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News Release

Sativex[®] improves symptoms of spasticity due to MS, study shows

Newbury, Berkshire, 2nd March 2011 – Results from a phase III clinical study published online yesterday in the *European Journal of Neurology Early View*

[<http://onlinelibrary.wiley.com/doi/10.1111/j.1468-1331.2010.03328.x/abstract>]

showed that about half of all people with moderate to severe spasticity due to multiple sclerosis (MS) who have not responded adequately to standard anti-spasticity therapy, find that adding Sativex[®] Oromucosal Spray (delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD)), to their existing medication can improve the debilitating symptoms of spasticity associated with MS.¹

The primary efficacy endpoint was the change in a validated, 10 point (0-10) self-reported spasticity numerical rating scale (NRS) from the point of randomisation to the end of the treatment.¹ Sativex[®] was shown to provide significant improvement, compared to placebo, in the NRS spasticity score, spasm frequency and sleep disturbance related to spasticity.¹

After a four-week, single-blind therapeutic trial period in 572 patients, Sativex[®] reduced the mean NRS score for spasticity by 3.01 points, from a baseline of 6.91 points.¹ 48% of patients achieved a clinically meaningful improvement of $\geq 20\%$ in spasticity severity during this initial period.¹ Of these responders, 241 proceeded into a 12-week, randomised, placebo-controlled trial phase.¹ At the end of the trial, Sativex[®] had reduced the mean spasticity 0-10 NRS score in responders by significantly more than placebo (estimated treatment difference 0.84 points; $p=0.0002$).¹ The number of patients achieving an improvement in spasticity NRS of $\geq 30\%$ by the end of the trial was significantly greater in the Sativex[®] group than the placebo group (74% vs. 51%; $p=0.0003$).¹

Professor John Zajicek, Honorary Consultant in Neurology, Derriford Hospital and Chair of Clinical Neurosciences at PCMD, University of Plymouth said, 'We have been aware for a long time that cannabinoid medicines can significantly improve spasticity, which is a common,

complex symptom of MS, and now the results from this study prove the positive impact they can have on patients' symptoms, and ultimately their lives.'

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Note to Editors

About MS

Multiple sclerosis (MS) is a condition that affects approximately 100,000 people in the UK in which damage occurs within the central nervous system (CNS - brain and spinal cord).² As the nerves of the CNS control the functions of the whole body, symptoms can affect many different areas.³ MS is the most common disabling disease of the CNS affecting young adults and is usually diagnosed between the ages of 20 and 40 years.^{3,4} MS is twice as common in women than in men.^{3,4}

More information can be found on the following websites:

- MS Society <http://www.mssociety.org.uk/>
- MS Trust <http://www.mstrust.org.uk/>

About spasticity

Spasticity is a common symptom associated with MS⁵ and is a major contributor to disability.⁶ It is caused by damage to the nerves in the central nervous system which carry messages instructing muscles how to move resulting in an involuntary muscle over activity.⁷

In a survey, 84% of people with MS reported symptoms of spasticity.⁸ Moderate, severe or total spasticity is reported in 34% of individuals.⁸ Symptoms include loss of coordination and mobility, painful spasms, stiffness and/or weakness of muscles.⁷ As a consequence an individual may have difficulty in walking, picking up objects, washing, dressing and other everyday activities involving movement.⁵ In addition to causing a great deal of distress to the person with MS, mood, self-image and motivation can also be affected.⁹

About the study¹

A 19-week follow-up, multicentre, double-blind, randomised, placebo-controlled, parallel-group study in subjects with MS spasticity not fully relieved with current anti-spasticity therapy. Subjects were treated with Sativex[®], as add-on therapy, in a single-blind manner for 4 weeks, after which those achieving an improvement in spasticity of $\geq 20\%$ progressed to a 12 week randomised, placebo-controlled phase.

About Sativex[®]

Sativex[®] was developed by UK-based GW Pharmaceuticals plc in specific response to the MS population's unmet need for a prescription cannabis based medicine. Manufactured under Home Office licence at an undisclosed location in the UK, Sativex[®] is marketed in the UK by Bayer Healthcare.

