies in pregnant women. Aldara Cream should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

### **Nursing Mothers**

It is not known whether topically applied imiquimod is excreted in breast milk.

### **Pediatric Use**

Safety and efficacy in patients with external genital/perianal warts below the age of 12 years have not been established. AK is not a condition generally seen within the pediatric population. The safety and efficacy of Aldara Cream for AK in patients less than 18 years of age have not been established.

### **Geriatric Use**

Of the 215 patients in the 2X/week clinical studies evaluating the treatment of AK lesions with Aldara Cream, 127 patients (59%) were 65 years and older, while 60 patients (28%) were 75 years and older. No overall differences in safety or effectiveness were observed between these patients and younger patients. No other clinical experience has identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out.

## **ADVERSE REACTIONS**

**Healthcare providers and patients may contact 3M or FDA's Medwatch to report adverse reactions by calling 1-800-814-1795 or 1-800-FDA-1088, or on the internet at <http://www.fda.gov/medwatch>.**

Dermal safety studies involving induction and challenge phases produced no evidence that Aldara Cream causes photoallergenicity or contact sensitization in healthy skin; however, cumulative irritancy testing revealed the potential for Aldara Cream to cause irritation, and in the

clinical studies application site reactions were reported in a significant percentage of study patients. Phototoxicity testing was incomplete as wavelengths in the UVB range were not included and Aldara Cream has peak absorption in the UVB range (320 nm) of the light spectrum.

## Actinic Keratosis

The data described below reflect exposure to Aldara Cream or vehicle in 436 patients enrolled in two double-blind, vehicle-controlled, 2X/week studies. Patients applied Aldara Cream or vehicle to a 25 cm<sup>2</sup> contiguous treatment area on the face or scalp 2X/week for 16 weeks.

### Summary of All Adverse Events Reported by > 1% of Patients in the Combined 2X/ Week Studies

| Body System<br>Preferred Term                      | Imiq 2X/Week<br>(n= 215) | Vehicle 2X/Week<br>(n= 221) |
|--|--------------------------|-----------------------------|
| <b>APPLICATION SITE DISORDERS</b>                  |                          |                             |
| APPLICATION SITE REACTION                          | 71 ( 33.0%)              | 32 ( 14.5%)                 |
| <b>BODY AS A WHOLE - GENERAL DISORDERS</b>         |                          |                             |
| BACK PAIN  | 3 ( 1.4%)                | 2 ( 0.9%)                   |
| FATIGUE  | 3 ( 1.4%)                | 2 ( 0.9%)                   |
| FEVER  | 3 ( 1.4%)                | 0 ( 0.0%)                   |
| HEADACHE   | 11 ( 5.1%)               | 7 ( 3.2%)                   |
| HERNIA NOS   | 4 ( 1.9%)                | 1 ( 0.5%)                   |
| INFLUENZA- LIKE SYMPTOMS                           | 4 ( 1.9%)                | 4 ( 1.8%)                   |
| PAIN   | 3 ( 1.4%)                | 3 ( 1.4%)                   |
| RIGORS   | 3 ( 1.4%)                | 0 ( 0.0%)                   |
| <b>CARDIOVASCULAR DISORDERS, GENERAL</b>           |                          |                             |
| CHEST PAIN   | 1 ( 0.5%)                | 4 ( 1.8%)                   |
| HYPERTENSION                                       | 3 ( 1.4%)                | 5 ( 2.3%)                   |
| <b>CENTR &amp; PERIPH NERVOUS SYSTEM DISORDERS</b> |                          |                             |
| DIZZINESS  | 3 ( 1.4%)                | 1 ( 0.5%)                   |
| <b>GASTRO- INTESTINAL SYSTEM DISORDERS</b>         |                          |                             |
| DIARRHOEA  | 6 ( 2.8%)                | 2 ( 0.9%)                   |
| DYSPEPSIA  | 6 ( 2.8%)                | 4 ( 1.8%)                   |
| GASTROESOPHAGEAL REFLUX                            | 3 ( 1.4%)                | 3 ( 1.4%)                   |
| NAUSEA   | 3 ( 1.4%)                | 3 ( 1.4%)                   |
| VOMITING   | 3 ( 1.4%)                | 1 ( 0.5%)                   |
| <b>HEART RATE AND RHYTHM DISORDERS</b>             |                          |                             |
| FIBRILLATION ATRIAL                                | 3 ( 1.4%)                | 2 ( 0.9%)                   |
| <b>METABOLIC AND NUTRITIONAL DISORDERS</b>         |                          |                             |
| HYPERCHOLESTEROLAEMIA                              | 4 ( 1.9%)                | 0 ( 0.0%)                   |
| <b>MUSCULO- SKELETAL SYSTEM DISORDERS</b>          |                          |                             |
| ARTHRALGIA   | 2 ( 0.9%)                | 4 ( 1.8%)                   |
| ARTHRITIS  | 2 ( 0.9%)                | 3 ( 1.4%)                   |
| MYALGIA  | 3 ( 1.4%)                | 3 ( 1.4%)                   |
| SKELETAL PAIN                                      | 1 ( 0.5%)                | 3 ( 1.4%)                   |
| <b>NEOPLASM</b>                                    |                          |                             |
| BASAL CELL CARCINOMA                               | 5 ( 2.3%)                | 5 ( 2.3%)                   |
| CARCINOMA SQUAMOUS                                 | 8 ( 3.7%)                | 5 ( 2.3%)                   |
| <b>RESISTANCE MECHANISM DISORDERS</b>              |                          |                             |
| HERPES SIMPLEX                                     | 4 ( 1.9%)                | 4 ( 1.8%)                   |

