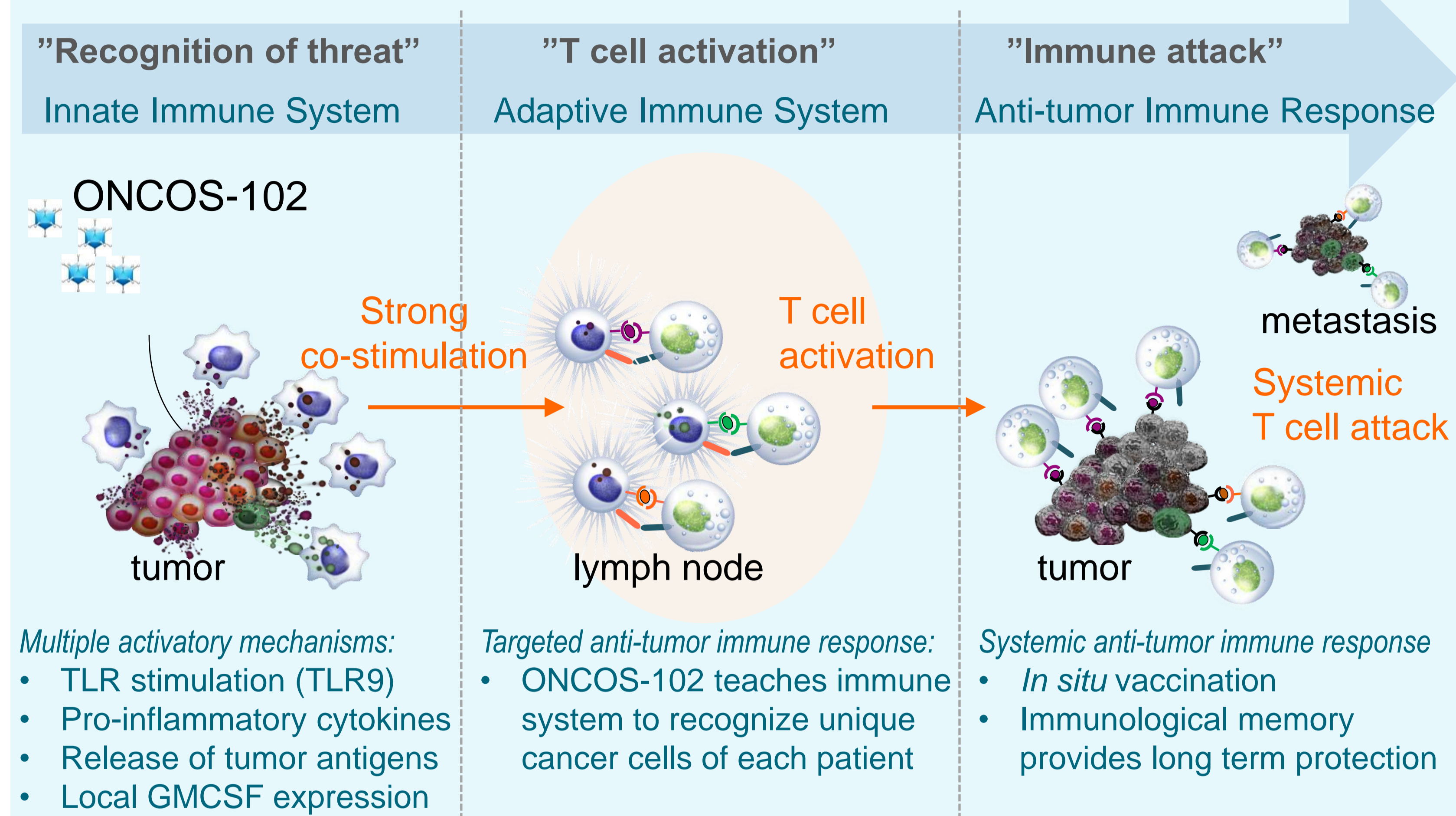


INTRODUCTION

ONCOS-102 (Ad5/3-D24-GM-CSF) is a tumor-targeted oncolytic adenovirus coding for human GM-CSF

Intratumoral ONCOS-102 induces a systemic CD8+ T cell response against patient's unique cancer cells:



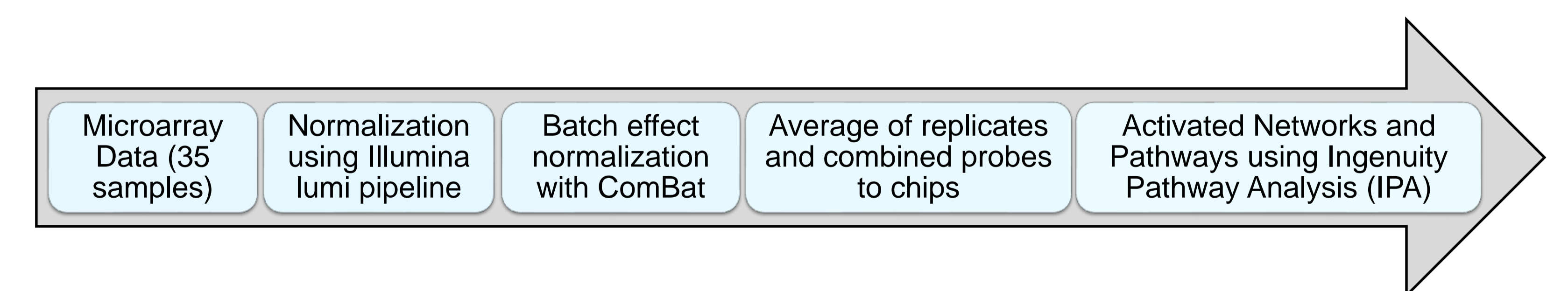
Phase I study - design

Day	0	1	4	8	15	29	57	85	113	141	169
ONCOS-102		X	X	X	X	X	X	X	X	X	X
Biopsy						X	X				
PBMCs		X	X	X	X	X	X	X	X	X	X
PET / CT								X		X	

12 last-line patients with 100% chemo refractory solid tumors were treated at 3 dose levels (3+3+6 pts)

Dose cohorts: 3x10¹⁰, 1x10¹¹, 3x10¹¹ viral particles

Gene expression analysis: Work flow



Induction of systemic anti-tumor CD8+ T cell response

Patient F11-14 with malignant pleural mesothelioma (MPM)

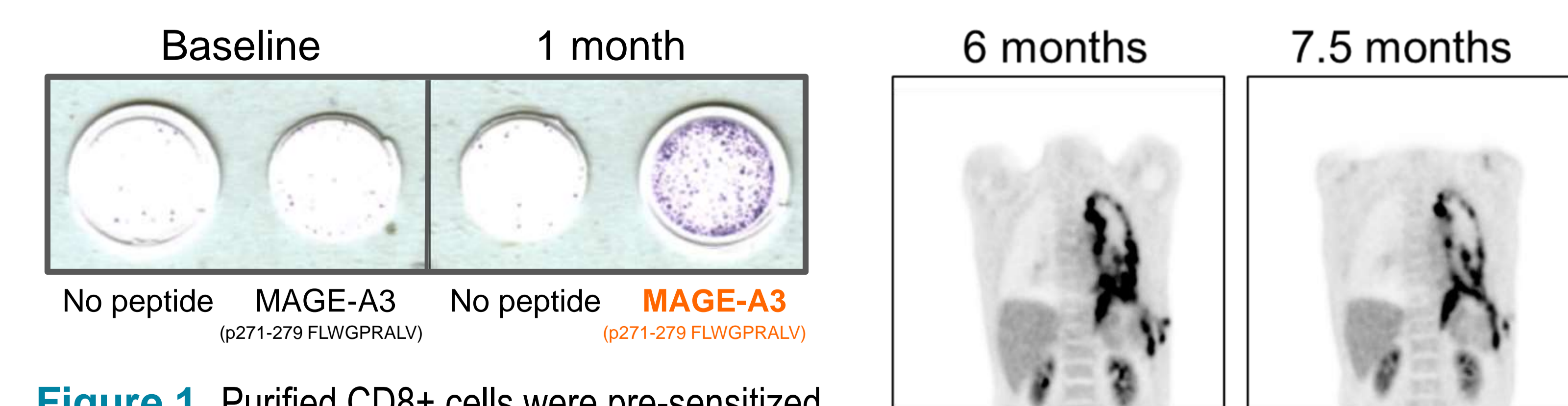


Figure 1. Purified CD8+ cells were pre-sensitized with peptide-pulsed, irradiated autologous PBMCs depleted of CD4 and CD8 T cells and tested on day 10 by IFN-gamma ELISPOT assay for recognition of autologous antigen-presenting cells.

47% reduction in total tumor burden (PET) between 6 and 7.5 months

Expression of Th1 response genes in tumor biopsies

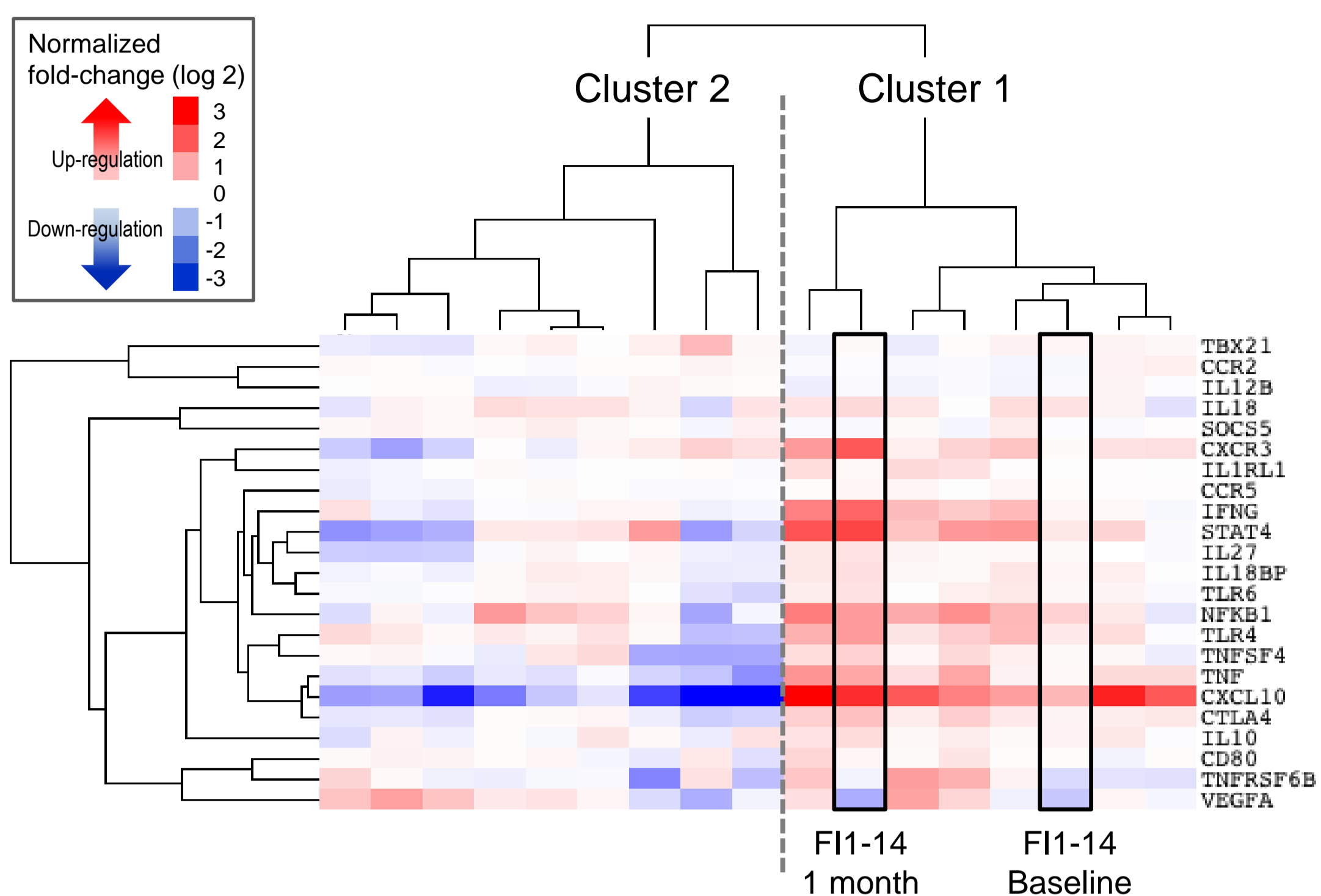


Figure 2. The expression of Th1 markers and cytokines in tumor biopsies divides patients into two separate clusters. Cluster 1 shows higher expression of Th1 related genes compared to Cluster 2. Patient F11-14 shows upregulation of CXCR3, IFN-γ, STAT4, and CXCL10 concomitantly with the induction of tumor-specific CD8+ T cells (see Figure 1). Data is presented as normalized fold-change from healthy control tissue.

