

## PRODUCT MONOGRAPH

**VAQTA<sup>®</sup>**

hepatitis A vaccine, purified inactivated

Suspension for Injection

Active Immunizing Agent against hepatitis A virus

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Date of Revision:  
April 29, 2011

**Global Trade Identification No.:**  
0 67055 04299 7 (pediatric/adolescent: 1 x 0.5 mL)  
0 67055 04296 6 (adult: 1 x 1 mL)

**Submission Control No: 146746**

**Date of Approval: May 13, 2011**

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# VAQTA®

hepatitis A vaccine, purified inactivated

## PART I: HEALTH PROFESSIONAL INFORMATION

### SUMMARY PRODUCT INFORMATION

Route of Administration	Dosage Form / Strength	Clinically Relevant Nonmedicinal Ingredients
Intramuscular	Suspension for injection 25 U of hepatitis A virus protein/0.5 mL dose (pediatric/adolescent presentation) 50 U of hepatitis A virus protein/1.0 mL dose (adult presentation)	Aluminum hydroxyphosphate sulfate, neomycin (trace amounts)  Latex in vial stopper  <i>For a complete listing see DOSAGE FORMS, COMPOSITION AND PACKAGING section.</i>

### INDICATIONS AND CLINICAL USE

VAQTA® (hepatitis A vaccine, purified inactivated) is indicated for vaccination against infection caused by hepatitis A virus.

VAQTA® is indicated for active pre-exposure prophylaxis against disease caused by hepatitis A virus. Vaccination is recommended in children 12 months of age and older, adolescents, and adults who are at risk of contracting or spreading infection or who are at risk of life-threatening disease if infected, including but not limited to:<sup>1-5,10,11</sup>

**A. Travelers to Endemic or Outbreak Areas**

**B. Frequently Affected Communities**

Members residing in any community with one or more recorded outbreaks within the last five years.

**C. Day-Care**

Children and staff of day-care centers as well as their parents, siblings, and other contacts.

**D. Military Personnel Prior to Departure for Endemic or Outbreak Areas**

- E. Persons for whom Hepatitis A is an Occupational Hazard**  
Health-care workers.  
Staff and residents of orphanages, chronic care hospitals and mental health care facilities.  
Sewage workers.
- F. Hemophiliacs and Other Recipients of Therapeutic Blood Products**
- G. People with chronic liver disease (including chronic hepatitis C infection)**  
People with chronic liver disease who may not be at increased risk of infection but are at increased risk of fulminant hepatitis A.<sup>10,11</sup>
- H. Food Handlers**
- I. Consumers of High-Risk Foods**  
e.g. raw shellfish
- J. Persons at Increased Risk of the Disease due to their Sexual Practices**  
Homosexually-active males.  
Persons who repeatedly contract sexually transmitted diseases.
- K. Users of Illicit Injectable Drugs**  
VAQTA<sup>®</sup> will not prevent hepatitis caused by infectious agents other than hepatitis A virus.

**Revaccination:** See DOSAGE AND ADMINISTRATION.

## **CONTRAINDICATIONS**

Patients who are hypersensitive to this vaccine or to any ingredient in the formulation or component of the container. For a complete listing, see DOSAGE FORMS, COMPOSITION AND PACKAGING section.

## **WARNINGS AND PRECAUTIONS**

If VAQTA<sup>®</sup> is used in individuals with malignancies or those receiving immunosuppressive therapy or who are otherwise immunocompromised, the expected immune response may not be obtained.

**VAQTA<sup>®</sup> IS NOT RECOMMENDED FOR USE IN INFANTS YOUNGER THAN 12 MONTHS OF AGE SINCE DATA ON USE IN THIS AGE GROUP ARE NOT CURRENTLY AVAILABLE.**

## **General**

Individuals who develop symptoms suggestive of hypersensitivity after an injection of VAQTA<sup>®</sup> should not receive further injections of the vaccine (see CONTRAINDICATIONS).

As with any vaccine, adequate treatment provisions, including epinephrine, should be available for immediate use should an anaphylactic or anaphylactoid reaction occur.

Since there is a possibility that the vaccine may contain trace amounts of neomycin, the possibility of an allergic reaction in individuals sensitive to this substance should be kept in mind when considering the use of this vaccine (see DOSAGE FORMS, COMPOSITION AND PACKAGING).

The vial stopper contains dry natural latex rubber. If a person reports a severe (anaphylactic) allergy to latex, products supplied in vials or syringes that contain natural rubber should not be administered, unless the benefit of administration outweighs the risk of an allergic reaction resulting from administration of the vaccine. A history of contact dermatitis to dry natural latex rubber is not a contraindication to receiving this vaccine.

As with any vaccine, vaccination with VAQTA<sup>®</sup> may not result in a protective response in all susceptible vaccinees.

Any acute infection or febrile illness may be reason for delaying use of VAQTA<sup>®</sup> except when, in the opinion of the physician, withholding the vaccine entails a greater risk.

VAQTA<sup>®</sup> will not prevent hepatitis caused by infectious agents other than hepatitis A virus. Because of the long incubation period (approximately 20 to 50 days) for hepatitis A, it is possible for unrecognized hepatitis A infection to be present at the time the vaccine is given. The vaccine may not prevent hepatitis A in such individuals.

## **Special Populations**

### **Use in Children**

VAQTA<sup>®</sup> has been shown to be generally well-tolerated and highly immunogenic in individuals 12 months through 17 years of age. See DOSAGE AND ADMINISTRATION for the recommended dosage schedule.

Safety and effectiveness in infants below 12 months of age have not been established.

### **Pregnant Women**

Animal reproduction studies have not been conducted with VAQTA<sup>®</sup>. It is also not known whether VAQTA<sup>®</sup> can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. VAQTA<sup>®</sup> should be given to a pregnant woman only if clearly needed.

## **Nursing Mothers**

It is not known whether VAQTA<sup>®</sup> is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when VAQTA<sup>®</sup> is administered to a woman who is breast feeding.

## **Carcinogenesis, Mutagenesis, Reproduction**

VAQTA<sup>®</sup> has not been evaluated for its carcinogenic or mutagenic potential, or its potential to impair fertility.

