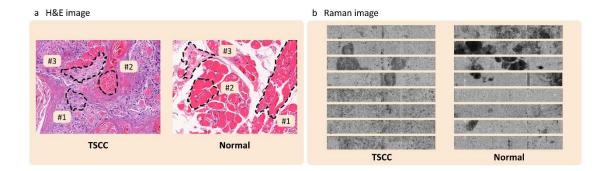
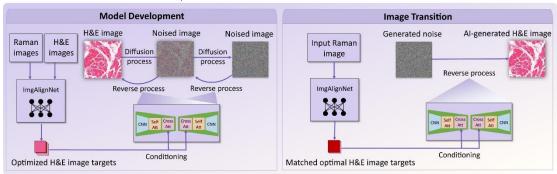
### **Supplementary Figures**

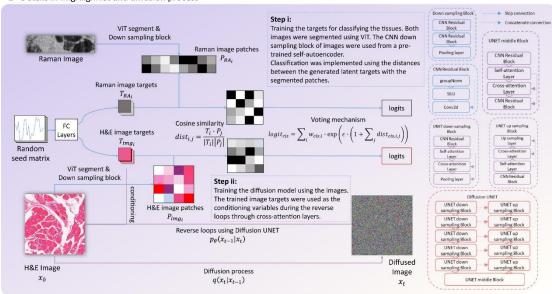


Supplementary Fig 1: H&E images and Raman images generated by histopathological imaging and Raman imaging, respectively. a Histopathological characteristics in H&E images. Left Panel: Significant histopathological features of TSCC observed in H&E images include pleomorphism of squamous cells (#1), formation of keratin pearls (#2), and invasion of cancer cells into surrounding connective tissue (#3). Right Panel: H&E images of normal tissue reveal major characteristics such as tongue muscle cells with a striated (striped) structure (#1), multiple nuclei positioned at the periphery of the cell (#2), and connective tissue (#3). b Raman images of TSCC and normal tissues. It posed a challenge to discern clear histopathological characteristics from these images.

### a Overview of AI transition model development



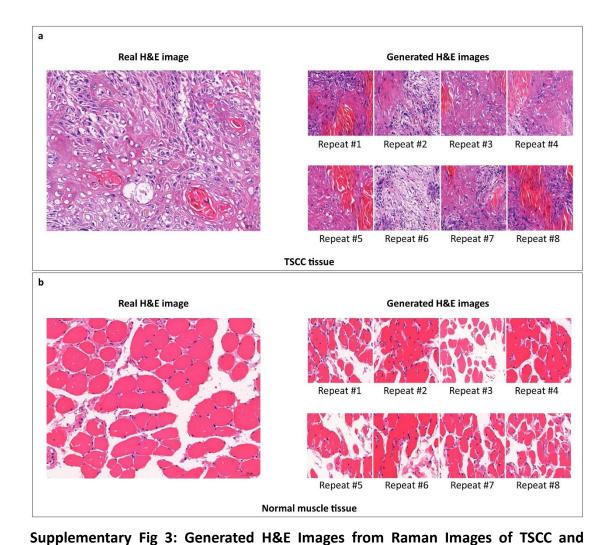
**b** Details in ImgAlignNet and diffusion process



### Supplementary Fig 2: Overview and Detailed Processes of AI Transformation Model.

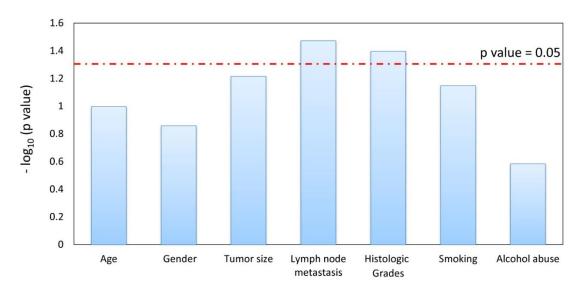
a Overview of the AI transformation model. In the model development phase (left panel), ImgAlignNet underwent training utilizing both Raman and H&E images. Specifically, ImgAlignNet was trained to align Raman images with H&E images. The H&E targets was pre-trained (optimized) for conditioning in the reverse process of the diffusion model training. In the subsequent application of the model for image transformation (right panel), the input Raman image underwent alignment with the pre-trained (optimized) H&E targets. These optimized targets were then utilized as conditioning to guide the diffusion model in generating an H&E image. b Details in ImgAlignNet and diffusion processes. Within the detailed processes, both Raman and H&E images were separately segmented and down-sampled into patches. Fully Connected (FC) layers were trained to generate optimized targets. These targets were strategically designed to exhibit the largest cosine similarity with corresponding patches and the highest accuracy in classifying TSCC and normal tissues. Subsequently,

the pre-trained (optimized) targets, known as H&E targets, played a crucial role as conditioning in the reverse process of developing the diffusion model.

