Characterization of a novel patient-derived antibody with sequence homology to antibodies directed against both desmosomal- and non-desmosomal targets in the skin of patients with Hidradenitis suppurativa

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Hidradenitis suppurativa (HS) is a chronic inflammatory disease of the skin that is characterized by recurring abscesses of the perianal, axillary, and perineal areas. The pathogenesis of HS is complex and not fully understood. Recent studies have suggested that immune dysregulation and inflammation play a significant role in the development and progression of the disease. In this study, we characterized a novel patient-derived antibody from a HS patient that showed sequence homology to antibodies directed against both desmosomal and non-desmosomal targets in the skin.

Methods: Patient tissue samples were obtained from HS patients undergoing surgical excision. We used immunohistochemistry, Western blotting, and mass spectrometry to identify potential targets of the antibody. The antibody was expressed in transgenic mice, and the resultant phenotype was analyzed.

Results: The antibody recognized both desmosomal and non-desmosomal targets in the skin of HS patients. It inhibited the development of abscesses in a transgenic mouse model. The antibody was able to recognize a specific epitope on the desmosomal protein, Dsg1.

Conclusion: This study provides novel insights into the immune mechanisms involved in HS and suggests potential therapeutic targets for this debilitating disease.