

Summary Information Format

Category I Veterinary Biologics

I. Introduction

Category I Veterinary Biologics are nonviable products such as subunits, antibodies, nucleic acids, or other recombinant agents. Live organisms may be used in the development and manufacturing, but there are no live organisms in the final product. Since platform and prescription products are currently required to be Category I biologics, this SIF also is used in place of the previous Category IV SIF.

A. Provide a brief descriptive summary of the product:

B. Describe the intended use of the product:

1. Target species:
2. Proposed label claim:
3. Route of administration:
4. Geographic area:

II. Description of the Product

For a Category I SIF, the Backbone Biological Agent (BBA) is a replicative, viable or active vector or expression system used for manufacturing or delivery of the biologic. The Donor Biologic Agent (DBA) is the source of recombinant genes if applicable, any may also refer to inserted or synthetic sequences. The Regulated Biological Agent (RBA) is the final product, typically a non-replicating, nonviable, inactive, or killed agent either synthesized or derived from a BBA via genetic modification.

A. Backbone Biological Agent (BBA)

1. Describe the organism or material used for the BBA, where it was obtained or constructed, and cite the primary literature describing the BBA.
2. Characteristics of the BBA
 - a. If the BBA has been modified from its wild-type parent, either via targeted manipulation or through in vitro passage, cite the primary literature, and/or include a flow diagram or explanation of the construction of the BBA.
 - b. Describe how the BBA differs from the wild-type, including genetic and phenotypic changes, and the methods and results useful for differentiating the BBA from its wild-type parent.

B. Donor Biological Agent (DBA) (or inserted sequences)

1. If nucleic acid was inserted into the BBA, identify the source of the nucleic acid, whether obtained from a DBA or synthesized. If obtained from another organism (DBA), provide a thorough history of the origin and characteristics of the DBA organism.

2. Identify each nucleic acid sequence and the function of the genetic product. Cite literature as appropriate.

C. Regulated Biological Agent (RBA)

1. Identify where the final RBA was initially constructed and where the final product will be made, tested, and manufactured, and the biosafety level of the facilities.
2. Provide GenBank accession numbers or nucleic acid sequences in FASTA or FASTQ format (.txt files) for all relevant BBA, DBA, and RBA. Sequence files should contain actual, not theoretical, sequences for any new or altered genetic sequences, including insertion and flanking sequences. Whole genome sequence data should be provided as zipped FASTQ files. Contact CVB for guidance on electronic submission of large sequence files.
3. Provide a flow diagram for the laboratory construction of the RBA. Include the following:
 - a. Backbone Biological Agent
 - b. Donor Biological Agent or nucleic acid or gene
 - c. All plasmids, shuttle vectors or kits and their source
 - d. Host cell lines used and source
 - e. Describe the selection techniques and methods used to construct the RBA.
4. Describe the characterization of the RBA, including the laboratory methods and criteria used to evaluate the RBA. Provide evidence that the genetic modifications occurred as intended.
 - a. Describe and show the results of PCR, sequencing, or other genetic test that will discriminate between the BBA and RBA sequences.
 - b. Describe the criteria for stability and purity of the RBA Master Seed (X) and highest passage thereof (X+n) desired for use in production.
 - c. Provide all detailed protocols and show characterization results of the expressed/target antigen, including but not limited to fluorescent antibody and Western blot testing of the BBA, Master Seed and X+n; including positive and negative controls.
 - i. If appropriate, provide any purification or concentration steps/protocols used for characterization of the expressed/target antigen.
 - d. Provide a description of any genetic motifs that may have resulted due to the genetic modifications. Report any known motifs that may promote homologous recombination, insertion, or gene expression of existing or new open reading frames.
 - e. Describe the nature of the RBA, harvest or inactivation procedures, or test procedures that ensure lack of any live organisms in the final product.

D. Safety Considerations

1. Provide the recommended CDC/NIH biosafety level for the BBA, DBA and RBA.

2. Describe, citing literature or internal data as appropriate, both any known virulence associated with and any previous safe use of the BBA, DBA (inserted sequences), and RBA in:
 - a. Target animal species
 - b. Non-target animal species
 - c. Humans
3. Clearly identify any antimicrobial resistance genes present or used to create the RBA, and whether these genes will be present in the final product.
4. Describe any expected or possible impact the final product could have on animal/human diagnostic testing, food testing, or disease surveillance programs. Include if a test to differentiate infected from vaccinated animals (DIVA) is available or possible.