|                               |             |             |
|-------------------------------|-------------|-------------|
| INFECTION VIRAL               | 3 ( 1.4%)   | 2 ( 0.9%)   |
| RESPIRATORY SYSTEM DISORDERS  |             |             |
| BRONCHITIS                    | 2 ( 0.9%)   | 3 ( 1.4%)   |
| COUGHING                      | 6 ( 2.8%)   | 10 ( 4.5%)  |
| PHARYNGITIS                   | 4 ( 1.9%)   | 4 ( 1.8%)   |
| PULMONARY CONGESTION          | 1 ( 0.5%)   | 3 ( 1.4%)   |
| RHINITIS                      | 7 ( 3.3%)   | 8 ( 3.6%)   |
| SINUSITIS                     | 16 ( 7.4%)  | 14 ( 6.3%)  |
| UPPER RESP TRACT INFECTION    | 33 ( 15.3%) | 27 ( 12.2%) |
| SECONDARY TERMS               |             |             |
| ABRASION NOS                  | 7 ( 3.3%)   | 5 ( 2.3%)   |
| CYST NOS                      | 0 ( 0.0%)   | 4 ( 1.8%)   |
| INFLECTED INJURY              | 19 ( 8.8%)  | 21 ( 9.5%)  |
| POST- OPERATIVE PAIN          | 3 ( 1.4%)   | 4 ( 1.8%)   |
| SKIN AND APPENDAGES DISORDERS | 47 ( 21.9%) | 42 ( 19.0%) |
| ALOPECIA                      | 3 ( 1.4%)   | 0 ( 0.0%)   |
| DERMATITIS                    | 3 ( 1.4%)   | 7 ( 3.2%)   |
| ECZEMA                        | 4 ( 1.9%)   | 3 ( 1.4%)   |
| HYPERKERATOSIS                | 19 ( 8.8%)  | 12 ( 5.4%)  |
| PHOTOSENSITIVITY REACTION     | 2 ( 0.9%)   | 4 ( 1.8%)   |
| PRURITUS                      | 2 ( 0.9%)   | 3 ( 1.4%)   |
| RASH                          | 5 ( 2.3%)   | 5 ( 2.3%)   |
| SKIN DISORDER                 | 6 ( 2.8%)   | 7 ( 3.2%)   |
| VERRUCA                       | 1 ( 0.5%)   | 3 ( 1.4%)   |
| URINARY SYSTEM DISORDERS      | 8 ( 3.7%)   | 10 ( 4.5%)  |
| URINARY TRACT INFECTION       | 3 ( 1.4%)   | 1 ( 0.5%)   |
| VISION DISORDERS              |             |             |
| CONJUNCTIVITIS                | 1 ( 0.5%)   | 3 ( 1.4%)   |
| EYE ABNORMALITY               | 4 ( 1.9%)   | 1 ( 0.5%)   |
| EYE INFECTION                 | 0 ( 0.0%)   | 3 ( 1.4%)   |

