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SCIENCE MEDICINES HEALTH

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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Delta-9-tetrahydrocannabinol and cannabidiol from extracts of the *Cannabis sativa* L. plant for the treatment glioma

On 17 February 2016, orphan designation (EU/3/16/1621) was granted by the European Commission to GW Research Ltd, United Kingdom, for delta-9-tetrahydrocannabinol and cannabidiol from extracts of the *Cannabis sativa* L. plant for the treatment of glioma.

What is glioma?

Glioma is a type of brain tumour that affects the 'glial' cells (the cells that surround and support the nerve cells). Patients with glioma can have severe symptoms, but the types of symptoms experienced depend on where the tumour develops in the brain.

Symptoms can include headaches, nausea (feeling sick), loss of appetite, vomiting, and changes in personality, mood, mental capacity and concentration. About one fifth of patients with glioma have seizures (fits) for months or years before the disease is diagnosed.

Glioma is a long-term debilitating and life-threatening disease because of the severe damage to the brain, and is associated with poor long-term survival.

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

At the time of designation, glioma affected approximately 2.6 in 10,000 people in the European Union (EU). This was equivalent to a total of around 134,000 people^{*}, and is below the ceiling 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 designation, several medicines were authorised for the treatment of glioma in the EU. Treatments for glioma included surgery, radiotherapy (treatment with radiation), and chemotherapy

^{*}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 28), Norway, Iceland and Liechtenstein. This represents a population of 513,700,000 (Eurostat 2016).



(medicines to treat cancer) to improve survival. Patients also received treatments for the symptoms of glioma, including corticosteroids to reduce pressure within the skull and medicines to prevent seizures.

The sponsor has provided sufficient information to show that this medicine might be of significant benefit for patients with glioma because studies in experimental models showed that the medicine might reduce the size of the tumour and improve the survival of patients with glioma when given with radiotherapy or with temozolomide (a chemotherapy medicine often used in patients with glioma). This assumption will need to be confirmed at the time of marketing authorisation.

How is this medicine expected to work?

Delta-9-tetrahydrocannabinol and cannabidiol are substances found in the cannabis plant and are thought to act in different and complementary ways on glioma.

Delta-9-tetrahydrocannabinol is expected to work by blocking the action of proteins called 'mTORC1 complex'. This is expected to prevent the production of proteins needed for the glioma cells to grow. It also causes substances called sphingolipids to build up in glioma cells, causing them to die.

Cannabidiol is thought to reduce the production of other proteins needed by the cancer to grow and invade other cells (called MMP-2 and MMP-9) as well as to develop new blood vessels to supply the glioma with nutrients (called VEGF). It may also increase the effect of other medicines used for treating glioma.

What is the stage of development of this medicine?

The effects of delta-9-tetrahydrocannabinol and cannabidiol have been evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials with delta-9-tetrahydrocannabinol and cannabidiol in patients with glioma were ongoing.

The combination of delta-9-tetrahydrocannabinol and cannabidiol was authorised as Sativex in a number of EU Member States for the treatment of multiple sclerosis.

At the time of submission, delta-9-tetrahydrocannabinol and cannabidiol was not authorised anywhere in the EU for glioma 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 21 January 2016 recommending the granting of this designation.

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 EU) 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:

Contact details of the current sponsor for this orphan designation can be found on EMA website, on the medicine's [rare disease designations page](#).

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 languages¹, Norwegian and Icelandic

Language	Active ingredient	Indication
English	Delta-9-tetrahydrocannabinol and cannabidiol from extracts of the <i>Cannabis sativa</i> L. plant	Treatment of glioma
Bulgarian	Делта-9-тетрахидроканабинол и канабидиол от екстракти от растението <i>Cannabis sativa</i> L.	Лечение на глиома
Croatian	Delta-9-tetrahidrokanabinol i kanabidiol iz ekstrakta biljke <i>Cannabis sativa</i> L.	Liječenje glioma
Czech	Delta-9-tetrahydrokanabinol a kanabidiol z extraktu rostliny <i>Cannabis sativa</i> L.	Léčba gliomů
Danish	Delta-9-tetrahydrocannabinol og cannabidiol fra ekstrakter af <i>Cannabis sativa</i> L.-planten	Behandling af gliom
Dutch	Delta-9-tetrahydrocannabinol en cannabidiol uit extracten van de <i>Cannabis sativa</i> L. plant	Behandeling van glioma
Estonian	Delta-9-tetrahüdrokannabinool ja kannabidiol hariliku kanepitaime (<i>Cannabis sativa</i> L.) ekstraktidest	Glioomi ravi
Finnish	<i>Cannabis sativa</i> L.-kasvin uutteista peräisin olevat Delta-9-tetrahydrokannabinoli ja kannabidioli	Gliooman hoito
French	Delta-9-tétrahydrocannabinol et cannabidiol provenant d'extraits de la plante <i>Cannabis sativa</i> L.	Traitement des gliomes
German	Delta-9-Tetrahydrocannabinol und Cannabidiol aus Extrakten der Pflanze <i>Cannabis sativa</i> L.	Behandlung von Gliomen
Greek	Δ9-τετραϋδροκανναβινόλη και κανναβιδιόλη από εκχυλίσματα του φυτού <i>Cannabis sativa</i> L	Θεραπεία του γλοιώματος
Hungarian	Delta-9-tetrahidrokanabinol és kannabidiol a <i>Cannabis sativa</i> L. növény kivonatából	Glioma kezelése
Italian	Delta-9-tetraidrokanabinolo e cannabidiolo da estratti della pianta <i>Cannabis sativa</i> L.	Trattamento del glioma
Latvian	Delta-9-tetrahidrokanabinols un kanabidiols, kas iegūts no sējas kaņepes (<i>Cannabis sativa</i> L.) auga ekstraktiem	Gliomas ārstēšana
Lithuanian	Delta-9-tetrahidrokanabinolis ir kanabidiolis iš <i>Cannabis sativa</i> L. augalų ekstraktų	Gliomos gydymas
Maltese	Delta-9-tetrahydrocannabinol u cannabidiol minn estratti tal-pjanta <i>Cannabis sativa</i> L.	Kura tal-glioma
Polish	Delta-9-tetrahydrokannabinol i kannabidiol z ekstraktów z <i>Cannabis sativa</i> L.	Leczenie glejaka
Portuguese	Delta-9-tetra-hidrokanabinol e canabidiol de extratos da planta <i>Cannabis sativa</i> L.	Tratamento do glioma
Romanian	Delta-9-tetrahidrokanabinol și canabidiol provenite din extracte de plante de <i>Cannabis sativa</i> L.	Tratamentul gliomului
Slovak	Delta-9-tetrahydrokanabinol a kanabidiol z extraktov rastliny <i>Cannabis sativa</i> L.	Liečba gliómu

¹ At the time of designation

Language	Active ingredient	Indication
Slovenian	Delta-9-tetrahidrokanabinol in kanabidiol iz ekstraktov rastline <i>Cannabis sativa</i> L.	Zdravljenje glioma
Spanish	Delta-9-tetrahidrocannabinol y cannabidiol extractos de la planta <i>Cannabis sativa</i> L.	Tratamiento del glioma
Swedish	Delta-9-tetrahydrocannabinol och cannabidiol från extrakt av växten <i>Cannabis sativa</i> L.	Behandling av gliom
Norwegian	Delta-9-tetrahydrocannabinol og cannabidiol fra ekstrakter av planten <i>Cannabis sativa</i> L.	Behandling av gliom
Icelandic	Delta-9-tetrahydrókannabínól og kannabídíól unnið úr <i>Cannabis sativa</i> L. jurtinni	Meðferð á glíóma