HIGHLIGHTS OF PRESCRIBING INFORMATION
These highlights do not include all the information needed to use KOÅTE® safely and effectively. See full prescribing information for KOÅTE.

KOÅTE®, Antihemophilic Factor (Human)
Lyophilized Powder for Solution for Intravenous Injection
Initial U.S. Approval: 1974

RECENT MAJOR CHANGES
Dosage and Administration (2.1, 2.2) 12/2015
Contraindications (4) 12/2015
Warnings and Precautions, Neutralizing Antibodies (5.2) 12/2015

INDICATIONS AND USAGE
KOÅTE is a human plasma-derived antihemophilic factor indicated for the control and prevention of bleeding episodes or in order to perform emergency and elective surgery in patients with hemophilia A (hereditary Factor VIII deficiency). (1)

Limitation of Use
KOÅTE is not indicated for the treatment of von Willebrand disease.

DOSAGE AND ADMINISTRATION
For intravenous use after reconstitution only.
• Each vial of KOÅTE contains the labeled amount of Factor VIII in international units (IU). (2)
• Required Dose (IU) = Body Weight (kg) x Desired Factor VIII Rise (IU/dL or % of normal ) x 0.5
• Frequency of KOÅTE administration is determined by the type of bleeding episode and the recommendation of the treating physician.

DOSAGE FORMS AND STRENGTHS
KOÅTE is available as a lyophilized powder for reconstitution in single-use vials of 250, 500, and 1,000 international units of Factor VIII activity. (3)

CONTRAINDICATIONS
Do not use in patients who have known hypersensitivity reactions, including anaphylaxis, to KOÅTE or its components. (4)

WARNINGS AND PRECAUTIONS
• Hypersensitivity reactions, including anaphylaxis, are possible. Should symptoms occur, discontinue KOÅTE and administer appropriate treatment. (5.1)
• Development of neutralizing antibodies (inhibitors) may occur. If expected plasma Factor VIII activity levels are not attained, or if bleeding is not controlled with an appropriate dose, perform an assay that measures Factor VIII inhibitor concentration. (5.2)
• Monitor for intravascular hemolysis and decreasing hematocrit values in patients with A, B or AB blood groups who are receiving large or frequent doses. (5.3)
• KOÅTE is made from human blood and therefore carries a risk of transmitting infectious agents, e.g., viruses, the variant Creutzfeldt-Jakob disease (vCJD) agent and, theoretically, the Creutzfeldt-Jakob disease (CJD) agent. (5.4)

ADVERSE REACTIONS
The most common adverse drug reactions (frequency ≥ 5% of subjects) observed in the clinical trial were nervousness, headache, abdominal pain, nausea, paresthesia and blurred vision. (6)

To report SUSPECTED ADVERSE REACTIONS, contact Grifols Therapeutics LLC at 1-800-520-2807 or FDA at 1-800-FDA-1088 or http://www.fda.gov/medwatch.

USE IN SPECIFIC POPULATIONS
Pediatric: clearance of Factor VIII (based on per kilogram body weight) is higher in children. Higher or more frequent dosing may be needed. (8.4)

See 17 for PATIENT COUNSELING INFORMATION. Revised: 6/2018

FULL PRESCRIBING INFORMATION: CONTENTS*
1 INDICATIONS AND USAGE
2 DOSAGE AND ADMINISTRATION
  2.1 Dose
  2.2 Preparation and Reconstitution
  2.3 Administration
3 DOSAGE FORMS AND STRENGTHS
4 CONTRAINDICATIONS
5 WARNINGS AND PRECAUTIONS
  5.1 Hypersensitivity Reactions
  5.2 Neutralizing Antibodies
  5.3 Intravascular Hemolysis
6 ADVERSE REACTIONS
  6.1 Clinical Trials Experience
  6.2 Postmarketing Experience
8 USE IN SPECIFIC POPULATIONS
  8.1 Pregnancy
  8.2 Lactation
  8.4 Pediatric Use
  8.5 Geriatric Use
11 DESCRIPTION
12 CLINICAL PHARMACOLOGY
  12.1 Mechanism of Action
12.2 Pharmacodynamics
  12.3 Pharmacokinetics
14 CLINICAL STUDIES
15 REFERENCES
16 HOW SUPPLIED/STORAGE AND HANDLING
17 PATIENT COUNSELING INFORMATION

