Proteomically scrutinizing the gastric cancer’s resection margin for malignancies

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Gastric cancer is the fourth-most common type of cancer and one of the highest in mortality rate world-wide. Its treatment is commonly carried out by surgically removing the tumor together with a section of “healthy” surrounding mucosa (the so-called resection margin). Early diagnosis results in higher chances for cure; however, as this cancer causes very few symptoms during its initial stages, it is mostly diagnosed in advanced stages. Our group has particular interest for this cancer as its incidence is uncommonly high in the Amazon state of Brazil. Here, we compared the proteomic profile of the resection margin, tumor, and control biopsies by using multi-dimensional chromatography (strong cation exchange and reverse phase) online with tandem mass spectrometry (Orbitrap Velos). Proteins commonly identified in the resection margin and the tumor but not in control subjects help in understanding the tumorigenesis and progression as they compose the micro-environment that nourishes the tumor, similarly as the soil to a seed. These can ultimately aid in the early diagnosis of this disease and in delimiting the resection margin; some examples are: Tropomyosin, Intelectin, FN1, and SEC13. The relevance of these and other identified putative prognostic markers are described in this work.

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