AtreMorine®

Nutraceutical

Ebiotec

Data Sheet

Neuroprotective
Pro-dopaminergic
Anti-parkinsonian

BRAND NAME
AtreMorine®, nutritional supplement.

MANUFACTURER
EuroEspes Biotechnology S.A. (EBIOTEC).

NATIONAL CODE (SPAIN)
182740.1

ORIGIN
Vicia faba L.

PRODUCT
E-PodoFavalin-15999®.

STUDIES
Supported by basic and clinical scientific studies (*see bibliography*).

COMMERCIAL PRESENTATION
Bottle with 75 g.

RECOMMENDED DOSE
5-20g/day.

L-DOPA CONTENT
Approximately 20 mg per gram of AtreMorine®.

COMPOSITION
5 g of AtreMorine® contain:

4,967 g of E-PodoFavalin-15999®.
0,033 g of d-alpha-Tocopheryl Acetate, equivalent to 12 mg of Vitamin E (100% NRV).

What is AtreMorine?

AtreMorine® is a nutraceutical product of vegetal origin obtained from the structural components of *Vicia faba* L. by non-denaturing biotechnological procedures that enable the preservation of all the healthy properties of the original plant. AtreMorine® is made up of 100% natural ingredients. Does not contain gluten or additives.

Composition

E-PodoFavalin-15999® extract + Vitamin E (D-alpha-tocopheryl acetate). A natural source of L-dopa, it contains approximately 20 mg of L-dopa per gram of extract; vegetal proteins, unsaturated fatty acids, minerals and vitamins; a high vegetal fiber content; carbohydrates; vegetal pigments, carotenes and vegetal sterols, phytosterols.

Reference Analysis per 100 g

AMINO ACIDS %	
Proteins	
ASPARTIC ACID	6.5
ARGININE	4.6
GLUTAMIC ACID	1.1
SERINE	0.9
LYSINE	0.7
ALANINE	0.7
TYROSINE	0.6
VALINE	0.6
LYSINE	0.6
GLYCINE	0.6
PHENYLALANINE	0.6
ISOLEUCINE	0.5
THREONINE	0.5
PROLINE	0.4
METHIONINE	0.3
HISTIDINE	0.3

CARBOHYDRATES	
STARCH	16.2 g
GLUCOSE	13.3 g
FRUCTOSE	4.6 g
SACAROSE	0.9 g

LIPIDS (g/100g fat)	
Saturated Total: 29.8	
PALMITIC	19.1
STEARIC	7.7
MYRISTIC	2.4
Monounsaturated Total: 29.1	
OLEIC	28.3
PALMITOLEIC	0.8
Polyunsaturated Total: 41.1	
LINOLEIC	29.6
LINOLENIC	11.5

PHYTOSTEROLS (g/100g fat)	
BETA-SITOSTEROL	68.2
CAMPESTEROL	20.5
STIGMASTEROL	6.9
SITOSTANOL	3.5
CHOLESTEROL	0.9

CAROTENOIDS (g/100g pigments)	
t-LUTEIN	37.4
BETA-CAROTENE	32.0
EPOXIDES	30.0
t-ZEAXANTHIN	1.0

MINERALS	
CALCIUM	441.1 mg
IRON	9.4 mg
MAGNESIUM	205.6 mg
POTASSIUM	1862.3 mg
SODIUM	385.5 mg
MANGANESE	2.2 mg

VITAMINS	
VITAMIN B_2 (RIBOFLAVIN)	0.2 mg
VITAMIN B_3 (NIACIN)	4.2 mg
VITAMIN B_5 (PANTOTHENIC ACID)	0.7 mg
VITAMIN B_6	1.4 mg
VITAMIN C (ASCORBIC ACID)	30.0 mg

OTHERS	
L-DOPA	25.6 mg/g
VICINE	0.3 mg/g
CONVICINE	0.3 mg/g

NUTRITIONAL ANALYSIS	(per dosis 5 g)
ENERGY VALUE	59 kJ 14 kcal
TOTAL FATS	0.1 g
OF WHICH SATURATES	0.016 g
TOTAL CARBOHYDRATES	3 g
OF WHICH SUGARS	0.5 g
PROTEIN	0.5 g
SALT	0.03 g
VITAMIN E (D-alpha-Tocopheryl Acetate)	12 mg*

* 100% of Nutrient Reference Values (NRV).

