Antigen specific anti-SPAS-1 CD8 T cell responses to in situ vaccination using irreversible electroporation (IRE) of prostate tumors

**Introduction**

Focal energy therapy (cryo, heat, and irreversible electroporation) reduces solid tumor burden while releasing antigenic tumor peptides that vaccinate the host. The prostatic adenocarcinoma SPAS-1 antigen is an immunogenic antigen associated with prostate tumors. The SPAS-1 ortholog SH3GLB2 (Fig. A) is over-expressed in immunogenic antigen associated with prostate tumors. The prostatic adenocarcinoma SPAS-1 antigen is an immunogenic antigen associated with prostate tumors. The antigenic tumor peptides that vaccinate the host. The immunopathology and tumor burden of this model.

**Specific Aims**

**Aim 1:** Characterization of changes in the number and phenotype of SPAS-1 antigen specific T cells following surgical resection or focal therapy with and without anti-CTLA4 monoclonal antibody.

**Aim 2:** Characterize T cell memory and secondary tumor burden after focal therapy or surgical resection combined with anti-CTLA4 immunotherapy.

**Results**

**Table 1**

<table>
<thead>
<tr>
<th>Histologic effects of thermal ablation modalities (radio-frequency, microwave ablation and irreversible electroporation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect of damage</td>
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<tr>
<td>Act of damage</td>
</tr>
<tr>
<td>Protein denaturation</td>
</tr>
<tr>
<td>Blood flow</td>
</tr>
<tr>
<td>Connective tissue</td>
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<tr>
<td>Region of damage</td>
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<tr>
<td>HIC effects</td>
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</tbody>
</table>

IHC, immunohistochemical.

**Conclusions**

- IRE combined with anti-CTLA4 immunotherapy results in greater total numbers of SPAS-1 specific CD8 T cells and higher activation within this cell population, versus resection with anti-CTLA4 antibody.
- Protection against secondary tumor challenge is similar with both treatments.
- anti-CTLA4 titration studies may help to eliminate potential immunopathologies.
- Enrolling mice with ideal tumor volume for IRE treatment may help to optimize this model.

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**References**


