

PART 1 (COUNCIL DECISION 2002/813/EC)

**SUMMARY NOTIFICATION INFORMATION FORMAT FOR THE RELEASE OF  
GENETICALLY MODIFIED ORGANISMS OTHER THAN HIGHER PLANTS IN  
ACCORDANCE WITH ARTICLE 11 OF DIRECTIVE 2001/18/EC**

*In order to tick one or several possibilities, please use crosses (meaning x or X) into the space provided as (.)*

**A. General information**

1. Details of notification

- (a) Member State of notification [Belgium](#)  
(b) Notification number [B/././....](#)  
(c) Date of acknowledgement of notification [.././....](#)  
(d) Title of the project  
[Phase 3, Open-label, Single-dose, Multicenter Study Investigating Efficacy, Safety, and Tolerability of CSL222 \(Etranacogene Dezaparvovec\) Administered to Adolescent Male Subjects \(≥ 12 to < 18 Years of Age\) with Severe or Moderately Severe Hemophilia B](#)

Proposed period of release                      From Q2 2026 to Q4 2033

2. Notifier

Name of institution or company:                      [CSL Behring LLC](#)

3. GMO characterisation

(a) Indicate whether the GMO is a:

viroid	(.)
RNA virus	(.)
DNA virus	<a href="#">(X)</a>
bacterium	(.)
fungus	(.)
animal	
- mammals	(.)
- insect	(.)
- fish	(.)
- other animal	(.)

specify phylum, class                      ...

(b) Identity of the GMO (genus and species)

[Parvoviridae](#)

Genus: [Dependovirus](#)

Species: [AAV-derived replication-deficient viral vector](#)

- (c) Genetic stability – according to Annex IIIa, II, A(10)

The stability in terms of genetic traits is expected to be equivalent to wild-type AAV. DNA of wild type AAV and of AAV-based vectors persists in transduced cells as circular (extrachromosomal) episomal concatemers in human tissues (Chen et al. 2005, Schnepf et al. 2005, Schnepf et al. 2009).

However, due to the lack of viral *Rep* and *Cap* genes, etranacogene dezaparvovec is expected to remain in the cells as episomes and will not replicate and produce viral particles. The expression cassette will be transcribed and translated by host cell enzymes leading to expression of FIX-Padua.

4. Is the same GMO release planned elsewhere in the Community (in conformity with Article 6(1)), by the same notifier?

Yes (X) No (.)

If yes, insert the country code(s) ES, FR, AT

5. Has the same GMO been notified for release elsewhere in the Community by the same notifier?

Yes (X) No (.)

If yes:

- Member State of notification BE
- Notification number B/BE/18/BVW7
  
- Member State of notification NL
- Notification number B/NL/18/001
  
- Member State of notification NL
- Notification number B/NL/18/007
  
- Member State of notification IE
- Notification number B/IE/18/01
  
- Member State of notification DE
- Notification number B/DE/19/PEI3489

**Please use the following country codes:**

Austria AT; Belgium BE; Germany DE; Denmark DK; Spain ES; Finland FI; France FR; United Kingdom GB; Greece GR; Ireland IE; Iceland IS; Italy IT; Luxembourg LU; Netherlands NL; Norway NO; Portugal PT; Sweden SE

6. Has the same GMO been notified for release or placing on the market outside the Community by the same or other notifier?

Yes (X) No (.)

If yes:

- Member State of notification AU
- Notification number Not applicable

7. Summary of the potential environmental impact of the release of the GMOs.

etranacogene dezaparvovec is a recombinant, replication-deficient, adeno-associated virus-based vector that will be administered intravenously by a single dose infusion to severe or

moderately severe haemophilia B patients. The intended application of etranacogene dezaparvovec is limited to a few hospital centres and the number of patients to be treated is restricted. Due to the extremely low numbers of etranacogene dezaparvovec particles potentially released into the environment during the study, either by accident or through shedding, horizontal gene transfer is unlikely. Even if horizontal gene transfer occurred, etranacogene dezaparvovec sequences would not confer a selective advantage to bacteria: Etranacogene dezaparvovec does not contain any prokaryotic promoters, any antibiotic or other types of resistance genes or any genes, which would enhance or constrain their growth. Therefore, it is unlikely that the vector would interfere with the control of pathogenic microorganisms or that it would have an effect on the natural dynamics of microbial populations or the biogeochemical cycles at any given site in the environment.

