



LEOPOLD I Clinical Trial: Main Study

Proven efficacy and safety in adolescents and adults with prophylaxis using as few as 2 infusions per week¹

LEOPOLD I Trial ^{1,2}	
Study description	 Multinational, open-label, prospective trial evaluating pharmacokinetics, efficacy, safety, and perioperative management of bleeding with KOVALTRY Previously treated male patients (PTPs) aged 12 to 65 years with severe hemophilia A (<1% FVIII) (N=73) studied for 1 year
Dosing	 Dosing regimens were determined by the investigators to meet individual patients' needs 2x/week prophylaxis: 20-50 IU/kg (n=18) 3x/week prophylaxis: 20-50 IU/kg (n=44)
Primary efficacy endpoint	✓ Annualized bleed rate (ABR) at 12 months (n=62 for efficacy analysis)

LEOPOLD=Long-Term Efficacy Open-Label Program in Severe Hemophilia A Disease

- Hypersensitivity reactions, including anaphylaxis, are possible with KOVALTRY. Early signs of hypersensitivity reactions, which can progress to anaphylaxis, may include chest or throat tightness, dizziness, mild hypotension and nausea. Discontinue KOVALTRY if symptoms occur and seek immediate emergency treatment.
- KOVALTRY may contain trace amounts of mouse and hamster proteins. Patients treated with this product may develop hypersensitivity to these non-human mammalian proteins.





LEOPOLD I Clinical Trial: Main Study

ABR by Dosing Regimen¹

Dosing was determined by investigators to meet individual patients' needs1

Patients who generally began the study with fewer bleeds and a lower percentage of target joints were selected for

2x/week prophylaxis and experienced^{1,2}

Median ABR (n=18) (IQR=0.0; 8.0)

Median dose: 35.0 IU/kg (range: 21-42 IU/kg)

Patients who generally began the study with more bleeds and a higher percentage of target joints were selected for

3x/week prophylaxis and experienced 1,2

Median ABR (n=44) (IQR=0.5; 5.0)

Median dose:

31.1 IU/kg (range: 24-43 IU/kg)

87% of bleeding episodes resolved with ≤2 infusions of KOVALTRY¹



IQR=interquartile range

SELECTED IMPORTANT SAFETY INFORMATION





LEOPOLD I Clinical Trial: Main Study Pharmacokinetics (PK) Parameters

The PK parameters of KOVALTRY were investigated in 26 previously treated adolescent and adult patients with severe Hemophilia A following administration of 50 IU/kg of KOVALTRY1

Chromogenic Substrate Assay¹			
Parameter [unit]	12 to 17 yrs (N=5)	≥18 yrs (N=21)	
AUC [IU*h/dL]	1572.0 ± 448.0	2103.4 ± 702.8	
C _{max} [IU/dL]	132.5 ± 46.3	133.1 ± 20.4	
t _{1/2} [h]	14.4 ± 5.5	14.2 ± 3.5	
CL [dL/h/kg]	0.034 ± 0.010	0.027 ± 0.010	

Parameter [unit] 12 to 17 yrs (N=5)		≥18 yrs (N=21)
AUC [IU*h/dL]	1572.0 ± 448.0	2103.4 ± 702.8
C _{max} [IU/dL]	132.5 ± 46.3	133.1 ± 20.4
t _½ [h]	14.4 ± 5.5	14.2 ± 3.5
CL [dL/h/kg]	0.034 ± 0.010	0.027 ± 0.010

RESULTS EXPRESSED AS ARITHMETIC MEAN ± SD

AUC: area under the curve

C_{max}: maximum drug concentration in plasma after single dose

t_{1/2}: terminal half-life **CL:** clearance

Parameter [unit]	≥12 yrs (N=115)
Median Incremental Recovery (IU/dL per IU/kg)	2.3 (1.8; 2.6)

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- KOVALTRY may contain trace amounts of mouse and hamster proteins. Patients treated with this product may develop hypersensitivity to these non-human mammalian proteins.