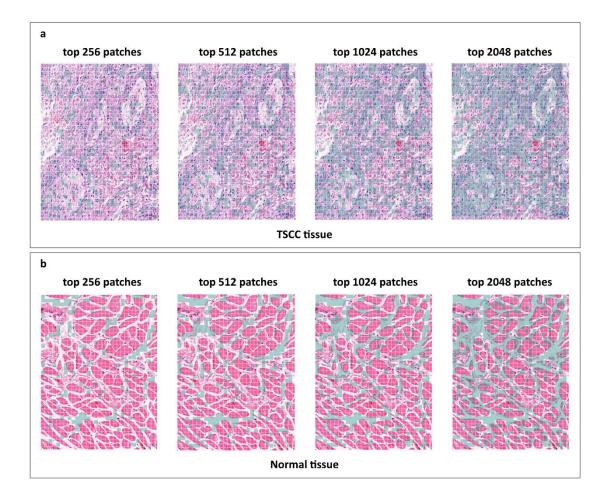


**Normal Tissues**. Using the AI transformation model, we transformed the Raman images of TSCC and normal tissues into corresponding H&E images. As the generated images from the diffusion model slightly differ each time, we ran the model eight times for each tissue type, resulting in eight distinct H&E images. a Raman image and generated images of TSCC. From the generated images of TSCC tissue, the histopathological features essential for clinical diagnosis are clearly observed, including the pleomorphism of squamous cells, the formation of keratin pearls, and the invasion of cancer cells into the surrounding connective tissue. b Raman image and generated images of normal tissue. Similarly, in the generated images of normal tissue, the striped structure of tongue muscle cells, multiple nuclei, and connective tissue are

distinctly visible.



Supplementary Fig 4: Results of univariate analysis of variance on the discriminability of the generated H&E Images of TSCC by the model across various clinical indicators. The discriminability of model-generated H&E images varies significantly among TSCC samples with different lymph node metastasis and histologic grades, as well as across various clinical indicators including age, gender, smoking history and alcohol abuse.



Supplementary Fig 5: Spatial Characteristics Represented by Pre-Trained H&E Targets in the Application of the Diffusion Model for H&E Image Generation. Pretrained H&E targets serve as conditioning in the diffusion model to guide the generation of H&E images. We paired the pre-trained H&E targets with H&E patches, creating target-patch pairs for computing cosine similarity within each pair.

Subsequently, all pairs were ranked based on their cosine similarities in descending order. The top *n* patches were then selected to assess the coverage of the real H&E image. a The coverage analysis of the top 256, 512, 1024, and 2018 patches in TSCC tissue. b The coverage analysis of the top 256, 512, 1024, and 2018 patches in normal tissue. The figure clearly exhibits the spatial characteristics captured by the pre-trained H&E targets, providing insights into the effectiveness of the diffusion model in generating H&E images with desired spatial features.

### Supplementary Methods: Pseudo codes for the details of model implementation

For enhanced clarity regarding the models employed in this study, we provide pseudo code outlining the entire generation process. Given that the original code is written in Python, we've reformatted it into a process-oriented style to improve readability. In this presentation, Python's keywords, such as 'if', 'for', and 'return', are highlighted in green for easy identification. Comments are marked in blue, and functions are distinguished in orange. Variables holding multiple values are presented in **bold** for emphasis. The subscripts i,j,k and cls denote dimensions, whereas other notations specify attributes, like HE for H&E images and RA for Raman images.

