**SUPPLEMENTARY MATERIAL**

## ****Immune modulatory microRNAs involved in tumor attack and tumor immune escape****

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**Supplementary Methods**

# Search Strategy and Selection Criteria

This review article is based on a systematic literature review performed on the bibliographic data bases Medline and PubMed, including following search terms related to microRNAs in combination with tumor and/or immune cells: “microRNAs and immune response”, “microRNAs and immune escape”, “microRNAs and HLA/MHC”, “microRNAs and co-inhibitory factors”, “microRNAs and interferon signaling”, “microRNAs and immunotherapy”, “microRNAs and tumor therapy”, “microRNAs and immune modulation”, “microRNAs and immune modulatory molecules”, “microRNAs and cross presentation” and “microRNAs and tumor microenvironment”. Only articles published in English were used with a focus on tumors and immune effector cells, in particular T cells, NK cells and dendritic cells.

# Bioinformatics analysis

The software suite MetaCoreTM containing more than 1.6 million manually curated molecular interactions (http://thomsonreuters.com/metacore/, accessed 11-10-2016) was used to generate networks illustrating the direct and indirect regulatory effects of miRNAs on the expression of the checkpoint molecules PD-1, PD-L1, CD28, CTLA-4, and ICOS-L. To determine direct regulation by miRNAs, the building algorithm was set to “expand by one interaction” with directions set to “both” and the use of activated canonical pathways. As *interaction* type, “miRNA binding” was selected and *object* types were restricted to “generic binding protein”, “generic receptor”, “RNA” and “transcription factor” (TF).

To trace indirect regulation through miRNA-targeted TFs, the building algorithm was set to “auto expand” and the number of nodes was set to 50. The *interaction* types were restricted to “Transcription regulation and miRNA binding”. The *object* types were restricted to “Generic binding protein”, “Generic receptor”, “RNA” and “Transcription factor”. Networks are depicted as hub-centric layouts; the nomenclature of miRNAs was standardized (e.g. microRNA-24-1 was changed to miR-24-1).

Abbreviations: CD28, cluster of differentiation 28 (receptor for CD80 and CD86); CTLA-4, cytotoxic T-lymphocyte associated protein 4; ICOS-L, inducible T-cell co-stimulator ligand; PD-1, programmed cell death 1; PD-L1, PD ligand 1.