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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Heat-killed *Mycobacterium vaccae* (whole cell) for the treatment of tuberculosis

On 20 September 2010, orphan designation (EU/3/10/786) was granted by the European Commission to Immodulon Therapeutics Ltd, United Kingdom, for heat-killed *Mycobacterium vaccae* (whole cell) for the treatment of tuberculosis.

What is tuberculosis?

Tuberculosis (TB) is an infection caused by bacteria called *Mycobacterium tuberculosis*. People become infected by inhaling infected droplets from the coughs or sneezes of people who have the disease. TB primarily affects the lungs (when it is called pulmonary TB) but it can also spread to other parts of the body, such as the bones or the nervous system. The symptoms of TB include a persistent cough, fever, weight loss and night sweats. Not everyone infected will develop the symptoms of the disease.

TB is a long-term debilitating disease. When left untreated, the disease may be life threatening, mainly because of the severe damage to the lungs that does not allow the patient to breathe normally, and because the bacteria causing the disease are often resistant to existing treatments.

What is the estimated number of patients affected by the condition?

At the time of designation, TB affected approximately 2 in 10,000 people in the European Union (EU)[*]. This is equivalent to a total of around 101,000 people, and is below the threshold for orphan designation, which is 5 people in 10,000. This is based on the information provided by the sponsor and the knowledge of the Committee for Orphan Medicinal Products (COMP).

What treatments are available?

At the time of submission of the application for orphan designation, several antibiotics were authorised for TB in the EU. These were used in combination and for long periods of time, normally for at least six months.

[*]Disclaimer: For the purpose of the designation, the number of patients affected by the condition is estimated and assessed on the basis of data from the European Union (EU 27), Norway, Iceland and Liechtenstein. This represents a population of 506,500,000 (Eurostat 2010).

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The sponsor has provided sufficient information to show that heat-killed *Mycobacterium vaccae* (whole cell) might be of significant benefit for patients with tuberculosis because it works in a different way to existing treatments. This assumption will need to be confirmed at the time of marketing authorisation, in order to maintain the orphan status.

How is this medicine expected to work?

Heat-killed *Mycobacterium vaccae* (whole cell) is expected to act as an 'immunotherapeutic medicine'. This means that it is expected to modify the way the immune system responds to TB to help the body fight the disease more effectively.

The medicine contains *Mycobacterium vaccae*, a bacterium from the same family as the bacteria that cause TB, which has been killed with heat. It is expected to increase the ability of the immune system to fight the TB bacteria. In addition, it may reduce some of the undesirable immune responses to the TB bacteria that can cause harm to the patient, such as damage to the lung tissue and weight loss. The medicine is intended to be used as an 'add on' to other medicines.

What is the stage of development of this medicine?

The effects of heat-killed *Mycobacterium vaccae* (whole cell) have been evaluated in experimental models.

At the time of submission of the application for orphan designation, a series of clinical trials had been completed with a previous formulation of the product but no clinical trials with the proposed formulation of heat-killed *Mycobacterium vaccae* (whole cell) in patients with tuberculosis had been started.

At the time of submission, heat-killed *Mycobacterium vaccae* (whole cell) was not authorised anywhere in the EU for tuberculosis or designated as an orphan medicinal product elsewhere for this condition.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 2 June 2010 recommending the granting of this designation.

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Opinions on orphan medicinal product designations are based on the following three criteria:

- the seriousness of the condition;
- the existence of alternative methods of diagnosis, prevention or treatment;
- either the rarity of the condition (affecting not more than 5 in 10,000 people in the European Union) or insufficient returns on investment.

Designated orphan medicinal products are products that are still under investigation and are considered for orphan designation on the basis of potential activity. An orphan designation is not a marketing authorisation. As a consequence, demonstration of quality, safety and efficacy is necessary before a product can be granted a marketing authorisation.

For more information

Sponsor's contact details:

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For contact details of patients' organisations whose activities are targeted at rare diseases see:

- Orphanet, a database containing information on rare diseases which includes a directory of patients' organisations registered in Europe.
- European Organisation for Rare Diseases (EURORDIS), a non-governmental alliance of patient organisations and individuals active in the field of rare diseases.

Translations of the active ingredient and indication in all official EU languages[1], Norwegian and Icelandic

Language	Active ingredient	Indication
English	Heat-killed *Mycobacterium vaccae* (whole cell)	Treatment of tuberculosis
Bulgarian	Термично-убит *Mycobacterium vaccae* (цели клетки)	Лечение на туберкулоза
Czech	Teplem usmrcené *Mycobacterium vaccae* (celobuněčná)	Léčba tuberkulózy
Danish	Varmedræbte *Mycobacterium vaccae* (helcelle)	Behandling af tuberkulose
Dutch	Hitte geïnactiveerd *Mycobacterium vaccae* (complete cel)	Behandeling van tuberculose
Estonian	Kuumsurmatud *Mycobacterium vaccae* (täisrakuline)	Tuberkuloosi ravi
Finnish	Lämpökäsittelyllä tuhottu *Mycobacterium vaccae* (kokosolu)	Tuberkuloosin hoito
French	*Mycobacterium vaccae* inactivé par la chaleur (germes entiers),	Traitement de la tuberculose
German	Hitze-inaktiviertes *Mycobacterium vaccae* (Ganzzellen)	Behandlung der Tuberkulose
Greek	Μυκοβακτήριο *vaccae* που έχει θανατωθεί με θερμότητα (ολοκυτταρικό)	Θεραπεία της φυματίωσης
Hungarian	Hőkezeléssel elölt *Mycobacterium vaccae* (teljes sejtes)	Tuberculosis kezelése
Italian	*Mycobacterium vaccae* ucciso col calore (cellula intera)	Trattamento della tubercolosi
Latvian	Ar karstumu iznīcināta *Mycobacterium vaccae* (visa šūna)	Tuberkulozes ārstēšana
Lithuanian	Karščiui neatspari *Mycobacterium vaccae* (tikra ląstelė)	Tuberkuliozės gydymas
Maltese	*Mycobacterium vaccae* maqtul bis-sħana (ċellula sħiħa)	Kura tat-tuberkulosi
Polish	Bakterie *Mycobacterium vaccae* (całe komórki) inaktywowane termicznie	Leczenie gruźlicy
Portuguese	*Mycobacterium vaccae* inactivada pelo calor (célula completa)	Tratamento da tuberculose
Romanian	*Mycobacterium vaccae* distrus termic (germeni intregi)	Tratamentul tuberculozei
Slovak	Teplom zabité *Mycobacterium vaccae* (celá bunka)	Liečba tuberkulózy
Slovenian	Z vročino ubita bakterija *Mycobacterium vaccae* (celotna celica)	Zdravljenje tuberkoloze
Spanish	*Mycobacterium vaccae* termoinactivado (de célula entera)	Tratamiento de la tuberculosis
Swedish	Värmeinaktiverad *Mycobacterium vaccae* (helcells)	Behandling av tuberkulos
Norwegian	Varmeinaktiverte *Mycobacterium vaccae* (hele celler)	Behandling av tuberkulose
Icelandic	Hitadeydd *Mycobacterium vaccae* (heilfrumu)	Meðferð við berklum

[1] At the time of designation