* Sections or subsections omitted from the full prescribing information are not listed.
FULL PRESCRIBING INFORMATION

1  INDICATIONS AND USAGE
KOATE® is a human plasma-derived antihemophilic factor indicated for the control and prevention of bleeding episodes or in order to perform emergency and elective surgery in patients with hemophilia A (hereditary Factor VIII deficiency).

Limitation of Use
KOATE is not indicated for the treatment of von Willebrand disease.

2  DOSAGE AND ADMINISTRATION
For intravenous use after reconstitution only.

2.1 Dose
- Dose and duration of treatment depend on the severity of the Factor VIII deficiency, location and extent of bleeding, and the patient’s clinical condition.
- Each vial of KOATE is labeled with the actual Factor VIII potency in international units (IU). Calculation of the required dose of Factor VIII is based on the empirical finding that one IU of Factor VIII per kg body weight raises the plasma Factor VIII activity by approximately 2% of normal activity or 2 IU/dL.
- The required dose can be determined using the following formula:
  \[
  \text{Dose (IU)} = \text{Body Weight (kg)} \times \frac{\text{Desired Factor VIII Rise}}{100} \times 0.5
  \]
- Estimate the expected in vivo peak increase in Factor VIII level, expressed as IU/dL (or % normal), using the following formula:
  \[
  \text{Estimated Increment of Factor VIII} = \frac{\text{Total Dose (IU)}}{\text{Body Weight (kg)}} \times 2
  \]
- Patients may vary in their pharmacokinetic (e.g., half-life, in vivo recovery) and clinical responses. Base the dose and frequency on the individual clinical response.

Control and Prevention of Bleeding Episodes
A guide for dosing KOATE for the control and prevention of bleeding episodes (1,2) is provided in Table 1. Consideration should be given to maintaining a Factor VIII activity at or above the target range.

<table>
<thead>
<tr>
<th>Type of Bleeding</th>
<th>Factor VIII:C Level Required (% of normal)</th>
<th>Doses (IU/kg)</th>
<th>Frequency of Doses (hours)</th>
<th>Duration of Therapy (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large bruises</td>
<td>30</td>
<td>15</td>
<td>12 (twice daily)</td>
<td>Until hemorrhage stops and healing has been achieved (1–2 days).</td>
</tr>
<tr>
<td>Significant cuts or scrapes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncomplicated joint hemorrhage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>50</td>
<td>25</td>
<td>12 (twice daily)</td>
<td>Until healing has been achieved (2–7 days, on average).</td>
</tr>
<tr>
<td>Nose, mouth and gum bleeds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dental extractions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hematuria</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major</td>
<td>80-100</td>
<td>Initial: 40-50</td>
<td>Maintenance: 25</td>
<td>For at least 3–5 days.</td>
</tr>
<tr>
<td>Joint hemorrhage</td>
<td></td>
<td></td>
<td></td>
<td>Until healing has been achieved for up to 10 days.</td>
</tr>
<tr>
<td>Muscle hemorrhage</td>
<td></td>
<td></td>
<td></td>
<td>Intracranial hemorrhage may require prophylaxis therapy for up to 6 months.</td>
</tr>
<tr>
<td>Major trauma</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hematuria</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intracranial and intraperitoneal bleeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery</td>
<td>Prior to surgery: 80-100</td>
<td>40-50</td>
<td>Once</td>
<td>Prior to surgery</td>
</tr>
<tr>
<td>After surgery: 60-100</td>
<td></td>
<td>30-50</td>
<td>12 (twice daily)</td>
<td>For the next 7–10 days, or until healing has been achieved.</td>
</tr>
</tbody>
</table>
2.2 Preparation and Reconstitution