Due to the lack of viral *Rep* and *Cap* genes, the vector will persist as episome and will not replicate or produce viral particles. The expression cassette will be transcribed and translated by host cell enzymes leading to expression of the human PADUA factor IX protein.

Although human infections are common with wild type AAV, they are not known to be a pathogenic viruses in humans and can be classified as a Risk Group 1 biological agent, defined in the EU as ‘one that is unlikely to cause human disease’ according to Directive 2000/54/EC on the protection of workers from risks related to exposure to biological agents at work.

Wild type AAV is not known to be involved in environmental processes and none of the genetic modifications made to wild type AAV during construction of etranacogene dezaparvovec is expected to have any impact on this property. As such, there is no expected impact to the environment following the release of etranacogene dezaparvovec .

Nonetheless, the hospital centres are expected to have adequately trained health care professionals involved in the study in the safe handling of GMOs and to have best biosafety practices implemented in order to minimise any accidental exposure to the product, be it personnel, contact persons or the environment. In view of the low risk etranacogene dezaparvovec presents to people and the environment and in view of the biorisk management measures applied to even further reduce the exposure to the vector, its overall risk for people and the environment can be evaluated as negligible.

**B. Information relating to the recipient or parental organism from which the GMO is derived**

**1. Recipient or parental organism characterisation:**

(a) Indicate whether the recipient or parental organism is a:

(select one only)

- |           |     |
|-----------|-----|
| viroid    | (.) |
| RNA virus | (.) |
| DNA virus | (X) |
| bacterium | (.) |
| fungus    | (.) |
| animal    |     |
| - mammals | (.) |

- insect (.)
- fish (.)
- other animal (.)  
(specify phylum, class) ...

other, specify ...

2. Name

- (i) order and/or higher taxon (for animals) N/A
- (ii) genus Dependovirus
- (iii) species Parvoviridae
- (iv) subspecies Adeno-associated virus
- (v) strain N/A
- (vi) pathovar (biotype, ecotype, race, etc.) Serotype 5
- (vii) common name Adeno-associated virus or AAV

3. Geographical distribution of the organism

- (a) Indigenous to, or otherwise established in, the country where the notification is made:  
Yes (X) No (.) Not known (.)

- (b) Indigenous to, or otherwise established in, other EC countries:

- (i) Yes (X)

If yes, indicate the type of ecosystem in which it is found:

- Atlantic X
- Mediterranean X
- Boreal X
- Alpine X
- Continental X
- Macaronesian X

- (ii) No (.)

- (iii) Not known (.)

- (c) Is it frequently used in the country where the notification is made?  
Yes (.) No (X)

- (d) Is it frequently kept in the country where the notification is made?  
Yes (.) No (X)

4. Natural habitat of the organism

- (a) If the organism is a microorganism

- water (.)
- soil, free-living (.)
- soil in association with plant-root systems (.)

in association with plant leaf/stem systems (.)  
other, specify [Specific hosts are humans and non-human primates](#)

- (b) If the organism is an animal: natural habitat or usual agroecosystem:  
[Not applicable](#)

5. (a) Detection techniques  
[Quantitative Polymerase Chain Reaction \(QPCR\)](#)

- (b) Identification techniques  
[Quantitative Polymerase Chain Reaction \(QPCR\)](#)

6. Is the recipient organism classified under existing Community rules relating to the protection of human health and/or the environment?

Yes ☒ No ☐

If yes, specify

[Adeno-associated viruses are not known to be associated with any pathogenic effect and thus are not assigned an Advisory Committee on Dangerous Pathogens \(ACDP\) category. Recombinant AAV-based vectors are usually classified as Biosafety Class 1 or 2 \(depending on the Member State\).](#)

7. Is the recipient organism significantly pathogenic or harmful in any other way (including its extracellular products), either living or dead?

