The widely accepted notion of tumor signal profile, i.e., hyper-intensity in DWI and hypo-intensity in ADC, seen here turns out to be false-positive identification due to tissue structural complexity.

**Patient Information**

<table>
<thead>
<tr>
<th>ID</th>
<th>Sex</th>
<th>Age</th>
<th>Diagnosis</th>
<th>Location Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>B90</td>
<td>Male</td>
<td>60</td>
<td>Glioblastoma (Grade IV)</td>
<td>Right Posterior Temporal</td>
</tr>
<tr>
<td>B94</td>
<td>Female</td>
<td>57</td>
<td>Glioblastoma (Grade IV)</td>
<td>Left Temporal Lobe</td>
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<tr>
<td>B95</td>
<td>Male</td>
<td>54</td>
<td>Glioblastoma (Grade IV)</td>
<td>Right Temporal Lobe</td>
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<tr>
<td>B96</td>
<td>Male</td>
<td>63</td>
<td>Anaplastic Ependymoma (Grade III)</td>
<td>Left Middle Temporal Gyrus</td>
</tr>
<tr>
<td>B97</td>
<td>Male</td>
<td>54</td>
<td>Glioblastoma (Grade IV)</td>
<td>Left Parasit Lobe</td>
</tr>
</tbody>
</table>

**Diffusion MRI Histology (D-Histo)**

Using Diffusion Signatures to Predict Histopathology

**Histology – MRI Co-Registration**

**Histology Quantification**

1. Paraffin embedding
2. Sectioning
3. H & E

**Transformation Function**

**Co-Registered**

**Histology – MRI Correlation**

**Histology Staining Reveals Complicated Pathologies in Tissue**

**Legacy Project: Multi-Dimensional Mapping of Spatial Heterogeneity in Gliomas**

Legacy001: Male, 16, Primitive Neuroectodermal Tumor (PNET, WHO Grade IV), Diffuse Astrocytoma (WHO Grade II), Optic Pathway Glioma (WHO Grade I)

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