Note: For health professionals only

The information contained in this data sheet is directed to health professionals.

Bibliography

Cacabelos R, Carrera I, Martínez O, Alejo R, Fernández-Novoa L, et al. 2021. Atremorine in Parkinson's disease: From dopaminergic neuroprotection to pharmacogenomics. Med Res Rev. 1–46.

Corzo L, Fernández-Novoa L, Carrera I, Martínez O, Rodríguez S, Alejo R, Cacabelos R. 2020. Nutrition, Health, and Disease: Role of Selected Marine and Vegetal Nutraceuticals. Nutrients. 12(3):747.

Cacabelos R, Carrera I, Alejo R, Fernández-Novoa L, Cacabelos P, Corzo L, Rodríguez S, Alcaraz M, Tellado I, Cacabelos N, Pego R, Carril JC. 2019. Pharmacogenetics of Atremorine-Induced Neuroprotection and Dopamine Response in Parkinson's Disease. Planta Med. 85(17):1351-1362.

Teijido O, Cacabelos R. 2018. Pharmacoepigenomic Interventions as Novel Potential Treatments for Alzheimer's and Parkinson's Diseases. Int J Mol Sci. 19, 3199.

Carrera I, Fernández-Novoa L, Sampedro C, Cacabelos R. 2017. Neuroprotective effect of Atremorine in an experimental model of Parkinson's disease. Curr Pharm Des. 23(18):2673-2684.

Romero A, Parada E, González-Lafuente L, Farré-Alins V, Ramos E, Cacabelos R, Egea J. 2017. Neuroprotective effects of E-PodoFavalin-15999 (Atremorine®). CNS Neurosci Ther. 23:450-452.

Cacabelos R, Fernández-Novoa L, Alejo R, Corzo L, Alcaraz M, Nebril L, Cacabelos P, Fraile C, Carrera I, Carril JC. 2016. E-PodoFavalin-15999 (Atremorine®)-Induced Dopamine Response in Parkinson's Disease: Pharmacogenetics-Related Effects. J Gen Med Pharm. 1(1):1-26.

Cacabelos R, Fernández-Novoa L, Alejo R, Corzo L, Rodríguez S, Alcaraz M, Nebril L, Cacabelos P, Fraile C, Carrera I, Carril JC. 2016. E-PodoFavalin-15999 (Atremorine®)-Induced Neurotransmitter and Hormonal Response in Parkinson's Disease. J Exp Res Pharm. 1(1):1-12.

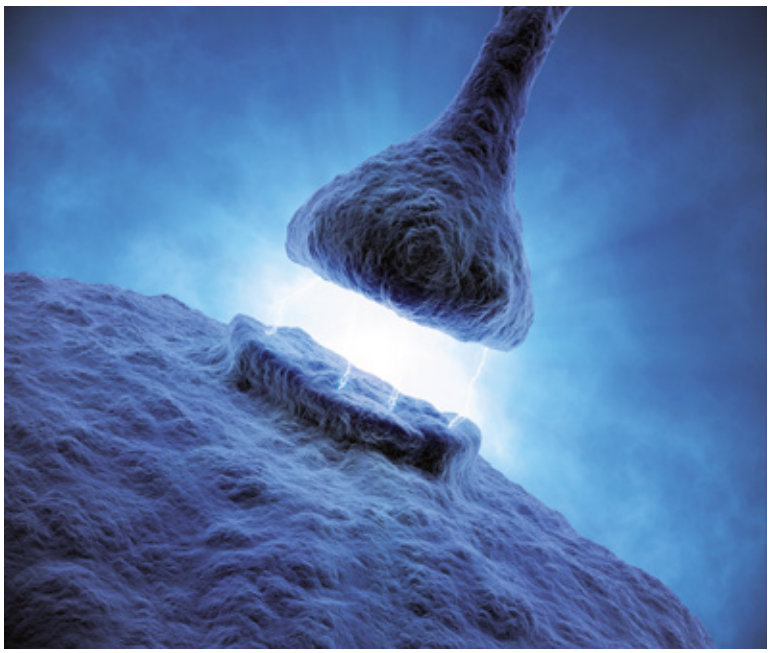
WHAT IS A NUTRACEUTICAL?

