

A large, stylized number '1' is formed by two overlapping white shapes with a drop shadow, set against a vibrant orange background. The background is decorated with various geometric elements: a vertical white bar on the left, several faint white circles of different sizes, and a small blue dot near the top of the '1'.

# Neuron Bio Dossier 2013



# Contents

Neuron Bio, leader in biotechnological solutions	03
Activity fields	05
Background of Neuron Bio	07
Business model and strategy for the future	09
Team	11
Neuron BioPharma	13
Neuron BioServices	15
Neol	19





**Leader in  
biotechnological  
solutions**





## Neuron Bio, leader in biotechnological solutions

A 50% strategic partner with Repsol of the joint venture Neol BioSolutions SA

### Company profile:

Quoted on the **Spanish Alternative Stock Market (MAB)** since 2010. First biotechnological company to join this market.

### Structure of the capital:

4.625.000 shares

Over 2.500 shareholders

Strong links between the Board of Directors, the management team and the shareholders.

### Team:

**Neuron Bio** has **27 people** on the staff, 9 of them doctors, a Board of Directors with wide business experience and an internationally recognized scientific advisory board.

### Management:

Certificate in **UNE166.002** (Standard Operating Procedure for R+D+i) and **SGE21** (Ethical and CSR Management System).

### R+D:

**More than 50 years accumulated postdoctoral experience in R+D** in biotechnological companies and national and international reference research centres.

**7 international patents** related to new drugs and R+D tools.

**Over 4.000 m2 of facilities** (laboratories, white rooms, specialized facilities for image techniques, behaviour rooms, animal experimentation rooms for rodents and zebrafish).

**Over 10 million EUR** so far invested in R+D.





# Activity fields



## Activity fields

Neuron Bio specialises in the development of biosolutions for the pharmaceutical, chemical, energy and agro-food industries via its divisions **Neuron BioPharma** and **Neuron BioServices**.



The division **Neuron BioPharma** is devoted mainly to the search for drugs for the prevention and treatment of neurodegenerative illnesses such as Alzheimer's disease, as well as the development of non-invasive diagnostic tools, which allow determining with higher efficiency the disease progression.



**Neuron BioServices** offers a range of integrated services for the development of projects and research facilities to public organisms, pharmaceutical, biotechnology, agro-food and animal health companies including consultancy and preclinical services.

**Neuron Bio** owns 50% of **Neol BioSolutions, S.A. (Neol)**, a company devoted to the discovery and development of industrial bioprocesses for application in the chemical and biofuel sector. **Neol** was created as break-away company from the segregation of the **Neuron Bio** bioindustrial division. In July 2012 Repsol acquired 50% of **Neol**, thus forming an alliance that will accelerate the development at industrial scale of processes to obtain advanced biofuels and bioplastics previously developed by **Neuron Bio**.



**Neuron Bio**  
is a Spanish biotech company  
**Young, dynamic, and**  
**focused on achieving**  
**good results.**

As well as being a pioneer  
**Neuron Bio** stands out for  
its growth and the internatio-  
nalization of its projects.