### Summary of All Application Site Reactions Reported by > 1% of Patients in the Combined 2X/ Week Studies

| Included Term             | Imiq 2X/Week<br>(n= 215) | Vehicle 2X/Week<br>(n= 221) |
|---------------------------|--------------------------|-----------------------------|
| BLEEDING AT TARGET SITE   | 7 ( 3.3%)                | 1 ( 0.5%)                   |
| BURNING AT REMOTE SITE    | 4 ( 1.9%)                | 0 ( 0.0%)                   |
| BURNING AT TARGET SITE    | 12 ( 5.6%)               | 4 ( 1.8%)                   |
| INDURATION AT REMOTE SITE | 3 ( 1.4%)                | 0 ( 0.0%)                   |
| INDURATION AT TARGET SITE | 5 ( 2.3%)                | 3 ( 1.4%)                   |
| IRRITATION AT REMOTE SITE | 3 ( 1.4%)                | 0 ( 0.0%)                   |
| ITCHING AT REMOTE SITE    | 7 ( 3.3%)                | 3 ( 1.4%)                   |
| ITCHING AT TARGET SITE    | 44 ( 20.5%)              | 15 ( 6.8%)                  |
| PAIN AT TARGET SITE       | 5 ( 2.3%)                | 2 ( 0.9%)                   |
| STINGING AT TARGET SITE   | 6 ( 2.8%)                | 2 ( 0.9%)                   |
| TENDERNESS AT TARGET SITE | 4 ( 1.9%)                | 3 ( 1.4%)                   |

Local skin reactions were collected independently of the adverse event "application site reaction" in an effort to provide a better picture of the specific types of local reactions that might be seen. The most frequently reported local skin reactions were erythema, flaking/scaling/dryness, and scabbing/crusting. The prevalence and severity of local skin reactions that occurred during controlled studies are shown in the following table.

**Local Skin Reactions in the Treatment Area as Assessed by the Investigator  
(Percentage of Patients)  
2X/Week Application**

|                         | Mild/Moderate/Severe  |                  | Severe                |                  |
|-------------------------|-----------------------|------------------|-----------------------|------------------|
|                         | Aldara Cream<br>n=215 | Vehicle<br>n=220 | Aldara Cream<br>n=215 | Vehicle<br>n=220 |
| Erythema                | 209 (97%)             | 206 (93%)        | 38 (18%)              | 5 (2%)           |
| Edema                   | 106 (49%)             | 22 (10%)         | 0 (0%)                | 0 (0%)           |
| Weeping/Exudate         | 45 (22%)              | 3 (1%)           | 0 (0%)                | 0 (0%)           |
| Vesicles                | 19 (9%)               | 2 (1%)           | 0 (0%)                | 0 (0%)           |
| Erosion/Ulceration      | 103 (48%)             | 20 (9%)          | 5 (2%)                | 0 (0%)           |
| Flaking/Scaling/Dryness | 199 (93%)             | 199 (91%)        | 16 (7%)               | 7 (3%)           |
| Scabbing/Crusting       | 169 (79%)             | 92 (42%)         | 18 (8%)               | 4 (2%)           |

The adverse reactions that most frequently resulted in clinical intervention (e.g., rest periods, withdrawal from study) were local skin and application site reactions. Overall, in the clinical studies, 2% (5/215) of patients discontinued for local skin/application site reactions. Of the 215 patients treated, 35 patients (16%) on Aldara Cream and 3 of 220 patients (1%) on vehicle cream had at least one rest period. Of these Aldara Cream patients, 32 (91%) resumed therapy after a rest period.

