

## **IS YLK-40 INVOLVED IN CAROTID BODY AGING MECHANISM ?**

C. Di Giulio<sup>1</sup>, F.J. van Overveld<sup>2</sup>, S. Zara<sup>3</sup>, G. Andringa<sup>2</sup>, A. Porzionato<sup>4</sup>, A. Cataldi<sup>3</sup>, G. T Rijkers<sup>2</sup>, C. Di Ilio<sup>5</sup>, M. Cacchio<sup>1</sup>, A. Mazzatenta<sup>1</sup>

<sup>1</sup>Department of Neurosciences, Imaging and Clinical Science, 'G. d'Annunzio' Chieti-Pescara University, digiulio@unich.it ,

<sup>2</sup>Department of Science, University College Roosevelt, Middelburg, the Netherlands,

<sup>3</sup>Pharmacy Department, 'G. d'Annunzio' Chieti-Pescara University,

<sup>4</sup>Department of Human Anatomy and Physiology, Padua University,

<sup>5</sup>Department of Medical, Oral and Biotechnological Sciences, 'G. d'Annunzio' University of Chieti-Pescara

Carotid Body (CB) is a paired chemoreceptive organ located at the bifurcation of the carotid artery. CB parenchyma is organized in clusters termed glomeruli composed by type I cells, which like sympathetic neurons are electrically excitable and secrete neurotransmitters in response to membrane depolarization, and sustentacular type II cells, structural glial-like non-excitabile cells. CB is a neurogenic center with a primary physiological function in the homeostatic acute O<sub>2</sub> sensing system, required to activate the brainstem respiratory center to produce hyperventilation during hypoxemia. CB grows several-fold its normal size upon exposure to chronic hypoxia, as it occurs during acclimation to high altitude, on returning to normoxia, size is restored. However, the sensing mechanism is unveiled. The aim of this work is to investigate the presence of YLK-40, in human CB of different age (N=6, age range 30-70). Human CB stain positive for anti-YLK-40 in both cellular and extracellular compartments. Furthermore, the immunoreactivity increases significantly in aging. In conclusion, we found YLK-40 in human CB, which might have an important physiological function in the oxygen-sensitive mechanism and/or in the aging process.