1. Use aseptic technique (clean and sanitized) and a flat work surface during the reconstitution procedure.
2. Bring the vials of KOATE and the diluent (Sterile Water for Injection) to room temperature before use.
3. Remove the shrink band from the KOATE vial. Do not use KOATE if the shrink band is absent or shows signs of tampering, and notify Grifols Therapeutics LLC immediately.
4. Remove the plastic cap from the KOATE vial and clean the top of the stopper with an alcohol swab. Allow the stopper to dry.
5. Repeat this step with the vial of sterile water.
6. Open the sterile Mix2Vial® package by peeling away the lid (Figure 1). Do not remove the device from the package.
7. Place the diluent vial upright on an even surface. Holding the diluent vial securely, push the blue end of the Mix2Vial straight down until the spike penetrates the stopper (Figure 2).
8. Remove the clear outer packaging from the Mix2Vial and discard it (Figure 3).
9. Place the KOATE vial upright on a flat surface, and invert the diluent vial with the Mix2Vial still attached.
10. While holding the KOATE vial securely on a flat surface, push the clear end of the Mix2Vial straight down until the spike penetrates the stopper (Figure 4). The diluent will automatically transfer into the KOATE vial by the vacuum contained within it.
   Note: If the Mix2Vial is connected at an angle, the vacuum may be released from the product vial and the diluent will not transfer into the product vial. If vacuum is lost, use a sterile syringe and needle to remove the sterile water from the diluent vial and inject it into the KOATE vial, directing the stream of fluid against the wall of the vial.
11. With the diluent and KOATE vials still attached to the Mix2Vial, agitate vigorously for 10 to 15 seconds, then gently swirl (Figure 5) until the powder is completely dissolved. Avoid excessive foaming. The reconstituted solution should be clear to opalescent. Do not use if particulate matter or discoloration is observed.
12. Remove the diluent vial and the blue end of the Mix2Vial (Figure 6) by holding each side of the vial adapter and twisting counterclockwise.
13. Draw air into an empty, sterile syringe. Connect the syringe to the clear end of the Mix2Vial by pressing and twisting clockwise, and push the air into the KOATE vial.
14. Immediately invert the system upside down and then draw the reconstituted KOATE into the syringe by pulling the plunger back slowly (Figure 7).
15. Detach the filled syringe from the Mix2Vial by turning counter-clockwise (Figure 8). Use KOATE within 3 hours after reconstitution. Do not refrigerate after reconstitution.

2.3 Administration

For intravenous administration only

- If the dose requires more than one vial of KOATE:
  o Reconstitute each vial using a new Mix2Vial.
  o Draw up all the solution into a single syringe.
- Visually inspect the final solution for particulate matter and discoloration prior to administration, whenever solution and container permit. Do not use if particulate matter or discoloration is observed.
- Attach the syringe to the connector end of an infusion set.
- Administer intravenously. The rate of administration should be determined by the patient’s comfort level, and no faster than 10 mL per minute.
3 DOSAGE FORMS AND STRENGTHS
KOÄTE® (Antihemophilic Factor [Human]) is available as a lyophilized powder for reconstitution in single-use vials of 250, 500 and 1,000 IU of Factor VIII activity. The actual Factor VIII potency is labeled on each KOÄTE vial.

4 CONTRAINDICATIONS
KOÄTE is contraindicated in patients who have had hypersensitivity reactions, including anaphylaxis, to KOÄTE or its components. [see Description (11)]

5 WARNINGS AND PRECAUTIONS
5.1 Hypersensitivity Reactions
Hypersensitivity reactions, including anaphylaxis, are possible. Early signs of hypersensitivity reactions, which can progress to anaphylaxis, may include angioedema, chest tightness, hypotension, rash, nausea, vomiting, paresthesia, restlessness, wheezing and dyspnea. If hypersensitivity symptoms occur, discontinue use of the product immediately and administer appropriate emergency treatment.