## **ADVERSE REACTIONS**

### **Clinical Trial Adverse Drug Reactions**

#### **Children – 12 Months Through 23 Months of Age**

In combined clinical trials, 706 healthy children 12 through 23 months of age received one or more ~25 U doses of hepatitis A vaccine with or without other pediatric vaccines. Table 1 lists local complaints and fever reported during the first 5-days following vaccination, and other systemic complaints reported during the 14-day period postvaccination. Irritability and upper respiratory infection were the most frequently reported complaints.

**Table 1**

#### **Local and Systemic Complaints (≥ 1%) in Healthy Children 12 Months Through 23 Months of Age from Combined Clinical Trials**

<b>Localized Injection-Site Reactions (generally mild and transient)</b>	
Pain/Tenderness/Soreness	8.6%
Erythema	5.9%
Swelling	5.1%
Warmth	3.2%
Ecchymosis	1.0%
<b>Body as a Whole</b>	
Fever ≥ 38.9°C, Oral	6.5%
<b>Digestive System</b>	
Diarrhea	5.9%
Vomiting	4.0%
Anorexia	1.2%
<b>Nervous System/Psychiatric</b>	
Irritability	10.8%
Crying	1.8%
<b>Respiratory System</b>	
Upper respiratory infection	10.1%
Rhinorrhea	5.7%
Cough	5.1%
Respiratory congestion	1.6%
Nasal congestion	1.2%
Laryngotracheobronchitis	1.2%

<b>Skin and Skin Appendages</b>	
Rash	4.5%
Measles-like/rubella-like rash	1.0%
Viral exanthema	1.0%
<b>Special Senses – Ear</b>	
Otitis media	7.6%
Otitis	1.8%
<b>Special Senses – Eye</b>	
Conjunctivitis	1.3%

In more recent clinical trials involving 2424 healthy children 12 through 23 months of age who received one or two doses of hepatitis A vaccine (~25 U) 6 months apart with or without other vaccines, the incidence of adverse experiences appeared to be consistent with that reported in the prior trials with the exception of the following injection-site reactions: pain/tenderness/soreness (37.8%), erythema (19.7%), and swelling (12.7%).

In The Monroe Efficacy Study, 1037 healthy children and adolescents 2 to 16 years of age received either a primary dose of ~25 U of hepatitis A vaccine and a booster 6, 12, or 18 months later, or placebo. Subjects were observed during a 5-day period for fever and local complaints and during a 14-day period for systemic complaints. Injection-site complaints, generally mild and transient, were the most frequently reported complaints. Table 2 summarizes the local and systemic complaints ( $\geq 1\%$ ) reported in this study, without regard to causality. There were no significant differences in the rates of any complaint between vaccine and placebo recipients after Dose 1.

**Table 2**  
**Local and Systemic Complaints ( $\geq 1\%$ ) in Healthy Children and Adolescents From the Monroe Efficacy Study**

REACTION	VAQTA <sup>®</sup>		Placebo <sup>†</sup>
	Dose 1*	Booster	
<b>Injection-Site Complaints</b>			
Pain	6.4% (33/515)	3.4% (16/475)	6.3% (32/510)
Tenderness	4.9% (25/515)	1.7% (8/475)	6.1% (31/510)
Erythema	1.9% (10/515)	0.8% (4/475)	1.8% (9/510)
Swelling	1.7% (9/515)	1.5% (7/475)	1.6% (8/510)
Warmth	1.7% (9/515)	0.6% (3/475)	1.6% (8/510)
<b>Systemic Complaints</b>			
Abdominal Pain	1.2% (6/519)	1.1% (5/475)	1.0% (5/518)
Pharyngitis	1.2% (6/519)	0% (0/475)	0.8% (4/518)
Headache	0.4% (2/519)	0.8% (4/475)	1.0% (5/518)

\* No statistically significant differences between the two groups.

† Second injection of placebo not administered because code for the trial was broken.

### Children/Adolescents – 2 through 17 years of Age

In combined clinical trials (including Monroe Efficacy Study participants) involving 2595 healthy children ( $\geq 2$  years of age) and adolescents who received one or more ~25 U doses

of hepatitis A vaccine, subjects were followed for fever and local complaints during a 5-day period postvaccination and systemic complaints during a 14-day period postvaccination. Injection-site complaints, generally mild and transient, were the most frequently reported complaints. Table 3 lists the complaints reported by  $\geq 1\%$  of subjects, without regard to causality, in decreasing order of frequency within each body system.

**Table 3**  
**Local and Systemic Complaints ( $\geq 1\%$ ) in Healthy Children and Adolescents from Combined Clinical Trials**

<b>Localized Injection-Site Reactions (generally mild and transient)</b>	
Pain	18.7%
Tenderness	16.8%
Warmth	8.6%
Erythema	7.5%
Swelling	7.3%
Ecchymosis	1.3%
<b>Body as a Whole</b>	
Fever $\geq 38.9^\circ\text{C}$ , Oral	3.1%
Abdominal pain	1.6%
<b>Digestive System</b>	
Diarrhea	1.0%
Vomiting	1.0%
<b>Nervous System/Psychiatric</b>	
Headache	2.3%
<b>Respiratory System</b>	
Pharyngitis	1.5%
Upper respiratory infection	1.1%
Cough	1.0%

### **Laboratory Findings**

Very few laboratory abnormalities were reported and included isolated reports of elevated liver function tests, eosinophilia, and increased urine protein.

### **Adults – 18 years of Age and Older**

In combined clinical trials involving 1529 healthy adults who received one or more  $\sim 50$  U doses of hepatitis A vaccine, subjects were followed for fever and local complaints during a 5-day period postvaccination and systemic complaints during a 14-day period postvaccination. Injection-site complaints, generally mild and transient, were the most frequently reported complaints. Table 4 lists the complaints reported by  $\geq 1\%$  of subjects without regard to causality, in decreasing order of frequency within each body system.

