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**Intestinal $Ca^{2+}$ absorption revisited: A molecular and clinical approach**



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**Abstract**

$Ca^{2+}$ has an important role in the maintenance of the skeleton and is involved in the main physiological processes. Its homeostasis is controlled by the intestine, kidney, bone and parathyroid glands. The intestinal $Ca^{2+}$ absorption occurs mainly *via* the paracellular and the transcellular pathways. The proteins involved in both ways are regulated by calcitriol and other hormones as well as dietary factors. Fibroblast growth factor is a strong antagonist of vitamin D action. Part of the intestinal $Ca^{2+}$ movement seems to be vitamin D independent. Intestinal $Ca^{2+}$ absorption changes according to different physiological conditions. It is promoted under high $Ca^{2+}$ demands such as growth, pregnancy, lactation, dietary $Ca^{2+}$ deficiency and high physical activity. In contrast, the intestinal $Ca^{2+}$ transport decreases with aging. Oxidative stress inhibits the intestinal $Ca^{2+}$ absorption whereas the antioxidants counteract the effects of prooxidants leading to the

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**Cited by:** 10 **Author:** BE Christopher Nordin
**Publish Year:** 2010

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THE **absorption** of **calcium** from the gastro-**intestinal** tract is one of the chief regulators of **calcium** metabolism and is known to be disturbed in a variety of **clinical** disorders.

**Author:** Christopher Nordin

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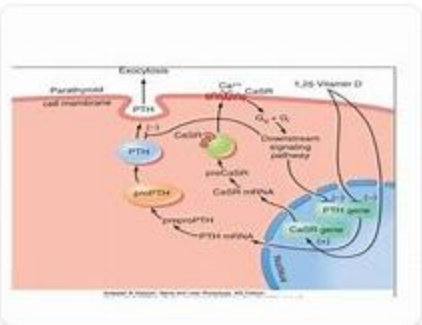


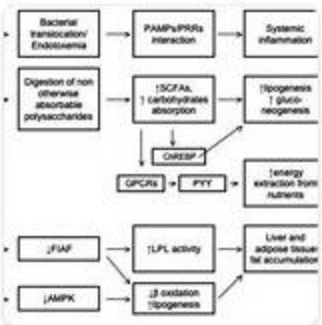


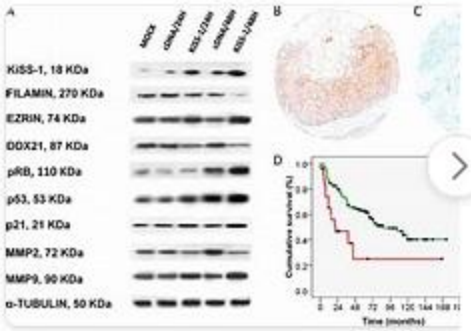


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**Cited by:** 1 **Author:** James C. Fleet
**Publish Year:** 2018

## JCI Insight - Volume 4, Issue 11

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Plasma calcium (**Ca2+**) is maintained by amending the release of parathyroid hormone and through direct effects of the **Ca2+**-sensing receptor (CaSR) in the renal tubule. Combined, these mechanisms alter **intestinal Ca2+ absorption** by **modulating** 1,25-dihydroxyvitamin D3 production, bone resorption, and **renal Ca2+** excretion.

## Molecular mechanisms of calcium signaling in the ...

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Jan 09, 2018 · INTRODUCTION. Epithelial ion transports are critical physiological processes in the human gastrointestinal (GI) tract. **Intestinal** epithelium either absorbs electrolytes or secretes ions (such as Cl-and HCO 3-), which provides the driving force for water **absorption** or secretion to maintain the liquid homeostasis in the human body.Epithelial ion transports are under control of several neuro ...

**Cited by:** 1 **Author:** Xin Yang, Guorong Wen, Biguang Tuo, F...
**Publish Year:** 2018

## Melatonin not only restores but also prevents the ...

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We have previously demonstrated that melatonin (MEL) blocks the inhibition of the **intestinal Ca 2 + absorption** caused by menadione (MEN). The purpose of this study were to determine whether MEL not only restores but also prevents the **intestinal Ca 2 + absorption** inhibited either by MEN or BSO, two drugs that deplete glutathione (GSH) in different ways, and to analyze the mechanisms by which ...