5.2 Neutralizing Antibodies
The formation of neutralizing antibodies (inhibitors) to Factor VIII may occur. Monitor all patients for the development of Factor VIII inhibitors by appropriate clinical observations and laboratory tests. If expected plasma Factor VIII activity levels are not attained, or if bleeding is not controlled with an appropriate dose, perform an assay that measures Factor VIII inhibitor concentration. [see Warnings and Precautions (5.5)]

5.3 Intravascular Hemolysis
KOÄTE contains blood group isoagglutinins which are not clinically significant when small doses are used to treat minor bleeding episodes. However, when large and/or frequent doses of KOÄTE are given to patients with blood groups A, B, or AB, acute hemolytic anemia may occur, resulting in increased bleeding tendency or hyperfibrinogenemia. Monitor these patients for signs of intravascular hemolysis and falling hematocrit. [see Warnings and Precautions (5.5)] Should this condition occur, leading to progressive hemolytic anemia, discontinue KOÄTE and consider administering serologically compatible Type O red blood cells and providing alternative therapy.

5.4 Transmissible Infectious Agents
Because KOÄTE is made from human blood, it may carry a risk of transmitting infectious agents, e.g., viruses, the variant Creutzfeldt-Jakob disease (vCJD) agent and, theoretically, the Creutzfeldt-Jakob disease (CJD) agent. There is also the possibility that unknown infectious agents may be present in the product. The risk that the product will transmit viruses has been reduced by screening plasma donors for prior exposure to certain viruses, by testing for the presence of certain current virus infections, and by inactivating and removing certain viruses during manufacture. Despite these measures, this product may still potentially transmit diseases. Report all infections suspected by a physician possibly to have been transmitted by this product to Grifols Therapeutics LLC at 1-800-520-2807.

5.5 Monitoring: Laboratory Tests
- Monitor plasma Factor VIII activity levels by performing a validated test (e.g., one-stage clotting assay) to confirm that adequate Factor VIII levels have been achieved and maintained. [see Dosage and Administration (2.1)]
- Monitor for the development of Factor VIII inhibitors. Perform a Bethesda inhibitor assay if expected Factor VIII plasma levels are not attained, or if bleeding is not controlled with the expected dose of KOÄTE. Use Bethesda Units (BU) to report inhibitor levels.
- Monitor for intravascular hemolysis and decreasing hematocrit values in patients with A, B or AB blood groups who are receiving large or frequent doses of KOÄTE.

6 ADVERSE REACTIONS
The most common adverse drug reactions (frequency ≥ 5% of subjects) observed in the clinical trial were nervousness, headache, abdominal pain, nausea, paresthesia and blurred vision.

6.1 Clinical Trials Experience
Because clinical studies are conducted under widely varying conditions, adverse reaction rates observed cannot be directly compared to rates in other clinical trials and may not reflect the rates observed in practice.

The safety assessment of KOÄTE is based on data from a 2-stage, safety, pharmacokinetic (PK) and efficacy clinical trial in which twenty subjects with severe hemophilia A (< 1% endogenous Factor VIII activity) were evaluable for safety. Nineteen subjects were enrolled in Stage I of the trial, including 15 Caucasian, 3 Hispanic, and 1 Black subjects. The mean age was 29 years (range: 13.9 – 46.4 years). Nineteen subjects, including the 18 subjects who completed Stage I, and one new subject were enrolled in Stage II. The mean age was 30 years (range: 13.9 – 46.4). The subjects received a total of 1053 infusions. Ten adverse reactions related to 7 infusions were reported in 4 subjects. These were: nervousness (2 subjects [10%]), headache (1 subject [5%]), abdominal pain (1 subject [5%]), nausea (1 subject [5%]), paresthesia (1 subject [5%]), and blurred vision (1 subject [5%]).
Immunogenicity
Subjects were monitored for neutralizing antibodies (inhibitors) to Factor VIII by the Bethesda assay at baseline and at 8, 17 and 26 weeks. No evidence of inhibitor formation was observed in the clinical trial.