Yes ☐ No ☒ Not known ☐

If yes:

- (a) to which of the following organisms:

humans ☐  
animals ☐  
plants ☐  
other ☐

- (b) give the relevant information specified under Annex III A, point II. (A)(11)(d) of Directive 2001/18/EC

[AAVs are frequently found in humans and animals, but they are not pathogenic, virulent, allergenic, or a carrier \(vector\) of a pathogen. The known host range includes humans and non-human primates. In natural conditions, wild type AAV is found to transmit to humans in the presence of a helper virus. It does not activate latent virus and is not able to colonise other organisms](#)

8. Information concerning reproduction

- (a) Generation time in natural ecosystems:  
[Not applicable since the vector is not capable of replication](#)

- (b) Generation time in the ecosystem where the release will take place:  
[Not applicable since the vector is not capable of replication](#)

(c) Way of reproduction: Sexual N/A Asexual N/A

(c) Factors affecting reproduction:  
Reproduction of wild-type AAV is dependent on co-infection with helper virus (Adenovirus or Herpesvirus)

9. Survivability

(a) ability to form structures enhancing survival or dormancy:

- (i) endospores (.)
- (ii) cysts (.)
- (iii) sclerotia (.)
- (iv) asexual spores (fungi) (.)
- (v) sexual spores (funghi) (.)
- (vi) eggs (.)
- (vii) pupae (.)
- (viii) larvae (.)
- (ix) other, specify AAVs have the ability to form extrachromosomal concatemers that remain episomal for extended periods of time

(b) relevant factors affecting survivability:

...

10. (a) Ways of dissemination  
Mainly through airway, although sexual transmission has been hypothesised

(b) Factors affecting dissemination  
Co-infection with a helper virus

11. Previous genetic modifications of the recipient or parental organism already notified for release in the country where the notification is made (give notification numbers)  
..., B/././... Not previously notified

C. Information relating to the genetic modification

1. Type of the genetic modification

- (i) insertion of genetic material (X)
- (ii) deletion of genetic material (X)
- (iii) base substitution (.)
- (iv) cell fusion (.)
- (v) others, specify ...

2. Intended outcome of the genetic modification

The intended outcome of the genetic modifications is the loss of the ability of the recombinant AAV to replicate, as a result of the deletion of the *Rep* and *Cap* viral sequences.

3. (a) Has a vector been used in the process of modification?  
Yes (X) Baculovirus No (.)

If no, go straight to question 5.

- (b) If yes, is the vector wholly or partially present in the modified organism?  
Yes (.) No (X)

If no, go straight to question 5.

4. If the answer to 3(b) is yes, supply the following information

(a) Type of vector

plasmid (.)  
bacteriophage (.)  
virus (.)  
cosmid (.)  
transposable element (.)  
other, specify ...

(b) Identity of the vector

...

(c) Host range of the vector

...

(d) Presence in the vector of sequences giving a selectable or identifiable phenotype  
Yes (.) No (.)

antibiotic resistance (.)  
other, specify ...

Indication of which antibiotic resistance gene is inserted  
...

(e) Constituent fragments of the vector

...

(f) Method for introducing the vector into the recipient organism

(i) transformation (.)  
(ii) electroporation (.)  
(iii) macroinjection (.)  
(iv) microinjection (.)  
(v) infection (.)  
(vi) other, specify ...

5. If the answer to question B.3(a) and (b) is no, what was the method used in the process of modification?

(i) transformation (.)  
(ii) microinjection (.)

- (iii) microencapsulation (.)
- (iv) macroinjection (.)
- (v) other, specify Triple infection of *expresSF+* insect cells with baculovirus containing respectively the *Rep*, *Cap* or hFIX-Padua expression cassette sequences. Any remaining baculovirus are then removed by downstream processing

6. Composition of the insert

- (a) Composition of the insert
  - i) Inverted Terminal Repeats (ITRs) from AAV2
  - ii) LP1 promoter/enhancer element from the human apolipoprotein hepatic control region and the human alpha-1-antitrypsin promoter
  - iii) Codon-optimised human Padua factor IX expression cassette
  - iv) SV40 polyA unit
- (b) Source of each constituent part of the insert
  - i) Inverted Terminal Repeats (ITRs): AAV2
  - ii) LP1 promoter/enhancer element: human
  - iii) Codon-optimised human Padua factor IX expression cassette: human
  - iv) polyA unit (pASV40): SV40 virus
- (c) Intended function of each constituent part of the insert in the GMO
  - i) Inverted Terminal Repeats (ITRs): Elements necessary for the packaging of the vector genome into the capsid and the formation of the episomal concatemers in the transduced cells
  - ii) LP1 promoter/enhancer element: Enhance the expression of the transgene
  - iii) Codon-optimised human factor IX-Padua expression cassette: Active part of the vector needed for the expression of the human coagulation factor IX-Padua protein
  - iv) polyA unit (pA SV40): mRNA translation
- (d) Location of the insert in the host organism
  - on a free plasmid (.)
  - integrated in the chromosome (.)
  - other, specify Mainly extrachromosomal by formation of episomal concatemers
- (e) Does the insert contain parts whose product or function are not known?
 

