

Effects of antibiotics, short-chain fatty acids and amino acids on Apolipoprotein A-I transcription and synthesis in normal and inflamed HepG2 and Caco-2 cells

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'Effects of antibiotics, short-chain fatty acids and amino acids on Apolipoprotein A-I transcription and synthesis in normal and inflamed HepG2 and Caco-2 cells'

Jehad Z. Tayyeb, 1st June 2021

1. Amoxicillin can directly and indirectly decrease ApoA-I production in human hepatic and intestinal cell lines. (*This thesis*)
2. Short-chain fatty acids elevate ApoA-I transcription in hepatic, but not intestinal cell lines. (*This thesis*)
3. The amino acids Leucine, Glutamic acid and Tryptophan increase ApoA-I transcription, while Glutamine, Proline and Histidine elevate pro-ApoA-I secretion in a human hepatic cell line. (*This thesis*)
4. Changes in PPAR α transactivation pathway are involved in the effects of antibiotics, short-chain fatty acids and amino acids on ApoA-I transcription in a human hepatic cell line. (*This thesis*)
5. The inhibitory effects of short-chain fatty acids on NF- κ B activation explain the rescue of ApoA-I transcription in response to short-chain fatty acids treatment during inflammation in a human hepatic cell line. (*This thesis*)
6. Targeting ApoA-I production by dietary natural compounds has great potential as a strategy to prevent CVD development and as such reduce the financial costs of current CVD treatment. (*Impact paragraph*)
7. Improving HDL functionality plays a more important role in the prevention of CVD than circulating HDL cholesterol levels. (*Kosmas et al., Drugs Context., 2018*)
8. The results from in vitro experiments form the basis of future in vivo studies and as such are an essential step in the translation to clinical outcomes. (*Honek et al., Medical Writ., 2017*)
9. "Science is a way of thinking much more than it is a body of knowledge." (*Carl Sagan*)
10. "The doctor of the future will no longer treat the human frame with drugs, but rather will cure and prevent disease with nutrition." (*Thomas Edison*)