Sativex[®] is indicated as add-on treatment for symptom improvement in patients with moderate to severe spasticity due to MS who have not responded adequately to other anti-spasticity medication and who demonstrate clinically significant improvement in spasticity related symptoms during an initial trial of therapy.¹⁰ There are around 100,000 people with MS in the UK², with 84% reporting symptoms of spasticity.⁸ Of these, approximately 11,500 do not respond adequately to standard therapy and would therefore be eligible for treatment with Sativex[®].⁸ About 50% of this treatment-resistant group will have a good response to Sativex[®] in an initial trial of therapy and will continue to do so when taking Sativex[®] for an extended period of time.¹¹

Sativex[®] contains active ingredients called 'cannabinoids' which are extracted from cannabis plants grown and processed under strictly controlled conditions. Cannabinoids bind to cannabinoid receptors that occur naturally throughout the body, particularly in the central nervous system, and can result in the inhibition of nerve impulses.¹² The detailed mode of action of cannabinoids is the subject of continuing research, but in simple terms Sativex[®] can reduce the overactivity of MS-damaged nerves that can result in spasticity. In responding patients, Sativex[®] added to existing anti-spasticity medication will therefore improve spasticity symptoms, reducing painful spasms and facilitating an improvement in the activities of daily living.

Sativex[®] is primarily made up of a 1:1 ratio of two particular cannabinoids - cannabidiol (CBD) and delta-9-tetrahydrocannabinol (THC).¹³ The CBD:THC formulation is believed to

provide maximum clinical efficacy - a significant decrease in MS spasticity - with the minimum of unwanted THC-related side effects.¹³

Main effects of CBD and THC: ¹⁴

CBD	THC
Anti-inflammatory, anticonvulsant, antipsychotic, anti-oxidant, neuroprotective, immunomodulatory	Analgesic, anti-spasmodic, anti-tremor, anti-inflammatory, appetite stimulant, anti-emetic

The most common side effects of Sativex[®] are dizziness, which occurs mainly in the first few weeks of treatment, and fatigue. These reactions are usually mild to moderate and improve within a few days even if treatment is continued.¹⁰

Sativex[®] is only available on prescription from a physician with experience in treating MS spasticity.¹⁰ It is sprayed into the mouth either onto the inside of the cheek or under the tongue. The MS patient decides how many sprays they need in any one day, with the typical dose of 8 sprays a day seen in clinical trials (maximum recommended dose of 12 sprays).¹⁰ The NHS price of Sativex[®] is £125 per 10ml vial which for a typical patient is approximately £11 per day.¹⁵

Sativex[®] is a registered trade mark of GW Pharmaceuticals and they are the Marketing Authorisation holder for Sativex[®].

More information for the press can be found at www.sativex.co.uk

About Bayer

Bayer is a worldwide leading specialty pharmaceutical company. Its research and business activities are focused on the following areas: Diagnostic Imaging, General Medicine, Haematology & Neurology, Oncology and Women's Healthcare. With innovative products, Bayer aims for leading positions in specialised markets worldwide. Using new ideas, Bayer aims to make a contribution to medical progress and strives to improve the quality of patients' lives.

Further information can be found at www.bayer.co.uk

About GW Pharmaceuticals Ltd

GW Pharmaceuticals plc (AIM:GWP) was founded in 1998 and is listed on the AiM, a market of the London Stock Exchange. Operating under licence from the UK Home Office, the company researches and develops cannabinoid pharmaceutical products for patients who suffer from a range of serious ailments, in particular MS and cancer pain. GW has assembled a large in-house scientific team with expertise in cannabinoid science as well as experience in the development of both plant based prescription pharmaceutical products and medicines containing controlled substances. GW occupies a world leading position in cannabinoids and has developed an extensive international network of the most prominent scientists in the field.

For further information, please visit www.gwpharm.com

Forward-Looking Statements

This release may contain forward-looking statements based on current assumptions and forecasts made by Bayer Group or subgroup management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports which are available on the Bayer website at www.bayer.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

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