Nutraceuticals are products derived from natural sources whose nutritional and functional characteristics provide benefits to help improve health and therefore reduce the risk of suffering diseases; they may be combined with other active ingredients or exogenous nutrients such as vitamins, minerals, antioxidants, fatty acids, etc.; however, this type of products, which cover a wide range of possibilities, should be taken as part of a healthy, balanced diet and never as a replacement for it.

Indications

E-PodoFavalin-15999® (AtreMorine®) is a potent dopaminergic enhancer in patients with Parkinson's disease. AtreMorine® showed a selective capacity to enhance the catecholaminergic system (dopamine, noradrenaline, adrenaline), with no effect on serotonin, together with an effective regulation of pituitary hormones (prolactin, growth hormone) which are dopamine-dependent at the hypothalamus-pituitary level. Clinical studies of patients with parkinsonian disorders who received AtreMorine® revealed that this nutraceutical can enhance dopaminergic neurotransmission and increase plasma dopamine levels by 200- to 500-fold in both untreated patients and patients chronically treated with conventional antiparkinsonian drugs. In MPTP models of Parkinson's disease, E-PodoFavalin-15999® has demonstrated to be an effective neuroprotective agent of dopaminergic neurons in the substantia nigra pars compacta. AtreMorine® also shows neuroprotective and antiinflammatory effects in different in vitro models of Parkinson disease (PD) and oxidative stress.

The effect of AtreMorine® is to enhance the synthesis of dopamine and noradrenaline and it is of great value for all those persons whose dopaminergic neurons are affected or who suffer neurodegenerative disorders affecting the dopaminergic and/or noradrenergic neurotransmission systems. AtreMorine® has also anti-oxidative and anti-inflammatory properties.



Precautions

Not suitable for persons allergic to any of its ingredients. Do not exceed the recommended daily dose. Keep out of the reach of children. Should not be used as a substitute for a balanced diet. Persons suffering from favism due to glucose 6-phosphate dehydrogenase deficiency, or those chronically taking psychotropic drugs, should consult their physician before taking AtreMorine®.

General Health Register
Nº: 26.06671/C

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EuroEspes Group

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ISO 9001 CERTIFIED COMPANY

OUR OWN MANUFACTURING PROCESSES:

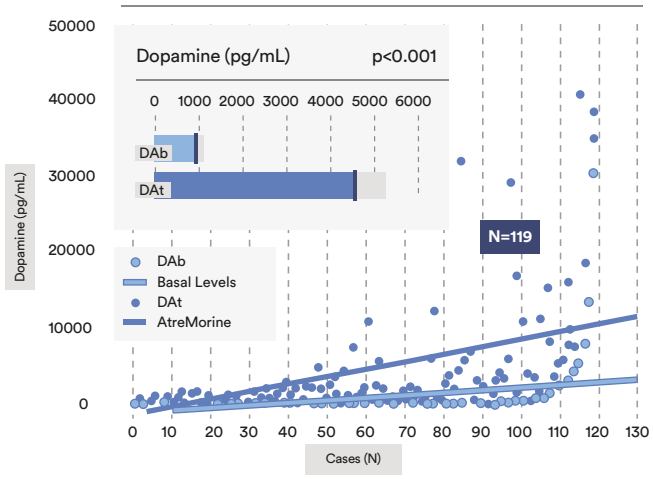
AtreMorine® is a nutritional supplement belonging to the vegetal line of nutraceuticals developed and manufactured by EuroEspes Biotechnology S.A. (Ebiotec).

The nutraceutical bioproducts developed at Ebiotec by the application of non denaturing biotechnological processes retain all the biological properties of their natural sources (of marine, vegetal or animal origin). All Ebiotec´s products are supported by preclinical and clinical scientific documentation, have a clearly prophylactic focus, and contribute high therapeutic value in various health problems (disturbance of lipid metabolism, arteriosclerosis, neurodegenerative diseases, cardio- and cerebrovascular disorders, immune system dysfunction).