Yes (.) No (X)

If yes, specify ...

**D. Information on the organism(s) from which the insert is derived**

1. Indicate whether it is a:

- viroid (.)
- RNA virus (.)
- DNA virus (.)
- bacterium (.)
- fungus (.)



animal

- mammals (.)
- insect (.)
- fish (.)
- other animal (.)

(specify phylum, class) ...

other, specify [Human \(coagulation Padua factor IX coding DNA sequence\)](#)

2. Complete name

- (i) order and/or higher taxon (for animals) [Primates](#)
- (ii) family name for plants [N/A](#)
- (iii) genus [N/A](#)
- (iv) species [Homo](#)
- (v) subspecies [Sapiens](#)
- (vi) strain [Sapiens](#)
- (vii) cultivar/breeding line [N/A](#)
- (viii) pathovar [N/A](#)
- (ix) common name [Human](#)

3. Is the organism significantly pathogenic or harmful in any other way (including its extracellular products), either living or dead?

Yes (.) No ([X](#)) Not known (.)

If yes, specify the following:

(b) to which of the following organisms:

- humans (.)
- animals (.)
- plants (.)
- other ..

(b) are the donated sequences involved in any way to the pathogenic or harmful properties of the organism

Yes (.) No ([X](#)) Not known (.)

If yes, give the relevant information under Annex III A, point II(A)(11)(d):

...

4. Is the donor organism classified under existing Community rules relating to the protection of human health and the environment, such as Directive 90/679/EEC on the protection of workers from risks to exposure to biological agents at work?

Yes (.) No ([X](#))

If yes, specify ...

5. Do the donor and recipient organism exchange genetic material naturally?

Yes ([X](#)) No (.) Not known (.)

Although following naturally acquired infection, AAV DNA mainly persists as circular double stranded episomes in human tissues (Schnepp *et al.*, 2005) it has been shown that some level of integration may occur in the host DNA (Kaeppel et al, 2013)

**E. Information relating to the genetically modified organism**

1. Genetic traits and phenotypic characteristics of the recipient or parental organism which have been changed as a result of the genetic modification

(a) is the GMO different from the recipient as far as survivability is concerned?

Yes (.) No (X) Not known (.)

Specify Due to the removal of the *Rep* and *Cap* genes, etranacogene dezaparvovec is replication incompetent even in the presence of helper virus.

(b) is the GMO in any way different from the recipient as far as mode and/or rate of reproduction is concerned?

Yes (X) No (.) Unknown (.)

Specify Due to the removal of the *Rep* and *Cap* genes, etranacogene dezaparvovec is replication incompetent even in the presence of helper virus

(c) is the GMO in any way different from the recipient as far as dissemination is concerned?

Yes (X) No (.) Not known (.)

Specify The GMO cannot enter an infectious cycle even in the presence of helper function.

(d) is the GMO in any way different from the recipient as far as pathogenicity is concerned?

Yes (.) No (X) Not known (.)

Specify Neither wild type AAV nor AAV5-hFIX are pathogenic to humans or the environment

2. Genetic stability of the genetically modified organism

Etranacogene dezaparvovec is non-replicating. In the absence of an intrinsic mechanism for genetic variation or instability and based on the known genetic stability of wild type AAV, the genetic traits of the organism are expected to be stable

3. Is the GMO significantly pathogenic or harmful in any way (including its extracellular products), either living or dead?

Yes (.) No (X) Unknown (.)

(a) to which of the following organisms?

humans (.)

animals (.)

plants (.)

other ...

- (b) give the relevant information specified under Annex III A, point II(A)(11)(d) and II(C)(2)(i)

Humans are likely infected by wild type AAV through the respiratory tract, sexual and gastrointestinal route. AAV is capable of infecting either non-dividing or dividing cells.