LEOPOLD I Clinical Trial: Main Study Pharmacokinetics (PK) Parameters



One-Stage Clotting Assay ¹		
Parameter [unit]	12 to 17 yrs (N=5)	≥18 yrs (N=21)
AUC [IU*h/dL]	1013.9 ± 286.8	1601.3 ± 520.0
C _{max} [IU/dL]	91.7 ± 28.7	99.7 ± 14.9
t _{1/2} [h]	11.7 ± 1.11	14.3 ± 3.7
CL [dL/h/kg]	0.053 ± 0.017	0.035 ± 0.012

Parameter [unit]	≥12 yrs (N=115)	
Median Incremental Recovery (IU/dL per IU/kg)	2.2 (1.8; 2.4)	

RESULTS EXPRESSED AS ARITHMETIC MEAN ± SD

AUC: area under the curve

C_{max}: maximum drug concentration in plasma after single dose

t_{1/2}: terminal half-life **CL:** clearance

SELECTED IMPORTANT SAFETY INFORMATION

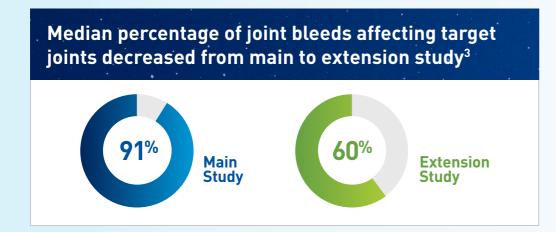


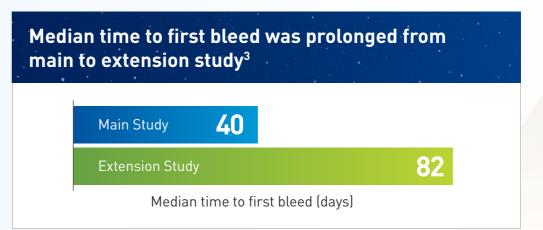


Kovaltry

LEOPOLD I Clinical Trial: Main and Extension Study

LEOPOLD I Extension Study ^{1,3}		
	The extension was an optional continuation of the prophylaxis treatment for up to 12 additional months, during which time subjects were treated with KOVALTRY.	
Extension Study Design	The extension study aimed to assess the long-term safety and efficacy profile of treatment with KOVALTRY (up to 2 years of treatment in the main and extension period).*	
	Patients aged 12 to 17 years (N=10) and aged ≥18 years (N=52) who completed the 1-year study period could be enrolled in the extension to collect additional safety and efficacy data.	
Patients Moved to Extension Study	y 55 patients: aged 12 to 17 years (n=8) and aged >18 (n=47)*	





*43 patients completed the extension study

LEOPOLD=Long-Term Efficacy Open-Label Program in Severe Hemophilia A Disease

SELECTED IMPORTANT SAFETY INFORMATION

- Hemophilic patients with cardiovascular risk factors or diseases may be at the same risk to develop cardiovascular events as non-hemophilic patients when clotting has been normalized by treatment with Factor VIII.
- Catheter-related infections may occur when KOVALTRY is administered via central venous access devices (CVADs). These infections have not been associated with the product itself.
- The most frequently reported adverse reactions in clinical trials (≥5%) were inhibitors in previously untreated patients (PUPs)/minimally treated patients (MTPs), and pyrexia, headache, and rash.

ase see full <u>Prescribing Information</u>.

Antihemophilic Factor (Recombinant)

For additional important risk and use information, please see full <u>Prescribing Information</u>.