Notably, as the implementation utilizes PyTorch, functions highlighted in orange but absent from the pseudo code refer to PyTorch's built-in functionalities.

```
Algorithm 1 ImgAlignNet forward
\mathsf{defforward} \big( Img_{HE_{cls}}, Img_{RA_{cls}}, seed_{cls,k}, w_{HE_{cls,k}}, w_{RA_{cls\,k}}, \lambda_{HE}, \lambda_{RA}, seg_{Padding}, seg_{Stride} \big) :
##Parameters:
   img: the tensor of a image
   cls: the class in {TSCC, Normal}
   HE: H&E image
   RA: Raman image
   λ, w: trainable parameters
   seg_{Padding}, seg_{Stride}: The parameters for segmentation
##Calculating and segmenting the patches
1: \{Patch_{HE_{cls}}\} = segImg(Img_{HE_{cls}}, seg_{Padding}, seg_{Stride})
2: \left\{ Patch_{RA_{clsi}} \right\} = \operatorname{segImg} \left( Img_{RA_{clsi}}, seg_{Padding}, seg_{Stride} \right)
##Generating targets
3: \{Target_{HE_{cls,k}}\}, \{Target_{RA_{cls,k}}\} = FCs(seed_{cls,k})
##Computing the logits
4: Logits_{HE_{cls}} = \sum_{k} \left| w_{HE_{cls,k}} \right| \sum_{i} \exp \left( |\lambda_{HE}| \left( cosSimilarity \left( Target_{HE_{cls,k}}, Patch_{HE_{cls,i}} \right) + 1 \right) \right)
5: Logits_{RA_{cls}} = \sum_{k} |w_{RA_{cls,k}}| \sum_{i} \exp\left(|\lambda_{RA}| \left(cosSimilarity\left(Target_{RA_{cls,k}}, Patch_{RA_{cls,j}}\right) + 1\right)\right)
##Computing loss value using cross entrophy
6: Loss = CE(softmax_{cls}(Logits_{RA}), cls) + CE(softmax_{cls}(Logits_{HE}), cls)
return \ Loss, \{ Target_{HE_{cls,k}} \}, \{ Target_{RA_{cls,k}} \}
```

```
Algorithm 2 ImgAlignModel segment image
```

```
def segImg(img, seg_Padding, seg_Stride):
##Parameters:
img: the tensor of a image
seg_Padding, seg_Stride: The parameters for segmentation
##Downsampling the image
1: img = CNNDownSampling(img)
##Segmenting the image
2: {Patch_{i}} = unfold(img, seg_Padding, seg_Stride)
##Adjust the dimension for every patch using a fully connected layer
3: Patch_{i} = FC(Patch_{i})
##Normalizing
4: Patch_{i} = normalize(p = 2)
return {Patch_{i}}
```

### Algorithm 3 CNN down sampling block

```
\begin{aligned} &\operatorname{defCNNDownSampling}(x, N_{iter} = 2): \\ &\# Parameters: \\ &x: the input tensor \\ &N_{iter}: the number of iteration \\ &\# Initial \, convolution \\ &1: x = \operatorname{Conv2d}(x, kernelSize = 1) \\ &2: for \, n \in \{1 \dots N_{iter}\}: \\ &3: \quad x = \operatorname{resBlock}(x) \\ &\# The \, down \, operation \, is \, processed \, by \, Conv2d \\ &4: \quad x = \operatorname{Conv2d}(x, kernelSize = 3, stride = 2, padding = 1) \\ &5: \quad x = \operatorname{resBlock}(x) \\ &return \, x \end{aligned}
```

### Algorithm 4 residule block

```
defresBlock(x):

##Parameters:

x: the input tensor

##The two convolution layers below uses kernelSize = 3, stride = 1, padding = 1

1: h = \text{Conv2d}\left(\text{SiLU}(\text{GroupNorm}(x))\right)

2: h = \text{Conv2d}\left(\text{Dropout}\left(\text{SiLU}(\text{GroupNorm}(h))\right)\right)

##Ensure the number of channels of shortcut is the same

3: if dim(h) \neq dim(x):

##The convolution layer below uses kernelSize = 1

x = \text{Conv2d}(x)

return h + x
```

```
Algorithm 5 the full connection layers for generating targets
def FCs(seed, N_{iter} = 2):
##Parameters:
  seed: the seed tensor generated from a standard normal distribution
 N_{iter}: the number of iteration
1: Target_{HE} = FC(x)
2: Target_{RA} = FC(x)
3: for n ∈ {1 ... N_{iter}}:
4: Target_{HE} = FC(SiLU(LayerNorm(Target_{HE})))
5: Target_{RA} = FC\left(SiLU(LayerNorm(Target_{RA}))\right)
return Target_{HE}, Target_{RA}
Algorithm 6 Diffusion Model training process
\operatorname{def} fit(Img_{HE_{cls}}, \{Target_{HE_{cls,k}}\}):
##Parameters:
  img: the tensor of a image
 Target: the optimized parameter from ImgAlignNet
 cls: the class in {TSCC, Normal}
 HE: H&E image
```