In the presence of helper virus (adenovirus or herpes virus), AAV undergoes productive infection characterised by genome replication, viral gene expression and virion production.

In the absence of a helper virus co-infection, AAV DNA remains extrachromosomal or may integrate in the host DNA. In both situations the virus remains latent.

Wild type AAV is weakly immunogenic. AAV-induced immune reaction is seemingly restricted to the generation of neutralising antibodies.

AAV has never been associated with any disease or pathological conditions in humans. AAV is not known to be associated to plants. Etranacogene dezaparvovec 1 is not expected to be pathogenic and does not interfere with any prophylactic or therapeutic treatments since it does not contain any sequences (no antibiotic-resistance genes) that could affect prophylaxis or treatment of pathogenic microorganism infection.

The hFIX-Padua coding DNA sequence present in the vector is a naturally occurring sequence in humans. Expression of this protein by infected cells does not induce cytopathic effects.

#### 4. Description of identification and detection methods

- (a) Techniques used to detect the GMO in the environment

The number of vector genomes can be determined by quantitative PCR with primers and probe specific for vector sequences. This technique however is only applicable where sufficient DNA can be recovered for analysis

- (b) Techniques used to identify the GMO

The vector is identified by quantitative PCR with primers and probe specific for vector sequences

### F. Information relating to the release

1. Purpose of the release (including any significant potential environmental benefits that may be expected)

The general purpose of the work is to further establish an AAV-based, liver directed gene therapy approach for the treatment of haemophilia B. In general terms the primary objective will be to assess safety and efficacy of a single intravenous infusion of etranacogene dezaparvovec in adult patients with severe (factor IX (FIX) activity  $\leq 1\%$  of normal) or moderately severe (FIX activity  $\leq 2\%$  of normal) haemophilia B.

2. Is the site of the release different from the natural habitat or from the ecosystem in which the recipient or parental organism is regularly used, kept or found?

Yes (X) No (.)

If yes, specify The GMO will be administered intravenously to haemophilia B patients in a few hospital centres. It should be noted that humans are natural hosts for AAV, infections are asymptomatic and AAV is not known to cause any noticeable pathology. Similarly, dose-dependent administration of AAV-based GMO's to humans has been shown to be safe. As noted above, a dose-dependent immune response does occur in a recipient and is without clinical consequence.

3. Information concerning the release and the surrounding area

(a) Geographical location (administrative region and where appropriate grid reference):

The final GMO is not released in the environment but will be administered to patients in a controlled area (clinical site). Planned participating site is located in Leuven.

(b) Size of the site (m<sup>2</sup>): ... m<sup>2</sup>  
(i) actual release site (m<sup>2</sup>): ... m<sup>2</sup>  
(ii) wider release site (m<sup>2</sup>): ... m<sup>2</sup>

Not applicable

(c) Proximity to internationally recognised biotopes or protected areas (including drinking water reservoirs), which could be affected:

Not applicable considering that shed material, if any at all, is non-infectious

(d) Flora and fauna including crops, livestock and migratory species which may potentially interact with the GMO

None

4. Method and amount of release

(a) Quantities of GMOs to be released:

Some shedding of vector DNA is expected to occur in body fluids/excreta for several days after administration. However, shed AAV-based vectors have been shown to be non-infectious.

(b) Duration of the operation:

The complete administration procedure including preparation of the infusion system is expected to take less than 24h.

(c) Methods and procedures to avoid and/or minimise the spread of the GMOs beyond the site of the release

The investigational medicinal product will be supplied to selected hospital centres on a subject-to-subject basis following confirmation of subject's eligibility, in order to avoid any long-time storage.

All involved personnel on the site will be trained in best biosafety practices to be applied during preparation in the pharmacy, transport to the administration room, precautions during administration and disposal of any biological waste. Such training

involves, among others, wearing adapted protective clothing and gloves, the constant presence of a spill kit and the decontamination of waste prior to disposal.

5. Short description of average environmental conditions (weather, temperature, etc.)  
Hospital treatment room and ambient indoor conditions for administration to clinical trial subjects. The receiving environment for the shed vector particles is most likely waste water and ambient temperature. The investigational medicinal product will be stored at 2-8°C, the prepared infusion bag will be kept at room temperature until administration.

