

# Omiganan enhances imiquimod-induced inflammatory response in a human skin challenge model

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## Introduction & Aim

Omiganan (OMN, a cationic peptide with immunomodulatory properties) and imiquimod (IMQ, TLR 7/8 agonist) have synergistic effects on inflammation *in vitro*. The objective of this study was to translate this to a human model for proof-of-concept, and to explore the potential of add-on treatment for HPV-induced skin diseases.

## Methods

- 16 healthy volunteers
- Topical treatment with IMQ, OMN and combination in different sequential orders under occlusion to tape stripped skin
- Erythema by visual erythema grading, colorimetry and 2D photo analysis
- Perfusion by laser speckle contrast imaging (LSCI)
- Skin punch biopsies for histology and immunohistochemistry assessment

## Results

- Skin inflammation was significantly more apparent as erythema and perfusion ( $p < 0.05$ ) when the skin was primed with IMQ for 48h, followed by 48h application of OMN, compared to IMQ or OMN alone
- IFN- $\gamma$ , IL-10, IL-6, MX1 and MXA mRNA expressions were all higher with this treatment regimen
- specifically CD4, CD8 and CD14 to be more apparent

## Conclusions

- OMN enhances IMQ-induced skin inflammation in healthy volunteers
- Combination therapy in HPV-induced skin diseases should be investigated

