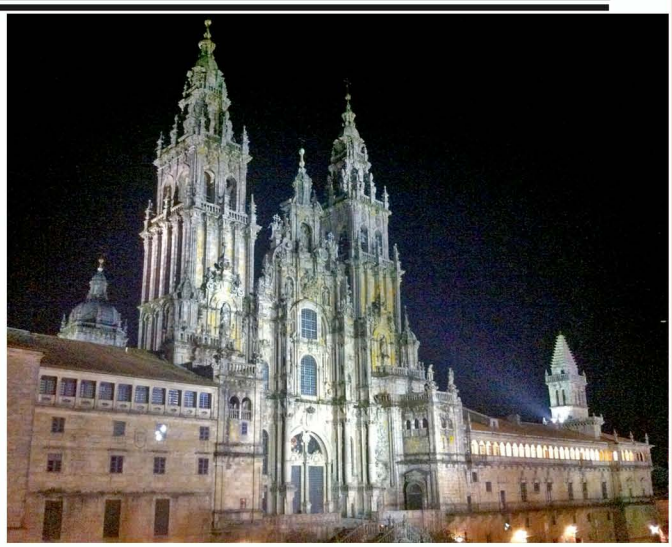
Histology and Histopathology

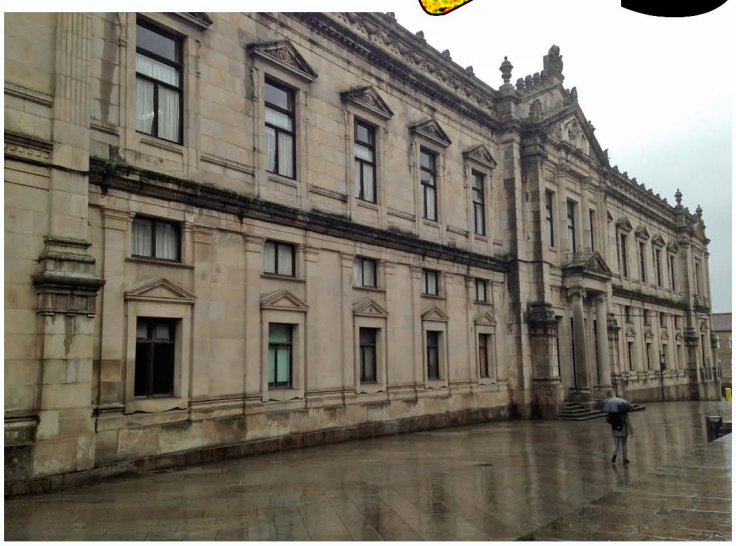
From Cell Biology to Tissue Engineering

Volume 32 (Supplement 1), 2017

http://www.hh.um.es



CONGRESO SEH/T



SANTIAGO DE COMPOSTELA

5 - 8 Septiembre 2017

XIX Congreso de la Sociedad Española de Histología e Ingeniería Tisular

IV Congreso Iberoamericano de Histología

VII Internacional Congress of Histology and Tissue Engineering

Santiago de Compostela, 5 – 8 de Septiembre de 2017

Honorary President

Andrés Beiras Iglesias

Organizing Committee

Presidents

Tomás García-Caballero

Rosalía Gallego Gómez

Scientific Committee

Concepción Parrado Romero

Ana Alonso Varona (UPV/EHU)
Antonia Álvarez Díaz (Universidad del País Vasco)
Rafael Álvarez Nogal (Universidad de León)
Rosa Álvarez Otero (Universidad de Vigo)
Miguel Ángel Arévalo Gómez (Universidad de Salamanca)
Julia Buján Varela (Universidad de Alcalá)
Juan José Calvo Martín (Universidad de la República, Uruguay)
Antonio Campos Muñoz (Universidad de Granada)
Pascual Vicente Crespo Ferrer (Universidad de Granada)
Juan Cuevas Álvarez (Universidad de Santiago)
Joaquín De Juan Herrero (Universidad de Alicante)
María Rosa Fenoll Brunet (Universidad Rovira i Virgili)
María Pilar Fernández Mateos (Universidad Complutense de Madrid)
Benito Fraile Laiz (Universidad de Alcalá)
Ricardo Fretes (Universidad Nacional de Córdoba. Argentina)
Natalio García Honduvilla (Universidad de Alcalá)
José M. García López (Universidad de Granada)
Manuel Garrosa García (Universidad de Valladolid)
Juan Francisco Madrid Cuevas (Universidad de Murcia)
Inés Martín Lacave (Universidad de Sevilla)
Alfredo Martínez Ramírez (CIBIR (Logroño)
Juan Francisco Montes Castillo (Universidad de Barcelona)
Carlos R. Morales McGrill (University Canadá.)
Carmen Helena Moreno Durán (Univ. Distrital Francisco José de Caldas. Colombia)
Ana María Navarro Incio (Universidad de Oviedo)
Rosa Noguera Salvá (Universidad de Valencia)
Juan Ocampo López (Univ. Autónoma del Estado de Hidalgo. México.)
Luis Miguel Pastor García (Universidad de Murcia)
Juan Ángel Pedrosa Raya (Universidad de Jaén)
José Peña Amaro (Universidad de Córdoba)
Carmen de la Paz Pérez Olvera (Universidad Autónoma de México.)
Eloy Redondo García (Universidad de Extremadura)
Javier F. Regadera González (Universidad de Autónoma de Madrid)
Viktor K Romero Díaz (Univ. Autónoma de Nuevo León. México.)
Amparo Ruiz Saurí (Universidad de Valencia)
Francisco José Sáez Crespo (Universidad del País Vasco)
Mercedes Salido Peracaula (Universidad de Cádiz)
Luis Santamaría Solís (Universidad Autónoma de Madrid)
Ana Sanz-Ochotorena (Universidad de la Habana. Cuba.)
Claudia Sierra Castillo (Univ. Autónoma del Estado de Morelos. México)
Jorge Luís Tolivia Fernandez, (Universidad de Oviedo)
José Antonio Uranga Ocio (Universidad Rey Juan Carlos)