LEOPOLD I Clinical Trial: Main and Extension Study

During the LEOPOLD I Main Study (N=62) and Extension Study (N=55), KOVALTRY demonstrated safety across patients aged 12 and older^{1,3*}



Incidence of drug-related AE/SAEs in the Main Study period¹

✓ Drug-related AEs: 6.5%; Drug-related SAEs: 0.0%



Incidence of drug-related AE/SAEs in the Extension Study period³

Drug-related AEs: 5.5%; Drug-related SAEs: 1.8%



In the extension study period, one patient discontinued KOVALTRY due to an SAE3†



Most common (≥5%) adverse events were:1,3

Inhibitors in previously untreated patients (PUPs)/minimally treated patients (MTPs),

Pyrexia, headache and rash



During the main and extension studies, no patient developed inhibitor antibodies to FVIII^{1,3}

†There was 1 SAE, a myocardial infarction, in a patient with known risk factors for cardiovascular events. The investigator considered this event to be treatment related, but not related to the specific study drug. The patient recovered after 2 weeks on remedial drug therapy.

INDICATION

- KOVALTRY Antihemophilic Factor (Recombinant) is a recombinant human DNA sequence derived, full length Factor VIII concentrate indicated for use in adults and children with hemophilia A for:
 - On-demand treatment and control of bleeding episodes
 - Perioperative management of bleeding
 - Routine prophylaxis to reduce the frequency of bleeding episodes
- KOVALTRY is not indicated for the treatment of von Willebrand disease.

SELECTED IMPORTANT SAFETY INFORMATION

KOVALTRY is contraindicated in patients who have a history of hypersensitivity reactions to the active substance, to any of the excipients, or to mouse or hamster proteins.



^{*}The extension period starts after the final visit in the main study and ends with final visit in extension study.



LEOPOLD Kids Trial: Main Study

Proven efficacy and safety in previously treated children with prophylaxis using as few as 2 infusions per week¹

LEOPOLD Kids Trial—Part A ¹ .				
Study description	 Multinational, open-label, prospective trial evaluating the pharmacokinetics, efficacy, safety, and perioperative management of bleeding with KOVALTRY Previously treated male patients aged 0 to <6 years (n=25) and aged 6 to <12 years (n=26) with severe hemophilia A (<1% FVIII) (n=51) studied for 6 months 			
Dosing	Dosing regimens were determined 2x/week prophylaxis: 25-50 IU/ 3x/week or every-other-day (EC	9	. patients' needs 6 to <12 years	
Joshing	2x/week	36% (n=9)	50% (n=13)	
	3x/week or EOD	64% (n=16)	50% (n=13)	
Primary endpoint	► Annualized number of total bleeds	s measured during routine prophylaxis,	within 48 hours of previous prophylaxis treatment	

LEOPOLD=Long-Term Efficacy Open-Label Program in Severe Hemophilia A Disease

- Hypersensitivity reactions, including anaphylaxis, are possible with KOVALTRY. Early signs of hypersensitivity reactions, which can progress to anaphylaxis, may include chest or throat tightness, dizziness, mild hypotension and nausea. Discontinue KOVALTRY if symptoms occur and seek immediate emergency treatment.
- KOVALTRY may contain trace amounts of mouse and hamster proteins. Patients treated with this product may develop hypersensitivity to these non-human mammalian proteins.





LEOPOLD Kids Trial: Main Study

ABR for Total Bleeds1







People with hemophilia A may develop inhibitors to rFVIII. People with a history of inhibitors and previously untreated children were excluded from LEOPOLD Kids—Part A¹

IQR=interquartile range

SELECTED IMPORTANT SAFETY INFORMATION



^{*}During the LEOPOLD Kids study, one patient was moved from a 2x/week prophylaxis regimen to a 3x/week prophylaxis regimen.

[†]One case of transient low titer inhibitor (0.6 BU/mL (peak titer: 1.0 BU/mL)) occurred in a 13 year old PTP after 549 EDs concurrent with an acute infection and positive IgG anticardiolipin antibodies. The Factor VIII recovery was normal (2.7 IU/dL per IU/kg), annualized bleeding rate (ABR) was zero, and no change in therapy was required.



