Title: Supplementary Data 1.

Description: Table with the clinical-pathological features of lung cancer patients included in the study.

Title: Supplementary Data 2. **Description:** Table with the list of primer sequences applied in qPCR analyses.

Title: Supplementary Data 3.

Description: Table with the list of primer sequences applied in ChIP analyses.

Title: Supplementary video 1.

Description: Ex vivo co-cultures of NSCLC cells (NCI-H23) and patient-derived TILs (green-stained) in presence of vehicle or BETi (OTX015). Acquired with Incucyte system (4x magnification, scale bar 400µm).

Title: Supplementary video 2.

Description: Ex vivo co-cultures of AD patient-derived CTOS and autologous purified NK cells (redstained) in presence of vehicle or BETi (OTX015). Acquired with Incucyte system (4x magnification, scale bar 300µm).

Title: Supplementary video 3.

Description: Co-cultures between NSCLC cells (NCI-H1299) and NK92 cells (green-stained) in presence of vehicle or BETi (OTX015). Acquired with Incucyte system (4x magnification, scale bar 400µm).

Title: Supplementary video 4.

Description: Co-cultures between NSCLC 3D spheroids (NCI-H1299) and NK92 cells (red-stained) in presence of vehicle or BETi (OTX015). Acquired with Incucyte system (4x magnification, scale bar 700µm).