# $\begin{aligned} &\operatorname{def} fit(\operatorname{Img}_{\operatorname{HE}_{\operatorname{cls}'}}\{\operatorname{Target}_{\operatorname{HE}_{\operatorname{cls},k}}\}): \\ & \#\operatorname{Parameters:} \\ & \operatorname{img:} \text{the tensor of a image} \\ & \operatorname{Target:} \text{the optimized parameter from ImgAlignNet} \\ & \operatorname{cls:} \text{the class in } \{\operatorname{TSCC},\operatorname{Normal}\} \\ & \operatorname{HE:} \operatorname{H\&E} \text{ image} \\ & \#\operatorname{Generating noise from a standard normal distribution} \\ & 1: \operatorname{noise} = \operatorname{randn\_like}(\operatorname{Img}_{\operatorname{HE}_{\operatorname{cls}}}) \\ & \#\operatorname{Adding noise, also called q sampling process:} q(x_t|x_0) \\ & 2: \operatorname{Img'}_{\operatorname{HE}_{\operatorname{cls'}}} t = \operatorname{qSample}(\operatorname{Img}_{\operatorname{HE}_{\operatorname{cls'}}} \operatorname{noise}) \\ & \#\operatorname{Using UNet for fitting the noise} \\ & 3: \operatorname{rec}_{\operatorname{noise}} = \operatorname{diffsionUNet}(\operatorname{Img'}_{\operatorname{HE}_{\operatorname{cls'}}} t, \{\operatorname{Target}_{\operatorname{HE}_{\operatorname{cls}k}}\}) \\ & 4: \operatorname{Loss} = \operatorname{MSE}(\operatorname{noise}, \operatorname{rec}_{\operatorname{noise}}) \\ & \operatorname{return Loss} \end{aligned}$

### Algorithm 7 Diffusion Model inference process

```
definference(Img_{RA}, shape_{img}):

##Parameters:

img: the tensor of a image

shape: the shape of the image to generate

RA: Raman image

##Generating the conditioning

1: {cond_k} = calcCond(Img_{RA_{cls}})

##Generating noise from a standard normal distribution

2: noise = randn(shape_{img})

##The reverse loop, also called p sampling process p(x_{t-1}|x_t)

3: rec = pSample(noise, \{cond_k\})

return rec
```

```
Algorithm 8 The q sampling process

\begin{aligned}
\text{def qSample} &(\textit{Img}_{\textit{HE}_{cls}}, \textit{noise}, t_{\textit{Num}} = 1000, \beta_{\textit{init}} = [0.0001, 0.02]): \\
\text{##Parameters:} \\ &\textit{img: the tensor of a image} \\ &\textit{cls: the class in {TSCC, Normal}} \\ &\textit{HE: H\&E image} \\ &\textit{noise: the noise from N(0,1) with the same shape of img} \\ &t_{\textit{Num}}: \text{the number of diffusion steps} \\ &\beta_{\textit{init}}: \text{a hyper parameter } \textit{contain the start and end value of } \beta \\ &\text{##Randomly generate a step with in } t_{\textit{Num}} \\ &1: t = \text{randint}(0, t_{\textit{Num}}) \end{aligned}
```

##Abstracting necessary parameter

2:  $\tilde{\alpha}_t = \text{calcAlphaCumprod}(t, t_{Num}, \boldsymbol{\beta}_{init})$ ##Adding the noise

return  $\tilde{\alpha}_t$ 

 $3: \pmb{Img'_{HE_{cls}}} = \sqrt{\tilde{\alpha}_t} \pmb{Img_{HE_{cls}}} + \sqrt{1 - \tilde{\alpha}_t} \pmb{noise}$  return Loss

