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| Adverse Effectss | Outcomes/Efficacy | Patient Population | Study Design | Mechanism of Action | Phase | Indication | Drug | Reference |
| Rash (48%), lymphopenia and leukopenia (33% each), mostly mild (grade 1 or 2) | Proviral load ↓ by ~65%; improvement in motor ability | 21 patients with HAM/TSP in phase I and 19 patients with HAM/TSP in phase IIa | Open-label, dose-escalation | Depletion of CCR4+ infected CD4+ T cells; ↓ neuroinflammation | Phase I/IIa | HTLV-1–associated myelopathy (HAM/TSP) | Mogamulizumab (KW-0761) | https://pubmed.ncbi.nlm.nih.gov/29414279/ |
| fever, chills, fatigue, nausea, transient liver function abnormalities, anemia, and thrombocytopenia | evaluating MTD & immune activation | ATL patients with prior therapy failure | Open-label, dose-escalation | CCR4 blockade + NK-cell activation | Phase I | ATL (relapsed/refractory) | Mogamulizumab + rhIL-15 | NCT04185220 |
| skin rash, initially considered to be cutaneous ATL, skin hypersensitivity, intraparotid localised nodal progression | in this small group of patients  achieving a proviral load <1% and a 4-5 log reduction in the absolute abundance of the malignant clone  was associated with long-term clinical remissions | 4 subjects treated in the UK with leukaemic-type disease (3 chronic, 1 acute  subtype) | multi-centre, open-label, randomised study | - | - | relapsed or refractory ATL | anti-CCR4  monoclonal antibody mogamulizumab (KW-0761) | http://doi.org/10.1182/blood.V128.22.5356.5356 |
| Rash, nasopharyngitis, decreased lymphocyte count (20, 30.8%), pyrexia (14, 21.5%), alopecia (13, 20.0%), back pain and stomatitis (12 patients each, 18.5%), arthralgia (11, 16.9%), and cystitis and contusion (10 patients each, 15.4%) (Table 5). Skin and subcutaneous tissue disorders were the most common TEAEs (61, 93.8%), followed by infections and infestations (51, 78.5%); gastrointestinal disorders (36, 55.4%); investigations (35, 53.8%); injury, poisoning, and procedural complications (33, 50.8%); musculoskeletal and connective tissue disorders (32, 49.2%); and general | mogamulizumab arm showed a significant decrease in HTLV-1 proviral load (− 59.39 ± 29.91%  vs. placebo 2.32 ± 36.31%) and CSF neopterin (p < 0.001)/CXCL10 levels (p = 0.004). The baseline OMDS pattern and the  60–80% HTLV-1 proviral load reduction were sustained through the open-label and extension treatment periods | 34 and 33 patients were randomized to mogamulizumab and placebo arms, respectively | multicenter, randomized, double-blind, placebo-controlled, open-label period, and extension treatment | - | phase 3 | HAM/TSP patients | 0.3 mg/kg intra-  venous mogamulizumab, a monoclonal antibody targeting-CC chemokine receptor 4 | https://doi.org/10.1007/s00415-024-12239-x |
| Adverse Effects | Outcomes/Efficacy | Patient Population | Study Design | Mechanism of Action | Phase | Indication | Drug | Reference |
| skin rash and hypersensitivity-like reactions | *(No results available* |  | Open-Label,Multi-Center |  | Phase-2 | stage IB-IIB Cutaneous T-Cell Lymphoma, (Mycosis Fungoides (MF) and Sézary Syndrome (SS)) | Anti-CCR4 Monoclonal Antibody (mogamulizumab) Plus Total Skin Electron Beam therapy (TSEB) | EudraCT Number: 2019-004566-17 |
| skin rash and hypersensitivity-like reactions |  | Total 28, Female 15, Male 23 | Open-Label, Multi-Center |  | Phase 2 | Treatment of patients with relapsed or refractory PTCL | Anti-CCR4 Monoclonal Antibody KW 0761 (mogamulizumab) | EudraCT Number: 2011-004151-39 |
| skin rash and hypersensitivity-like reactions |  | 372 | Open-Label, Multi-Center, Randomized Study |  | - | Treatment of subjects with previously treated cutaneous T-cell lymphoma | Anti-CCR4 Monoclonal Antibody KW 0761 (mogamulizumab) | EudraCT Number: 2012-004766-17 |
| skin rash and hypersensitivity-like reactions |  | 71 patients were therefore enrolled into the study. | Multi-Center, Open-Label, Randomized |  | - | Treatment of patients with relapsed or refractory ATL | Anti-CCR4 Monoclonal Antibody KW-0761 or Investigator’s Choice in Subjects with Previously Treated Adult T-cell Leukemia-Lymphoma (ATL) | EudraCT Number: 2011-005738-20 |