Scientific Studies

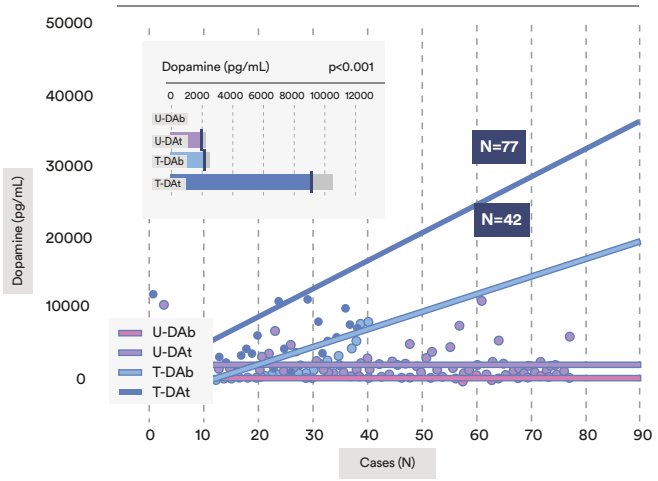
01. AtreMorine® increases the levels of dopamine in parkinsonian disorders.

AtreMorine® induced dopamine response



A single oral dose of 5g of **AtreMorine®**, in 119 patients with parkinsonian disorders, produced a huge increase in dopamine levels after one hour.

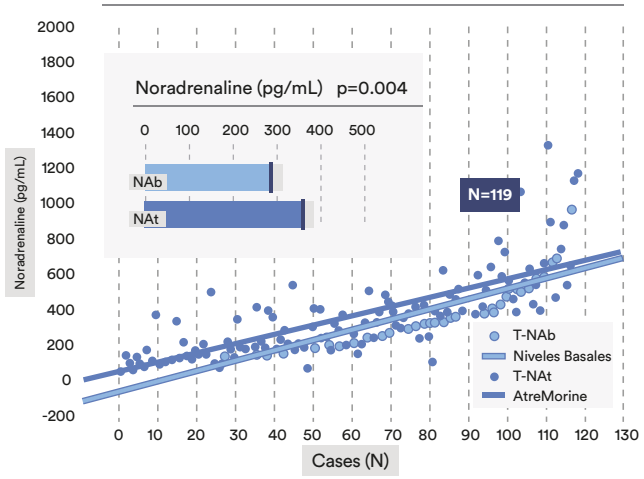
Comparative effect in untreated vs treated patients with anti-parkinsonian drugs



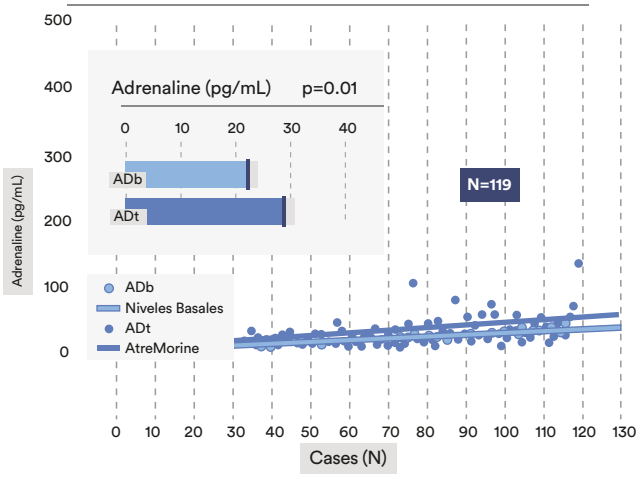
Comparison of the effect of **AtreMorine®** on the levels of dopamine in treated vs. untreated parkinsonian patients. In untreated patients the response rate was 100%, while in treated patients the response rate was 98%.