## **Algorithm 9** Calculating cumulative product of $\alpha$

```
def calcAlphaCumprod (t, t_{Num} = 1000, \beta_{init} = [0.0001, 0.02]):
##Parameters:

t: a time step

t_{Num}: the number of diffusion steps

\beta_{init}: a hyper parameter contain the start and end value of \beta
##Generating \beta using linear schedule

1: \beta_{start}, \beta_{end} = \beta_{init}

2: \beta = linspace (\beta_{start}, \beta_{end}, t_{Num})
##Computing \alpha and \alpha, generally they are global values

3: \alpha = 1 - \beta

4: \alpha = cumprod (\alpha)
## only return the t^{th} value
```

```
Algorithm 10 Computing the conditioning information
```

```
\operatorname{def} \operatorname{calcCond} (\operatorname{Img}_{RA}, \{\operatorname{Target}_{\operatorname{HE}_{\operatorname{clsk}}}\}, \{\operatorname{Target}_{RA_{\operatorname{clsk}}}\}, \lambda_{RA}, \operatorname{seg}_{\operatorname{Padding}}, \operatorname{seg}_{\operatorname{Stride}}, k_t = 2, k_p = 4\}:
##Parameters:
  noise: the tensor of noise
  cond: the conditions
  \{Target_{HE_{cls.k}}\}, \{Target_{RA_{cls.k}}\}: The optimized targets
  \lambda_{RA}: the optimized parameter of ImgAlignNet
  seg_{Padding}, seg_{Stride}: The parameters for segmentation
  k_t, k_p: the parameter for topK operation
##Segmenting the Raman image
1: \{Patch_{RA_i}\} = segImg(Img_{RA}, seg_{Padding}, seg_{Stride})
##Computing the cosine similarity
2: dist_{cls,k,i} = \exp(|\lambda_{RA}|(\cos Similarity(Target_{RA_{cls,k}}, Patch_{RA_i}) + 1))
##Using topK operation for filtering small values
3: dist_{k',i} = reshape(dist_{cls,k,i}, [-1,i])
4: dist_{k',i'} = \operatorname{topk}(dist_{k',i}, k_p, dim = -1)
##The second topK operation only abstract the values as threshold
5: thres = topk(dist_{k',i'}, k_t, dim = 1). values
6: if dist_{k',i'} < thres:
7: dist_{k',i'} = -\inf
8: dist_{cls,k,i'} = \text{reshape}(\text{softmax}_{k'}(dist_{k',i'}), [cls, -1, i'])
\#\#Using\ attention-like\ operation\ generating\ conditioning
##Note that the target changes to the corresponding HE targets
9: cond_{i'} = \sum_{cls,k} dist_{cls,k,i'} Target_{HE_{cls,k}}
return {cond<sub>i'</sub>}
```

### Algorithm 11 The p sampling process

```
def pSample(noise, \{cond_k\}, t_{Num} = 1000):
##Parameters:
  noise: the tensor of noise, representing x_t
  cond: the conditions
  t_{Num}: the number of diffusion steps
1 \colon for \ t \in \{1, \dots, t_{Num}\} \colon
##Using UNet to compute the noise \epsilon for last step:
2: pred = diffsionUNet(noise, t, \{cond_k\})
\#\# \textit{Generating necessary parameters}, \textit{the } \pmb{\beta_{init}} \textit{ is globally consistent} :
3: \tilde{\alpha}_t = \text{calcAlphaCumprod}(t, t_{Num}, \boldsymbol{\beta_{init}})
\#\#Computing \ x_0 \ from \ x_t(x_0,\epsilon) = \sqrt{\widetilde{\alpha}_t} x_0 + \sqrt{1-\widetilde{\alpha}_t} \epsilon :
```

4: 
$$pred' = \sqrt{\frac{1}{\tilde{\alpha}_t}}noise - \sqrt{\frac{1 - \tilde{\alpha}_t}{\tilde{\alpha}_t}}pred$$

##Computing posterior values:

5: 
$$\mu_t$$
,  $\sigma_t = \text{calcPosteriorVals}(pred', noise, t, t_{Num}, \beta_{init})$ 

6: *if* 
$$t > 1$$
:

7: 
$$noise = \mu_t + randn_like(noise)\sigma_t$$

9: 
$$noise = \mu_t$$

return **noise** 

```
Algorithm 12 Calculating the posterior values
```

def calcPosteriorVals(pred', noise, t,  $t_{Num} = 1000$ ,  $\beta_{init} = [0.0001,0.02]$ ): ##Parameters: **pred**', **noise**: the input tensors from **Algorithm 11** represent  $x_0$  and  $x_t$ t: a time step  $t_{Num}$ : the number of diffusion steps  $oldsymbol{eta}_{init}$ : a hyper parameter contain the start and end value of  $oldsymbol{eta}$ ## $Generating \beta$  using linear schedule 1:  $\beta_{start}$ ,  $\beta_{end} = \beta_{init}$ 

1: 
$$\beta_{start}$$
,  $\beta_{end} = \beta_{init}$ 

2: 
$$\boldsymbol{\beta} = \text{linspace}(\beta_{start}, \beta_{end}, t_{Num})$$

##Computing  $\alpha$  and  $\widetilde{\alpha}$ , generally they are global values

3: 
$$\alpha = 1 - \beta$$

$$4: \widetilde{\alpha} = \operatorname{cumprod}(\alpha)$$

##Generating a  $\widetilde{lpha}_{prev}$ , representing the previous step of  $\widetilde{lpha}$ 

5: 
$$\widetilde{\alpha}_{prev_t} = \widetilde{\alpha}_{t-1}$$
,  $\widetilde{\alpha}_{prev_1} = 0$ 

##Computing the posterior values from  $q(x_{t-1}|x_t, x_0) = q(x_t|x_{t-1}, x_0) \frac{q(x_{t-1}|x_0)}{q(x_t|x_0)}$ 

$$6: \mu = \frac{\beta \sqrt{\widetilde{\alpha}_{prev}}}{1 - \widetilde{\alpha}} pred' + \frac{\left(1 - \widetilde{\alpha}_{prev}\right)\sqrt{\alpha}}{1 - \widetilde{\alpha}} noise$$

$$7: \boldsymbol{\sigma} = \sqrt{\frac{\boldsymbol{\beta} (1 - \widetilde{\boldsymbol{\alpha}}_{prev})}{1 - \widetilde{\boldsymbol{\alpha}}}}$$

## only return the  $t^{th}$  value

return  $\mu_t$ ,  $\sigma_t$ 

### Algorithm 13 the forward process of Diffusion UNet

```
def \frac{diffusionUNet(x, t, cond, n_{iter} = 5, attStartIdx = 4):
##Parameters:
  x: the input tensor
  t: a time step
  cond: the conditioning information
  n_{iter}: the number of iteration
  attStartIdx: the index where start to use attention
##Embeding time step, the position encoding method is from transformer
 1: t_{ebd} = FC\left(SiLU\left(FC(pos\_encoding(t))\right)\right)
 2: h_1 = x
##Down sampling iterations
 3: for \ n \in \{1 \dots n_{iter}\}:
 4: h_{n+1} = \text{resBlock}(\text{resBlock}(h_n))
 5: if n \ge attStartIdx:
        h_{n+1} = crossAttention(selfAttention(h_{n+1}), cond)
##Down sampling layer implemented by convolution layer
 7: h_{n+1} = \text{Conv2d}(h_{n+1}, kernelSize = 3, stride = 2, padding = 1)
##After the iteration of down sampling, the footnote should be n_{iter} + 1
8: g_{n_{iter}+1} = \text{resBlock} \left( \text{crossAttention} \left( \text{selfAttention} \left( \left( \text{resBlock} (h_{n_{iter}+1}) \right) \right), cond \right) \right)
##Up sampling iterations
9: for n ∈ {n_{iter} ... 1}:
10: g_n = \text{resBlock}\left(\text{resBlock}\left(\text{cat}(g_{n+1}, h_{n+1})\right)\right)
11: if n \ge attStartIdx:
        g_n = \operatorname{crossAttention}(\operatorname{selfAttention}(g_n), cond)
##Up sampling layer implemented by interpolate operation
13: g_n = interpolate(h_n, scale = 2)
14: img = \text{Conv2d}(\text{SiLU}(\text{GroupNorm}(g_1)))
return img
```

# **Supplementary Table 1:** Demographic information for the TSCC patients

Case information		Patients (%)
All patients		15(100)
Age	Range from 29 to 79 years	
	Median 67 years	
Gender	Female	4(26.7%)
	Male	11(73.3%)
Tumor size	T1	3(20%)
	T2	9(60%)
	Т3	1(6.7%)
	T4	2(13.3%)
Lymph node metastasis	Positive	9(60%)
	Negative	6(40%)
Smoking	Positive	6(40%)
	Negative	9(60%)
Alcohol abuse	Positive	5(33.3%)
	Negative	10(66.7%)

Supplementary Table 2: Independently classified results for generated H&E images by three pathologists.