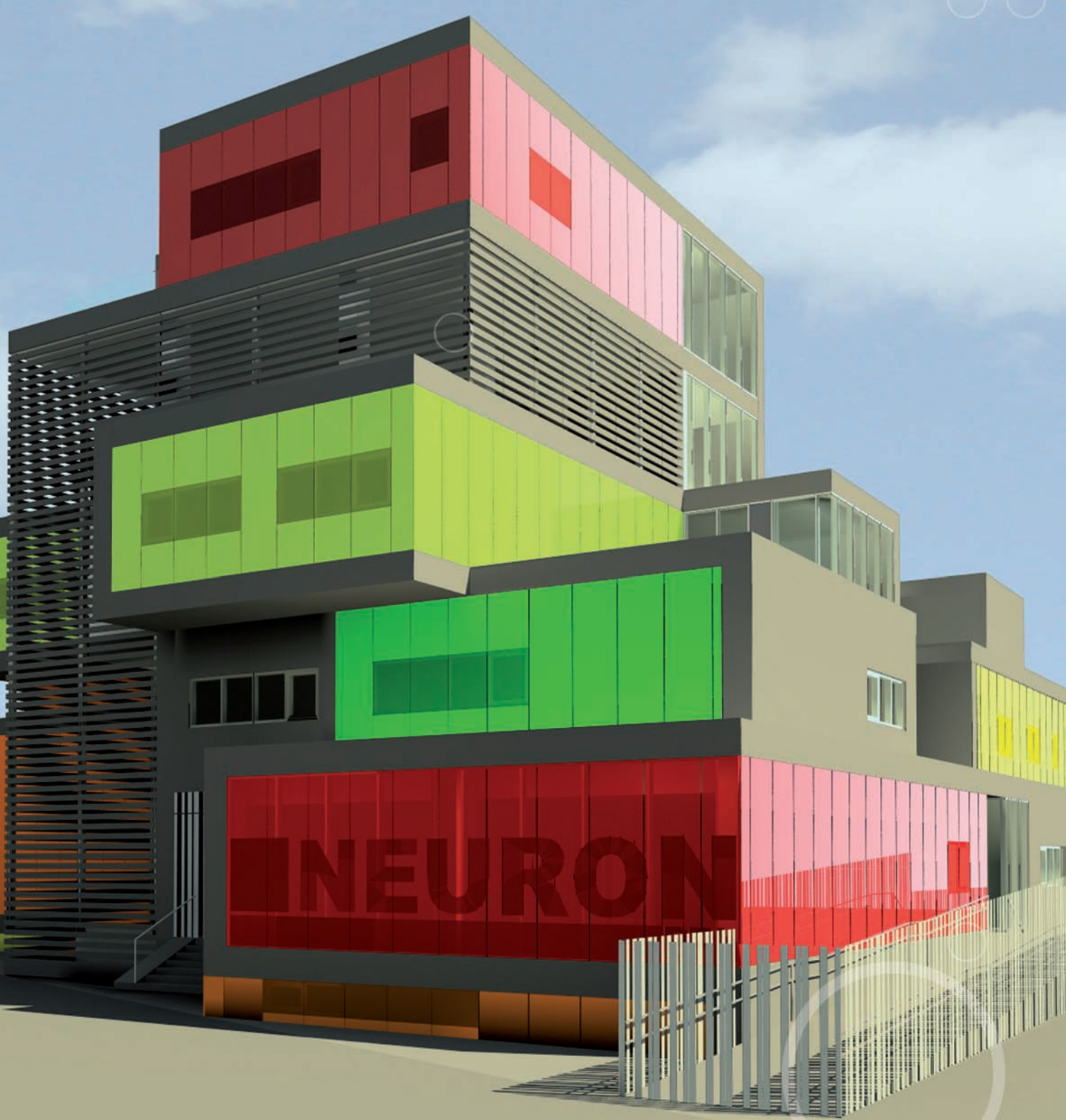




# Background of Neuron Bio







## Background of Neuron Bio

**2005:** Creation of the company in Spain.

**2006:** Design and installation of laboratories and offices in Granada.

**2010:** Neuron Bio begins to quote in the **Spanish Alternative Stock Market** for companies in expansion (MAB-EE), being the first biotech to join this market.

**2012:** Creation of a 50% joint venture with Repsol, resulting Neol BioSolutions SA (Neol).

**2013:** Inauguration of facilities in Madrid, where the international expansion is boosted.

In less than 7 years **Neuron Bio** has become one of the reference businesses in the Spanish biotech market, a reputation ratified by numerous awards and international prizes.

Neuron Bio trades shares on the Spanish Alternative Stock Market.

Neuron was the first biotech company and is the business with the greatest liquidity in this market.



4.

**Business model  
and strategy for  
the future**



## Business model and strategy for the future

The **Neuron Bio** business model is a hybrid one, combining, on the one hand, the dynamics of a company searching for new drugs with a great capacity to create long-term value, on the other, of biotechnological business over shorter times, such as the provision of consultancy services and pre-clinical studies (**Neuron BioServices**) or the development of bioplastics and biofuels (**Neol**).

The main strategic goal of the group is **to create value** for clients and shareholders thanks to the development of biotechnological companies and via the marketing of their projects on consultancy, research, development and innovation.

**Neuron Bio** moves forward with its strategy on the development of independent businesses in a similar way to the creation of the 50:50 joint venture with Repsol. So, and according to the indicated path in the Strategic Plan of the company, the generation of independent and specific business lines will encourage the growth of the group. This short-time segregation will allow the company to reach expected milestones and moreover it will boost to attracting specialized investment for each line of business.

Once the ideal level of maturity and development of the technologies and exclusive products of the company have been achieved, **Neuron Bio** will reorganize its business lines in two new creation companies, the former one focused on the discovery of neuroprotective drugs and the other one specialized in the development of diagnostic tools for diseases of the Central Nervous System.