The detection of antibody formation is highly dependent on the sensitivity and specificity of the assay. Additionally, the observed incidence of antibody (including neutralizing antibody) positivity in an assay may be influenced by several factors including assay methodology, sample handling, timing of sample collection, concomitant medications, and underlying disease. For these reasons, it may be misleading to compare the incidence of antibodies to KOATE in the study described above with the incidence of antibodies in other studies or to other products.

6.2 Postmarketing Experience
Because postmarketing reporting of adverse reactions is voluntary and from a population of uncertain size, it is not always possible to reliably estimate the frequency of these reactions or establish a causal relationship to product exposure.

- Blood and Lymphatic System Disorders: Factor VIII inhibition, hemolytic anemia
- Immune System Disorders: Hypersensitivity including anaphylaxis, rash, pruritus
- Injury, Poisoning and Procedural Complications: Post-procedural hemorrhage
- Nervous System Disorders: Generalized clonic-tonic seizure

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy
Risk Summary
There are no data with KOATE use in pregnant women to inform on drug-associated risk. Animal reproduction studies have not been conducted using KOATE. It is not known whether KOATE can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. KOATE should be given to a pregnant woman only if clearly needed. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2-4% and 15-20%, respectively.

8.2 Lactation
Risk Summary
There is no information regarding the presence of KOATE in human milk, the effects on the breastfed infant, or the effects on milk production. The developmental and health benefits of breastfeeding should be considered along with the mother’s clinical need for KOATE and any potential adverse effects on the breast-fed infant from KOATE or from the underlying maternal condition.

8.4 Pediatric Use
Safety and efficacy studies have been performed in 20 previously treated pediatric patients aged 2.5 to 16 years. Subjects received 208 infusions of KOATE for treatment or control of bleeding episodes, including perioperative management, and routine prophylaxis. Children have shorter half-life and lower recovery of Factor VIII than adults. Because clearance of Factor VIII (based on per kilogram body weight) is higher in children, higher or more frequent dosing may be needed.

8.5 Geriatric Use
Clinical studies of KOATE did not include any subjects aged 65 and over to determine whether they respond differently from younger subjects. Individualize dose selection for geriatric patients.

11 DESCRIPTION
KOATE, Antihemophilic Factor (Human), is a sterile, stable, dried concentrate of human antihemophilic factor in lyophilized powder form for reconstitution for intravenous injection. The product is supplied in single-use vials containing nominally 250, 500, or 1,000 international units (IU or units). Each vial of KOATE is labeled with the actual amount of Factor VIII expressed in IU. One IU is defined by the current World Health Organization International Standard for Factor VIII concentrate, which can be traced to the level of Factor VIII found in 1 mL of fresh pooled human plasma. The final product when reconstituted as directed contains not more than (NMT) 1500 μg/mL polyethylene glycol (PEG), NMT 0.05 M glycine, NMT 25 μg/mL polysorbate 80, NMT 5 μg/g tri-n-butyl phosphate (TNBP), NMT 3 mM calcium, NMT 1 μg/mL aluminum, NMT 0.06 M histidine, and NMT 10 mg/mL human albumin.

KOATE is purified from the cold insoluble fraction of pooled human plasma; the manufacturing process includes solvent/detergent (TNBP and polysorbate 80) treatment and heat treatment of the lyophilized final container. A gel permeation chromatography step serves the dual purpose of reducing the amount of TNBP and polysorbate 80 as well as increasing the purity of the Factor VIII in KOATE to 300 to 1,000 times over whole plasma. When reconstituted as directed, KOATE contains approximately 50 to 150 times as much Factor VIII as an equal volume of fresh plasma. The specific activity after addition of human albumin is in the range of 9 to 22 units/mg protein. KOATE also contains naturally occurring von Willebrand factor, which is co-purified as part of the manufacturing process.

