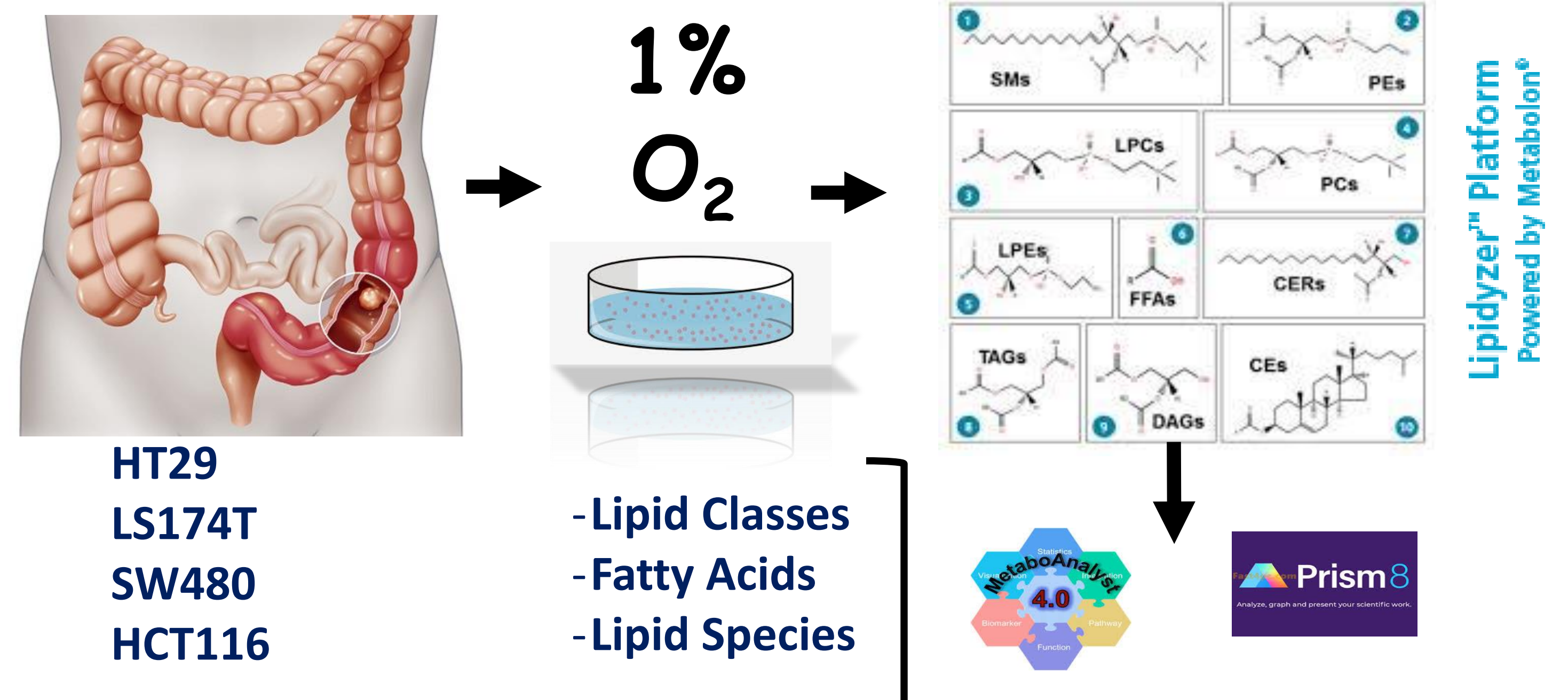


## Do exist common features in the lipid profile of different CRC cell lines under hypoxia?

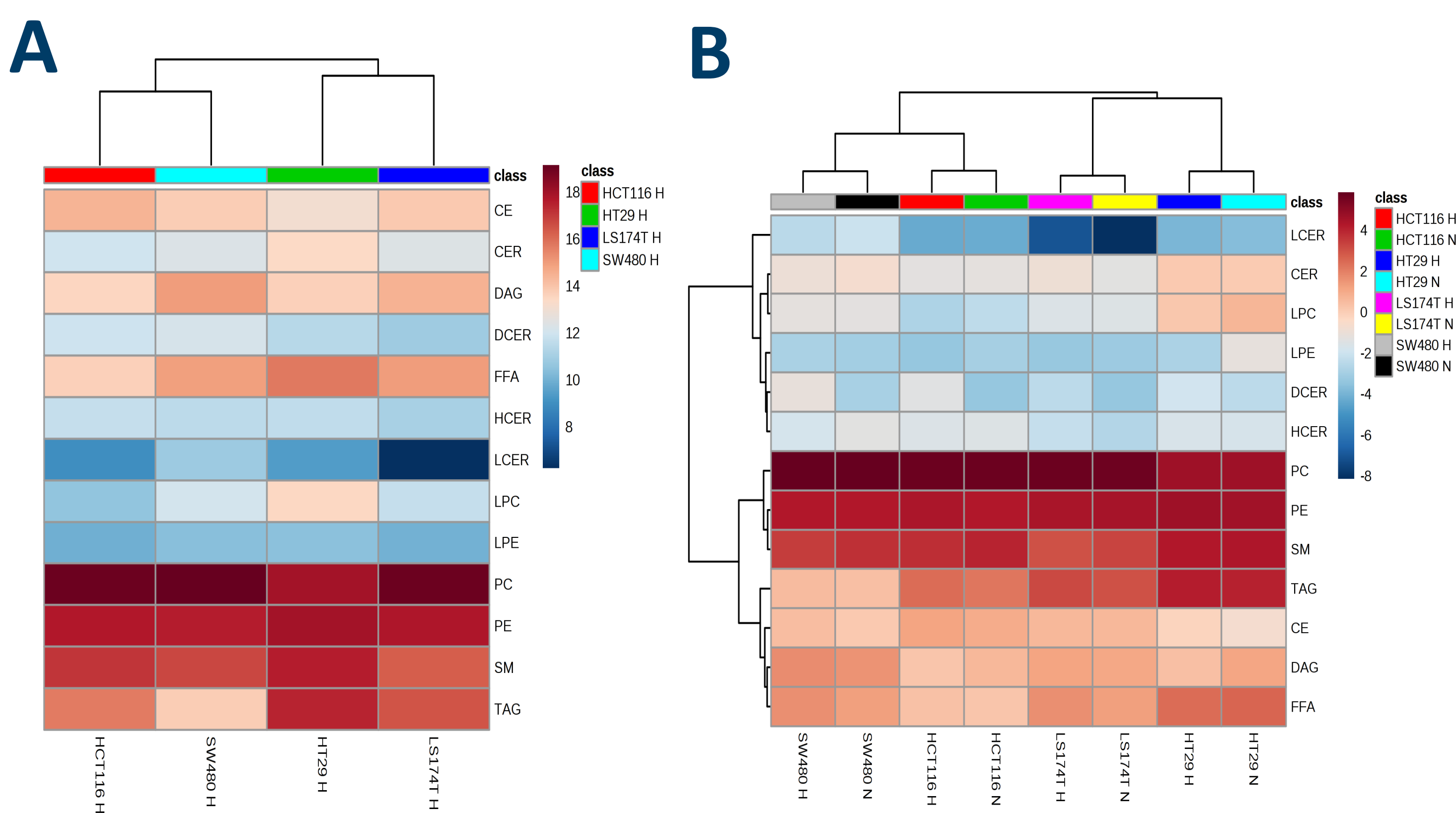
### BACKGROUND

- CRC is a disease with multiple stages and grades depending on the location and cell differentiation status.
- During CRC development, the tumor microenvironment (TM) has shown to be a key component to sustain progress and spreading of the tumor.
- Hypoxia is a well-known state during tumor development, it is responsible for metabolic adaptation, and lipid re-modeling.
- Intrinsic heterogeneity of CRC and TM highlights the importance of studying hypoxia across different CRC cell lines to a better understand cancer and tumor microenvironment biology.

