

Correspondence

Reply

To the Editor:

We thank Chirumbolo et al¹ for their interest in our article.² We agree that mast cells represent a heterogeneous population of different mast cell phenotypes; however, we did not seek to address mast cell heterogeneity. Rather, we propose the use of human blood-progenitor differentiated mast cells (hMCs) as a tool to model *in vitro* allergen-induced cell responses, and improve the diagnosis of IgE-mediated allergic disease.

We agree that the differentiation of hMCs from progenitors requires time and specific expertise. However, once the hMC cultures have been established, the mast cell activation test (MAT) and basophil activation test (BAT) are equivalent in terms of the time needed to perform the assay. We propose that the far higher robustness, specificity, and sensitivity of the MAT assay compared with current assays (including BAT) are convincing arguments to pursue the work to further improve culture conditions and cell handling. We note that in a recent report, even the LAD2 mast cell line performs better than BAT in terms of sensitivity, albeit with less sensitivity than we reported for hMCs.³

Chirumbolo et al propose that hMCs generated from different healthy donors may differ from those in atopic individuals. However, there is little evidence to support this. Krohn et al³ showed that cultured mast cells from patients with asthma and nonatopic controls responded with similar sensitivity to recombinant Der p2-induced, IgE-mediated activation. The authors concluded that activation of cultured mast cells appears to depend on culture conditions (IL-4, IgE) rather than on donor status as atopy and asthma.⁴ Furthermore, Cop et al⁴ recently demonstrated that mast cells “cultured out of peripheral blood from healthy control individuals showed a similar phenotype as compared to birch pollen allergic donors, viz., their mature CD117-positive MCs express CD203c and FcεRI with similar densities.” These data imply the absence of obvious phenotypical mast cell differences between healthy individuals and allergic patients.

Chirumbolo et al suggest that we used a novel gating strategy for basophils: our method has been previously published,⁵ and the limitations of other BAT gating strategies have been well reported.^{5,6} We did not seek to compare CD63 expression on human basophils and hMCs, but rather compare the diagnostic utility of BAT versus MAT, something Chirumbolo et al may have missed in their commentary on our article.

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