The KOATE manufacturing process includes two dedicated steps with virus inactivation capacity. The solvent/detergent treatment step has the capacity to inactivate enveloped viruses (such as HIV, HCV, HBV, and WNV). Heat treatment at 80°C for 72 hours has the capacity to inactivate enveloped viruses (such as HIV and HCV) as well as nonenveloped viruses (such as HAV and B19V). The polyethylene glycol (PEG) precipitation/de depth filtration step has the capacity to remove both enveloped and nonenveloped viruses. The accumulated virus reduction factors for KOATE manufacturing process are presented in Table 2.
Table 2: Virus Clearance Capacity (Log_{10}) for the Antihemophilic Factor (Human) Manufacturing Process

<table>
<thead>
<tr>
<th>Enveloped Viruses</th>
<th>Non-enveloped Viruses</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV-1</td>
<td>BVDV</td>
</tr>
<tr>
<td>PRV</td>
<td>VSV</td>
</tr>
<tr>
<td>WNV</td>
<td>Reo3</td>
</tr>
<tr>
<td>HAV</td>
<td>PPV</td>
</tr>
<tr>
<td>Model for</td>
<td></td>
</tr>
<tr>
<td>HIV-1/2</td>
<td>HCV</td>
</tr>
<tr>
<td>Large enveloped DNA viruses (e.g., herpes virus)</td>
<td>Enveloped RNA viruses</td>
</tr>
<tr>
<td>Global Reduction Factor</td>
<td>≥ 12.0</td>
</tr>
</tbody>
</table>

* WNV inactivation was evaluated only for the solvent/detergent treatment step

Additionally, the KO\(\text{AT}\)E manufacturing process was investigated for its capacity to decrease the infectivity of an experimental agent of transmissible spongiform encephalopathy (TSE), considered a model for the variant Creutzfeldt-Jakob disease (vCJD) and Creutzfeldt-Jakob disease (CJD) agents. The manufacturing process has been shown to decrease TSE infectivity of that experimental model agent (a total of 5.1 log_{10} reduction), providing reasonable assurance that low levels of vCJD/CJD agent infectivity, if present in the starting material, would be removed.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action
KO\(\text{AT}\)E temporarily replaces the missing clotting Factor VIII that is needed for effective hemostasis.

12.2 Pharmacodynamics
Hemophilia A is a bleeding disorder characterized by a deficiency of functional coagulation Factor VIII, resulting in a prolonged plasma clotting time as measured by the activated partial thromboplastin time (aPTT) assay. Treatment with KO\(\text{AT}\)E normalizes the aPTT over the effective dosing period.

12.3 Pharmacokinetics
The pharmacokinetics (PK) of KO\(\text{AT}\)E were evaluated in a prospective, two-stage clinical trial of 20 previously treated patients (PTPs) with severe hemophilia A. In Stage I, the PK parameters for 19 subjects were based on plasma Factor VIII activity after a single intravenous infusion of 50 IU/kg of KO\(\text{AT}\)E. Bioequivalence of the dry heat-treated KO\(\text{AT}\)E to the unheated KO\(\text{AT}\)E was demonstrated by comparison of C_{\text{max}} and the area under the curve, AUC_{0-48} (Table 3). The incremental \textit{in vivo} recovery ten minutes after infusion of dry heat-treated KO\(\text{AT}\)E was 1.90% unit/kg (unheated KO\(\text{AT}\)E was 1.82% units/kg). Mean biologic half-life was 16.1 hours.

In Stage II of the study, participants received KO\(\text{AT}\)E treatments for six months on home therapy with a median of 52 days (range 23 to 94 days). At the end of 6 months, the mean AUC_{0-48} was 1471 ± 237 unit*hour/100 mL, the C_{\text{max}} was 99 ± 13 unit/100 mL, and the t_{1/2} was 16 ± 3.9 hours.