In the AK studies, 22 of 678 imiquimod treated patients developed treatment site infections that required a rest period off Aldara Cream and were treated with antibiotics (19 with oral and 3 with topical).

### **External Genital Warts**

In controlled clinical trials for genital warts, the most frequently reported adverse reactions were local skin and application site reactions.

These reactions were usually mild to moderate in intensity; however, severe reactions were reported with 3X/week application. **These reactions were more frequent and more intense with daily application than with 3X/week application.** Some patients also reported systemic reactions. Overall, in the 3X/week application clinical studies, 1.2% (4/327) of the patients discontinued due to local skin/application site reactions. The incidence and severity of local skin reactions during controlled clinical trials are shown in the following table.

**Wart Site Reaction as Assessed by Investigator (Percentage of Patients)  
3X/Week Application**

|             | Mild/Moderate/Severe     |                 |                          |                  | Severe                   |                 |                          |                  |
|-------------|--------------------------|-----------------|--------------------------|------------------|--------------------------|-----------------|--------------------------|------------------|
|             | Females                  |                 | Males                    |                  | Females                  |                 | Males                    |                  |
|             | Aldara<br>Cream<br>n=114 | Vehicle<br>n=99 | Aldara<br>Cream<br>n=156 | Vehicle<br>n=157 | Aldara<br>Cream<br>n=114 | Vehicle<br>n=99 | Aldara<br>Cream<br>n=156 | Vehicle<br>n=157 |
| Erythema    | 74 (65%)                 | 21 (21%)        | 90 (58%)                 | 34 (22%)         | 4 (4%)                   | 0 (0%)          | 6 (4%)                   | 0 (0%)           |
| Erosion     | 35 (31%)                 | 8 (8%)          | 47 (30%)                 | 10 (6%)          | 1 (1%)                   | 0 (0%)          | 2 (1%)                   | 0 (0%)           |
| Excoriation |                          |                 |                          |                  |                          |                 |                          |                  |
| / Flaking   | 21 (18%)                 | 8 (8%)          | 40 (26%)                 | 12 (8%)          | 0 (0%)                   | 0 (0%)          | 1 (1%)                   | 0 (0%)           |
| Edema       | 20 (18%)                 | 5 (5%)          | 19 (12%)                 | 1 (1%)           | 1 (1%)                   | 0 (0%)          | 0 (0%)                   | 0 (0%)           |
| Induration  | 6 (5%)                   | 2 (2%)          | 11 (7%)                  | 3 (2%)           | 0 (0%)                   | 0 (0%)          | 0 (0%)                   | 0 (0%)           |
| Ulceration  | 9 (8%)                   | 1 (1%)          | 7 (4%)                   | 1 (1%)           | 3 (3%)                   | 0 (0%)          | 0 (0%)                   | 0 (0%)           |
| Scabbing    | 4 (4%)                   | 0 (0%)          | 20 (13%)                 | 4 (3%)           | 0 (0%)                   | 0 (0%)          | 0 (0%)                   | 0 (0%)           |
| Vesicles    | 3 (3%)                   | 0 (0%)          | 3 (2%)                   | 0 (0%)           | 0 (0%)                   | 0 (0%)          | 0 (0%)                   | 0 (0%)           |

Remote site skin reactions were also reported in female and male patients treated 3X/week with Aldara Cream. The severe remote site skin reactions reported for females were erythema (3%), ulceration (2%), and edema (1%); and for males, erosion (2%), and erythema, edema, induration, and excoriation/flaking (each 1%).