**Table 4**  
**Local and Systemic Complaints ( $\geq 1\%$ ) in Healthy Adults from Combined Clinical Trials**

<b>Localized Injection-Site Reactions (generally mild and transient)</b>	
Tenderness	52.6%
Pain	51.1%
Warmth	17.3%
Swelling	13.6%
Erythema	12.9%
Ecchymosis	1.5%
Pain/soreness	1.2%
<b>Body as a Whole</b>	
Asthenia/fatigue	3.9%
Fever $\geq 38.3^{\circ}\text{C}$ , Oral	2.6%
Abdominal pain	1.3%
<b>Digestive System</b>	
Diarrhea	2.4%
Nausea	2.3%
<b>Musculoskeletal System</b>	
Myalgia	2.0%
Arm pain	1.3%
Back pain	1.1%
Stiffness	1.0%
<b>Nervous System/Psychiatric</b>	
Headache	16.1%
<b>Respiratory System</b>	
Upper respiratory infection	2.8%
Pharyngitis	2.7%
Nasal congestion	1.1%
<b>Urogenital System</b>	
Menstruation disorder	1.1%

Local and/or systemic hypersensitivity reactions occurred in  $< 1\%$  of children, adolescents, or adults in clinical trials and included the following regardless of causality: pruritus, urticaria and rash.

As with any vaccine, there is the possibility that use of VAQTA<sup>®</sup> in very large populations might reveal adverse experiences not observed in clinical trials.

### **Post-Market Adverse Drug Reactions**

#### **Post-marketing Safety Study**

In a post-marketing safety study, a total of 42,110 individuals  $\geq 2$  years of age received 1 or 2 doses of VAQTA<sup>®</sup>. There was no serious, vaccine-related, adverse event identified. There was no nonserious, vaccine-related, adverse event resulting in outpatient visits, with the exception of diarrhea/gastroenteritis in adults at a rate of 0.5%.

### **Marketed Experience**

The following additional adverse reactions have been reported with use of the marketed vaccine.

### **Nervous System**

Very rarely, Guillain-Barré syndrome, cerebellar ataxia, encephalitis.

### **Hemic and Lymphatic system**

Very rarely, thrombocytopenia.

## **DRUG INTERACTIONS**

### **Use With Other Vaccines**

VAQTA<sup>®</sup> may be given concomitantly with measles, mumps, rubella, varicella, pneumococcal 7-valent conjugate, and oral or inactivated polio vaccines.

### **Adults – 18 years of Age and Older**

VAQTA<sup>®</sup> may be given concomitantly with yellow fever and typhoid vaccines.

Data on concomitant use with other vaccines are limited (see DOSAGE AND ADMINISTRATION, Use With Other Vaccines).

Separate injection sites and syringes should be used for concomitant administration of injectable vaccines.

**Vaccines administered simultaneously should be given using separate syringes at separate sites (unless otherwise specified by the manufacturer)**, consideration being given to the precautions that apply to each individual vaccine. Concomitant administration of other vaccines at other injection sites is unlikely to interfere with the immune response to hepatitis A vaccine.<sup>11</sup>

The Advisory Committee on Immunization Practices has stated that limited data from studies conducted among adults indicate that simultaneous administration of hepatitis A vaccine with diphtheria, poliovirus (oral and inactivated), tetanus, oral typhoid, cholera, Japanese encephalitis, rabies, or yellow fever vaccine does not decrease the immune response to either vaccine or increase the frequency of reported adverse events. Studies indicate that hepatitis B vaccine can be administered with VAQTA<sup>®</sup> without affecting immunogenicity or increasing the frequency of adverse events.<sup>12</sup>

### **Use With Immune Globulin**

For individuals requiring either post exposure prophylaxis or combined immediate and longer-term protection (e.g., travelers departing on short notice to endemic areas), VAQTA<sup>®</sup> may be administered concomitantly with immune globulin (IG) using separate sites and syringes.

## **DOSAGE AND ADMINISTRATION**

### **Dosing Considerations**

**FOR INTRAMUSCULAR USE ONLY.** For adults, adolescents, and children older than 2 years of age, the deltoid muscle is the preferred site for intramuscular injection. For children 12 through 23 months of age, the anterolateral area of the thigh is the preferred site for intramuscular injection.

**Do not inject intravascularly, intradermally, or subcutaneously.**

### **Recommended Dose and Dosage Adjustment**

The vaccination series consists of one primary dose and one booster dose given according to the following schedule:

#### **Children/Adolescents – 12 Months Through 17 years of Age**

Individuals 12 months through 17 years of age should receive a single 0.5 mL (~25 U) dose of vaccine at an elected date and a booster dose of 0.5 mL (~25 U) 6 to 18 months later.

#### **Adults**

Adults 18 years of age and older should receive a single 1.0 mL (~50 U) dose of vaccine at an elected date and a booster dose of 1.0 mL (~50 U) 6 months later.

#### **Interchangeability of the Booster Dose**

A booster dose of VAQTA<sup>®</sup> may be given at 6 to 12 months following the initial dose of other inactivated hepatitis A vaccines.

#### **Missed dose**

If a dose is missed, the physician will decide when to give it.

#### **Administration**

##### **Use With Other Vaccines**

Separate injection sites and syringes should be used for concomitant administration of injectable vaccines (see DRUG INTERACTIONS, Use with Other Vaccines and CLINICAL TRIALS, Use With Other Vaccines).

##### **Known or Presumed Exposure to Hepatitis A Virus, Travel to Endemic Areas, and Use With Immune Globulin**

VAQTA<sup>®</sup> may be administered concomitantly with IG using separate sites and syringes. The vaccination regimen for VAQTA<sup>®</sup> should be followed as stated above. Consult the manufacturers' Product Monograph for the appropriate dosage of IG. A booster dose of VAQTA<sup>®</sup> should be administered at the appropriate time as outlined above (see CLINICAL TRIALS and DRUG INTERACTIONS).

The vaccine should be used as supplied; no reconstitution is necessary.

Shake well before withdrawal and use. Thorough agitation is necessary to maintain suspension of the vaccine.

Parenteral drug products should be inspected visually for extraneous particulate matter and discoloration prior to administration whenever solution and container permit. After thorough agitation, VAQTA<sup>®</sup> is a slightly opaque, white suspension.

It is important to use a separate, sterile syringe and needle for each individual to prevent transmission of infectious agents from one person to another.

## **OVERDOSAGE**

There are no data with regard to overdose.

For management of a suspected overdose, contact your regional Poison Control Centre.
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## **ACTION AND CLINICAL PHARMACOLOGY**

### **Mechanism of Action**

VAQTA<sup>®</sup> is an inactivated whole virus vaccine which has been shown to induce antibody to hepatitis A virus protein.