02. AtreMorine® affects neurotransmitter release in parkinsonian disorders.

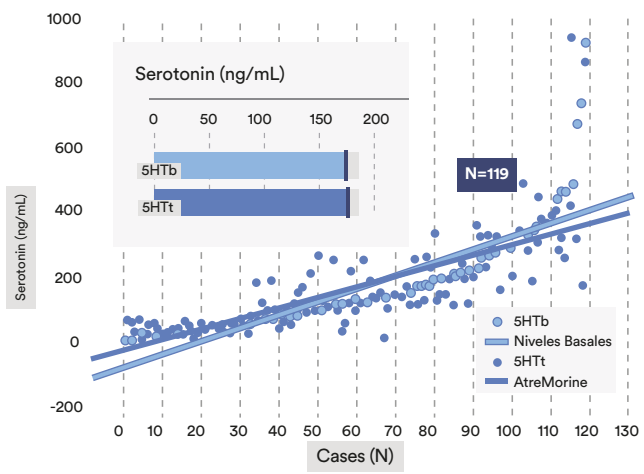
AtreMorine® induced noradrenaline response



AtreMorine® induced adrenaline response



AtreMorine® induced serotonin response

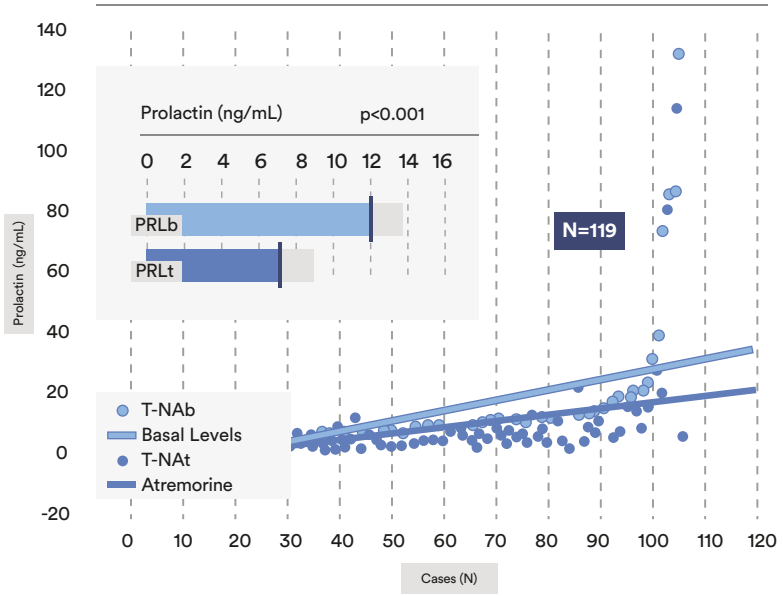


A single oral dose of 5 g of **AtreMorine®** increased noradrenaline and adrenaline levels in parkinsonian patients, while serotonin levels remained unchanged.

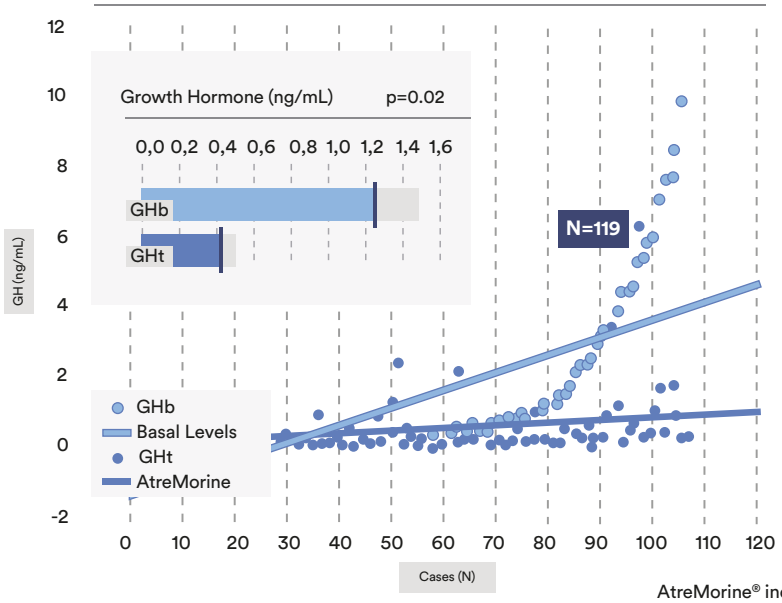
03. Hormone effects of AtreMorine® in parkinsonian patients.

A single oral dose of 5 g **AtreMorine®** induced a significant decrease in the levels of prolactin, GH, and cortisol.

