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Evaluation of metabolism and biosignaling in the angiogenic microenvironment as potential targets for therapeutic intervention

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The "re-discovery" of Warburg effect at the turn of the present millennium has been a key determinant of the current renewed interest on cancer metabolism. In fact, metabolic reprogramming has been identified as one of the hallmarks of cancer. However, cancers grow in tight contact with non-tumoral accompanying cells and the surrounding extracellular matrix, as underlined by the concept of tumor microenvironment. Endothelial cells are key components of this tumor microenvironment, since they are requested for angiogenesis, another hallmark of cancer. In this complex system, rewiring of metabolism and signaling pathway in cancer, endothelial and other accompanying cell emerges as new potential targets for therapeutic intervention. In this communication, we will present the drug discovery and characterization approach of our group and our more recent results in this field, including new modeling with an evolutionary and ecological point of view. [Our experimental work is supported by grants BIO2014-56092-R (MINECO and FEDER) and P12-CTS-1507 (Andalusian Government and FEDER) and funds from group BIO-267 (Andalusian Government). The "CIBER de Enfermedades Raras" is an initiative from the ISCIII (Spain)]. This communication has the support of a travel grant "Universidad de Málaga. Campus de Excelencia Internacional Andalucía Tech".