### **Disease Epidemiology**

Hepatitis A virus is one of several hepatitis viruses that cause a systemic infection with pathology in the liver. The incubation period ranges from approximately 20 to 50 days. While the course of the disease is generally benign and does not result in chronic hepatitis, infection with hepatitis A virus remains an important cause of morbidity and occasional fulminant hepatitis and death.

Hepatitis A is transmitted most often by the fecal-oral route, with infection occurring within private households, day-care centers, neonatal intensive care units, and chronic-care hospitals. Common-source outbreaks due to contaminated food and water supplies have occurred following consumption of certain foods such as raw shellfish, and uncooked foods prepared by an infected food-handler or otherwise contaminated prior to ingestion (salads, sandwiches, frozen raspberries, etc). Bloodborne transmission, while uncommon, is possible via blood transfusion, contaminated blood products, or from needles shared with an infected viremic individual. Sexual transmission has also been reported.<sup>1,2,3,4,5</sup>

The disease burden due to hepatitis A as of 2006 in the United States has been estimated to be approximately 3579 cases of clinical hepatitis each year, resulting in 549 hospitalizations, and 5 deaths due to fulminant hepatitis. Worldwide, it has been estimated that 1.4 million cases occur annually.<sup>2</sup> The clinical manifestations of hepatitis A infection often pass unrecognized in children < 6 years of age whereas overt hepatitis develops in the majority of infected older children and

adults. Symptoms and signs of hepatitis A infection are similar to those associated with other types of viral hepatitis and include anorexia, nausea, fever/chills, jaundice, dark urine, light-colored stools, abdominal pain, malaise, and fatigue.

## STORAGE AND STABILITY

Store vaccine refrigerated at 2°C to 8°C. **Do not freeze (below 0°C) since freezing destroys potency.**

VAQTA<sup>®</sup> can be administered provided total (cumulative multiple excursion) time out of refrigeration (at temperatures between 8°C and 25°C) does not exceed 72 hours. Cumulative multiple excursions between 0°C and 2°C are also permitted, as long as the total time between 0°C and 2°C does not exceed 72 hours. These are not, however, recommendations for storage.

## DOSAGE FORMS, COMPOSITION AND PACKAGING

### Dosage Forms

VAQTA<sup>®</sup> (hepatitis A vaccine, purified inactivated) is supplied as a sterile, slightly opaque, white suspension for injection in a single-dose vial.

The vaccine should be used as supplied; no reconstitution is necessary.

### Composition

VAQTA<sup>®</sup> is available as a pediatric/adolescent presentation (0.5 mL dose) and as an adult presentation (1.0 mL dose).

Each single dose approximately contains:

	<b>Pediatric/Adolescent Presentation (0.5 mL dose)</b>	<b>Adult Presentation (1.0 mL dose)</b>
<b>Active Ingredient</b>		
Hepatitis A virus protein	25 U	50 U
<b>Other Ingredients:</b>		
<i>Excipients:</i>		
Aluminum (as amorphous aluminum hydroxyphosphate sulfate)	0.225 mg	0.45 mg
Sodium borate	35 µg	70 µg
Sodium chloride	4.5 mg	9.0 mg
Water for injection	To volume	To volume

### *Manufacturing Process Residuals*

Within the limits of current assay variability, the 50 unit (1 mL) dose of VAQTA<sup>®</sup> contains less than 0.1 µg (less than 100 ng) of non-viral protein, less than  $4 \times 10^{-6}$  µg (less than 0.004 ng) of DNA, less than  $10^{-4}$  µg (less than 0.1 ng) of bovine albumin, less than 0.8 µg (less than 800 ng) of formaldehyde and a trace of neomycin [ $\leq 0.002$  µg ( $\leq 2$  ng)]. Other process chemical residuals are less than 10 parts per billion (ppb). VAQTA<sup>®</sup> meets the World Health Organization requirement for biological substances including those for final vaccine residual bovine serum albumin.

### **Packaging**

**Pediatric/Adolescent Presentation:** VAQTA<sup>®</sup> is supplied in 3 mL, single-dose Type 1 glass vials containing one 0.5 mL dose (25 U of hepatitis A virus protein). The vial stopper contains latex. VAQTA<sup>®</sup> is available in packages of 1 single-dose vial.

**Adult Presentation:** VAQTA<sup>®</sup> is supplied in 3 mL, single-dose Type 1 glass vials containing one 1.0 mL dose (50 U of hepatitis A virus protein). The vial stopper contains latex. VAQTA<sup>®</sup> is available in packages of 1 single-dose vial.

## PART II: SCIENTIFIC INFORMATION

### PHARMACEUTICAL INFORMATION

#### Drug Substance

Proper name: hepatitis A vaccine, purified inactivated

#### Product Characteristics

VAQTA<sup>®</sup> is a sterile suspension for intramuscular injection. It is a highly purified inactivated whole virus vaccine derived from hepatitis A virus grown in cell culture in human MRC-5 diploid fibroblasts. It contains inactivated virus of a strain which was originally derived by further serial passage of a proven attenuated strain. The virus is grown, harvested, purified by a combination of physical and high performance liquid chromatographic techniques, formalin inactivated, and then adsorbed onto amorphous aluminum hydroxyphosphate sulfate. One milliliter of the vaccine contains approximately 50 units (U) of hepatitis A antigen, equivalent to approximately 50 nanograms (ng) of virus protein per mL which is highly purified and is formulated without a preservative.

### CLINICAL TRIALS

#### Clinical Evaluation

Clinical trials conducted worldwide with several formulations of the vaccine in 3159 children 12 through 23 months of age and 9421 healthy individuals ranging from 2 to 85 years of age have demonstrated that VAQTA<sup>®</sup> (hepatitis A vaccine, purified inactivated) is highly immunogenic and generally well tolerated.

Protection from hepatitis A disease has been shown to be related to the presence of antibody; an anamnestic antibody response occurs in healthy individuals with a history of infection who are subsequently re-exposed to hepatitis A virus.<sup>5</sup> Protection after vaccination with VAQTA<sup>®</sup> was associated with the onset of seroconversion ( $\geq 10$  mIU/mL of hepatitis A antibody) and with an anamnestic antibody response following booster vaccination with VAQTA<sup>®</sup>.