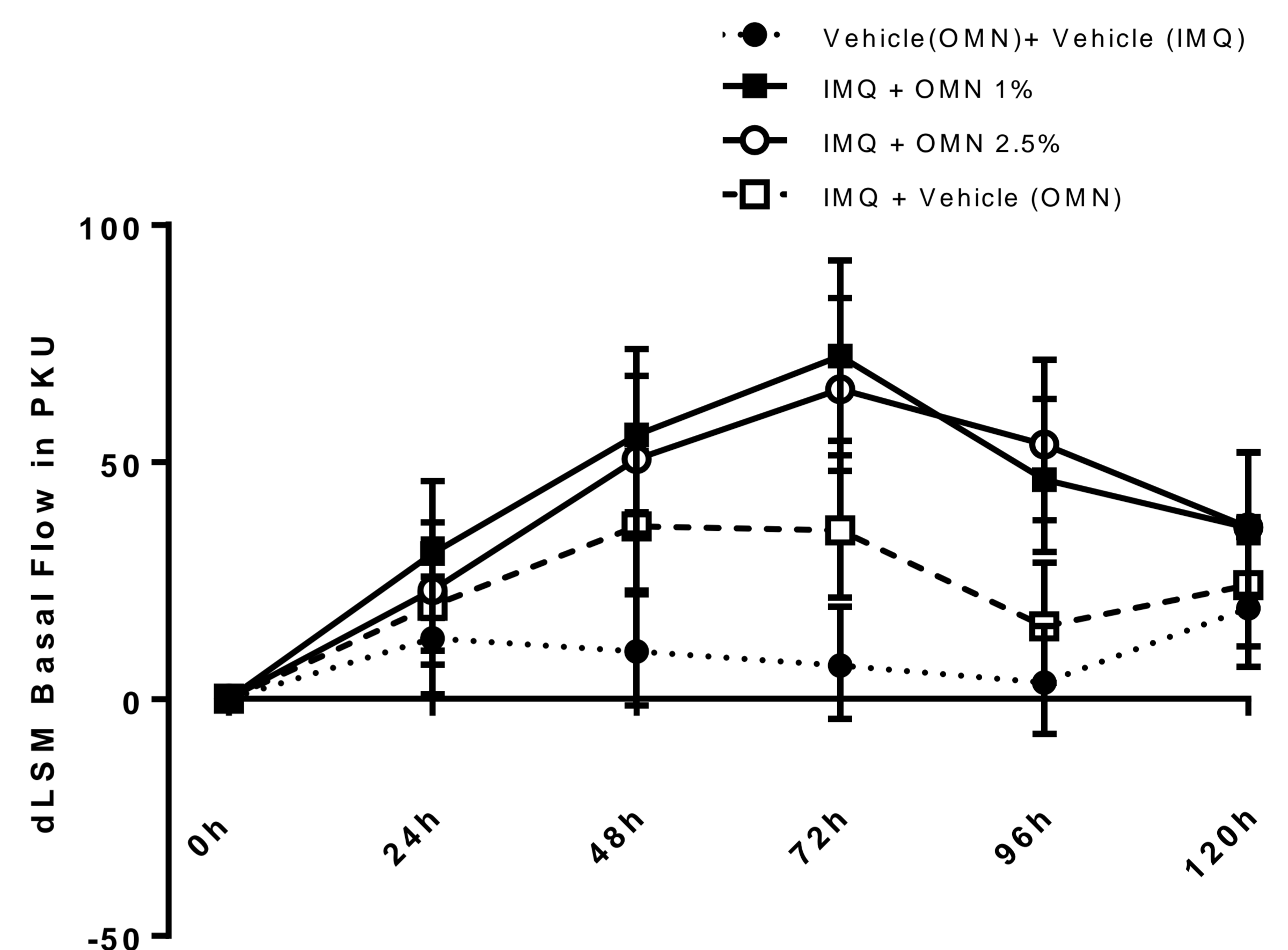


Figure 1: LSCI results

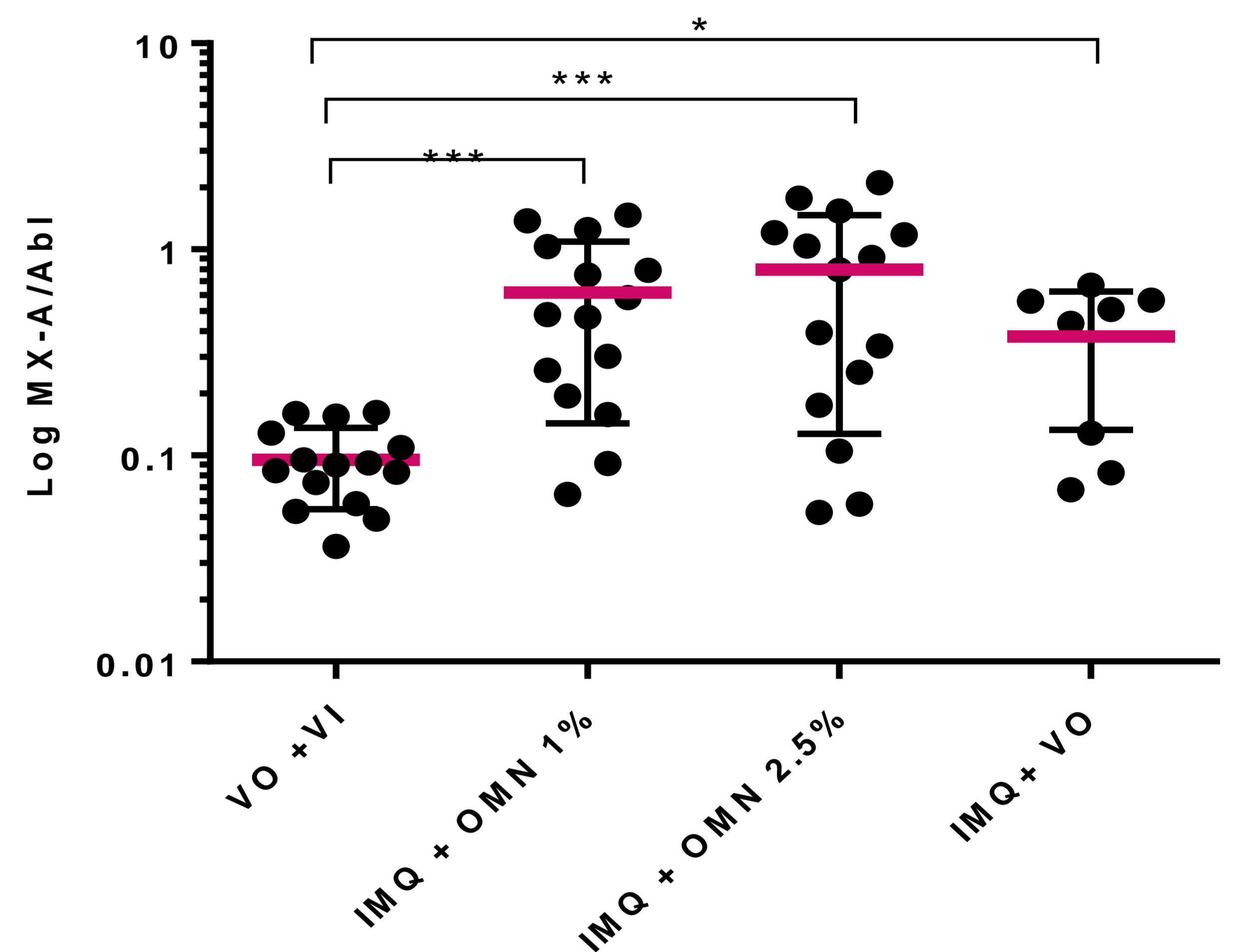