6. Relevant data regarding previous releases carried out with the same GMO, if any, specially related to the potential environmental and human health impacts from the release.

None available

**G. Interactions of the GMO with the environment and potential impact on the environment, if significantly different from the recipient or parent organism**

1. Name of target organism (if applicable)

(i) order and/or higher taxon (for animals)	Primates
(ii) family name for plants	N/A
(iii) genus	Homo
(iv) species	Sapiens
(v) subspecies	Sapiens
(vi) strain	N/A
(vii) cultivar/breeding line	N/A
(viii) pathovar	N/A
(ix) common name	Human

2. Anticipated mechanism and result of interaction between the released GMOs and the target organism (if applicable)

In treated subjects, etranacogene dezaparvovec is expected to preferentially localise to the liver. Hepatocyte transduction will enable a functional human coagulation factor IX to be expressed. The excretion of functional factor IX-Padua into the circulation at levels resulting in a clinically meaningful improvement in the clotting function will improve the haemophilia phenotype of patients. The vector DNA is expected to persist in transduced cells by the formation of episomal concatemers.

3. Any other potentially significant interactions with other organisms in the environment

None expected

4. Is post-release selection such as increased competitiveness, increased invasiveness for the GMO likely to occur?

Yes (.) No (X) Not known (.)

Give details

...

5. Types of ecosystems to which the GMO could be disseminated from the site of release and in which it could become established

Even in the event of shedding of DNA in waste water no establishment in such a system can be expected.

6. Complete name of non-target organisms which (taking into account the nature of the receiving environment) may be unintentionally significantly harmed by the release of the GMO

None

- |        |   |     |
|--------|---|-----|
| (i)    | order and/or higher taxon (for animals) | ... |
| (ii)   | family name for plants                  | ... |
| (iii)  | genus                                   | ... |
| (iv)   | species                                 | ... |
| (v)    | subspecies                              | ... |
| (vi)   | strain                                  | ... |
| (vii)  | cultivar/breeding line                  | ... |
| (viii) | pathovar                                | ... |
| (ix)   | common name                             | ... |

7. Likelihood of genetic exchange in vivo

- (a) from the GMO to other organisms in the release ecosystem:

Highly unlikely. Due to the low numbers of vector DNA copies potentially released into the environment through shedding, horizontal gene transfer is highly unlikely. Even if horizontal gene transfer occurred, the sequences would not confer a selective advantage to other organisms such as bacteria since etranacogene dezaparvovec does not contain any prokaryotic promoters, any antibiotic or other types of resistance genes or any genes, which would enhance or constrain their growth. Therefore, it is unlikely that etranacogene dezaparvovec would interfere with the control of pathogenic microorganisms or that it would have an effect on the natural dynamics of microbial populations or the biogeochemical cycles at any given site in the environment.

- (b) from other organisms to the GMO:

Highly unlikely. Since etranacogene dezaparvovec contains the ITR-sequences of AAV2, there is a (remote) possibility of homologous recombination of the vector with wild type AAV2 in case of a co-infection in exposed persons. The result of such a recombination would be that etranacogene dezaparvovec would gain functional genes of the AAV2 required for replication and encapsidation, but in turn would lose the transgene. Hence, recombination would lead to the formation of viruses that are identical to the starting material and replication competent.

- (c) likely consequences of gene transfer:

The genetic material from the *Rep* and *Cap* genes together with the transgene would be too large in size to be packed in an AAV capsid. Thus, it is highly unlikely that the recombination would result in a replication-competent vector containing transgenes.

8. Give references to relevant results (if available) from studies of the behaviour and characteristics of the GMO and its ecological impact carried out in stimulated natural environments (e.g. microcosms, etc.):

No references available

9. Possible environmentally significant interactions with biogeochemical processes (if different from the recipient or parental organism)

None known or predictable since wild type AAV is not known to be involved in any bio-geochemical process.