In a post-marketing safety study, conducted at a large health maintenance organization in the United States, a total of 42,110 individuals  $\geq 2$  years of age received 1 or 2 doses of VAQTA<sup>®</sup>. Safety was monitored by reviewing medical records that tracked emergency room and outpatient visits, hospitalizations and deaths. There was no serious, vaccine-related, adverse event identified among the 42,110 individuals in this study. There was no nonserious, vaccine-related, adverse event resulting in outpatient visits, with the exception of diarrhea/gastroenteritis in adults at a rate of 0.5%. There was no vaccine-related, adverse event identified that had not been reported in earlier clinical trials with VAQTA<sup>®</sup>.

## Immunogenicity

In a clinical study, 96% of 471 children ~12 months of age seroconverted with a geometric mean titer of 48 mIU/mL within 6 weeks after the primary ~25 U intramuscular dose of VAQTA<sup>®</sup>. After each dose of VAQTA<sup>®</sup>, the hepatitis A antibody titers were comparable between children who were initially seropositive to hepatitis A and children who were initially seronegative to hepatitis A. These data suggest that maternal antibody to hepatitis A in children ~12 months of age does not affect the immune response to VAQTA<sup>®</sup>.

In another study of children 12 through 23 months of age, who received two ~25 U intramuscular doses of VAQTA<sup>®</sup> 6 months apart with or without other vaccines, 100% (n=182; 95% CI: 98.0%, 100%) were seropositive within 4 weeks after the second dose of VAQTA<sup>®</sup> given with other vaccines for both doses, and 99.4% (n=159, 95% CI: 96.5%, 100%) were seropositive within 4 weeks after 2 doses of VAQTA<sup>®</sup> only.

In combined clinical studies, 97% of 1214 children and adolescents 2 to 17 years of age seroconverted within 4 weeks after a single ~25 U intramuscular dose of VAQTA<sup>®</sup>. Similarly, 95% of 1428 adults ≥ 18 years of age seroconverted within 4 weeks after a single ~50 U intramuscular dose of VAQTA<sup>®</sup>. Immune memory was later demonstrated by an anamnestic antibody response in individuals who received a booster dose (see Persistence).

While a study evaluating VAQTA<sup>®</sup> alone in a post-exposure setting has not been conducted, the concurrent use of VAQTA<sup>®</sup> (~50 U) and immune globulin (IG, 0.06 mL/kg) was evaluated in a clinical study involving healthy adults 18 to 39 years of age. Table 5 provides seroconversion rates at 4 and 24 weeks after the first dose in each treatment group and at one month after a booster dose of VAQTA<sup>®</sup> (administered at 24 weeks).

**Table 5**  
**Seroconversion Rates After Vaccination With VAQTA<sup>®</sup> Plus IG, VAQTA<sup>®</sup> Alone, and IG Alone**

	VAQTA <sup>®</sup> plus IG	VAQTA <sup>®</sup>	IG
Weeks	Seroconversion Rate		
4	100% (n=129)	96% (n=135)	87% (n=30)
24	92% (n=125)	†97% (n=132)	0% (n=28)
28	100% (n=114)	100% (n=128)	N/A

† Seroconversion rate in the vaccine alone group significantly higher than that in the vaccine plus IG group (p=0.05).  
N/A=Not Applicable.

A very high degree of protection has been demonstrated after a single dose of VAQTA<sup>®</sup> in children and adolescents.<sup>7</sup> The protective efficacy, immunogenicity, and safety of VAQTA<sup>®</sup> were evaluated in a randomized, double-blind, placebo-controlled study involving 1037 susceptible healthy children and adolescents 2 to 16 years of age in a U.S. community with recurrent outbreaks of hepatitis A (The Monroe Efficacy Study). Each child received a single intramuscular dose of VAQTA<sup>®</sup> (~25 U) or placebo. Among those individuals who were initially seronegative (measured by a modification of the HAVAB\* radioimmunoassay [RIA]<sup>6</sup>), seroconversion was achieved in > 99% of vaccine recipients within 4 weeks after vaccination. The onset of seroconversion following a single dose of VAQTA<sup>®</sup> was shown to parallel the onset of protection against clinical hepatitis A disease.

Because of the long incubation period of the disease (approximately 20 to 50 days or longer in children), analysis of protective efficacy was based on cases of hepatitis A occurring  $\geq 50$  days after vaccination in order to exclude any children incubating the infection before vaccination. In subjects who were initially seronegative, the protective efficacy of a single dose of VAQTA<sup>®</sup> was observed to be 100% with 21 cases of clinical hepatitis A occurring in the placebo group and none in the vaccine group ( $p < 0.001$ ). No cases of clinical hepatitis A disease occurred in the vaccine group after day 16. In addition, 28 cases of clinical hepatitis A occurred in the placebo group while none occurred in the vaccine group  $\geq 30$  days after vaccination. Following demonstration of protection with a single dose and termination of the study, a booster dose was administered to most vaccinees 6, 12, or 18 months after the primary dose. The effectiveness of VAQTA<sup>®</sup> for use in community outbreak control has been demonstrated by the fact that, to date, no cases of hepatitis A disease  $\geq 19$  days after vaccination have occurred in those vaccinees from The Monroe Efficacy Study monitored for up to 9 years. In contrast, three nearby sister communities to Monroe have continued to experience outbreaks.<sup>7-9</sup>

### **Persistence**

The total duration of the protective effect of VAQTA<sup>®</sup> in healthy vaccinees is unknown at present. However, seropositivity was shown to persist up to 18 months after a single  $\sim 25$  U dose in most children and adolescents who participated in The Monroe Efficacy Study. In adults, seropositivity has been shown to persist up to 6 months after a single  $\sim 50$  U dose.

Persistence of immunologic memory was demonstrated with an anamnestic antibody response to a booster dose of  $\sim 25$  U given 6 to 18 months after the primary dose in children and adolescents, and to a booster dose of  $\sim 50$  U given 6 months after the primary dose to adults.

