P015 Distribution of Ca^{2+} release channels in colonic epithelium and their role in apoptosis

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Ca^{2+} release through both inositol 1,4,5-trisphosphate receptors (IP_3R) and ryanodine receptors (RyR) can play a role in the regulation of colonic ion transport.

We therefore investigated the expression and distribution of the various types of the two receptor families in rat colonic crypt cells in comparison to HT29/B6 cells. Presence of RyRs was studied by [^{3}H]ryanodine binding and by RT-PCR analysis. We detected the presence of the type 1 RyR in rat colonic crypt cells while no evidence for RyR expression was found in HT29/B6 cells. As in many other tissues all three types of IP_3Rs were expressed in colonic cells. By quantitative Western Blot analysis we determined the percentage of the different isoforms in rat colonic crypts and HT29/B6 cells and in both tissues type 3 IP_3R appeared to be the main isoform. Since there is evidence that type 3 IP_3R is involved in control of apoptosis we studied its potential role in colonic cell death by down-regulation of the receptor with specific siRNA. Ongoing experiments will elucidate whether this can influence the susceptibility of the colonic cells to apoptosis.