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(54) **PHARMACEUTICAL PREPARATION FOR TREATING OR PREVENTING CARDIOVASCULAR OR NEUROLOGICAL DISORDERS BY MODULATING OF THE ACTIVITY OF NITRIC OXIDE SYNTHASE**

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(58) **Field of Search** 514/249, 565

(56) **References Cited**

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(57) **ABSTRACT**

The invention relates to the use of at least folic acid or a folate and tetrahydrobiopterin (BH₄) or derivatives thereof for treating or preventing cardiovascular or neurological disorders by modulation of the activity of nitric oxide synthase (NOS). The present invention also relates to the use of at least folio acid or a folate and tetrahydrobiopterin (BH₄) or derivatives thereof for the production of a pharmaceutical preparation suitable for influencing the nitric oxide (NO) level, particularly by modulation of the activity of nitric oxide synthase (NOS) by reducing superoxide (O₂⁻) production and enhancing nitric oxide (NO) synthesis. This effect occurs in absence of negative changes in other risk factors, e.g. lipids, blood pressure and homocysteine. Clinical areas of application include all anomalies of the nitric oxide level, particularly the prevention and treatment of cardiovascular and of neurological disorders. The present invention also relates to pharmaceutical preparations comprising at least one compound selected from the group consisting of 5-formyl-(6S)-tetrahydrofolic acid, 5-methyl-(6S)-tetrahydrofolic acid, 5,10-methylene-(6R)-tetrahydrofolic acid, 5,10-methenyl-(6R)-tetrahydrofolic acid, 10-formyl-(6R)-tetrahydrofolic acid, 5-formimino-(6S)-tetrahydrofolic acid or (6S)-tetrahydrofolic acid or pharmaceutically compatible salts thereof, together with tetrahydrobiopterin (BH₄) and with pharmaceutically compatible active and adjuvant substances, such as L-arginine, for influencing the nitric oxide (NO) level.

34 Claims, 7 Drawing Sheets