



EUROPEAN MEDICINES AGENCY  
SCIENCE MEDICINES HEALTH

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Patient Health Protection

## Scientific recommendation on classification of advanced therapy medicinal products

Article 17 – Regulation (EC) No 1394/2007

**Disclaimer:** This document is a summary for public release of a scientific recommendation on classification of advanced therapy medicinal products. The original text adopted by the Committee for Advanced Therapies (CAT) has been redacted to delete commercially confidential information.

The present scientific recommendation refers exclusively to the case as presented to the European Medicines Agency (EMA) without prejudice to future evaluations by the Agency.

This scientific recommendation is not binding and is without prejudice to any decision taken by Member State competent authorities on matters falling within their own remits.

### **Short descriptor (or name when available) of the proposed active substance**

Alginate encapsulated porcine pancreatic islet cells

### **Brief description of the proposed finished product**

The finished product is an immunoprotected (alginate-encapsulated) porcine islet preparation. The porcine islets are isolated from the pancreases of neonatal piglets from a Designated Pathogen Free (DPF) pig herd via a standard collagenase digestion procedure, and encapsulated in alginate microcapsules (diameter 600 to 900 micrometres).

### **Proposed indication**

Type 1 (insulin-dependent) diabetes mellitus



## **EMA/CAT comment**

### ***Consideration of Article 1(2) of Directive 2001/83/EC (definition of medicinal product – see Annex A)***

- The product consists of viable porcine islet, which can be considered a 'substance' in the meaning of the pharmaceutical legislation (in accordance with article 1(3) of Directive 2001/83/EC).
- According to Article 1(2), the restoration, correction or modification of the physiological function is to be mediated by the substances that exert "a pharmacological, immunological or metabolic action". As the product consists of viable Alginate encapsulated porcine pancreatic islet cells and capable of secreting therapeutic substance, it can be agreed that the product acts via pharmacological, immunological and/or metabolic means.
- The product is presented as having properties for treating or preventing disease in human being. The product is intended to be used for treating Type I diabetes (criteria a), and might be considered to be effective in modifying abnormal glucose metabolism in Type I diabetics.

### ***Fulfilment of Article 2(1) of Regulation (EC) No 1394/2007 (definition of advanced therapy medicinal product – see Annex A)***

- The product consists of viable Alginate encapsulated porcine pancreatic islet cells.
- The porcine islets in the product are isolated from the pancreases of neonatal piglets from a Designated Pathogen Free (DPF) pig herd. During the manufacture of the product, cell differentiation occurs with an increase in the % of insulin producing beta cells. After 30 days of culturing there is typically a five-fold increase in the amount of insulin released from the cells in response to a glucose challenge. As such the cells are considered to be substantially manipulated.
- The claimed mechanism of action is mainly metabolic, namely the therapeutic production and secretion of porcine insulin to replace endogenous insulin which is not produced in patients Type 1 (insulin-deficient) diabetes mellitus.

Based on the above, it is considered that the product falls within the definition of a somatic cell therapy as provided in Article 2(1)(a) of Regulation (EC) No 1394/2007.

In addition, having regard to article 2(1)(d) of Regulation 1394/2007/EC and, on basis of the claim of the company and the information that is available to the EMA/CAT, the CAT considers that the product falls within the definition of a combined Advanced therapy medicinal product. The alginate microcapsule, which is an integral part of the product represents a material intended to be used for human beings for the purpose of the modification of a physiological process (prevention of an immune response to the encapsulated porcine islet cells) by acting as a physical barrier between the patient and the porcine islet cells, while at the same time allowing the free diffusion of glucose, insulin, nutrient and dissolved oxygen / carbon dioxide across the microcapsule membrane.

Based on the above, the product can further be classified as a Combined ATMP as defined in article 2(1)(d) of Regulation 1394/2007/EC.

## EMA/CAT conclusion

On the basis that:

- The product consists of cells that have been subject to substantial manipulation so that biological characteristics, physiological functions or structural properties relevant for the intended clinical use have been altered,
- The product is presented as having properties for, and is used in or administered to human beings with a view to treating and preventing a disease through the pharmacological, immunological or metabolic action of its cells.
- the claimed mechanism of action is metabolic, namely based on the secretion of insulin by the porcine islet cells

The EMA/CAT considers that the product falls within the definition of a somatic cell therapy medicinal product as provided in Article 2(1)(a) of Regulation (EC) No 1394/2007.

The alginate capsule is an integral part of the product and on basis of the data provided by the applicant, EMA/CAT considers that the product falls within the definition of a combined ATMP as provided in Article 2(1)(d) of Regulation (EC) No 1394/2007