In studies of healthy children ( $\geq 2$  years of age) and adolescents who received two doses ( $\sim 25$  U) of VAQTA<sup>®</sup> at 0 and 6 to 18 months, detectable levels of anti-HAV antibodies ( $\geq 10$  mIU/mL) were present in 100% of subjects available for testing for at least 10 years postvaccination. In subjects who received VAQTA<sup>®</sup> at 0 and 6 months, the GMT was 819 mIU/mL ( $n=175$ ) at 2.5 to 3.5 years and 505 mIU/mL ( $n=174$ ) at 5 to 6 years, and 574 mIU/mL ( $n=114$ ) at 10 years postvaccination. In subjects who received VAQTA<sup>®</sup> at 0 and 12 months, the GMT was 2224 mIU/mL ( $n=49$ ) at 2.5 to 3.5 years, 1191 mIU/mL ( $n=47$ ) at 5 to 6 years, and 1005 mIU/mL ( $n=36$ ) at 10 years postvaccination. In subjects who received VAQTA<sup>®</sup> at 0 and 18 months, the GMT was 2501 mIU/mL ( $n=53$ ) at 2.5 to 3.5 years, 1614 mIU/mL ( $n=56$ ) at 5 to 6 years, and 1507 mIU/mL ( $n=41$ ) at 10 years postvaccination. No data are currently available on the persistence of hepatitis A antibody when both doses are administered in children 12 through 23 months of age.

In studies of healthy adults who received two doses ( $\sim 50$  U) of VAQTA<sup>®</sup> at 0 and 6 months, the hepatitis A antibody response has been shown to persist at least 6 years. Detectable levels of anti-HAV antibodies ( $\geq 10$  mIU/mL) were present in 100% (378/378) of subjects with a GMT of 1734 mIU/mL at 1 year, 99.2% (252/254) of subjects with a GMT of 687 mIU/mL at 2 to 3 years, 99.1% (219/221) of subjects with a GMT of 605 mIU/mL at 4 years, and 99.4% (170/171) of subjects with a GMT of 684 mIU/mL at 6 years postvaccination.

Data available from long term studies show persistence of antibodies up to 10 years in subjects who received 2 doses of VAQTA<sup>®</sup>. Although the total duration of the protective effect of VAQTA<sup>®</sup> in healthy, immunocompetent subjects is unknown, mathematical modelling using persistence data from subjects up to 41 years of age projects that at least 99% of subjects should remain seropositive ( $\geq 10$  mIU anti-HAV/mL) for 25 years or possibly longer.

### Interchangeability of the Booster Dose

A clinical study in 537 healthy adults, 18 to 83 years of age, evaluated the immune response to a booster dose of VAQTA<sup>®</sup> and Havrix\* (hepatitis A vaccine, inactivated) given at 6 or 12 months following an initial dose of Havrix\*. When VAQTA<sup>®</sup> was given as a booster dose following Havrix\*, the vaccine produced an adequate immune response (see Table 6) and was generally well tolerated (see DOSAGE AND ADMINISTRATION, Interchangeability of the Booster Dose).

**Table 6**  
**VAQTA<sup>®</sup> Versus Havrix\* Seropositivity Rate, Booster Response Rate<sup>†</sup> and Geometric Mean Titer at 4 Weeks Postbooster**

First Dose	Booster Dose	Seropositivity Rate	Booster Response Rate <sup>†</sup>	Geometric Mean Titer
Havrix* 1440 EL.U.	VAQTA <sup>®</sup> 50 U	99.7% (n=313)	86.1% (n=310)	3272 (n=313)
Havrix* 1440 EL.U.	Havrix* 1440 EL.U.	99.3% (n=151)	80.1% (n=151)	2423 (n=151)

<sup>†</sup> Booster Response Rate is defined as greater than or equal to a tenfold rise from prebooster to postbooster titer and postbooster titer  $\geq 100$  mIU/mL.

### Use With Other Vaccines

A concomitant use study was conducted among 617 healthy children who were randomized to receive VAQTA<sup>®</sup> (~25 U) with or without M-M-R<sup>®</sup> II (measles, mumps and rubella virus vaccine, live, attenuated, Merck Std.) and VARIVAX<sup>®</sup> (varicella virus vaccine, live, attenuated [Oka/Merck]) at ~12 months of age, and VAQTA<sup>®</sup> (~25 U) with or without DTaP (Diphtheria, Tetanus, and acellular Pertussis) vaccine (and an optional dose of polio vaccine) at ~18 months of age. In this study, the concomitant administration of VAQTA<sup>®</sup> with other vaccines at separate injection sites was generally well tolerated. The safety profile of VAQTA<sup>®</sup> administered alone at ~12 months and ~18 months of age was comparable to the safety profile of VAQTA<sup>®</sup> administered alone to children 2 to 16 years of age. The safety profile of the concomitant administration of VAQTA<sup>®</sup> with other vaccines at ~12 months and ~18 months of age was comparable to the safety profile of VAQTA<sup>®</sup> administered alone at ~12 months and ~18 months of age.

The hepatitis A response rates after each dose of VAQTA<sup>®</sup> when VAQTA<sup>®</sup> was given alone or concomitantly with M-M-R<sup>®</sup> II and VARIVAX<sup>®</sup> or DTaP and an optional dose of polio vaccine were similar. The hepatitis A response rates also were similar to predefined historical rates seen in 2- to 3-year-old children administered VAQTA<sup>®</sup> alone. When VAQTA<sup>®</sup> was administered concomitantly with M-M-R<sup>®</sup> II and VARIVAX<sup>®</sup>, the measles, mumps, and rubella response rates were similar to the historical rates for M-M-R<sup>®</sup> II. VAQTA<sup>®</sup> may be given concomitantly at

separate injection sites with M-M-R<sup>®</sup> II. Data suggest that VAQTA<sup>®</sup> may be administered concomitantly with oral or inactivated polio vaccines. Immunogenicity data are insufficient to support concomitant administration of VAQTA<sup>®</sup> with DTaP. The immune responses to polio vaccine coadministered with VAQTA<sup>®</sup> are not available (see DOSAGE AND ADMINISTRATION, Use With Other Vaccines).