TSCC Sample #1

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	✓ TSCC  ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
46	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	✓ TSCC  ☐ Normal muscle tissue ☐ Not sure	<ul><li>✓ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
3	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
30	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	✓ TSCC  Normal muscle tissue  Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC  ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	✓ TSCC  ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
#	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	✓ TSCC  ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	✓ TSCC  Normal muscle tissue  Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	✓ TSCC  ☐ Normal muscle tissue ☐ Not sure	✓ TSCC  ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
*	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
100	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
137-04	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
X	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
262	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC  ☑ Normal muscle tissue ☐ Not sure	☐ TSCC  ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC  ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
1	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
会	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>✓ TSCC</li><li>Normal muscle tissue</li><li>Not sure</li></ul>		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3			
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>			
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>			
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure			
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure			
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☑ Normal muscle tissue ☑ Normal muscle tissue				
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	Normal muscle tissue				
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	ormal muscle tissue				
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure			

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
A	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☑ Normal muscle tissue ☑ Normal muscle tissue			
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	rmal muscle tissue			
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	✓ TSCC  Normal muscle tissue  Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☑ TSCC ☐ Normal muscle tissue ☐ Not sure		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☑ Normal muscle tissue ☑ Normal muscle tissue			
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	Normal muscle tissue			
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
3	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☑ TSCC ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		

Generated H&E images	Pathologist #1	Pathologist #2	Pathologist #3		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
2	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☐ Normal muscle tissue ☑ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		
	✓ TSCC  ☐ Normal muscle tissue ☐ Not sure	<ul><li>☑ TSCC</li><li>☐ Normal muscle tissue</li><li>☐ Not sure</li></ul>	✓ TSCC  Normal muscle tissue  Not sure		
	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure	☐ TSCC ☑ Normal muscle tissue ☐ Not sure		

**Supplementary Table 3** Comparison of Model Performance in Classifying Raman Images on the Independent Test Set

Pre-trained	TP	FP	FN	TN	ACC	F1	Recall	Precision	мсс
Yes	9	15	8	16	0.5208	0.5208	0.5208	0.5208	0.0436
No	0	24	1	23	0.4792	0.4792	0.4792	0.4792	-0.1459
Yes	23	1	19	5	0.5833	0.5833	0.5833	0.5833	0.2520
No	15	9	13	11	0.5417	0.5417	0.5417	0.5417	0.0845
Yes	20	4	11	13	0.6875	0.6875	0.6875	0.6875	0.3920
No	0	24	0	24	0.5000	0.5000	0.5000	0.5000	0.0000
Yes	19	5	12	12	0.6458	0.6458	0.6458	0.6458	0.3049
No	14	10	10	14	0.5833	0.5833	0.5833	0.5833	0.1667
Yes	14	10	6	18	0.6667	0.6667	0.6667	0.6667	0.3381
No	1	23	1	23	0.5000	0.5000	0.5000	0.5000	0.0000
	20	4	6	18	0.7916	0.8000	0.8333	0.7692	0.5854
	Yes No Yes No Yes No Yes No Yes No Yes	Yes         9           No         0           Yes         23           No         15           Yes         20           No         0           Yes         19           No         14           Yes         14           No         1	Yes       9       15         No       0       24         Yes       23       1         No       15       9         Yes       20       4         No       0       24         Yes       19       5         No       14       10         Yes       14       10         No       1       23	Yes       9       15       8         No       0       24       1         Yes       23       1       19         No       15       9       13         Yes       20       4       11         No       0       24       0         Yes       19       5       12         No       14       10       10         Yes       14       10       6         No       1       23       1	Yes     9     15     8     16       No     0     24     1     23       Yes     23     1     19     5       No     15     9     13     11       Yes     20     4     11     13       No     0     24     0     24       Yes     19     5     12     12       No     14     10     10     14       Yes     14     10     6     18       No     1     23     1     23	Yes         9         15         8         16         0.5208           No         0         24         1         23         0.4792           Yes         23         1         19         5         0.5833           No         15         9         13         11         0.5417           Yes         20         4         11         13         0.6875           No         0         24         0         24         0.5000           Yes         19         5         12         12         0.6458           No         14         10         10         14         0.5833           Yes         14         10         6         18         0.6667           No         1         23         1         23         0.5000	Yes         9         15         8         16         0.5208         0.5208           No         0         24         1         23         0.4792         0.4792           Yes         23         1         19         5         0.5833         0.5833           No         15         9         13         11         0.5417         0.5417           Yes         20         4         11         13         0.6875         0.6875           No         0         24         0         24         0.5000         0.5000           Yes         19         5         12         12         0.6458         0.6458           No         14         10         10         14         0.5833         0.5833           Yes         14         10         6         18         0.6667         0.6667           No         1         23         1         23         0.5000         0.5000	Yes         9         15         8         16         0.5208         0.5208         0.5208           No         0         24         1         23         0.4792         0.4792         0.4792           Yes         23         1         19         5         0.5833         0.5833         0.5833           No         15         9         13         11         0.5417         0.5417         0.5417           Yes         20         4         11         13         0.6875         0.6875         0.6875           No         0         24         0         24         0.5000         0.5000         0.5000           Yes         19         5         12         12         0.6458         0.6458         0.6458           No         14         10         10         14         0.5833         0.5833         0.5833           Yes         14         10         6         18         0.6667         0.6667         0.6667           No         1         23         1         23         0.5000         0.5000         0.5000	Yes         9         15         8         16         0.5208         0.5208         0.5208         0.5208           No         0         24         1         23         0.4792         0.4792         0.4792         0.4792           Yes         23         1         19         5         0.5833         0.5833         0.5833         0.5833           No         15         9         13         11         0.5417         0.5417         0.5417         0.5417           Yes         20         4         11         13         0.6875         0.6875         0.6875         0.6875           No         0         24         0         24         0.5000         0.5000         0.5000         0.5000           Yes         19         5         12         12         0.6458         0.6458         0.6458         0.6458           No         14         10         10         14         0.5833         0.5833         0.5833           Yes         14         10         6         18         0.6667         0.6667         0.6667         0.6667           No         1         23         1         23         0.5000         <

**Supplementary Table 4** The sample wise FID scores with different feature dimensions and independent manual review voting results

Comple		FID So	core from o	different	Independent Manual			
Label	Sample		dimer	nsions	Review			
	Number	64	192	768	2048	Normal	TSCC	Uncertain
	1	8.11	25.26	1.14	319.48	0	22	2
	2	6.47	22.08	1.18	327.55	20	2	2
	3	6.93	22.62	1.00	293.33	21	2	1
	4	7.16	25.84	1.08	300.80	24	0	0
	5	11.49	48.63	1.12	304.73	24	0	0
	6	15.49	52.97	1.20	436.05	24	0	0
	7	6.75	25.93	0.95	313.02	21	2	1
Normal	8	7.65	26.84	0.96	283.96	21	3	0
-	9	18.24	63.61	1.43	365.93	15	9	0
	10	12.91	42.52	1.12	307.43	18	6	0
	11	6.93	25.85	0.84	263.06	24	0	0
	12	20.23	61.97	1.34	354.84	9	12	3
	13	9.07	32.88	1.04	306.38	20	2	2
	14	14.49	43.19	1.62	417.08	9	12	3
	15	13.41	43.17	1.34	308.45	20	3	1
	1	15.02	39.44	0.78	161.31	5	18	1
	2	21.41	51.02	0.86	200.57	6	18	0
	3	12.18	31.19	1.12	272.98	3	20	1
TCCC	4	16.57	43.12	1.19	230.54	6	18	0
TSCC	5	14.40	36.20	0.96	222.60	3	19	2
	6	7.14	22.98	1.28	344.67	0	23	1
	7	27.50	57.58	1.45	306.80	12	11	1
	8	17.10	42.17	0.95	165.27	0	23	1

9	17.26	39.42	1.12	189.87	3	21	0
10	15.67	36.69	0.83	146.50	0	22	2
11	11.82	31.02	1.21	236.70	0	24	0
12	16.00	38.24	0.95	206.90	0	23	1
13	20.70	67.08	1.15	233.09	0	21	3
14	20.30	50.35	1.37	285.34	13	7	4
15	13.58	38.66	1.45	302.20	0	23	1