

Description of Additional Supplementary Files

Supplementary Movie 1: MigR control T cells in tumour stroma at day 7 post administration.

Supplementary Movie 2: Meo-CAR T cells in tumour stroma at day 7 post administration.

Supplementary Movie 3: FAP-CAR T cells in tumour stroma at day 4 post administration.

Supplementary Movie 4: FAP-CAR T cells in tumour boarder at day 4 post administration.

Supplementary Movie 5: FAP-CAR T cells in tumour stroma at day 7 post administration.

Supplementary Movie 6: FAP-CAR T cells in tumour nest at day 7 post administration.

Supplementary Movie 7: FAP-CAR T cells penetrating the tumour and moving to targeted cells.

Supplementary Movie 8: FAP-CAR T cells interacting with targeted cells.

Supplementary Movie 9: Tdtomato+ Meso-CAR T cells accumulating in the tumour stroma at day 1 post administration of FAP-CAR T cells.

Supplementary Movie 10: Tdtomato+ Meso-CAR T cells successfully infiltrating into the tumour nest at day 7 post administration of FAP-CAR T cells.