|  |  | 52 | Multicenter, Randomized, Double-Blind and Placebo-Controlled Study, and Open Study |  | Phase 3 | HTLV-1 associated Myelopathy (HAM) | [**KW-0761**](https://ddrare.nibn.go.jp/ddrare_Mar2023/cgi-bin/clinical_trials_e.cgi?db=drug_who&query=%22kw-0761%22), Dose form:INJECTION, Route of administration:INTRAVENOUS DRIP. Control intervention1:Placebo, Dose form:INJECTION, Route of administration:INTRAVENOUS DRIP. | [JPRN-JMA-IIA00324](https://trialsearch.who.int/Trial2.aspx?TrialID=JPRN-JMA-IIA00324) |
|  |  | 52 | Multicenter, Randomized, Double-Blind and Placebo-Controlled Study, and Open Study |  | Phase 3 | HTLV-1 associated Myelopathy (HAM) | [**KW-0761**](https://ddrare.nibn.go.jp/ddrare_Mar2023/cgi-bin/clinical_trials_e.cgi?db=drug_who&query=%22kw-0761%22) INN of the intervention : [**Mogamulizumab**](https://ddrare.nibn.go.jp/ddrare_Mar2023/cgi-bin/clinical_trials_e.cgi?db=drug_who&query=%22mogamulizumab%22) Dosage And administration of the intervention : 0.3 mg/kg, IV Control intervention name : - INN of the control intervention : - Dosage And administration of the control intervention : - | [JPRN-JapicCTI-173608](https://trialsearch.who.int/Trial2.aspx?TrialID=JPRN-JapicCTI-173608) |
|  |  | 66 | Multicenter, Randomized, Double-Blind and Placebo-Controlled Study, and Open Study |  | Phase 3 | HTLV-1 associated Myelopathy (HAM) | KW-0761 0.3 mg/kg IV;Drug: Placebo (saline) | [NCT03191526](https://trialsearch.who.int/Trial2.aspx?TrialID=NCT03191526) ([ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/NCT03191526) |
| Pharyngitis  Stevens-Johnson syndrome  Rash |  | 27 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE2 | Adult T-cell Leukemia-lymphoma | BIOLOGICAL: KW-0761 | https://clinicaltrials.gov/study/NCT00920790 |
|  |  | 38 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: |Primary Purpose: TREATMENT |  | PHASE2 | Peripheral T/NK-cell Lymphoma | BIOLOGICAL: KW-0761 | <https://clinicaltrials.gov/study/NCT01192984> |
|  |  | 38 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE2 | Peripheral T-Cell Lymphoma | BIOLOGICAL: KW-0761 (mogamulizumab) | https://clinicaltrials.gov/study/NCT01611142 |
|  |  | 16 | Allocation: NON\_RANDOMIZED|Intervention Model: PARALLEL|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE1 | Gastric Cancer|Esophageal Cancer|Lung Cancer|Renal Cancer|Oral Cancer | BIOLOGICAL: Mogamulizumab|BIOLOGICAL: Nivolumab | https://clinicaltrials.gov/study/NCT02946671 |
|  |  | 44 | Allocation: RANDOMIZED|Intervention Model: PARALLEL|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE2 | Adult T-cell Leukemia-Lymphoma | DRUG: VCAP/AMP/VECP(mLSG15)|BIOLOGICAL: KW-0761 | 5:  https://clinicaltrials.gov/study/NCT01173887 |
| Herpes zoster  Hypoxia  Rash |  | 16 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE1 | Adult T-Cell Leukemia and Lymphoma (ATL)|Adult Peripheral T-Cell Lymphoma (PTCL) | DRUG: KW-0761 | https://clinicaltrials.gov/study/NCT00355472 |
|  |  | 5 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | Pahse 1, 2 | Mycosis Fungoides|Primary Cutaneous T-Cell Non-Hodgkin Lymphoma|Sezary Syndrome | PROCEDURE: Extracorporeal Photopheresis|BIOLOGICAL: Mogamulizumab|OTHER: Quality-of-Life Assessment | https://clinicaltrials.gov/study/NCT04676087 |
|  |  | 22 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE2 | T Cell Lymphoma | DRUG: Mogamulizumab|DRUG: DA-EPOCH Protocol | https://clinicaltrials.gov/study/NCT05996185 |
| Anaemia  Hypercalcaemia  Renal Failure Acute  Respiratory Failure  Pneumonia  Sepsis |  | 71 | Allocation: RANDOMIZED|Intervention Model: PARALLEL|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE2 | Adult T-cell Leukemia-Lymphoma | BIOLOGICAL: KW-0761|DRUG: Pralatrexate|DRUG: gemcitabine plus oxaliplatin|DRUG: DHAP | https://clinicaltrials.gov/study/NCT01626664 |
| Hypophosphataemia |  | 1 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE2 | Peripheral T-cell Lymphoma|Cutaneous T-cell Lymphoma | BIOLOGICAL: KW-0761 | https://clinicaltrials.gov/study/NCT01226472 |
