

AperTO - Archivio Istituzionale Open Access dell'Università di Torino

**PERIPHERAL NERVE INJURY: ANALYSIS OF BIOMOLECULAR CHANGES IN NEURONS AND  
COMPATIBILITY OF CHITOSAN FOR PERIPHERAL NERVE REGENERATION**

**This is the author's manuscript**

*Original Citation:*

*Availability:*

This version is available <http://hdl.handle.net/2318/153633> since

*Terms of use:*

Open Access

Anyone can freely access the full text of works made available as "Open Access". Works made available under a Creative Commons license can be used according to the terms and conditions of said license. Use of all other works requires consent of the right holder (author or publisher) if not exempted from copyright protection by the applicable law.

(Article begins on next page)

Login to view your options.



July 5-9, 2014  
Milan | Italy

[Forum Information](#) [Programme](#) [Industry](#) [My FENS](#) [Help](#) [Advanced Search](#)

All

[Home](#) > [Abstract](#)

## ABSTRACT

### Poster Instructions

<b>Title</b>	PERIPHERAL NERVE INJURY: ANALYSIS OF BIOMOLECULAR CHANGES IN NEURONS AND COMPATIBILITY OF CHITOSAN FOR PERIPHERAL NERVE REGENERATION. Room: Poster Area - Session: D23 - Abstract Number: FENS-1750 - Poster Board Number: D052
<b>Poster No:</b>	D052
<b>Presenter:</b>	D. Pascal
<b>Author(s):</b>	D. Pascal(1), G. Ronchi(1), A. Iannello(1), F. Fregnan(1), G. Gambarotta(1), S. Raimondo(1)
<b>Affiliation(s):</b>	(1)Department of clinical and biological sciences, Università degli Studi di Torino, Orbassano, Italy
<b>Session:</b>	D23: Poster Session - Motor neurons and muscle Poster boards: D039-058
<b>Date:</b>	Tuesday - July 08, 2014 12:15 - 13:15
<b>Location:</b>	Poster Area
<b>Subtopic:</b>	D.10 Motor neurons and muscle
<b>Topic:</b>	D.10 Motor neurons and muscle
<b>Theme:</b>	D. Sensory and motor systems

Peripheral nerve trauma or injuries may lead to sensory or motor function deficits if not properly treated. To improve peripheral nerve regeneration the surgical approaches have matched with new biomedical strategies; all this has been possible thanks to the more in-depth study of biomolecular mechanisms that promote nerve regeneration.

The aim of this study was twofold: i) evaluate the compatibility of a chitosan conduit for peripheral nerve repair and regeneration; ii) analyze molecular changes in the cellular body of sensory neurons after peripheral nerve injury. For the first task we analyzed morphological and biomolecular changes in a line of Schwann cells (RT4-D6P2T) cultured on chitosan membranes of different grade of acetylations.

In the second part we caused a peripheral nerve injury (crush of the median, ulnar and radial nerve) in a rat model and after 1,3,7,15 days and one month we took the Dorsal Root Ganglia (DRG) from C5-T1 level. We performed quantitative real-time PCR analysis looking for Neuregulin1 isoforms ( $\alpha$ ,  $\beta$ , I/II and III), and ErbBs receptors (ErbB2 and ErbB3). Data show no changes in the ErbBs mRNA expression after injury. Expression levels of the soluble Neuregulin1 isoforms (type I/II) show an upregulation in the first three days from the lesion. At contrary for Neuregulin1 type III and  $\beta$  mRNA expression we see an upregulation from 7 days after lesion. These results allow us think that nerve regeneration process should be divided in two temporary steps, regulated by different molecules such as the Neuregulin1 isoforms.

[Home](#) [Forum Information](#) [Programme](#) [Industry](#) [My FENS](#) [Help](#) [Advanced Search](#)

For all queries, please write directly to [support@meetingxpert.net](mailto:support@meetingxpert.net).  
Support is available from Monday–Friday 08:00-16:00 (GMT).  
We currently support Chrome, Firefox, Internet Explorer 9 or newer.