



INSTITUTO DE
NEUROCIENCIAS
CASTILLA Y LEÓN



UBICACIÓN/LOCATION:

Laboratory 14 (INCYL, Salamanca)

NOMBRE DEL LABORATORIO/GRUPO; RESEARCH GROUP NAME/ACRONYMS:

Laboratory of Neuroanatomy of the Peptidergic Systems

BREVE DESCRIPCIÓN DE LA LÍNEA DE INVESTIGACIÓN/ RESEARCH LINE

Specific areas of interest: 1) Neuropeptides: distribution and functions in the mammalian diencephalon and brainstem (from rodents to humans); 2) Neuropeptides and diseases (e.g., Alzheimer's, Parkinson's, Schizophrenia, Depression, Stress, Migraine); 3) Multiple sclerosis; and 4) Neuropeptides and Cancer. Regarding the latter topic, our data suggest that the substance P (SP)/neurokinin (NK)-1 receptor system regulates the growth of cancer cells, angiogenesis and metastasis. Data show that NK-1 receptor antagonists act through three mechanisms: 1) an antiproliferative action: they inhibit the tumor cell growth by inducing apoptosis in cancer cells; 2) an antiangiogenic effect: they inhibit angiogenesis in the tumor mass; and 3) an antimetastatic action: they block the migration of tumor cells. That is, the NK-1 receptor is a therapeutic target in cancer and the use of NK-1 receptor antagonists in oncology therapy is very promising.

INVESTIGADOR RESPONSABLE O PRINCIPAL DEL GRUPO/GROUP TEAM LEADER

Rafael Coveñas Rodríguez

PERSONAL ADSCRITO/ GROUP MEMBERS

(indicar nombre completo y cargo o puesto que ocupa):

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PROYECTOS VIGENTES/ON-GOING RESEARCH PROJECTS

(indicar nombre completo, referencia, Investigador principal, financiación y periodo):

1. Spanish MINECO (grant SAF2016-79008-P) to Drs. Zaida Díaz-Cabiale and José Angel Narváez Bueno (PI)

Interaction of serotonin-galanin reuptake inhibitor antidepressants (1-15):

physiopathological mechanisms in depression

2017-2020

Amount awarded: € 100.000

2. GEMACBIO (Saint Jean d'Ilac, France) to Dr. Rafael Coveñas Rodríguez (PI)

Immunocytochemical identification of compounds using the new antibodies

developed by Gemacbio and evaluation of new therapeutic compounds in

different pathologies of the central nervous system

2017-2022

Amount awarded: € 75.000

PUBLICACIONES/PUBLICATIONS

(indicar hasta un máximo de las 10 publicaciones más significativas):

1. Parrado C, Díaz-Cabiale Z, García-Coronel M, Agnati LF, Coveñas R, Fuxe K, Narváez JA (2007)

Region specific galanin receptor/neuropeptide Y Y₁ receptor interactions in the tel-

and diencephalon of the rat. Relevance for food consumption

Neuropharmacology 52: 684-692

PMID:17087983

2. Muñoz M, Rosso M, Coveñas R (2010)
A new frontier in the treatment of cancer: NK-1 receptor antagonists
Current Medicinal Chemistry 17: 504-516
PMID: 20015033

3. Mangas A, Coveñas R, Geffard M (2010)
New drug therapies for multiple sclerosis
Current Opinion in Neurology 23: 287-292
doi: 10.1097/WCO.0b013e32833960f6

4. Muñoz M, Rosso M, Robles-Frías MJ, Salinas-Martín MV, Coveñas R (2010)
Immunolocalization of the neurokinin-1 receptor: a new target in the treatment of
human malignant melanoma
Laboratory Investigation 90: 1259-1269
doi: 10.1038/labinvest.2010.92

5. Muñoz M, González-Ortega A, Coveñas R (2012)
The NK-1 receptor is expressed in human leukemia and is involved in the antitumor
action of aprepitant and other NK-1 receptor antagonists on acute lymphoblastic
leukemia cell lines
Investigational New Drugs 30: 529-540
doi: 10.1007/s10637-010-9594-0

6. Duque E, Mangas A, Salina P, Díaz-Cabiale Z, Narváez JA, Coveñas R (2013)
Mapping of alpha-neo-endorphin- and neurokinin B-immunoreactivity in the human brainstem
Brain Structure and Function 218: 131-149
doi: 10.1007/s00429-012-0388-3

7. Muñoz M, Coveñas R (2014)
Involvement of substance P and the NK-1 receptor in human pathology
Amino Acids 46: 1727-1750
doi: 10.1007/s00726-014-1736-9

8. Sánchez ML, Díaz-Cabiale Z, Narváez JA, Manso B, Salinas P, Rivada E, Smith V, Coveñas R (2016)
Mapping of methionine-enkephalin-Arg⁶-Gly⁷-Leu⁸ in the human diencephalon
Neuroscience 334: 245-258
doi: 10.1016/j.neuroscience.2016.08.010

9. Muñoz M, Rosso M, Coveñas R (2018)
Neurokinin-1 receptor. In: **Encyclopedia of Signaling Molecules**. Second edition. Choi, S. (ed.), Springer, Cham (Switzerland), pp. 3437-3445
ISBN: 978-3-319-67198-7

10. Muñoz M, Coveñas R (2018)
Substance P. In: **Encyclopedia of Endocrine Diseases**. Second edition, vol. 1. Huhtaniemi, I., Martini L. (eds.), Academic Press, Oxford, pp. 571-578.

doi: 10.1016/B978-0-12-801238-3.95886-0