**Figure S3.** Local and systemic immunotherapy delivery reduces the incidence of low and high-grade lesions. A single local dose shows similar oral lesion response to systemic administration of PD1 antibody. C57BL/6J Mice were exposed to 4NQO (100 µg/ml) for 8 weeks. Immunotherapy treatment started four weeks after carcinogen exposure ended. A single dose of local delivery (IgG isotype-hydrogel, and anti-PD1-hydrogel) on week 4, and 8 doses of intraperitoneal (IP) administration twice a week for 4-weeks. Mice were monitored for additional 11 weeks after immunotherapy treatment; tongues were collected and processed for histopathological studies. Oral premalignant lesions (OPLs) were evaluated as described in material and method section. We did not observed statistical significance in the reduction of OPLs when comparing local versus intraperitoneal immunotherapy administration, however there is trend increase of high-grade lesions when immunotherapy is i IP route. Nonetheless, there is a significance difference among IgG isotype control and anti-PD1 treatment within same drug route administration. The table (Bottom) shows the values represented in the graph. Chi-square test (**P > 0.0001).