Figure 2: mRNA expression MX-A in skin punch biopsies

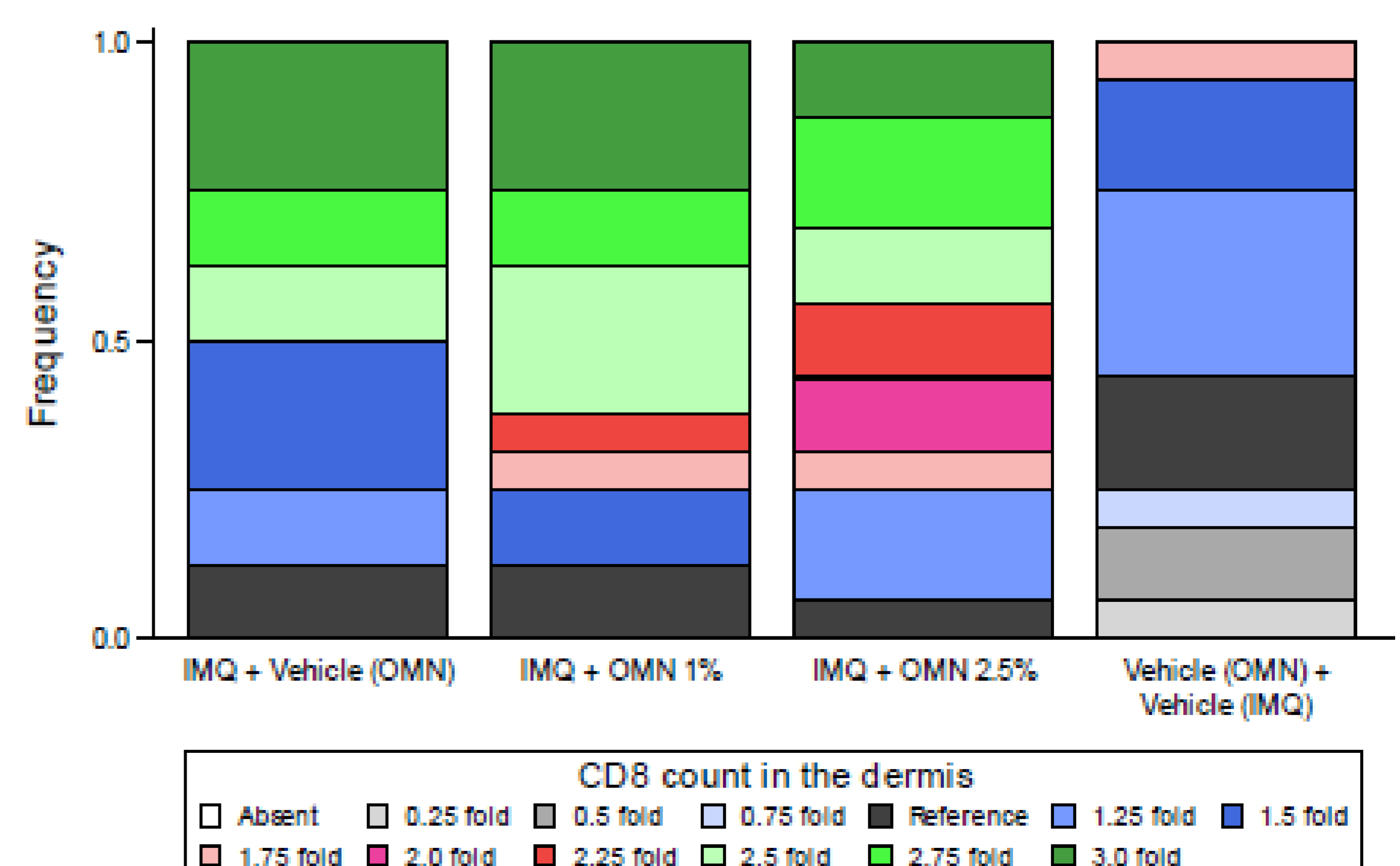


Figure 3: Influx of CD8+ cells