Adverse events judged to be probably or possibly related to Aldara Cream reported by more than 5% of patients are listed below; also included are soreness, influenza-like symptoms and myalgia.

|                                    | 3X/Week Application   |                  |                       |                  |
|------------------------------------|-----------------------|------------------|-----------------------|------------------|
|                                    | Females               |                  | Males                 |                  |
|                                    | Aldara Cream<br>n=117 | Vehicle<br>n=103 | Aldara Cream<br>n=156 | Vehicle<br>n=158 |
| <b>Application Site Disorders:</b> |                       |                  |                       |                  |
| Application Site Reactions         |                       |                  |                       |                  |
| <b>Wart Site:</b>                  |                       |                  |                       |                  |
| Itching                            | 32%                   | 20%              | 22%                   | 10%              |
| Burning                            | 26%                   | 12%              | 9%                    | 5%               |
| Pain                               | 8%                    | 2%               | 2%                    | 1%               |
| Soreness                           | 3%                    | 0%               | 0%                    | 1%               |
| <b>Fungal Infection*</b>           | 11%                   | 3%               | 2%                    | 1%               |
| <b>Systemic Reactions:</b>         |                       |                  |                       |                  |
| Headache                           | 4%                    | 3%               | 5%                    | 2%               |
| Influenza-like symptoms            | 3%                    | 2%               | 1%                    | 0%               |
| Myalgia                            | 1%                    | 0%               | 1%                    | 1%               |

\* Incidences reported without regard to causality with Aldara Cream.

Adverse events judged to be possibly or probably related to Aldara Cream and reported by more than 1% of patients included: **Application Site Disorders: Wart Site Reactions** (burning, hypopigmentation, irritation, itching, pain, rash, sensitivity, soreness, stinging, tenderness); **Remote Site Reactions** (bleeding, burning, itching, pain, tenderness, tinea cruris); **Body as a Whole:** fatigue, fever, influenza-like symptoms; **Central and Peripheral Nervous System Disorders:** headache; **Gastro-Intestinal System Disorders:** diarrhea; **Musculo-Skeletal System Disorders:** myalgia.

## OVERDOSAGE

Persistent topical overdosing of Aldara Cream could result in an increased incidence of severe local skin reactions and may increase the risk for systemic reactions. The most clinically serious adverse event reported following multiple oral imiquimod doses of >200 mg (equivalent to imiquimod content of >16 packets) was hypotension, which resolved following oral or intravenous fluid administration.

## DOSAGE AND ADMINISTRATION

**The application frequency for Aldara Cream is different for each indication.**

### Actinic Keratosis

Aldara Cream is to be applied 2 times per week for 16 weeks to a defined treatment area on the face or scalp (but not both concurrently). The treatment area should be one contiguous area of approximately 25 cm<sup>2</sup> (e.g., 5 cm x 5 cm). Imiquimod cream should be applied to the entire treatment area (e.g., the forehead, scalp, or one cheek).

Aldara Cream is packaged in single-use packets, with 12 packets supplied per box. Patients should be prescribed no more than 3 boxes (36 packets) for the 16 week treatment period. Unused packets should be discarded. Partially-used packets should be discarded and not reused. Before applying the cream, the patient should wash the treatment area with mild soap and water and allow the area to dry thoroughly (at least 10 minutes). The patient should apply no more than one packet of Aldara Cream to the contiguous treatment area at each application. **Aldara Cream is applied prior to normal sleeping hours, and left on the skin for approximately 8 hours, after which time the cream should be removed by washing the area with mild soap and water.** The cream should be rubbed into the treatment area until the cream is no longer visible. Contact with the eyes, lips and nostrils should be avoided. Examples of two times per week application schedules are Monday and Thursday, or Tuesday and Friday prior to sleeping hours. **Aldara Cream treatment should continue for the full 16 weeks. However, the treatment period should not be extended beyond 16 weeks due to missed doses or rest periods.** Local skin reactions in the treatment area are common. Patients should contact their physician if they experience any sign or symptom in the treatment area that restricts or prohibits their daily activity or makes continued application of the cream difficult. A rest period of several days may be taken if required by the patient's discomfort or severity of the local skin reaction.



