greatly potentiated by Bay K 8644.

7. These results suggest that CA secretion evoked by Ca^{2+}-reintroduction, high K^+ and the removal of extracellular Na^+ and Ca^{2+} is mainly mediated by Ca^{2+} entered through L-type voltage dependent Ca^{2+} channels in adrenal chromaffin cells.

EFFECTS OF TYROSINE KINASE INHIBITORS AND NON-SELECTIVE CATION CHANNEL BLOCKERS ON CAPACITATIVE Ca^{2+} ENTRY IN RAT ILEAL SMOOTH MUSCLES

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1. The present experiment was performed to examine the involvement of tyrosine kinase and non-selective cation channels in capacitative Ca^{2+} entry (CCE) in the rat ileal smooth muscles. The effects of tyrosine kinase inhibitors (genistein and tyrphostin 47), an inactive analogue of genistein (daidzein), non-selective cation channel blocker (SK & F96365) and Ca^{2+} entry blocker (tetrandrine) were examined in the presence of methoxyverapamil.

2. In the presence of external Ca^{2+}, carbachol-induced sustained contractions were dose-dependently inhibited by genistein, daidzein, tyrphostin 47, SK & F96365 and tetrandrine.

3. Under Ca^{2+}-free conditions, after the depletion of stored Ca^{2+} by carbachol or caffeine, the application of Ca^{2+} evoked transient contractions due to CCE. These contractions were inhibited by genistein, daidzein, tyrphostin 47, SK & F96365 and tetrandrine. The inhibitory potency of genistein was greater than that of daidzein. The application of Ca^{2+} evoked sustained contractions due to CCE after the depletion of stored Ca^{2+} with the treatment of thapsigargin. These five drugs also inhibited the contraction, but the potency of daidzein was greater than that of genistein.

4. SK & F96365 produced no inhibitory effects on the carbachol- and caffeine-induced contractions due to Ca^{2+} released from Ca^{2+} store. Genistein, daidzein and tyrphostin 47 inhibited these contractions. However, these drugs were less effective in inhibiting the contraction evoked by Ca^{2+} release than that by CCE. Tetrandrine inhibited contraction induced by carbachol but not caffeine.

5. Genistein slightly suppressed Ca^{2+}-induced contractions in β-escine treated skinned fibers.

6. These results suggest that CCE induced by carbachol and caffeine may be mediated by tyrosine kinase and this pathway is sensitive to SK & F96365 and tetrandrine. However, the inhibitory effects on CCE were produced by not only genistein but also daidzein, indicating that further studies are nesessary to evaluate this hypothesis.