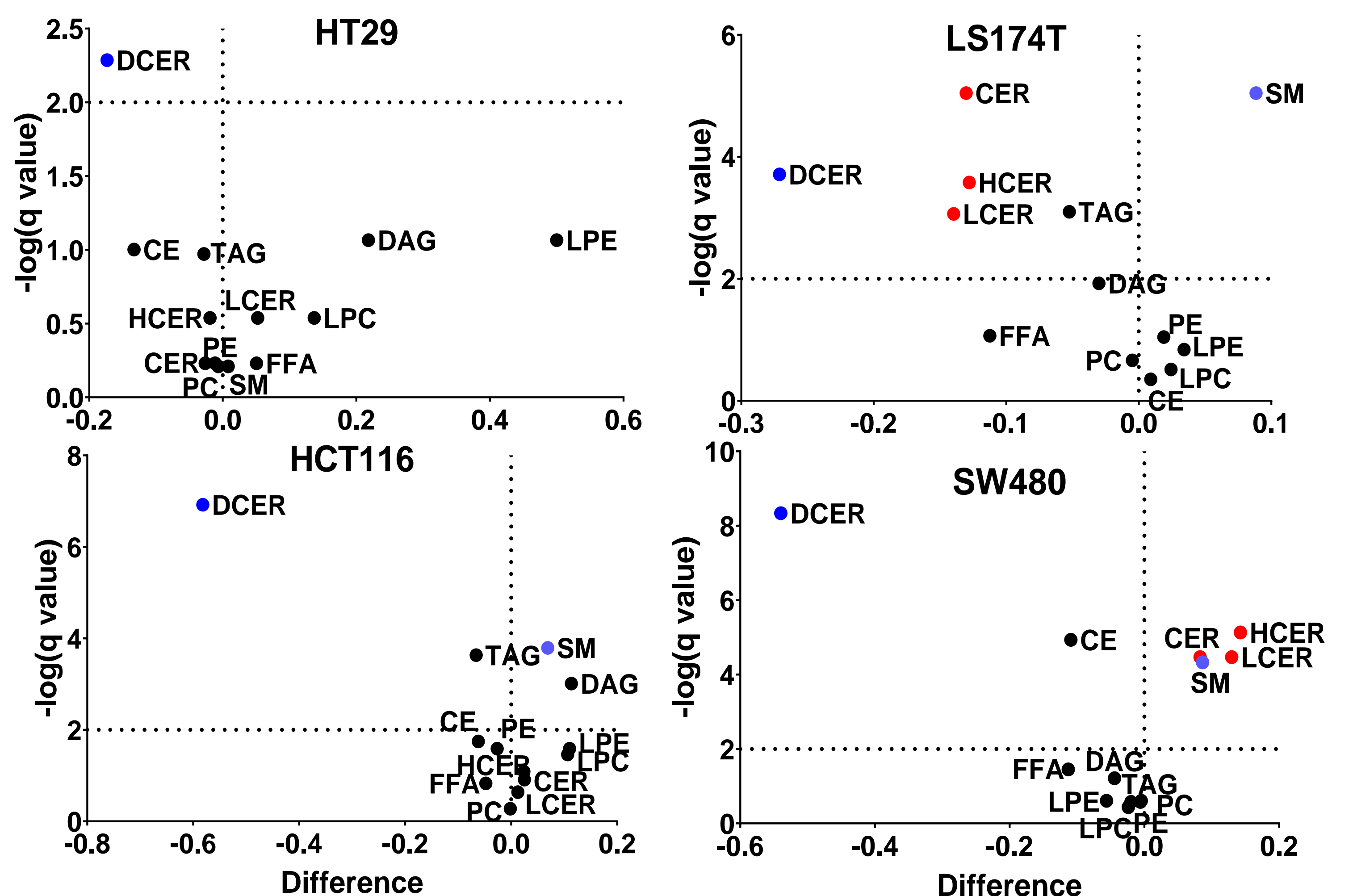
### METHODOLOGY



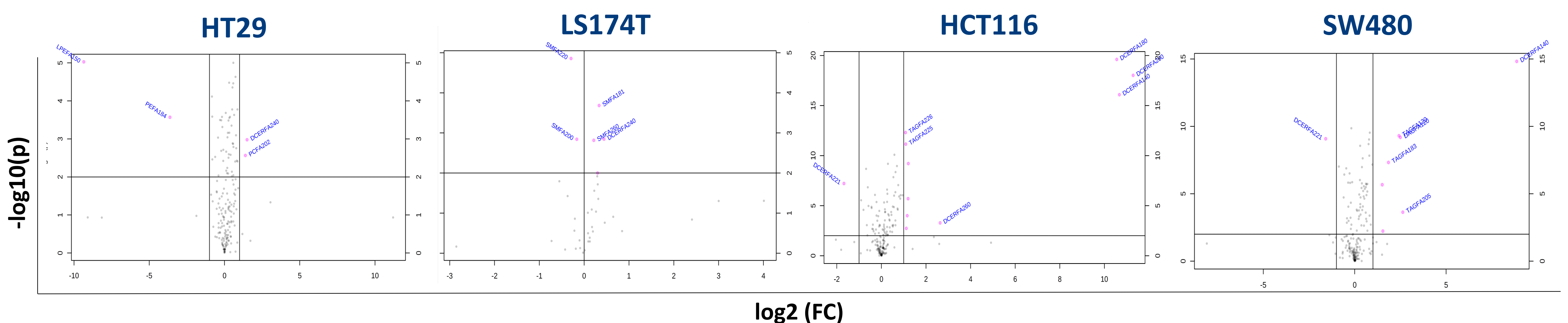
### RESULTS



**Fig 1. Lipid profiling of CRC cell lines in normoxia A) and hypoxia B).** Analysis of the lipid class composition in the basal state (normoxia) revealed that mostly differences are in ceramide metabolism; on the other side major cell components are membrane lipids. Clustering analysis showed alterations in the lipid profile upon hypoxia treatment. Ceramide – related, LPE, and LPC lipid classes were the most evident changes



**Fig 2. Common lipid classes up or down regulated after hypoxia.** Volcano plot analysis for each individual cell line displayed upregulation of DCER, and down regulation of SM lipid classes, as a common feature after hypoxia. Moreover, SW480 and LS174T shared changes in lipid classes related with ceramide metabolism.



**Fig 3. Fatty acid composition in lipid classes affected by hypoxia.** Lipid classes, previously shown to be up or down regulated, were analyzed at the fatty acid composition level. Results showed HT29 and LST174T to be less hypoxia responsive compared to the other two cell lines, however, the four cell lines shared an upregulation in long and very long saturated fatty acid from DCER lipid classes.

### CONCLUSION

Hypoxia induces changes in the lipid metabolism of CRC cell lines that are mainly associated to long and very long fatty acids from DCER lipid class.