## **H. Information relating to monitoring**

1. Methods for monitoring the GMOs  
Collection of body fluids according to the clinical protocol and risk management plan and quantification using a specific DNA QPCR method.
2. Methods for monitoring ecosystem effects  
No monitoring is considered necessary
3. Methods for detecting transfer of the donated genetic material from the GMO to other organisms  
The method for detecting transfer of the donated genetic material to other organisms will be QPCR. The presence of vector DNA sequences will be determined in serum and semen from the treated patients. However, it has been shown that the material found in excreta is not infectious and thus transfer of donated genetic material from the patient to other organisms is not envisaged.
4. Size of the monitoring area (m<sup>2</sup>)  
... m<sup>2</sup>  
Not applicable. Only the subject's body fluids will be monitored after administration.
5. Duration of the monitoring  
The body fluids of treated subjects will be monitored until found negative (three consecutive negative samples) for the presence of vector DNA.
6. Frequency of the monitoring  
At regular intervals according to the clinical protocol (e.g. once weekly for the first three months depending on the nature of the sample) for five years after administration.

## **I. Information on post-release and waste treatment**

1. Post-release treatment of the site  
Decontamination of the IMP administration room by standard procedures will be used after administration. Any material or surface in contact with the product will be decontaminated with hypochlorite solution or autoclaved. Any other disposable instruments or other materials used during the dose preparation procedure will be disposed of in a manner consistent with the standard practice of the institution for potentially biohazardous materials.
2. Post-release treatment of the GMOs  
Since the product will be supplied by the manufacturer to the hospital pharmacy in a subject-to-subject manner, no unused product should remain at the hospital centre after administration to patients. Any open vials or unused material will be destroyed by decontamination according to local biosafety guidelines.
3. (a) Type and amount of waste generated  
Empty vials and used vials and the used delivery system components (guide tube, cannula, injection needles and syringes), gauzes, personal protective equipment (e.g. gloves etc.) and components used for collecting body fluids samples after administration.

3. (b) Treatment of waste  
Sharps such as needles will be disposed of in adequate sharp containers and incinerated. Disposables such as syringes, tubing and catheters will be decontaminated by immersion in a chemical disinfectant with virucidal activity before incineration.

All the surgical materials (surgery tools, linens) and surgery waste (gloves, compresses) will be collected and autoclaved before washing and sterilisation or incineration. All non-disposable surgical equipment will be cleaned using a chemical disinfectant with proven virucidal activity (e.g. hypochlorite solution) and then sterilised by autoclaving according to standard practices of the institution.

## **J. Information on emergency response plans**

1. Methods and procedures for controlling the dissemination of the GMO(s) in case of unexpected spread  
The solution of etranacogene dezaparvovec for intravenous infusion will be prepared by the hospital pharmacist or designee using sterile technique, under aseptic conditions, using proper engineering controls (e.g. biological safety cabinet or isolator), and according to institutional policies. In case of spillage the affected area, lined with absorbing material, will be decontaminated using appropriate disinfectants with virucidal activity. A spill kit will be available at all times during the administration procedure.  
All materials in contact with the product should be disposed of as hospital waste according to local biosafety guidelines. Details are given in the Investigators's Brochure and Site IMP Manual, describing the handling of the IMP in the pharmacy and the administration procedures, that will be handed over to the site during the site initiation visit (prior to starting the study).
2. Methods for removal of the GMO(s) of the areas potentially affected  
Should persons working with the GMO come into direct contact with the GMO (through inhalation or accidental injection during administration, or via blood samples taken shortly after administration), no immediate and/or delayed effects different from those expected for the recipients (test subjects) are expected: a (dose-dependent) immune response to the GMO could occur that will not affect subjects' general well-being.  
  
For splashes to the eye of the GMO, the eye will be rinsed with eyewash for 15 minutes and the patient will then report to the hospital emergency room for evaluation.  
In case of accidental injection of material containing the GMO, bleeding of the wound will be encouraged, the area will be washed well with soap and water and the patient will report to the hospital emergency room for evaluation.  
In case of accidental exposure to skin, the affected area must be thoroughly cleaned with soap and water for at least 15 minutes.  
In case of accidental inhalation, the person should be moved into fresh air.  
In case of accidental oral exposure, abundantly rinse mouth with water.
3. Methods for disposal or sanitation of plants, animals, soils, etc. that could be exposed during or after the spread  
Not applicable since exposure of plants or animals is not expected
4. Plans for protecting human health and the environment in the event of an undesirable effect  
No undesirable effects are expected