The technique for proper dose administration should be demonstrated by the prescriber to maximize the benefit of Aldara Cream therapy. Handwashing before and after cream application is recommended.

Lesions that do not respond to therapy should be carefully re-evaluated and management reconsidered.

### **External Genital Warts**

Aldara Cream is to be applied 3 times per week, prior to normal sleeping hours, and left on the skin for 6-10 hours. Patients should be instructed to apply Aldara Cream to external genital/perianal warts. A thin layer is applied to the wart area and rubbed in until the cream is no longer visible. The application site is not to be occluded. Following the treatment period cream should be removed by washing the treated area with mild soap and water. Examples of 3 times per week application schedules are: Monday, Wednesday, Friday; or Tuesday, Thursday, Saturday application prior to sleeping hours. Aldara Cream treatment should continue until there is total clearance of the genital/perianal warts or for a maximum of 16 weeks. Local skin reactions (erythema) at the treatment site are common. A rest period of several days may be taken if required by the patient's discomfort or severity of the local skin reaction. Treatment may resume once the reaction subsides. Non-occlusive dressings such as cotton gauze or cotton underwear may be used in the management of skin reactions. The technique for proper dose administration should be demonstrated by the prescriber to maximize the benefit of Aldara Cream therapy. Handwashing before and after cream application is recommended. Aldara Cream is packaged in single-use packets which contain sufficient cream to cover a wart area of up to 20 cm<sup>2</sup>; use of excessive amounts of cream should be avoided.

### **HOW SUPPLIED**

Aldara (imiquimod) Cream, 5%, is supplied in single-use packets which contain 250 mg of the cream. Available as: box of 12 packets NDC 0089-0610-12.

Store below 25°C (77°F).  
Avoid freezing.

*Keep out of reach of children.*

**Rx only**

March 2, 2004



**Patient Information**  
**ALDARA [al dar' a] Cream, 5%**  
**(Imiquimod)**

Read the Patient Information that comes with Aldara Cream before you start using it and each time you get a refill. There may be new information. This leaflet does not take the place of talking with your healthcare provider about your medical condition or treatment. If you do not understand the information, or have any questions about Aldara Cream, talk with your healthcare provider or pharmacist.

**What is Aldara Cream?**

Aldara Cream is a skin use only (topical) medicine used to treat:

- external genital and perianal warts in people 12 years and older
- actinic keratosis in adults with normal immune systems. Actinic keratosis is caused by too much sun exposure.

Aldara Cream is used in different ways for the two different skin conditions it is used to treat. It is very important that you follow the instructions for your skin condition. Talk to your healthcare provider if you have questions.

Aldara Cream does not work for everyone. Aldara Cream will not cure your genital or perianal warts. New warts may develop during treatment with Aldara Cream. It is not known if Aldara Cream can stop you from spreading genital or perianal warts to other people. For your own health and the health of others, it is important to practice safer sex. Talk to your healthcare provider about safer sex practices.

**Who should not use Aldara Cream?**

- Aldara Cream has not been studied in children under 12 years old for external genital and perianal warts.
- Aldara Cream has not been studied in children under 18 years old for actinic keratosis. Children usually do not get actinic keratoses.