In a clinical trial involving 653 healthy children 12 to 15 months of age, 330 were randomized to receive VAQTA<sup>®</sup> (~25 U), ProQuad<sup>®</sup> [Measles, Mumps, Rubella and Varicella (Oka/Merck) Virus Vaccine Live], and Prevnar<sup>\*</sup> (Pneumococcal 7-valent Conjugate Vaccine) concomitantly, and 323 were randomized to receive ProQuad<sup>®</sup> and Prevnar<sup>\*</sup> concomitantly followed by VAQTA<sup>®</sup> 6 weeks later. The seropositivity rate after 2 doses of VAQTA<sup>®</sup> given concomitantly with ProQuad<sup>®</sup> and Prevnar<sup>\*</sup> was 100% [95% CI: 98.0%, 100.0%] and for VAQTA<sup>®</sup> given without ProQuad<sup>®</sup> and Prevnar<sup>\*</sup> was 99.4% [95% CI: 96.5%, 100.0%]. Hepatitis A response was similar among the two groups who received VAQTA<sup>®</sup> with or without ProQuad<sup>®</sup> and Prevnar<sup>\*</sup>. Seroconversion rates and antibody titers for varicella and *S. pneumoniae* types 4, 6B, 9V, 14, 18C, 19F, and 23F were similar between the groups at 6 weeks post-vaccination. No clinically significant differences in adverse events were reported among treatment groups.

In a clinical trial involving 1800 healthy children 12 to 23 months of age, 1453 received two ~25 U intramuscular doses of VAQTA<sup>®</sup>, and 347 were randomized to receive two ~25 U intramuscular doses of VAQTA<sup>®</sup> concomitantly with 2 doses of ProQuad<sup>®</sup> at least 6 months apart. Rates of solicited injection-site reactions (pain/tenderness, erythema, swelling) were higher than prior experience with VAQTA<sup>®</sup> in 12- to 23-month-old children. Rates of systemic adverse experiences and fever ( $\geq 38.9^{\circ}\text{C}$ , oral) were consistent with prior experience following 2 doses of VAQTA<sup>®</sup>.

A controlled clinical study was conducted with 240 healthy adults, 18 to 54 years of age, who were randomized to receive either VAQTA<sup>®</sup>, yellow fever and typhoid vaccines concomitantly at separate injection sites; yellow fever and typhoid vaccines concomitantly at separate injection sites; or VAQTA<sup>®</sup> alone. The seropositivity rate for hepatitis A when VAQTA<sup>®</sup>, yellow fever and typhoid vaccines were administered concomitantly was generally similar to when VAQTA<sup>®</sup> was given alone. The antibody response rates for yellow fever and typhoid were adequate when yellow fever and typhoid vaccines were administered concomitantly with and without VAQTA<sup>®</sup>. The concomitant administration of these three vaccines at separate injection sites was generally well tolerated (see DOSAGE AND ADMINISTRATION, Use With Other Vaccines).

## REFERENCES

1. Desenclos JCA, MacLafferty L. Community Wide Outbreak of Hepatitis A Linked to Children in Day Care Centres and with Increased Transmission in Young Adult Men in Florida 1988-9. *J Epidemiol Community Health* 1993;47:269-73.
2. Hadler SC: Global Impact of Hepatitis A Virus Infection Changing Patterns. In: Hollinger FB, Lemon SM, Margolis H, eds. *Viral Hepatitis and Liver Disease: Proceedings of the 1990 International Symposium on Viral Hepatitis and Liver Disease: Contemporary Issues and Future Prospects*. Baltimore, Williams & Wilkins, 1991;14-20.
3. Hepatitis A Among Homosexual Men - United States, Canada, and Australia. *JAMA* 1992;267(12):1587-8.
4. Yao G: Clinical Spectrum and Natural History of Viral Hepatitis A in a 1988 Shanghai Epidemic. In: Hollinger FB, Lemon SM, Margolis H, eds. *Viral Hepatitis and Liver Disease: Proceedings of the 1990 International Symposium on Viral Hepatitis and Liver Disease: Contemporary Issues and Future Prospects*. Baltimore, Williams & Wilkins, 1991;76-8.
5. Villarejos VM, Jaime Serra C, Anderson-Visona K, Mosley JW. Hepatitis A Virus Infection in Households. *Am J Epidemiol* 1982;115(4):577-86.
6. Miller WJ, Clark W, Hurni W, Kuter B, Schofield T, Nalin D. Sensitive Assays for Hepatitis A Antibodies. *J Med Virol* 1993;41:201-4.
7. Werzberger A, Mensch B, Kuter B, Brown L, Lewis J, Sitrin R, Miller W, Shouval D, Wiens B, Calandra G, Ryan J, Provost P, Nalin D. A Controlled Trial of a Formalin-Inactivated Hepatitis A Vaccine in Healthy Children. *N Engl J Med* 1992;327(7): 453-7.
8. Werzberger A, Kuter B, Shouval D, Mensch B, Brown L, Wiens B, Lewis J, Miller W, Sitrin R, Provost P, Nalin D. Anatomy of a Trial: A Historical View of the Monroe Inactivated Hepatitis A Protective Efficacy Trial. *J Hepatol* 1993;18 (Suppl. 2):S46-S50.
9. Werzberger A, Mensch B, Nalin DR, Kuter BJ. Effectiveness of Hepatitis A Vaccine in a Former Frequently Affected Community: 9 years' Followup after the Monroe Field Trial of VAQTA<sup>®</sup>. *Vaccine* 2002;20:1699-1701.
10. Centers for Disease Control. Recommendations for the Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease. *MMWR* 1998;47:29.
11. National Advisory Committee on Immunization. Hepatitis A Vaccine, in: *Canadian Immunization Guide*, 7th Edition, 2006:179-188.
12. Advisory Committee on Immunization Practices. Prevention of Hepatitis A Through Active or Passive Immunization. *MMWR* 1996;45:19.

**PART III: CONSUMER INFORMATION****VAQTA<sup>®</sup>**

hepatitis A vaccine, purified inactivated

This leaflet is part III of a three-part "Product Monograph" published when VAQTA<sup>®</sup> was approved for sale in Canada and is designed specifically for Consumers. This leaflet is a summary and will not tell you everything about VAQTA<sup>®</sup>. Contact your doctor or pharmacist if you have any questions about the vaccine.

**ABOUT THIS VACCINE**What the vaccine is used for:

VAQTA<sup>®</sup> helps protect you or your child against hepatitis A disease, an infection of the liver caused by the hepatitis A virus. The vaccine can be administered to children 12 months of age and older, adolescents, and adults.