| Disease Progression  Cellulitis  Pneumonia  Embolism |  | 372 | Allocation: RANDOMIZED|Intervention Model: PARALLEL|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE3 | Cutaneous T-Cell Lymphoma | BIOLOGICAL: KW-0761|DRUG: Vorinostat | https://clinicaltrials.gov/study/NCT01728805 |
|  |  | 43 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | Phase 2 | Stage IB-IIB Cutaneous T-Cell Lymphoma | DRUG: Mogamulizumab|RADIATION: Total Skin Electron Beam Therapy (TSEB)|DRUG: Mogamulizumab (subsequent cycles post TSEB) | https://clinicaltrials.gov/study/NCT04128072 |
| Nausea  Vomiting  Neoplasm malignant  Hypotension |  | 42 | Allocation: NON\_RANDOMIZED|Intervention Model: SEQUENTIAL|Masking: NONE|Primary Purpose: TREATMENT |  | Phase 1, 2 | Peripheral T-Cell Lymphoma | BIOLOGICAL: KW-0761 | https://clinicaltrials.gov/study/NCT00888927 |
| Duodenal hemorrhage  Disease progressio  Bacteremia  Catheter related infection  Myositis  Hypoxia  Rash maculo-papular |  | 6 | Allocation: NON\_RANDOMIZED|Intervention Model: SEQUENTIAL|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE1 | Adult T-Cell Lymphoma/Leukemia|Sezary Syndrome|Mycosis Fungoides | DRUG: Recombinant human Interleukin-15 (rhIL-15)|BIOLOGICAL: Mogamulizumab | https://clinicaltrials.gov/study/NCT04185220 |
|  |  | 34 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE2 | Folliculotropic Mycosis Fungoides|Primary Cutaneous T-Cell Non-Hodgkin Lymphoma|Sezary Syndrome|Stage IB Mycosis Fungoides and Sezary Syndrome AJCC v8|Stage II Mycosis Fungoides and Sezary Syndrome AJCC v8|Stage IIA Mycosis Fungoides and Sezary Syndrome AJCC v8|Stage IIB Mycosis Fungoides and Sezary Syndrome AJCC v8|Transformed Mycosis Fungoides | PROCEDURE: Extracorporeal Photopheresis|BIOLOGICAL: Mogamulizumab|OTHER: Quality-of-Life Assessment|OTHER: Questionnaire Administration | https://clinicaltrials.gov/study/NCT04185220  https://clinicaltrials.gov/study/NCT04930653 |
|  |  | 20 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | PHASE4 | Cutaneous T-Cell Lymphoma | DRUG: Mogamulizumab | https://clinicaltrials.gov/study/NCT06285370 |
| Anemia  Heart failure  Apical ballooning  Colitis  Infusion-related reaction  Ejection fraction decreased  Hypercalcemia |  | 8 | Allocation: RANDOMIZED|Intervention Model: PARALLEL|Masking: NONE|Primary Purpose: TREATMENT |  | Phase 1, 2 | Recurrent Diffuse Large B-Cell Lymphoma|Recurrent High Grade B-Cell Lymphoma|Recurrent Transformed B-Cell Non-Hodgkin Lymphoma|Refractory Diffuse Large B-Cell Lymphoma|Refractory High Grade B-Cell Lymphoma|Refractory Transformed B-Cell Non-Hodgkin Lymphoma | BIOLOGICAL: Mogamulizumab|BIOLOGICAL: Pembrolizumab | https://clinicaltrials.gov/study/NCT03309878 |
|  |  | 12 | Allocation: NA|Intervention Model: SINGLE\_GROUP|Masking: NONE|Primary Purpose: TREATMENT |  | Phase 1 | Recurrent Adult T-Cell Leukemia/Lymphoma|Recurrent Primary Cutaneous T-Cell Non-Hodgkin Lymphoma|Refractory Adult T-Cell Leukemia/Lymphoma|Refractory Primary Cutaneous T-Cell Non-Hodgkin Lymphoma | DRUG: Cyclophosphamide|DRUG: Fludarabine|BIOLOGICAL: Mogamulizumab|BIOLOGICAL: Natural Killer Cell Therapy|OTHER: Quality-of-Life Assessment|OTHER: Questionnaire Administration | https://clinicaltrials.gov/study/NCT04848064 |
|  |  | 5 | Allocation: RANDOMIZED|Intervention Model: CROSSOVER|Masking: NONE|Primary Purpose: TREATMENT |  | Phase 1, 2 | Mycosis Fungoides|Recurrent Mycosis Fungoides|Recurrent Mycosis Fungoides and Sezary Syndrome|Recurrent Sezary Syndrome|Refractory Mycosis Fungoides|Refractory Mycosis Fungoides and Sezary Syndrome|Refractory Sezary Syndrome|Sezary Syndrome|Stage IB Mycosis Fungoides and Sezary Syndrome AJCC v8|Stage II Mycosis Fungoides and Sezary Syndrome AJCC v8|Stage III Mycosis Fungoides and Sezary Syndrome AJCC v8|Stage IV Mycosis Fungoides and Sezary Syndrome AJCC v8 | PROCEDURE: Biospecimen Collection|PROCEDURE: Computed Tomography|BIOLOGICAL: Magrolimab|BIOLOGICAL: Mogamulizumab|PROCEDURE: Positron Emission Tomography|PROCEDURE: Punch Biopsy | https://clinicaltrials.gov/study/NCT04541017 |

Comprehensive Summary Table of Clinical Trials on Anti-CCR4 mAbs in HTLV-1–related Diseases