LEOPOLD Kids Trial: Main Study Pharmacokinetic (PK) Parameters

The PK parameters of KOVALTRY were investigated in 20 previously treated patients, 0 to <12 years of age, with severe Hemophilia A following administration of 50 IU/kg of KOVALTRY¹

Chromogenic Substrate Assay ^{1,a}			
Parameter [unit]	0 to <2 yrs (N=4)	2 to <6 yrs (N=6)	6 to <12 yrs (N=10)°
AUC [IU*h/dL]	1232.5 ± 581.3	1484.8 ± 411.3 ^b	1214.5 ± 395.1
C _{max} [IU/dL]	96.1 ± 20.4	83.3 ± 28.7 ^b	81.6± 17.8
t _{1/2} [h]	9.6 ± 3.1	12.2 ± 3.1 ^b	12.0 ± 2.1
CL [dL/h/kg]	0.050 ± 0.024	0.034 ± 0.011b	0.045 ± 0.016

RESULTS EXPRESSED AS ARITHMETIC MEAN ± SD

AUC: area under the curve C_{max} : maximum drug concentration in plasma after single dose t_{v_2} : terminal half-life CL: clearance

LEOPOLD=Long-Term Efficacy Open-Label Program in Severe Hemophilia A Disease

- Hemophilic patients with cardiovascular risk factors or diseases may be at the same risk to develop cardiovascular events as non-hemophilic patients when clotting has been normalized by treatment with Factor VIII.
- Catheter-related infections may occur when KOVALTRY is administered via central venous access devices (CVADs). These infections have not been associated with the product itself.
- The most frequently reported adverse reactions in clinical trials (≥5%) were inhibitors in previously untreated patients (PUPs)/minimally treated patients (MTPs), and pyrexia, headache, and rash.



^a Only Chromogenic Substrate Assay was used for PK parameter assessment in LEOPOLD Kids.

^b n=5

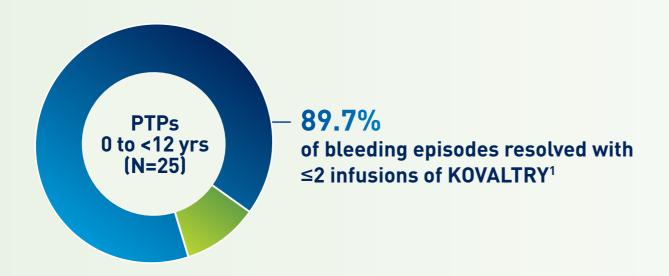
^cOne subject considered PK outlier was excluded.

► KOVALTRY® Treatment for Children

LEOPOLD Kids Trial: Main Study Pharmacokinetic (PK) Parameters

Chromogenic Substrate Assay¹			
Parameter [unit]	0 to <6 yrs (N=25)	6 to <12 yrs (N=25)	
Median Incremental Recovery (IU/dL per IU/kg)	1.6 (1.3; 1.9)	1.7 (1.4; 2.0)	

RESULTS EXPRESSED AS ARITHMETIC MEDIAN (Q1; Q3)





- KOVALTRY Antihemophilic Factor (Recombinant) is a recombinant human DNA sequence derived, full length Factor VIII concentrate indicated for use in adults and children with hemophilia A for:
 - On-demand treatment and control of bleeding episodes
 - Perioperative management of bleeding
 - Routine prophylaxis to reduce the frequency of bleeding episodes
- KOVALTRY is not indicated for the treatment of von Willebrand disease.

SELECTED IMPORTANT SAFETY INFORMATION

KOVALTRY is contraindicated in patients who have a history of hypersensitivity reactions to the active substance, to any of the excipients, or to mouse or hamster proteins.



For additional important risk and use information, please see full Prescribing Information.