ONCOS-102 triggered cytotoxic T cell mediated apoptosis in tumor cells (Patient F11-14)

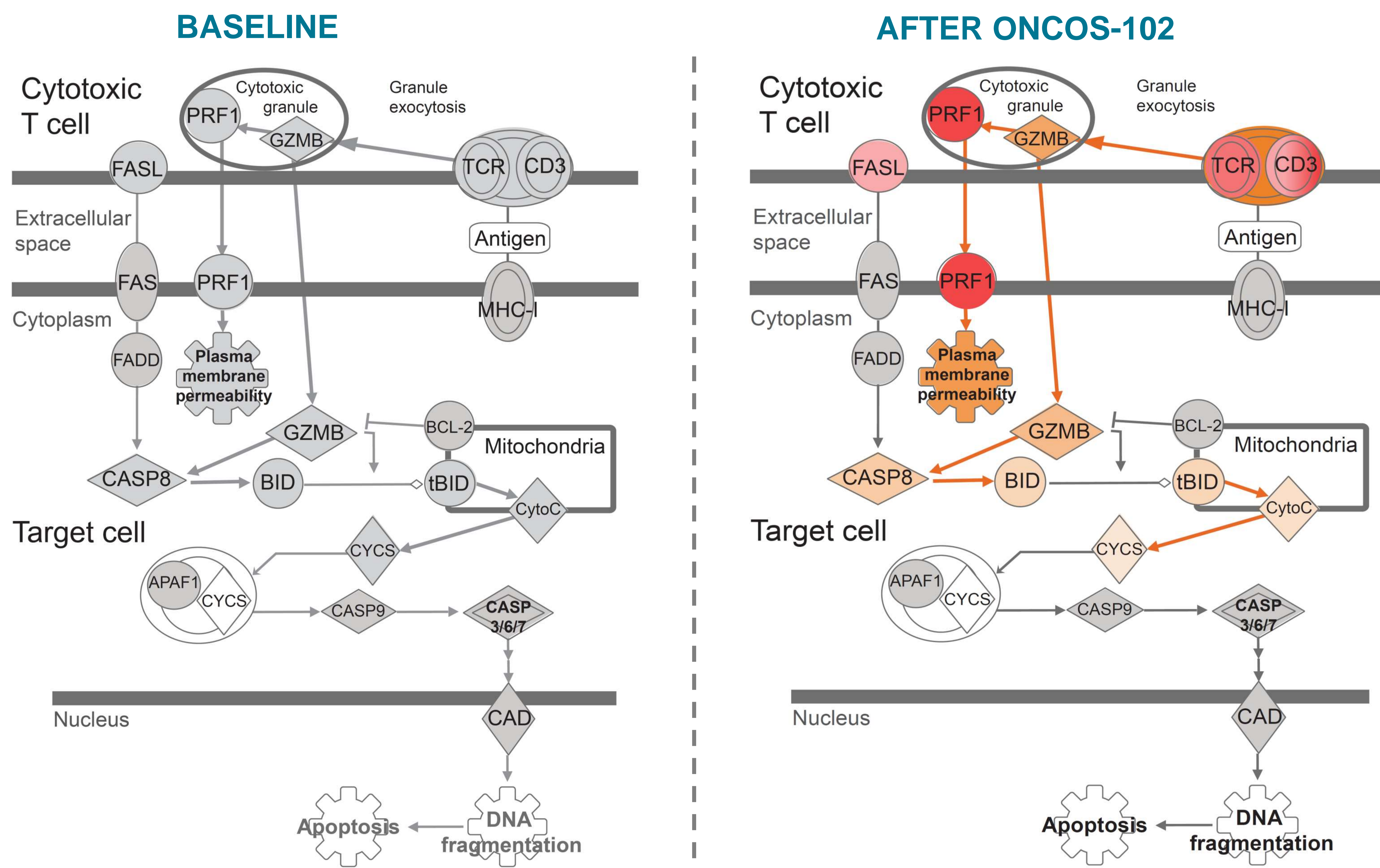


Figure 3. ONCOS-102 induced cytotoxic T cell mediated apoptosis of tumor cells in the last-line chemorefractory MPM patient as demonstrated by IPA. Other activated signaling pathways included: Leukocyte extravasation, Leukocyte adhesion and diapedesis, Crosstalk between Dendritic Cells and Natural killer cells, and Antigen presentation.