An innovative proposal for the study of the causes of autism

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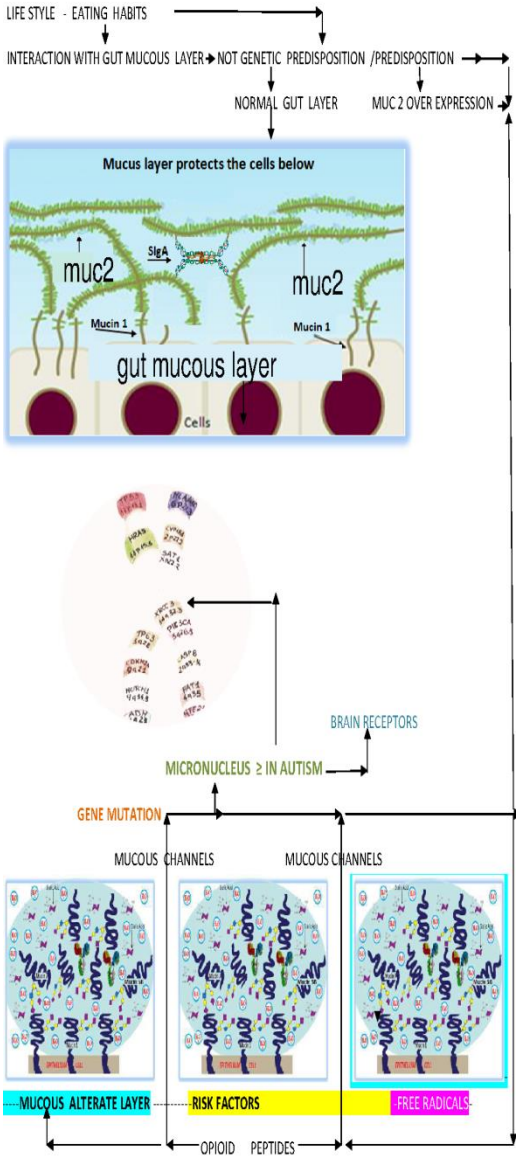
Abstract

Several studies demonstrated that many foods may provide a large number of bioactivepeptides into the gastrointestinal tract, for example, the beta-casomorphin-7, an opioid-like peptide produced by casein. Recent studies have established that the production of these opioid peptides is experimentally associated with autism. Autism is a developmental disorder with a possible connection between dietary components and triggering or worsening of symptoms. An altered intestinal permeability might allow absorption of incompletely digested peptides (gluten and casein) that could produce opioid-like activity on the brain, causing significant changes in behavior. It is also showed that phenomenon of the formation of opioid peptides strongly stimulates intestinal mucin production in *ex vivo* and *in vitro* models particularly, these effects were associated with a higher expression of intestinal mucins (gel forming), MUC2, the principal constituent of gut protective layer. The over expression of MUC 2 on contrary to what one might think, does not strengthen the intestinal protective layer, but rather tends to altering the continuous layer, in a succession of bubbles, separated by channels, which allow for greater permeability, facilitating the cycle of the opioid peptides and the free radicals. The effect is twofold: inhibition of nerve receptors, and formation of cerebral micronuclei. The purpose of this study is to propose research to evaluate, the biochemical process for inhibition of the MUC2 over expression in autism.



Recent Publications

1. Lázaro CP, Pondé MP, Rodrigues LE (2016) Opioid peptides and gastrointestinal symptoms in autism spectrum disorders. Rev. Bras. Psiquiatr. 38(3):243-6.
2. Rosenfeld CS (2015) microbiome disturbances and autism spectrum disorders. Drug Metab. Dispos. 43(10):1557-71.
3. Plaisancié P, Boutrou R, Estienne M, Henry G, Jardin J, Paquet A, Léonil J (2015) β-Casein (94-123)-derived

peptides differently modulate production of mucins in intestinal goblet cells. J Dairy Res. 82(1):36-46.
4. Main PA, Thomas P, Angley MT, Young R, Esterman A, King CE, Fenech (2015) Lack of evidence for genomic instability in autistic children as measured by the cytokinesis-block micronucleus cytome assay. Autism Res. 8(1):94-104.
5. Frye RE, James SJ (2014) Metabolic pathology of autism in relation to redox metabolism. Biomark Med. 8(3):321-30.
6.

Biography

Menicagli Roberto has completed his PhD from Milan University, and Postdoctoral Studies in Biochemistry and Molecular Genetics, at the Faculty of Biology at Milan University. He is the Director of Roma Biomed Research Lab, a private medical service organization. He has published more than 20 papers in reputed journals. He is also the Principal Author of 4 international patents in the field of the Environment and Biomarkers and has been serving as an Editorial Board Member of two magazines concerning the medical sciences.

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Notes/Comments: