

Publication

Association of STR polymorphisms in CMA1 and IL-4 with asthma and atopy : the SAPALDIA cohort

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Author(s) Hersberger, Martin; Thun, Gian-Andri; Imboden, Medea; Brandstätter, Anita; Waechter, Vanessa; Summerer, Monika; Schmid-Grendelmeier, Peter; Bircher, Andreas; Rohrer, Lucia; Berger, Wolfgang; Russi, Erich W; Rochat, Thierry; Kronenberg, Florian; Probst-Hensch, Nicole

Author(s) at UniBasel [Bircher, Andreas J.](#) ; [Probst Hensch, Nicole](#) ;

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Asthma is a chronic pulmonary disorder that is characterized by airway inflammation and bronchial hyperreactivity. Several genetic loci have been associated with asthma, and some of these associations have been replicated in independent studies. However, larger population-based replication studies for the association of short tandem repeat (STR) polymorphisms with asthma are limited. In this study, we investigated the association of STR polymorphisms in genes encoding mast cell chymase (CMA1), uteroglobin (UGB), tumor necrosis factor-alpha (TNF-alpha) and interleukin-4 (IL-4) with asthma and atopic phenotypes in the large population-based Swiss Cohort Study SAPALDIA. Our results show that the STR polymorphism in the CMA1 gene is associated with asthma and that this association is even stronger with atopic asthma. Similarly, we observed a weak association of the IL-4 2-allele with asthma that tended to be stronger for atopic asthma than for nonatopic asthma. This minor IL-4 2-allele was also associated with higher IgE levels, with a higher risk for a positive skin prick test and with a trend for a higher risk for bronchial hyperresponsiveness. These results support previous findings suggesting a role for CMA1 and IL-4 in atopic asthma and for IL-4 in atopy in general

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