

## **PREFACE: AN IMPORTANT INITIAL NOTE**

The research line which I followed during my PhD dealt with the investigation of the role of Diacylglycerol Kinase- $\alpha$  ( $Dgk\alpha$ ) in the migratory signals triggered by HGF and v-Src in epithelial cells.

In this report, I provide an overview of the up to date knowledge concerning diacylglycerol kinases functions and regulation, cancer onset and progression, including the role of tyrosine kinases in tumor establishment and development, and the molecular determinants for cell motility. These information are organized to provide a framework useful to contextualize and understand the three articles concerning  $Dgk\alpha$ , which represent the outcome of my research work. In the first article, by Filigheddu *et al.* (Anticancer Research, *in press*),  $Dgk\alpha$  emerges as a key enzyme for the HGF-dependent invasive properties of the breast cancer cell line MDA-MB-231. The second manuscript, by Cutrupi, Chianale *et al.* (submitted to Molecular Biology of the Cell and presently under revision after the referees' comments), unravels the transduction pathways and the molecular events regulated by  $Dgk\alpha$  in the context of HGF- and v-Src-induced cell migration of the epithelial cell line MDCK. The third manuscript, by Baldanzi, Cutrupi *et al.* (submitted to Oncogene and presently under revision after the referees' comments), analyzes the molecular determinants of  $Dgk\alpha$  which represent the target of its regulation by Src.

Finally, I provide the commission with other two published papers that collect the data obtained in different research lines that I contributed to develop. In the article by Filigheddu *et al.* (Molecular Biology of the Cell, 2007), the gastric hormone ghrelin is shown to induce, both in the acylated and in the non-acylated form, differentiation of C2C12 skeletal myoblasts, by acting through a still uncharacterized receptor. The article by De Gobbi *et al.* (European Journal of Pediatrics, 2003) reports the early diagnosis of juvenile hemochromatosis, combining linkage analysis and a non-invasive method for liver iron quantitation, in a 11-year-old child, which turned out to be important and useful in a period where the responsible gene was still unknown.