**Team**





## Team

Neuron Bio's team is currently made up of 27 staff including **researchers**, who have studied in prestigious public research centres and **business experts** with wide experience in business-innovation management. More than 85% of the company staff is directly involved in **R&D activities** in their daily work in the company's laboratories.

The **management team** has wide experience and is led by Professor Fernando Valdivieso, an expert of international renown on neurodegenerative diseases.

To strengthen its scientific excellence the company has an **Advisory Scientific Committee**, including such important figures as Federico Mayor Zaragoza, Professor Ana Frank-García, Professor Arnold L. Demain, Dr. Jesús Benavides and Dr. Miguel A. Moreno.

### Management team:

**Chairman;** Dr. Fernando Valdivieso Amate

**Chief Scientific Officer of Neuron BioPharma;** Dr. Javier S. Burgos Muñoz

**Chief Financial Officer;** Ms. Consuelo García Liria

**Head of Business Development;** Ms. Elena Mª Requena Rodríguez





**Neuron BioPharma**



## Neuron BioPharma

**Neuron BioPharma** is working on the discovery and development of compounds that help to prevent or treat various neurodegenerative diseases.

Research into **Alzheimer's disease** is the main aim of this division, which concentrates on understanding the implications of cholesterol regulation in the brain. Thanks to the development of these studies Neuron Bio has become a world-rated pioneer in this sector and has a unique knowledge of the mechanisms that regulate cholesterol levels in the brain as well as the effects they have on the development of neurodegenerative diseases.

**Neuron Bio** approaches this kind of disease from the angle of prevention, focusing on the early stages of the disease. This strategy is a key factor for **Neuron BioPharma** and distinguishes its research lines from the current lines of pharmaceutical companies. All available treatments in the market related to diseases such as Alzheimer's try to reverse severe cognitive impairment related to the later stages of the disease, a goal which has proved elusive to date.

For this reason **Neuron Bio** is committed to preventive treatments, which avoid this deterioration as well as to the development of tools for an early diagnosis.

### Neuron BioPharma. Achievements

- **Neuron BioPharma** has discovered, patented and developed a portfolio of **10 new neuroprotective** compounds against the Alzheimer's disease. The compound NST0037 is in a more advanced phase and will begin clinical trials after having demonstrated its efficacy and security in animal models.
- **Neuron BioPharma** owns an **exclusive platform of drug discovery** concentrated in the development of compounds for diverse diseases of the Central Nervous System.
- **Neuron BioPharma** approaches to the patient via the **development of non-invasive diagnostic tools**, which allow determining with higher efficiency the progression of the Alzheimer's disease.

Neuron BioPharma works in the early stages of the ALZHEIMER'S DISEASE by searching for compounds which prevent the illness.







**Neuron BioServices**



## Neuron BioServices

**Neuron BioServices** offers solutions for the design of research facilities as well as for the development of contractual projects in the fields of chemistry, toxicology, pharmacology, biomedical sciences, agro-food and animal health among others:

- Design and setting up of laboratories.
- Consultancy for design and execution of research projects.
- Development of security and safety studies via both in vitro and in vivo assays, and also investigation into behavioural response.

**Neuron BioServices** works with multidisciplinary teams, which contribute with their wide experience to the design of laboratories, clean rooms and animal facilities.

The comprehensive offer of **Neuron Bio** is demanded by international companies of the agro-food sector as well as by biotechnological and pharmaceutical companies, which outsource part of their R&D projects.

Scientific evidence obtained by **Neuron BioServices**, combined with other data, is used by these companies to arrive at decisions about the future development of these compounds as a prior step to their subsequent clinical trials.

The services of  
**Neuron BioServices**  
are in great demand from  
diverse sectors such as the  
**chemical and  
pharmaceutical**  
industries.

The potential effects of different  
drugs are also studied, leading to  
take of informed decisions  
according to their use.

In a similar way, the services offered, particularly those concerning safety, are in wide demanded by companies belonging to such diverse fields as the chemical and pharmaceutical industries.

### Design and setting up of laboratories

Planning and setting up of laboratories according to the client's needs and requests and also the international regulations regarding the processes, the equipment and the safety, as well as their adequacy to criteria such as sustainability, energy saving and environmental care.

We advise our clients from the first idea to the functional integration of people, spaces and equipments.







Each project is designed and executed by a technical office, which determines the required investment and makes the purchase of the laboratory material and equipment depending on the technical and economic viability of the client.

