



Skin allergenicity of airborne and soil algae isolated from Malaysia

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Abstract Studies have shown that the aquatic algae can cause allergy in humans. However, there are relatively few studies of airborne and soil algae on skin allergenicity. Therefore, we aimed to assess the skin allergenicity potential of airborne and soil algae isolated from Malaysia. Six algal species namely *Scenedesmus* sp., *Stichococcus* sp., *Chlorococcum* sp., *Chlorella* sp., *Ulothrix* sp. and *Hapalosiphon* sp. isolated from air and soil samples were

screened based on the expression of IL-18 by NCTC 2544 keratinocytes in vitro assay. The mechanism of *Stichococcus* sp., *Hapalosiphon* sp. and *Scenedesmus* sp. in inducing skin allergenicity was further elucidated using Balb/c mouse model. Both proliferation of T-lymphocytes at local lymph nodes and expression of various acute inflammatory cytokines were assessed. The in vitro study showed that all algal extracts (1 mg/mL) except *Ulothrix* sp. were potential contact sensitizers and induced the expression of IL-18 by 0.369–5.227 pg/mg (IL-18/unit protein)

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