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DEVELOPMENT OF NOVEL BIOMARKERS FOR ALLERGIC DISEASES

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The prevalence of allergic diseases such as asthma, atopic dermatitis, and allergic rhinitis, has been dramatically increasing worldwide in these decays. This indicates that treating allergic diseases is not only a medical problem, but also a social problem. Biomarkers are useful to treat patients in many aspects such as pharmacodynamic assessment, diagnosis of diseases, and prediction of efficacy of drugs or of prognosis of patients. However, the repertoire of biomarkers for allergic diseases, particularly those in serum, is very limited. On the other hand, several drugs targeting cytokines/cytokine receptors for allergic diseases have been developed; however, since the pathogenesis of allergic diseases are heterogeneous, biomarkers to estimate the efficacy of these drugs, so-called “companion diagnostics,” are required. We found for the first time that periostin, a matricellular protein, is a downstream molecule of IL-4 and IL-13, signature type 2 cytokines tightly involved in the pathogenesis of allergic diseases. We and others have subsequently shown that periostin is highly expressed in inflamed sites of chronic inflammatory diseases—asthma, atopic dermatitis, eosinophilic chronic sinusitis/chronic rhinosinusitis with nasal polyp, and allergic conjunctivitis—and that periostin plays important roles in the pathogenesis of these diseases. Based on these findings, we explored the possibility that periostin can be a novel biomarker for allergic diseases finding that periostin is useful for treating these diseases—help in diagnosis, assessment of clinical severity, monitoring efficacy of treatments, and, moreover, prediction of efficacy of molecularly targeted drugs. Taken together, these results demonstrate that periostin has emerged as a novel and useful biomarker for allergic diseases.

Biography

Kenji Izuhara received his MD degree on 1984, and PhD degree on 1993 from Kyushu University, Fukuoka, Japan. He served as a Postdoctoral fellow in DNAX Research Institute, Palo Alto, USA, from 1991 to 1994. He has been a Professor of Saga Medical School, Saga, Japan since 2000. His research interests include clarification of the pathogenesis of allergic diseases and discovery of drug targets and diagnostic markers for allergic diseases. He has published about 200 papers and reviews in peer-reviewed international journals, contributed to 40 books, and he has given 97 plenary and invited lectures in international and domestic conferences and symposia by 2018. He has served as Editor-In-Chief of *Allergology International* (2013-present) and as Editorial Board Membership of *Allergy, Asthma & Immunology Research* (2016-present) and *International Journal of Molecular Sciences* (2018-present).

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