**Before using ALDARA Cream, tell your healthcare provider**

- **about all your medical conditions, including if you:**
  - **are pregnant or planning to become pregnant.** It is not known if Aldara Cream can harm your unborn baby.
  - **are breastfeeding.** It is not known if Aldara Cream passes into your milk and if it can harm your baby.
- **about all the medicines you take including prescription and non-prescription medicines, vitamins and herbal supplements.** Especially tell your healthcare provider if you have had

other treatments for genital or perianal warts, or actinic keratosis. Aldara Cream should not be used until your skin has healed from other treatments.

### How should I use Aldara Cream?

- Use Aldara Cream exactly as prescribed by your healthcare provider. **Aldara Cream is for skin use only. Do not take by mouth or use in or near your eyes, lips or nostrils.** Do not use Aldara Cream unless your healthcare provider has taught you the right way to use it. Talk to your healthcare provider if you have any questions.
  - Aldara Cream is used for several skin conditions. **Use Aldara cream only on the area of your body to be treated.** Your healthcare provider will tell you where to apply Aldara cream and how often and for how long to apply it for your condition. Do not use Aldara Cream longer than prescribed. Using too much Aldara Cream, or using it too often, or for too long can increase your chances for having a severe skin reaction or other side effect. Talk to your healthcare provider if Aldara Cream does not work for you.
1. **For external genital and perianal warts** Aldara Cream is usually used once a day for 3 days a week:
    - Monday, Wednesday and Friday, or
    - Tuesday, Thursday and Saturday

For these conditions, Aldara Cream is usually left on the skin for 6 to 10 hours. Treatment should continue until the warts are completely gone, or up to 16 weeks.

2. **For actinic keratosis** Aldara Cream is usually used once a day for 2 days a week, 3 to 4 days apart, such as:
  - Monday and Thursday, or
  - Tuesday and Friday

For this condition, Aldara Cream is usually left on the skin for about 8 hours. Treatment should continue for the full 16 weeks even if all actinic keratoses appear to be gone, unless you are told otherwise by your healthcare provider. The area you treat with Aldara Cream should be no larger than approximately the size of your forehead or one cheek (for example 2 inches by 2 inches), unless otherwise directed by your healthcare provider.

### Applying Aldara Cream

Aldara Cream should be applied just before your bedtime.

- Wash the area to be treated with mild soap and water. Allow the area to dry.
  - Uncircumcised males treating warts under their penis foreskin must pull their foreskin back and clean before treatment, and clean daily during the weeks of treatment.
- Wash your hands
- Open a new packet of Aldara Cream just before use

- Apply a thin layer of Aldara Cream only to the affected area or areas to be treated. Do not use more Aldara cream than is needed to cover the treatment area.
- Rub the cream in all the way to the affected area or areas.
  - Do not get Aldara Cream in your eyes.
  - Do not get Aldara Cream in the anus when applying to perianal warts.
  - Female patients treating genital warts must be careful when applying Aldara Cream around the vaginal opening. Female patients should take special care if applying the cream at the opening of the vagina because local skin reactions on the delicate moist surfaces can cause pain or swelling, and may cause problems passing urine. Do not put Aldara Cream in your vagina or on the skin around the genital wart.
- Do not cover the treated area with an airtight bandage. Cotton gauze dressings can be used. Cotton underwear can be worn after applying Aldara Cream to the genital or perianal area.
- Safely throw away the open packet of Aldara Cream so that children and pets cannot get it. The open packet should be thrown away even if all the Aldara Cream was not completely used.
- **After applying Aldara Cream, wash your hands well.**
- Leave the cream on the affected area or areas for the time prescribed by your healthcare provider. The length of time that Aldara Cream is left on the skin is not the same for the different skin conditions that Aldara Cream is used to treat. Do not bathe or get the treated area wet before the right time has passed. Do not leave Aldara Cream on your skin longer than prescribed.
- After the right amount of time has passed, wash the treated area or areas with mild soap and water.
- If you forget to apply Aldara Cream, apply the missed dose of cream as soon as you remember and then continue on your regular schedule.
- If you get Aldara Cream in your mouth or in your eyes rinse well with water right away.

#### **What should I avoid while using Aldara Cream?**

- Do not cover the treated site with bandages or other closed dressings. Cotton gauze dressings are okay to use, if needed. Cotton underwear can be worn after treating the genital or perianal area.
- Do not apply Aldara Cream in or near the eyes, lips or nostrils, or in the vagina or anus.
- Do not use sunlamps or tanning beds, and avoid sunlight as much as possible during treatment with Aldara Cream. Use sunscreen and wear protective clothing if you go outside during daylight.
- Do not have sexual contact including genital, anal, or oral sex when Aldara Cream is on your genital or perianal skin. Aldara Cream may weaken condoms and vaginal diaphragms. This means they may not work as well to prevent pregnancy. For your own health and the health of others, it is important to practice safer sex. Talk to your healthcare provider about safer sex practices.

## What are the possible side effects of Aldara Cream?

The most common side effects with Aldara Cream are skin reactions at the treatment site including:

- redness
- swelling
- a sore, blister, or ulcer
- skin that becomes hard or thickened
- skin peeling
- scabbing and crusting
- itching
- burning
- changes in skin color that do not always go away

### Actinic Keratosis

**During treatment and until the skin has healed, your skin in the treatment area is likely to appear noticeably different from normal skin.** Side effects, such as redness, scabbing, itching and burning are common at the site where Aldara Cream is applied, and sometimes the side effects go outside of the area where Aldara Cream was applied. Swelling, small open sores and drainage may also be experienced with use of Aldara Cream. You may also experience itching and/or burning. Actinic keratoses that were not seen before may appear during treatment and may later go away. If you have questions regarding treatment or skin reactions, please talk with your doctor.

### External Genital and Perianal Warts

Patients should be aware that new warts may develop during treatment, as Aldara Cream is not a cure. Many people see reddening or swelling on or around the application site during the course of treatment. If you have questions regarding treatment or local skin reactions, please talk with your doctor.

You have a higher chance for severe skin reactions if you use too much Aldara Cream or use it the wrong way. **Stop Aldara Cream right away and call your healthcare provider if you get any skin reactions that affect your daily activities, or that do not go away.** Sometimes, Aldara Cream must be stopped for a while to allow your skin to heal. Talk to your healthcare provider if you have questions about your treatment or skin reactions.

Other side effects of Aldara Cream include headache, back pain, muscle aches, tiredness, flu-like symptoms, swollen lymph nodes, diarrhea, and fungal infections.

These are not all the side effects of Aldara Cream. For more information, ask your healthcare provider or pharmacist.

### How do I store Aldara Cream?

- Store Aldara Cream below 77° F (25° C). Do not freeze.
- Safely throw away Aldara Cream that is out of date or that you do not need.

- **Keep Aldara Cream and all medicines out of the reach of children.**

### **General information about Aldara Cream**

Medicines are sometimes prescribed for conditions that are not mentioned in patient information leaflets. Do not use Aldara Cream for a condition for which it was not prescribed. Do not give Aldara Cream to other people, even if they have the same symptoms you have.

This leaflet summarizes the most important information about Aldara Cream. If you would like more information, talk with your healthcare provider. You can ask your pharmacist or healthcare provider for information about Aldara Cream that is written for the healthcare provider. If you have other questions about Aldara Cream, call 1-888-2-ALDARA. Visit our website at <http://www.aldara.com>

### **What are the ingredients in Aldara Cream?**

**Active Ingredient:** imiquimod

**Inactive ingredients:** isostearic acid, cetyl alcohol, stearyl alcohol, white petroleum, polysorbate 60, sorbitan monostearate, glycerin, xanthan gum, purified water, benzyl alcohol, methylparaben, and propylparaben.

### **Rx Only**

**3M**

**3M Pharmaceuticals**

275-3W-01 3M Center

St. Paul, MN 55144-1000

March 2, 2004