

عنوان مقاله:

Effects of some anti-diabetic herbal extracts on the insulin-degrading enzyme in human colon cancer Caco-2 cell line

محل انتشار:

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خلاصه مقاله:

Objective: Type 2 diabetes mellitus (T2DM) is a condition characterized by insufficient insulin production or insulin resistance. The insulin-degrading enzyme (IDE) is responsible for degrading insulin and is a potential drug target for T2DM treatment. Numerous activities have been proposed for plant extracts, but research on the effects of plant extracts on IDE expression and activity is riddled with drawbacks. **Materials and Methods:** We investigated the effect of *Phaseolus vulgaris*, *Allium cepa*, *Portulaca oleracea*, *Cinnamomum verum*, and *Citrullus colocynthis* extracts on the expression and activity of IDE in the Caco-2 cell line. **Results:** Findings of RT-PCR showed that IDE gene expression was reduced following treatment with *P. vulgaris*, *C. colocynthis*, and *C. verum* extracts. The results of IDE activity with fluorogenic peptide substrate V also indicated that *P. vulgaris*, *C. colocynthis*, and *P. oleracea* extracts reduced IDE activity in a significant and dose-dependent manner. **Conclusion:** The hydroalcoholic extracts studied, except for *A. cepa*, can prevent insulin degradation by reducing the expression and activity of the IDE enzyme. This new insight into the effects of herbal medicines on IDE activity can help future studies

کلمات کلیدی:

Insulin-degrading enzyme, *Phaseolus vulgaris*, *Allium cepa*, *Portulaca oleracea*, *Cinnamomum verum*, *Citrullus*

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