Inclusion criteria

In order to be eligible to participate in this study, a subject must meet all of the following criteria:

All patients:

1) ≥ 18 years of age
2) ECOG/WHO 0-2 (WHO 3 is allowed only when due to underlying disease)
3) No remaining therapeutic treatment options available
4) Patients must be willing and able to use adequate contraception from first chemotherapy infusion through 6 months after administering the last study treatment
5) Patients must agree to refrain from donating blood or organs and breastfeeding following treatment with TEG001
6) Written informed consent

r/r AML/high-risk MDS (IPSS-R > 4.5) patients:

7) Diagnosis (according to WHO 2016) with:
    a) cytopathologically confirmed diagnosis of AML according WHO classification (excluding acute promyelocytic leukaemia) OR
    b) a diagnosis of MDS with an IPSS-R score > 4.5 OR
    c) patients with therapy-related AML/MDS OR
    d) patients with biphenotypic leukemia
8) Relapsed/refractory disease defined by Cheson et al. by:
    a) Primary refractory AML or high-risk MDS not eligible for allo-HSCT OR
    b) Relapsed AML or high-risk MDS after allo-HSCT complicated by at least one of the following features:
        i) not suitable for 2nd allo-HSCT or DLI (according to investigator/ local guideline)
        ii) no response to DLI
        iii) relapsed AML/ high risk MDS after 2nd allo-HSCT

r/r Multiple Myeloma patients (including plasma cell leukemia):

9) Diagnosis of MM defined by IMWG Diagnostic Criteria
10) Relapsed / refractory MM as defined by Durie et al.:
    a) Relapsed from, or refractory to, 2 or more different prior therapies
    b) Relapse post allo-HSCT

Exclusion criteria

A potential subject who meets any of the following criteria will be excluded from participation in this study:

11) Patients with amyloidosis
12) Active GVHD and/or systemic immune suppression for GHVD
13) Uncontrolled infections
14) Infection with HTLV-1, HTLV-2, HIV-1, HIV-2, hepatitis B (HBsAg positive) or hepatitis C virus (anti-HCV positive).
15) Bilirubin and/or transaminases > 2.5 x ULN

16) Glomerular filtration rate (GFR) < 45 ml/min/1.73 m2 as calculated by the Modification of Diet in Renal Disease (MDRD) equation where the predicted GFR (ml/min/1.73 m2) = 186 x (Serum Creatinine in mg/dl)^ - 1.154 x (age in years)^ - 0.203 x (0.742 if patient is female) x (1.212 if patient is black). If the serum creatinine is measured in micromole/L, recalculate it in mg/dl according to the equation: 1 mg/dl = 88.7 micromole/L) and use above mentioned formula.
17) Cardiac dysfunction defined as:
    a) Unstable angina or unstable cardiac arrhythmias
    b) NYHA classification > II
    c) Cardiac symptoms and/or history of cardiac disease AND a cardiac ejection fraction < 45%
18) Pulmonary dysfunction defined as baseline oxygen saturation < 92%
19) Malignancy requiring concurrent treatment or having been treated < 3 months before screening
20) Pregnant or lactating women
21) Patients of both genders who are not willing to practice birth control from the time of consent through 6 months after infusion of TEG001 product
22) Patients with >10% endogenous γδT cells