LEOPOLD Kids Clinical Trial: Main and Extension Study

LEOPOLD Kids Extension Study ⁵	
Extension Study Design	 The extension was an optional continuation of the prophylaxis treatment for up to 12 additional months, during which time subjects were treated with KOVALTRY. The extension study aimed to assess long-term safety of KOVALTRY in patients with at least 100 accumulated exposure days across the main and extension studies. Patients aged 0 to <6 years (n=25) and aged 6 to <12 years (n=26) could roll over after reaching at least 50 exposure days in order to achieve at least 100 cumulative exposure days.
Moved to Extension Study	46 patients*

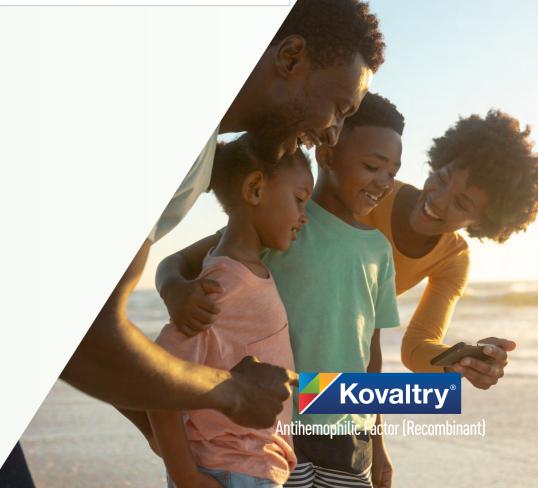
^{*45} patients completed the extension study

LEOPOLD=Long-Term Efficacy Open-Label Program in Severe Hemophilia A Disease

SELECTED IMPORTANT SAFETY INFORMATION

- Hypersensitivity reactions, including anaphylaxis, are possible with KOVALTRY. Early signs of hypersensitivity reactions, which can progress to anaphylaxis, may include chest or throat tightness, dizziness, mild hypotension and nausea. Discontinue KOVALTRY if symptoms occur and seek immediate emergency treatment.
- KOVALTRY may contain trace amounts of mouse and hamster proteins. Patients treated with this product may develop hypersensitivity to these non-human mammalian proteins.

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LEOPOLD Kids Clinical Trial: Main and Extension Study

During the LEOPOLD Kids Main Study (N=51) and Extension Study (N=46), KOVALTRY demonstrated safety across patients aged 0 to <12 years^{1,5*}



Incidence of drug-related AE/SAEs in the Main Study period¹

Drug-related AEs: 2.0%; Drug-related SAEs: 0.0%



Incidence of drug-related AE/SAEs in the Extension Study period⁵

Drug-related AEs: 2.2%; Drug-related SAEs: 2.2%



Zero patients discontinued KOVALTRY due to AE/SAEs^{1,5}



Most common (≥5%) adverse events were:1,5

✓ Inhibitors in previously untreated patients (PUPs)/minimally treated patients (MTPs)

Pyrexia, headache and rash



During the extension study (including measurements at 50-75 exposure days and ≥100 exposure days), no patients developed a new FVIII inhibitor⁵

SELECTED IMPORTANT SAFETY INFORMATION



^{*}The extension period starts after the final visit in the main study and ends with the final visit in extension study.



KOVALTRY® Manufacturing, Reconstitution and Storage

KOVALTRY is manufactured using state-of-the-art techniques^{1,6}



KOVALTRY has a FVIII primary protein structure that has been in use for more than 25 years1



KOVALTRY is an **unmodified, full-length** rFVIII product. Post-translational modifications are similar to those of **natural FVIII**¹



Human heat shock protein (HSP70), a chaperone protein, was introduced intracellularly to improve proper folding of the FVIII protein¹



Human- and animal-derived raw materials are **not added** in the cell culture, purification, or formulation processes¹



20-nm filtration step designed to remove potential small viruses1

nm=nanometer

- Hemophilic patients with cardiovascular risk factors or diseases may be at the same risk to develop cardiovascular events as non-hemophilic patients when clotting has been normalized by treatment with Factor VIII.
- Catheter-related infections may occur when KOVALTRY is administered via central venous access devices (CVADs). These infections have not been associated with the product itself.





