

Appendix S1

SUPPLEMENTARY METHODS

Subjects - Patients with other skin diseases as well as patients undergoing topical treatment on the day of examination or those with ongoing UV treatment or systemic treatment for AD were excluded from the study. All patients gave informed written consent in compliance with the Helsinki Declaration, and the study was performed with the approval of the regional Ethics Examination Board of Lund, ref. no. 2012/82.

Immunological analyses and serum analyses of MBL – Sensitization to skin-associated microorganisms *C. albicans*, *Malassezia* and *S. aureus*, serum-specific immunoglobulin E (IgE) levels to *C. albicans* (m5), *Malassezia* (m227) and *S. aureus* enterotoxin A (m80), *S. Aureus* enterotoxin (SEB) (m81), Toxic shock syndrome toxin (TSST) (Rm226), were measured. Specific IgE were measured by ImmunoCAP™ system, Phadia AB, Uppsala, Sweden. The analyses of specific IgE and MBL serum concentrations were performed at the Immunological laboratory of Skåne University Hospital.

Mannose-binding lectin gene polymorphism – Genetic analyses were performed at the section of Rheumatology, Department of Clinical Sciences Lund, Lund University, Skåne University Hospital, Lund, Sweden.

Transepidermal water loss (TEWL) – TEWL was measured by using a closed chamber TEWL meter, Vapometer 300 (Delfin Technologies Ltd, Kuopio, Finland), according to the guidelines (27). Before the measurements, the patient had to rest for 5–15 minutes. We aimed for an ambient relative humidity of 10–60% and an ambient temperature of 20–22°C. TEWL was measured on three different measuring points in all patients: left volar forearm, left dorsal forearm, and abdomen (right of the umbilical) and an average of the measurements was calculated.

Assessment of disease severity – The disease severity was determined by the scoring of AD (SCORAD) index classification, based on a consensus report by the European Task Force on Atopic Dermatitis (28,29). The prevalence of head and neck dermatitis was registered. Extent and intensity were assessed by the same two physicians throughout the whole study.

Statistical analysis – Analyses were performed to study a possible association between MBL deficiency and sensitization to *C. albicans* in patients with AD. Differences among patients showing positive and negative sensitization tests towards skin microbes were evaluated with an χ^2 -test for categorical independent variables and t-test for continuous independent variables. Logistic regression models were employed to evaluate whether the odds ratio (OR) for *C. albicans* sensitization differed among MBL genotypes, with and without adjustment for SCORAD category, TEWL and head and neck dermatitis, respectively. The analysis was performed in Stata 14 (StataCorp, 2015) and a p-value of <0.05 was considered statistically significant. StataCorp. 2015. *Stata Statistical Software: Release 14*. College Station, TX: StataCorp LP.