



Supplementary Figure 2. Representative example of the training procedure for a deep learning-based classifier when only slide-level labels are available. To discriminate microsatellite stable (MSS) and instable (MSI) tumors, only tumor tissue patches are selected from the tissue slides. Then, MSS and MSI patches are collected based on the slide-level labels, i.e., all the patches from a slide become either MSS or MSI. From the collection of the MSS and MSI tissue image patches, a deep neural network (DNN) can be trained.