KOVALTRY® Manufacturing, Reconstitution and Storage

The KOVALTRY needleless reconstitution system contains¹:

- Vial adapter with built-in 15-micrometer filter
- 2.5 mL or 5.0 mL prefilled diluent syringe
- 25-gauge butterfly needle



Storage at room temperature (up to 77°F) for up to 1 year¹

Store KOVALTRY at 36°F to 46°F for up to 30 months from the date of manufacture. Do not freeze. Within this period, KOVALTRY may be stored for a period of up to 12 months at temperatures up to 77°F. Record the starting date of room temperature storage clearly on the unopened product carton. Once stored at room temperature, do not return the product to the refrigerator. The product then expires after storage at room temperature for 12 months, or after the expiration date on the product vial, whichever is earlier. Store vials in their original carton and protect them from extreme exposure to light.

KOVALTRY is available in a wide range of vial sizes1

Reconstitution with small diluent volumes



SELECTED IMPORTANT SAFETY INFORMATION

The most frequently reported adverse reactions in clinical trials (≥5%) were inhibitors in previously untreated patients (PUPs)/minimally treated patients (MTPs), and pyrexia, headache, and rash.



Explore KOVALTRY® with Confidence

The only unmodified, full-length rFVIII offering the potential for as few as 2 infusions per week1*

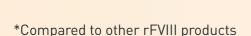
202 2x/week prophylaxis 3x/week prophylaxis

Mean number of prophylaxis infusions per patient²

In LEOPOLD I Main and Extension Study:

90 Fewer infusions with 2x/week vs 3x/week prophylaxis during the 2-year study period^{2,3}

	Recommended prophylaxis dose	Regimen
Children aged ≤12 years¹	25-50 IU/kg	2x/week, 3x/week, or EOD
Adolescents and adults ¹	20-40 IU/kg	2x/week or 3x/week



INDICATION

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 - Routine prophylaxis to reduce the frequency of bleeding episodes
- KOVALTRY is not indicated for the treatment of von Willebrand disease.

References: 1. KOVALTRY [prescribing information]. Whippany, NJ: Bayer HealthCare LLC; 2021. 2. Data on file. Bayer HealthCare Pharmaceuticals, Inc; 2016. 3. Bayer Data on File, April 2024. LEOPOLD I Extension. BAY 81-8973, 12594 Extension. Clinical Study Report Addendum 1, PH37225. 4. Liung R, Kenet G, Mancuso ME, et al. BAY 81-8973 safety and efficacy for prophylaxis and treatment of bleeds in previously treated children with severe hemophilia A: results of the LEOPOLD Kids Trial [published online December 9, 2015]. Haemophilia. doi:10.1111/hae.12866. 5. Bayer Data on File, April 2024. LEOPOLD Kids Extension. BAY 81-8973. 13400 Extension. Clinical Study Report, PH-41325. 6. Garger S, Wu P, Regan L, et al. BAY 81-8973: a full-length, unmodified, recombinant human factor VIII product created through advanced manufacturing technologies. Poster presented at: European Association for Haemophilia and Allied Disorders 9th Annual Congress: February 2016; Malmö, Sweden.

For additional important risk and use information, please see full Prescribing Information.

You are encouraged to report negative side effects or quality complaints of prescription drugs to the FDA. Visit www.fda.gov/medwatch or call 1-800-FDA-1088.

Kovaltry

Antihemophilic Factor (Recombinant)

SELECTED IMPORTANT SAFETY INFORMATION

excipients, or to mouse or hamster proteins.

KOVALTRY is contraindicated in patients who have a history of

hypersensitivity reactions to the active substance, to any of the

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