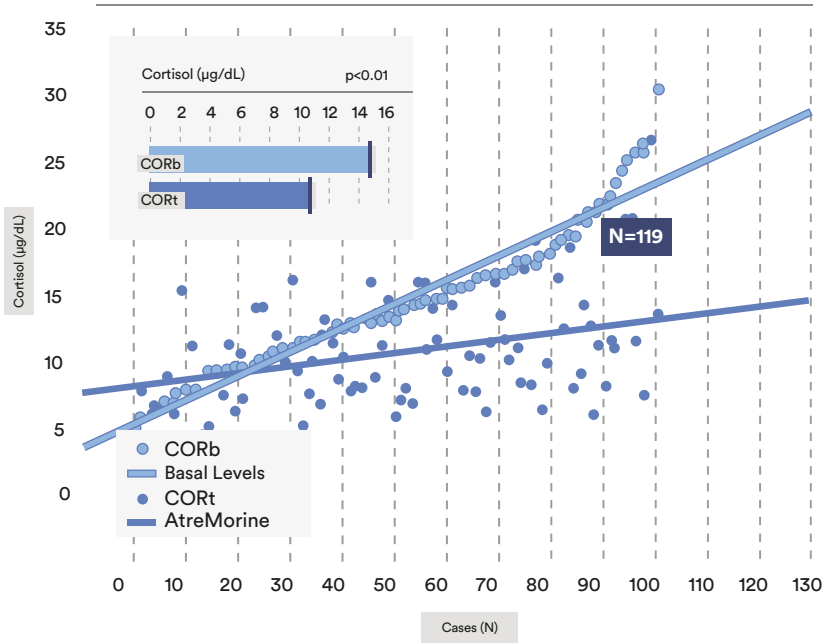
AtreMorine® induced Prolactin response



AtreMorine® induced GH response

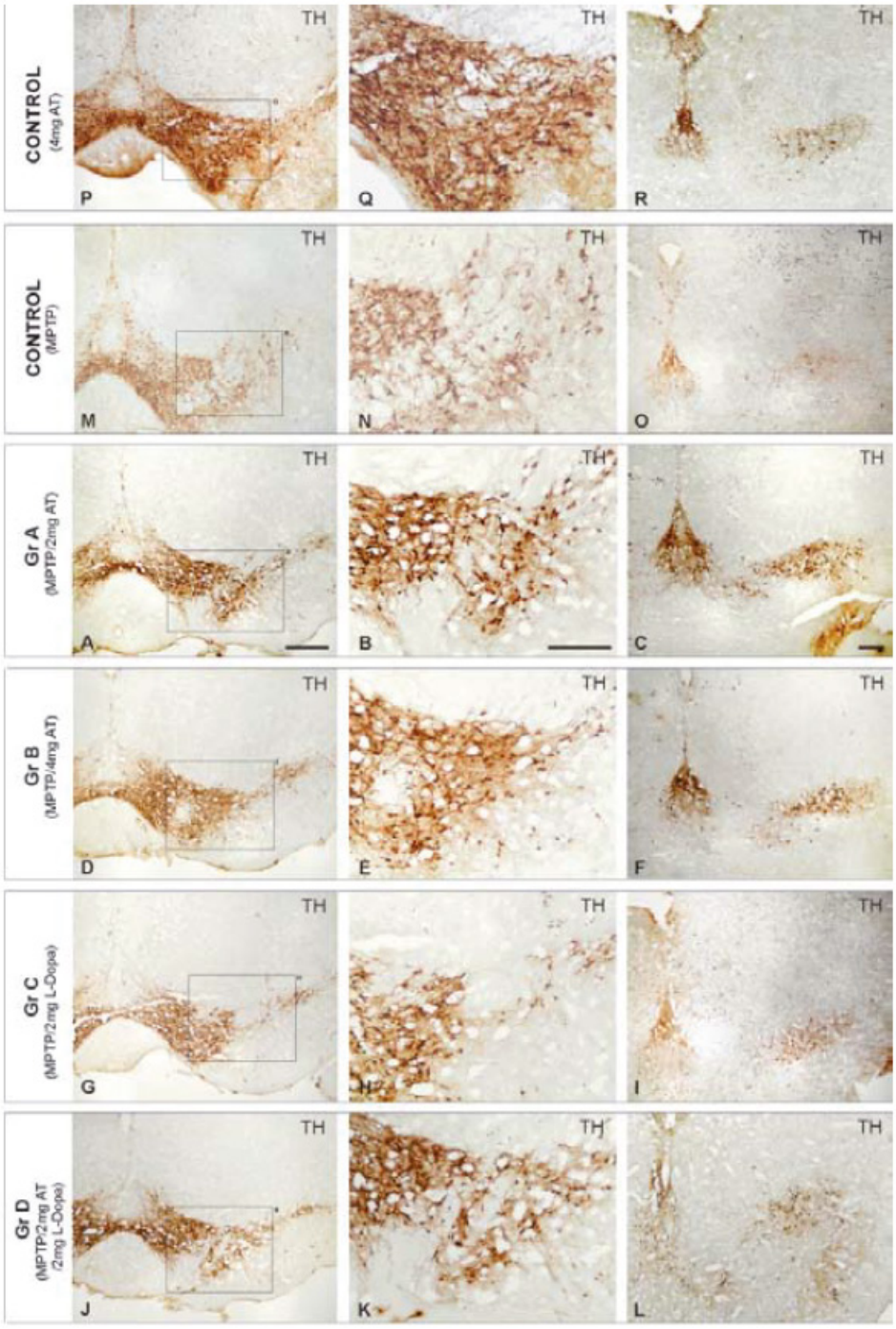


AtreMorine® induced Cortisol response



04. AtreMorine® protects against MPTP-induced dopaminergic neurodegeneration.

Comparative photomicrographs of dopaminergic immunoreactivity (TH) in the substantia nigra of MPTP mice with different treatments. Transverse brain sections of mice from groups A and B, treated with AtreMorine® (2 and 4 mg), show a remarkable neuroprotective effect by reducing the dopaminergic neuronal degeneration in the substantia nigra.



MPTP, neurotoxic that simulates degeneration of neurons affected by Parkinson's Disease; L-Dopa (Sinemet®), palliative pharmacological treatment. AT, dose of AtreMorine® administered together with diet in animal models of PD.

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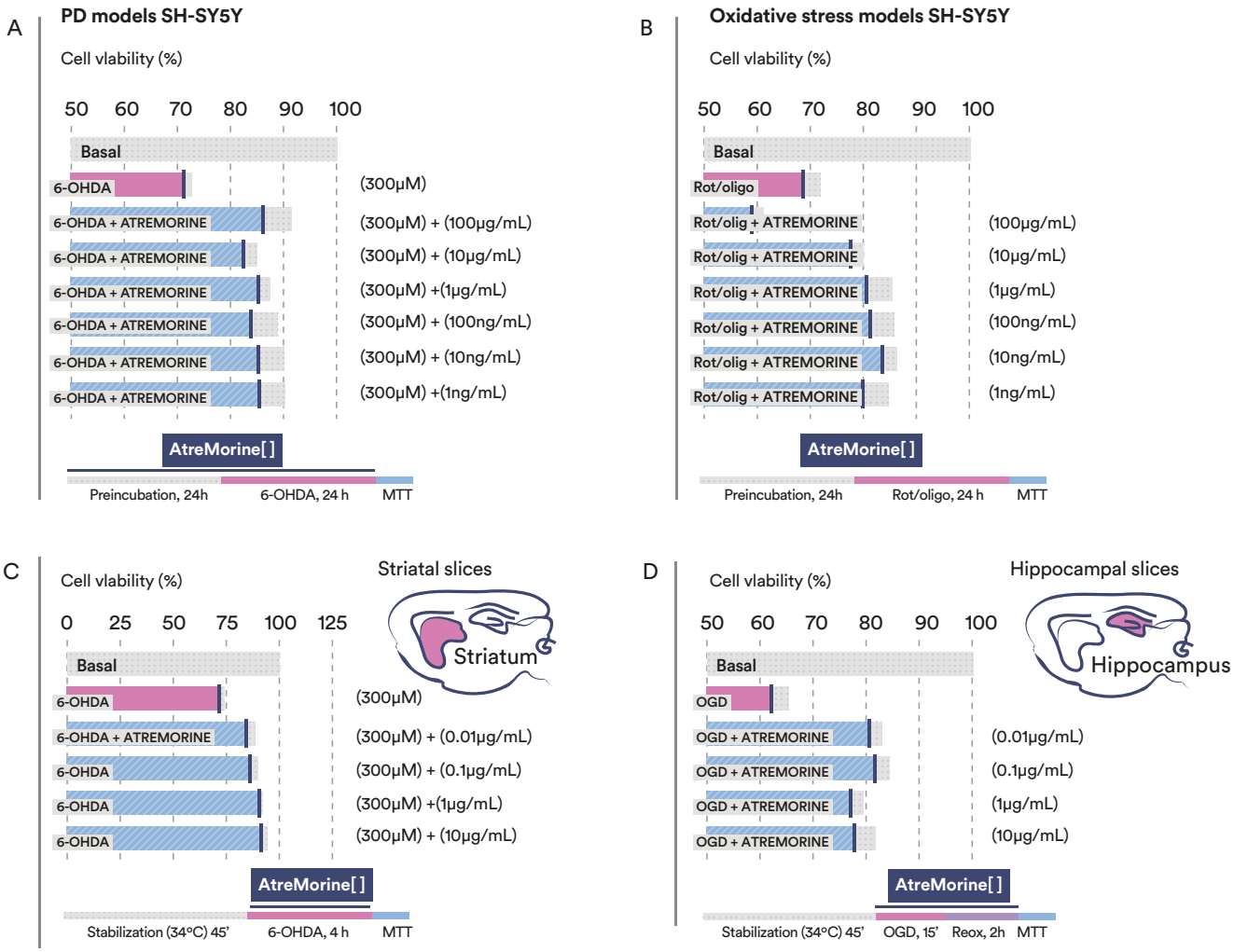
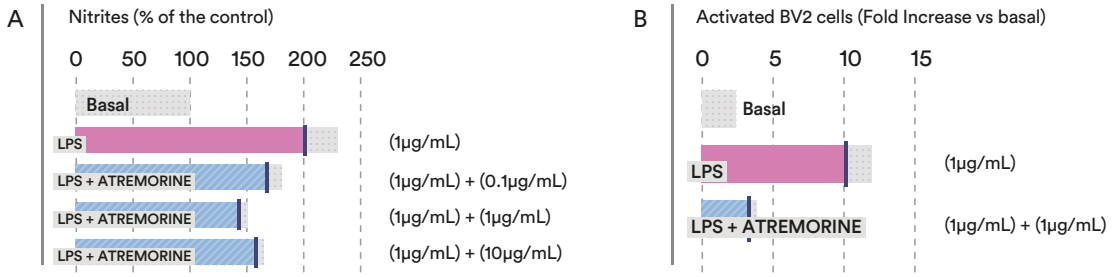
05. Neuroprotective and antiinflammatory effects of AtreMorine® in several *in vitro* models of Parkinson's disease and oxidative stress.



Neuroprotective effect of AtreMorine® against oxidative stress and 6-OHDA Parkinson's disease model (PD). SH-SY5Y cells were treated with 6-OHDA or with the toxic combination of rotenone plus oligomycin A (rote/oligo, oxidative stress model) for 24 hours, and to evaluate the protective effect of AtreMorine®, increasing concentrations were added (A,B). To test AtreMorine® in a PD model, rat striatal slices were treated with 6-OHDA for 4 hours and, subsequently, rat hippocampal slices were subjected to 15-minute oxygen and glucose deprivation followed by 2-hour reoxygenation period (OGD/Reox) as an oxidative stress model (C,D).



Antiinflamatory efficacy of AtreMorine® in BV2 microglia cells in response to LPS (a TLR4 agonist; a neuroinflammatory model). Microglia BV2 cells were treated with increasing concentrations of LPS in the absence or the presence of AtreMorine® for 24 h. Panel (A) shows AtreMorine® reduction of nitrite release elicited by LPS. Panel (B) shows statistics of the effect of AtreMorine® on activated phenotype elicited by LPS treatment.