

TECHNOLOGY PRESENTATION

MAST CELL BIOMARKERS OF ASTMA

VALUE PROPOSITION

There are few markers of allergic asthma (clinical assessment, sIgE, Basophil activation, eosinophilia, FENO), and none of them offer a direct diagnosis.

We have compared expression of nearly 800 potential biomarkers in mast cells from asthmatic patients (n=10) and controls (n=10) and found two differentially regulated biomarkers that can be used to distinguish patients with allergic asthma from healthy people.

BUSINESS OPPORTUNITY

We want to transform this into a diagnostic test. At the moment, the test takes two months to complete. We expect to shorten this time by either improving the analysis, or by focussing on another component that is similarly regulated. We expect to develop a product that will have major treatment impact as it will be used in regional hospitals for diagnosis of allergic asthma.

We are looking for:

- Proof of Concept funding
- Funding/Investors
- Partner/Research collaboration

TECHNOLOGY SUMMARY

Biomarkers that can be used to distinguish patients with allergic asthma from healthy people.

CURRENT STATE OF DEVELOPMENT

We want to reproduce the data we have obtained with 18 mild and 18 severe allergic asthmatic patients and 18 normal controls to confirm our observation. We expect that 9 mast cell lines will grow badly, and we aim at having data for 45 individuals. At the same time, we will explore whether the same measurement can be made in blood basophil granulocytes and in whole blood containing basophil granulocytes in a subset of patients.

The proof of concept project is expected to complete in 12 months time.

Proof of concept funding requirement: 121,000 €

INTELLECTUAL PROPERTY RIGHTS

The discovery has been reported to Aarhus University, who have reserved the right to patent this observation.

The idea is owned by Aarhus University and Aarhus University Hospital.

INVENTORS



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REFERENCES

- C Hjort, Schiøtz, PO, Ohlin, M, Würtzen PA, Christensen, LH and Hoffmann HJ: The number and affinity of productive IgE pairs determine allergen activation of mast cells, J Allergy Clin Immunol. 2017 Oct;140(4):1167-1170.e2. doi: 10.1016/j.jaci.2017.04.014.
- Hoffmann HJ: Generation of a Human Allergic Mast Cell Phenotype from CD133(+) Stem Cells, Methods Mol Biol. 2014; 1192:57-62. doi: 10.1007/978-1-4939-1173-8_4
- Krohn IK, Lund G, Frandsen PM, Schiøtz PO, Dahl R, Hoffmann HJ: Mast cell FcεRI density and function dissociate from dependence on soluble IgE concentration at very low and very high IgE concentration, J Asthma, 2013; 50: 117

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