

Project Title: Molecular Characterization of Gluten Sensitivity in Schizophrenia

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Abstract

Genetic, immunologic, and environmental factors are believed to contribute to the etiopathogenesis of schizophrenia (SZ). Among various immune abnormalities, increased antibody response to dietary gluten has been found to be associated with SZ in recent studies. However, little is known about the molecular specificity of the anti-gluten immune response and its pathogenic relevance in the disease process. Our preliminary data show that the immune response to gluten in SZ is significantly different from celiac disease, the prototype of gluten sensitivity, appearing to involve a distinct mechanism and molecular specificity. The new data provide a strong rationale for in-depth examination of the humoral immune response to gluten in SZ. The current proposal represents a systematic approach to further assess the relevance of gluten in SZ through the following specific aims: 1) To characterize the molecular specificity of the anti-gluten immune response in SZ, and 2) To map the epitope specificity of the observed anti-gluten antibody response in SZ. The information that is expected to emerge if the aims of the proposed project are achieved will 1) offer novel biomarkers that may help in the identification of specific subsets of SZ patients or individuals at risk of developing SZ, 2) support closer examination of gluten exclusion diet as a treatment option in the identified patient subset(s), 3) offer novel clues about the pathogenic relevance of gluten in SZ and other neuropsychiatric conditions.