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Public summary of opinion on orphan designation

Adeno-associated viral vector serotype 3B encoding shortened human ATP7B for the treatment of Wilson's disease

On 21 August 2020, orphan designation EU/3/20/2321 was granted by the European Commission to Vivet Therapeutics S.A.S., France, for adeno-associated viral vector serotype 3B encoding shortened human ATP7B (also known as VTX-801) for the treatment of Wilson's disease.

What is Wilson's disease?

Wilson's disease is a genetic disorder that causes copper absorbed from food to build up in the body. In healthy people, liver cells remove excess copper. In people with Wilson's disease, due to a genetic mutation (change), the liver cannot remove copper, which builds up in the liver and in other organs such as the brain, and damages them.

Wilson's disease is chronically debilitating and can be life threatening if not treated due to the toxicity of copper in the liver and brain.

What is the estimated number of patients affected by Wilson's disease?

At the time of designation, Wilson's disease affected less than 1 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 52,000 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, penicillamine, trientine and zinc acetate were authorised in the EU for the treatment of Wilson's disease. The only curative treatment for Wilson's disease was liver transplantation.

The sponsor has provided sufficient information to show that the medicine might be of significant benefit for patients with Wilson's disease, with laboratory studies showing that a single treatment was

*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, Iceland, Liechtenstein, Norway and the United Kingdom. This represents a population of 519,200,000 (Eurostat 2020).

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enough to reduce copper levels in urine and liver, reducing liver damage. 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?

Because of a genetic mutation, in patients with Wilson's disease a protein in liver cells called ATP7B does not work properly. As a result, the liver cannot remove copper.

The medicine is made of a virus that has been modified to contain normal copies of the gene for producing the ATP7B protein. After being given to the patient as a single injection into a vein, the virus is expected to deliver the *ATP7B* gene into the liver cells and enable them to produce the ATP7B protein. This is expected to help relieve symptoms of the disease.

The type of virus used in this medicine ('adeno-associated virus') does not cause disease in humans.

What is the stage of development of this medicine?

The effects of the medicine have been evaluated in experimental models.

At the time of submission of the application for orphan designation, no clinical trials with the medicine in patients with Wilson's disease had been started.

At the time of submission, the medicine was not authorised anywhere in the EU for the treatment of Wilson's disease or designated as an orphan medicinal product elsewhere for this condition.

In accordance with Regulation (EC) No 141/2000, the COMP adopted a positive opinion on 16 July 2020, 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

Contact details of the current sponsor for this orphan designation can be found on EMA website.

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	Adeno-associated viral vector serotype 3B encoding shortened human ATP7B	Treatment of Wilson's disease
Bulgarian	Адено-асоцииран вирусен вектор серотип 3B кодиращ съкратен човешки ATP7B	Лечение на болест на Уилсън
Croatian	Adeno-asocirani virusni vektor serotipa 3B, koji kodira skraćeni humani ATP7B	Liječenje Wilsonove bolesti
Czech	Adeno-asociovaný virový vektor sérotypu 3B kódující zkrácený lidský ATP7B	Léčba Wilsonovy choroby
Danish	Adeno-associeret viral vektor serotype 3B, som koder forkortet human ATP7B	Behandling af Wilsons sygdom
Dutch	Adeno-geassocieerd virus vector serotype 3B die codeert voor ingekort humane ATP7B	Behandeling van de ziekte van Wilson
Estonian	Inimese lühendatud ATP7B kodeeriv adeno-assotsieerunud viirusvektori serotüüp 3B	Wilsoni haiguse ravi
Finnish	Adeno-assosioitu virusvektori, serotyyppi 3B, joka koodaa lyhennettyä ihmisen ATP7B	Wilsonin taudin hoito
French	Vecteur viral adéno-associé de sérotype 3B codant l'ATP7B humain raccourci	Traitement de la maladie de Wilson
German	Adeno-assoziierter Viraler Vektor vom Serotyp 3B, der für die humane verkürzt ATP7B codiert	Behandlung des Morbus Wilson
Greek	Αδενο-σχετιζόμενος ιικός φορέας οροτύπου 3B που κωδικοποιεί περικομμένη ανθρώπινη ATP7B	Θεραπεία της νόσου του Wilson
Hungarian	Adeno-asszociált vírusvektor 3B, amely a rövidített humán ATP7B-t kódolja	Wilson-betegség kezelése
Italian	Vettore virale adeno-associato di sierotipo 3B che codifica per ATP7B umana accorciata	Trattamento del morbo di Wilson
Latvian	Adeno-asociētā vīrusa 3B serotipa vektors, kas kodē saīsinātu cilvēka ATP7B	Vilsona slimības ārstēšana
Lithuanian	Adeno-asocijuoto viruso vektoriaus 3B serotipas, koduojantis sutrumpintą žmogaus *ATP7B*	Vilsono ligos gydymas
Maltese	Serotip 3B ta' vettur virali assoċjat ma' adeno li jikkodifika ATP7B uman imqassar	Kura tal-marda ta' Wilson
Polish	Wektor wirusowy zależny od adenowirusów serotypu 3B, kodujący skrócony ludzki gen ATP7B	Leczenie choroby Wilsona
Portuguese	Vector viral adeno-associado de serotipo 3B que codifica ATP7B humana reduzida	Tratamento da doença de Wilson
Romanian	Vector viral adeno-asociat de serotip 3B, care codifică ATP7B uman scurtat	Tratamentul bolii Wilson

[1] At the time of designation

Language	Active ingredient	Indication
Slovak	Adeno-asociovaný vírusový vektor sérotypu 3B kódujúci skrátený ľudský ATP7B	Liečba Wilsonovej choroby
Slovenian	adenovirusom pridruženivirusni vektor serotipa 3B, ki kodira skrajšani človeški ATP7B	Zdravljenje Wilsonove bolezni
Spanish	Vector viral adenoasociado del serotipo 3B que codifica ATP7B humana acortada	Tratamiento de la enfermedad de Wilson
Swedish	Adenoassocierad virusvektor serotyp 3B som kodar för förkortad human ATP7B	Behandling av Wilsons sjukdom
Norwegian	Adenoassosiert virusvektor serotype 3B som koder for avkortet human ATP7B	Behandling av Wilsons sykdom
Icelandic	Adenótengd veiruferja, sermisgerð 3B, sem kóðar fyrir styttu manna-ATP7B	Meðferð við Wilsons sjúkdómi