Adaptive cellular therapy (ACT) has emerged as a promising approach for the treatment of cancer. However, despite its great potential, only a small proportion of patients with solid tumors has been treated successfully. Major challenges of ACT in solid tumors include heterogeneity of tumor antigen expression, tumor escape (e.g. after addressing only one target) and toxicities (e.g. due to expression of targets on healthy tissues). ACTolog® (IMA101) is a personalized multi-target ACT approach that is intended to overcome these limitations by generating autologous T-cell products that are redirected towards multiple novel tumor targets that were identified by Immatics’ proprietary XPRESIDENT™ technology platform. As part of the comprehensive cellular immunomonitoring of the ACTolog® trial, we developed two flow cytometric assays that allow us to determine the frequency and phenotype of target-specific cells in the T-cell product prior infusion and in the blood of treated patients. In addition to the persistence of infused cells, the expression of memory markers (CD45RA, CD27, CD28, CD90, CD62L, CD25, CD127) and immune checkpoints (CD137, LAG-3, PD-1, TIGIT, TIM-3) of target-specific cells is closely monitored providing ex vivo insight into the phenotype of the infused cells in treated patients. In summary, product characterization and initial persistence data of the first six treated patients revealed a high prevalence as well as a favorable phenotype of target-specific cells.

### References


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