Francisco Valladares Parrilla (Universidad de La Laguna)
María Lucía Zaidan Dagli (Universidad de Sao Paulo. Brasil)

ULTRASTRUCTURAL CHARACTERISTICS OF GLIAL AND INTERSTITIAL CELLS OF CAJAL IN THE LIZARD INTESTINE: PRESENCE OF PRIMARY CILIUM

Javier Gracia LLanes, Marta Monzón, Pablo Iruzubieta, Carmen Berga, Mª José Luesma, Mª Concepción Junquera.

Faculty of Medicine, Department of Human Anatomy and Histology, University of Zaragoza / Institute for Health Research Aragón (IIS), Domingo Miral s/n, 50009 Zaragoza, Spain

Introduction: In mammals, enteric nervous system consists of neurons and glial cells which are mainly organized in two ganglionated plexuses: the myenteric plexus, and the inner and outer submucosal plexuses. Enteric glial cells establish a direct contact with neurons; their cytoplasm prolongations surround the unmyelinated axons. The interstitial cells of Cajal (ICCs) are located around enteric ganglia and in both muscular layers forming an interconnected network. It is now known that some ICCs and glial cells in mammals present a single cilium but its presence in the rest of vertebrate classes has been not still demonstrated. The aim of the present study is to characterize, at the ultrastructural level, the enteric glial cells and ICCs in the lizard intestine.

Material and methods: We used ten adult lizards *Podarcis hispanica* (Reptilia). Small and large intestine wall samples were fixed with 2.5% glutaraldehyde in PB buffer (pH 7.3) and routinely processed for TEM visualization.

Results: Lizard intestinal ganglia show a lower number of neurons than those from mammals. Glial cells were smaller than neurons and they showed dark nuclei because of their condensate heterochromatin. These glial cells surround axons mainly containing mixed both cholinergic and peptidergic vesicles. Occasionally, some axons were found surrounded by myelin sheaths. We found ICCs around enteric ganglia of the myenteric plexus. They present triangular or spindle forms and a very voluminous nucleus, with scarce marginal heterochromatin, surrounded by a thin perinuclear cytoplasm that expands with long cytoplasmic processes. ICC processes penetrate and connect with other ICCs located in the connective tissue of the both muscle layers by gap-like junctions forming a three-dimensional network. In addition, we demonstrate the presence of a primary cilium in ICCs as well as in glial cells. We describe their ultraestructural features: basal foot and cap in the basal corpuscle, (9+0) axonema, and a characteristic domain of membrane: the ciliary pocket.

Conclusions: Our data support that the single cilium is present in both kinds of cells and consequently, this is a phylogenetically preserved structure.

Acknowledgements: Authors would like to acknowledge the use of *Servicio General de Apoyo a la Investigación*-SAI, Universidad de Zaragoza**.**