JOHN-PETER GANDA MALL obtained his bachelor degree in biomedicine and Master of Science degree in medicine from Örebro University, Sweden, during the years 2007-2012. He started his PhD in late 2012 at the Nutrition-Gut-Brain Interactions Research Centre (NGBI), Örebro University. At NGBI he set up methods to study intestinal permeability and throughout his PhD he has used an interdisciplinary approach to his studies by combining pre-clinical and clinical studies.

The elderly population is increasing worldwide and many elderly suffer from gastrointestinal (GI) symptoms in the form of diarrhoea and constipation. The mechanisms behind these symptoms are not fully understood but could be caused by an increased permeability towards bacteria and toxins in the gut, as in the case with Crohn’s disease. The hypothesis of this thesis was that elderly with GI symptoms have an increased intestinal permeability and that non-digestible polysaccharides (NPS), e.g., dietary fibres, can have a direct effect on the intestinal barrier function and other health-related parameters. The results from this thesis show that elderly with GI symptoms do have an increased intestinal permeability that also is associated with increased psychological distress. We also found that specific NPS can prevent intestinal barrier dysfunction in various populations, including patients with Crohn’s disease that are known to suffer from severe inflammation and increased permeability.