During the project of laboratory equipment and material acquisition, the technical office is in charge of carrying out convenient technical and financial monitoring including the following tasks:

- **Negotiation and selection of offers:** once the most suitable suppliers have been selected, different aspects are negotiated with each company in order to determine the optimal conditions related to price, delivery time, warranty and maintenance, accessories to be included, etc.
- **Awarding and formalisation** of the order with the selected suppliers.
- **Monitoring of compliance** with the prior established delivery time and supervision of the equipments' installation.
- **Monitoring of the training** in order to check that the training, the users of the new equipment receive, is appropriate and so guarantee the adequate use and maintenance.
- **Control test:** the technical office conducts inspection tasks, assays and tests in order to ensure the correct operating of the new equipment.
- **Validation and final reception of the equipment:** once the proper functioning of the equipment use is stated, the warranty period will be established validating so the purchase process with the final reception.

Since the year 2006 **Neuron Bio** has designed and equipped more than 9.000 m<sup>2</sup> of laboratories and R+D facilities in different Spanish localities as i Granada (new headquarters of the company, photo), Madrid (Scientific Park of Cantoblanco), Armilla (BIC building) or Ogíjares (Polígono Industrial). **Neuron Bio** has designed, implemented and delivered diagnostic laboratories, pathological anatomy laboratories, clean rooms for cell cultures; biotechnology and microbiology laboratories, molecular biology rooms, analytic chemistry and natural products laboratories, rodent and zebrafish facilities, fermentation pilot plants, biosafety laboratories of level P2 and P3, etc.

### Consultancy for design and implementation of research projects

Specialised advice for integral innovation management via the development of strategic R+D plans and consultancy services for their public and private financing.

## Safety and security studies:

- **Screening platform**

Automatized in vitro assays for the rapid and efficient assessment of the pharmaceutical properties and safety of any type of compound.

- **Zebrafish platform**

**Neuron BioServices** has developed a range of technologies based in the use of embryos, larvae and adult zebrafish in order to study the effects of the compounds on the Central Nervous System and its development. The company offers studies, which determine the growth and neuronal development of animals after the administration of the products to study. Safety studies of new compounds and ingredients in zebrafish embryos and larvae show evidences on the best candidates or the mixture of them as a prior stage to its validation in rat or mouse with 6 time lower costs and 3 times faster than the studies carried out with rodents.

Among the advantages brought by **Neuron Bio** via the use of this animal model there are: the simplicity of handling, the high number of obtained embryos per laying and the high genetic and proteomic homology between the higher vertebrate models.

Moreover, in this platform there are also evaluated adverse effects of compounds and ingredients. The most demanded contract by the clients is the FET (Fish Embryo toxicity Test), which provides a wide information about the toxicological profile of a compound or an extract, achieving a high quality-price ratio and developing in very short-time periods.

- **Rodent platform**

Toxicity and efficacy studies are conducted in mouse and rat models according the clients' request and also according to the guidelines of regulatory agencies (EMEDA, FDA, OCED etc.).

**Neuron BioServices** offers also tailor-made studies with each of its platforms, with great capacity to adapt to the requirements of every project and thus be able to offer scientific and technical assessment, with the ultimate aim of attending to all our clients to their complete satisfaction.







**Neol**





## Neol

Neol is the result of a strategic alliance between the bioindustrial division of **Neuron Bio** and **Repsol**.

Neol is devoted to the discovery and development of industrial bioprocesses for the biofuel and chemical sector.

Thanks to its substantial collection of microorganisms and its highly qualified team **Neol** owns **MicrobiotoolsbyNeol**, a technological platform that allows bioprocesses to be followed through to the industrial scale.

### MicroBiOil®

MicroBiOil® is a technological platform for the production of second-generation biofuels from microbial oils. The microorganisms and processes have been developed in their entirety by Neol and are protected by international patents.

### TriBioPlast®

Neol works on the production of bioplastics on the basis of industrial waste and renewable carbon sources (TriBioPlast®). These processes rely on the culture of microorganisms which are "super-producers" of polyhydroxyalkanoates, isolated and cultured by Neol.

Neol  
is the result of an  
Alliance between  
**Neuron Bio**  
and **Repsol** and is  
specialised in the  
development of  
bioprocesses.





# NEURON

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# BIO

Direct contact:

Head of Communication of Neuron Bio  
Malena Valdivieso: [mvaldivieso@neuronbio.com](mailto:mvaldivieso@neuronbio.com)

[www.neuronbio.com](http://www.neuronbio.com)

[www.neuronbiopharma.com](http://www.neuronbiopharma.com)

[www.neuronbioservices.com](http://www.neuronbioservices.com)