What it does:

VAQTA<sup>®</sup> is a highly purified inactivated whole virus injectable vaccine that helps prevent infection of the liver caused by hepatitis A virus.

When it should not be used:

If you are allergic to any component of the vaccine.

What the medicinal ingredient is:

Each 0.5 mL dose of the Pediatric/Adolescent formulation contains approximately 25 Units of hepatitis A virus antigen as the active ingredient. Each 1 mL dose of the Adult formulation contains approximately 50 Units of hepatitis A virus antigen as the active ingredient.

What the important nonmedicinal ingredients are:

Aluminum provided as amorphous aluminum hydroxyphosphate sulfate, sodium borate and sodium chloride. The vaccine may contain trace amounts of neomycin.

The vial stopper contains latex.

What dosage forms it comes in:

**Pediatric/Adolescent Presentation** – 0.5 mL single-use vials containing 25 U of hepatitis A virus antigen on an amorphous aluminum hydroxyphosphate sulfate adjuvant packaged in ones.

**Adult Presentation** – 1.0 mL single-use vials containing 50 U of hepatitis A virus protein on an amorphous aluminum hydroxyphosphate sulfate adjuvant, packaged in ones.

**WARNINGS AND PRECAUTIONS**

BEFORE you use VAQTA<sup>®</sup> talk to your doctor or pharmacist if:

- You are allergic to any component of the vaccine.
- You are allergic to latex.
- You are pregnant or intend to become pregnant.
- You are breast-feeding.

**Use in children**

VAQTA<sup>®</sup> can be used in children and adolescents 12 months through 17 years of age.

**Use in pregnancy**

It is not known whether the vaccine is harmful to an unborn baby when administered to a pregnant woman. If you are pregnant, you should be vaccinated with VAQTA<sup>®</sup> only if your doctor decides it is clearly needed.

**Use in breast-feeding**

Tell your doctor if you are breast-feeding. If you are breast-feeding, you should be vaccinated with VAQTA<sup>®</sup> only if your doctor decides it is clearly needed.

**Can I drive or operate machinery after vaccination with VAQTA<sup>®</sup>?**

There is no specific information on this; however, weakness/tiredness and headache have been reported following vaccination with VAQTA<sup>®</sup>.

**Other considerations**

Because hepatitis A infection can go undetected for a long period of time, it is possible that an individual may already be infected at the time the vaccine is given. The vaccine may not prevent hepatitis A in these individuals.

**INTERACTIONS WITH THIS VACCINE**

VAQTA<sup>®</sup> may be given concomitantly with yellow fever, typhoid, measles, mumps, rubella, varicella, pneumococcal 7-valent conjugate and oral or inactivated polio vaccines; however, data on concomitant use with other vaccines are limited. VAQTA<sup>®</sup> may also be given at the same time as immune globulin. Separate injection sites and syringes should be used for concomitant administration of injectable vaccines and immune globulin.

**PROPER USE OF THIS VACCINE**Usual dose:

VAQTA<sup>®</sup> is given by injection. Two doses, each given on two different dates, are needed to complete the series. The schedule for children/adolescents and for adults is as follows:

Children and adolescents 12 months to 17 years of age should receive a 0.5 mL single dose (~25 Units) at any time and a 0.5 mL booster dose (~25 Units) 6 to 18 months later.

Adults 18 years of age and older should receive a 1.0 mL single dose (~50 Units) at any time and a 1.0 mL booster dose (~50 Units) 6 months later.

A booster dose of VAQTA<sup>®</sup> may be given at 6 to 12 months following the initial dose of other inactivated hepatitis A vaccines.

Overdose:

In case of overdose, contact a health care practitioner, hospital emergency department or regional Poison Control Centre immediately, even if there are no symptoms.

Missed Dose:

If you miss a dose, your doctor will decide when to give the missed dose.

**SIDE EFFECTS AND WHAT TO DO ABOUT THEM**

Any vaccine may have unintended or undesirable effects, so-called side effects. VAQTA<sup>®</sup> has been shown to be generally well tolerated. Side effects include injection-site reactions such as soreness, redness, and swelling, and generalized reactions including weakness/tiredness, fever, irritability, upper respiratory infection, nausea, abdominal pain, diarrhea, vomiting, sore throat, cold, headache and muscle pain.

Your doctor has a more complete list of side effects.

Tell your doctor promptly about these or any other unusual symptoms. If the condition persists or worsens, seek medical attention.

In addition, tell your doctor if you or your child experienced any symptoms that suggest an allergic reaction (such as itching, hives, or rash) after any dose in the vaccination series.

*This is not a complete list of side effects. For any unexpected effects, contact your doctor or pharmacist.*

**HOW TO STORE IT**

Store vaccine refrigerated at 2°C to 8°C (36°F - 46°F).

**Do not freeze since freezing destroys potency.**

**REPORTING SUSPECTED SIDE EFFECTS**

To monitor vaccine safety, the Public Health Agency of Canada collects information on serious and unexpected adverse events following vaccination. If you suspect you have had a serious or unexpected event following receipt of a vaccine you may notify the Public Health Agency of Canada:

By toll-free telephone: 1-866-844-0018  
 By toll-free fax: 1-866-844-5931  
 By e-mail: CAEFI@phac-aspc.gc.ca

By regular mail:

The Public Health Agency of Canada  
 Vaccine Safety Section  
 130 Colonnade Road  
 Ottawa, ON K1A 0K9  
 A/L 6502A

or at Merck Canada Inc. by one of the following 2 ways:

- Call toll-free at 1-800-567-2594
- Complete a Canada Vigilance Reporting Form and:
  - Fax toll-free to 1-866-496-9092, or
  - Mail to: Merck Canada Inc.  
 Pharmacovigilance  
 P.O. Box 1005  
 Pointe-Claire - Dorval, QC H9R 4P8

NOTE: Should you require information related to the management of the side effects, contact your health professional. The Public Health Agency of Canada or Merck do not provide medical advice.

**MORE INFORMATION**

This document plus the full product monograph, prepared for health professionals can be found at:  
<http://www.merck.ca>  
 or by contacting the sponsor, Merck Canada Inc.,  
 at: 1-800-567-2594

This leaflet was prepared by Merck Canada Inc.

Last revised: April 29, 2011

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