Table 3: PK Parameters of KO\(\text{AT}\)E (Stage I of Crossover Trial)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>KO(\text{AT})E Dry Heat-treated (mean ± SD)</th>
<th>KO(\text{AT})E Unheated (mean ± SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUC_{0-48} (IU·hr/mL)</td>
<td>1432 ± 288</td>
<td>1477 ± 343</td>
</tr>
<tr>
<td>C_{\text{max}} (IU/mL)</td>
<td>103 ± 19</td>
<td>99 ± 20</td>
</tr>
<tr>
<td>T_{\text{max}} (hr)</td>
<td>0.41 ± 0.26</td>
<td>0.43 ± 0.44</td>
</tr>
<tr>
<td>Half life (hr)</td>
<td>16.1 ± 3.2</td>
<td>16.1 ± 5.1</td>
</tr>
</tbody>
</table>

14 CLINICAL STUDIES

The efficacy of KO\(\text{AT}\)E for the treatment of bleeding episodes was demonstrated in a 2-stage, safety, PK and efficacy clinical trial. Stage I was a randomized, single-blind, single-dose, crossover, and PK study comparing heat-treated KO\(\text{AT}\)E with unheated KO\(\text{AT}\)E. Nineteen subjects were randomized and received a single dose of 50 IU/kg of either heated KO\(\text{AT}\)E or unheated KO\(\text{AT}\)E for PK assessment. Stage II was a 6 month open-label safety study conducted at two hemophilia centers. Nineteen subjects received KO\(\text{AT}\)E, including for on-demand treatment and control of bleeding episodes. The study populations included 15 Caucasians, 3 Hispanic, and 1 Black subjects. A total of 306 bleeding episodes were treated, of which 82% were treated with a single infusion of Factor VIII.

15 REFERENCES

16 HOW SUPPLIED/STORAGE AND HANDLING

How Supplied
KOATE is supplied in single-use vials containing 250, 500 or 1,000 IU of Factor VIII activity, packaged with 5 mL or 10 mL of Sterile Water for Injection and a Mix2Vial® transfer device. The actual amount of KOATE in IU is stated on each carton and vial label. Components used in the packaging of KOATE are not made with natural rubber latex.

<table>
<thead>
<tr>
<th>Strength</th>
<th>Carton (Kit) NDC Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 IU</td>
<td>76125-256-20 or 76125-257-25</td>
</tr>
<tr>
<td>500 IU</td>
<td>76125-668-30 or 76125-663-50</td>
</tr>
<tr>
<td>1,000 IU</td>
<td>76125-676-50 or 76125-678-10</td>
</tr>
</tbody>
</table>

Storage and Handling
• Store KOATE in its original package to protect it from light.
• Store the KOATE package at 2 to 8°C (36 to 46°F). Do not freeze.
• KOATE may also be stored at room temperature (up to 25°C or 77°F) for up to 6 months.
• Do not use after the expiration date.
• Use reconstituted KOATE immediately or within 3 hours of reconstitution.

17 PATIENT COUNSELING INFORMATION

• Inform patients to immediately report the following early signs and symptoms of hypersensitivity reactions to their healthcare professional: angioedema, chest tightness, hypotension, rash, nausea, vomiting, paresthesia, restlessness, wheezing and dyspnea. [see Warnings and Precautions (5.1)]

• Inform patients that the development of inhibitors to Factor VIII is a possible complication of treatment with KOATE. Advise the patients to contact their healthcare provider for further treatment and/or assessment if they experience a lack of clinical response to KOATE because this may be a manifestation of an inhibitor. [see Warnings and Precautions (5.2)]

• Inform patients that KOATE is made from human plasma and may carry a risk of transmitting infectious agents. While the risk that KOATE can transmit an infection has been reduced by screening plasma donors for prior exposure, testing donated plasma, and inactivating or removing certain viruses during manufacturing, patients should report any symptoms that concern them. [see Warnings and Precautions (5.4)]

Manufactured for:
Kedrion Biopharma Inc.
400 Kelby Street, Fort Lee, NJ 07024

Manufactured by:
Grifols Therapeutics LLC
Research Triangle Park, NC 27709 USA
U.S. License No. 1871
Mix2Vial® is a registered trademark of Medimop Medical Projects Ltd.