

# Dermatology

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We have examined patients with various severe skin diseases and considered to provide the best treatments for all patients. Our basic and clinical research interests are mainly severe drug eruption including Stevens-Johnson syndrome (SJS)/toxic epidermolysis necrosis (TEN). Patients diagnosed with SJS/TEN still have a high mortality rate and early diagnosis and treatment are necessary.



We have been identified several potential biomarkers of SJS/TEN and hope to search for more conclusive biomarkers to distinguish whether severe drug eruption occur at an early stage. We have also tried to receive diagnosis early using artificial intelligence (AI) system.

Moreover, we also focus on genetic skin disorders. We have searched pathogenic mutations and performed functional assays for genetic skin disorders. We are trying to identify the novel causative gene and treatment for genetic skin diseases. We can make 3D skin constructs using patient's keratinocytes and induced pluripotent stem (iPS) cells and hope to establish *in vitro* model systems of various skin diseases.

## Research and Clinical interests

1. Searching potential biomarker of severe drug eruption including SJS/TEN and drug induced hypersensitivity syndrome.
2. Establishment of early diagnosis for SJS/TEN using AI system.
3. Identification of pathogenic mutations and establish 3D skin constructs for genetic skin disorders.

## Materials and methods for collaborations

1. Screening many cytokines for several diseases using multiplex system.
2. Making skin sections and checking morphology using electron microscope.
3. Making 3D skin construct using keratinocyte and iPS derived keratinocyte.
4. Provide human serum, cDNA and skin sections for several diseases and normal controls.

## Links to additional info

1. Hama N, Abe R et al. Galectin-7 as a potential biomarker of Stevens-Johnson syndrome/toxic epidermal necrolysis: identification by targeted proteomics using causative drug-exposed peripheral blood cells. J Allergy Clin Immunol Pract; 7(8): 2894-2897, 2019.  
<https://www.sciencedirect.com/science/article/abs/pii/S2213219819304490?via%3Dihub>
2. Yuki A, Abe R et al. CADM1 is a diagnostic marker in early-stage mycosis fungoides: Multicenter study of 58 cases. J Am Acad Dermatol 79(6):1039-1046, 2018.  
<https://www.sciencedirect.com/science/article/pii/S0190962218321479?via%3Dihub>
3. Lab HP (Japanese). <https://www.med.niigata-u.ac.jp/der/>