```
In [1]:  import numpy as np
         import matplotlib.pyplot as plt
```

```
In [16]:  data = np.load("pathmnist_224.npz")
```

```
In [18]:  print(data.files)
```

```
['train_images', 'train_labels', 'val_images', 'val_labels', 'test_images', 'test_labels']
```

```
In [22]:  print(np.unique(data['train_labels'], return_counts=True))
          print(np.unique(data['val_labels'], return_counts=True))
          print(np.unique(data['test_labels'], return_counts=True))
```

```
(array([0, 1, 2, 3, 4, 5, 6, 7, 8], dtype=uint8), array([ 9366,  9509, 10360, 10401,  8006, 12182,  7886,  9401, 128
85]))
(array([0, 1, 2, 3, 4, 5, 6, 7, 8], dtype=uint8), array([1041, 1057, 1152, 1156,  890, 1354,  877, 1045, 1432]))
(array([0, 1, 2, 3, 4, 5, 6, 7, 8], dtype=uint8), array([1338,  847,  339,  634, 1035,  592,  741,  421, 1233]))
```

Meaning of labels: {'0': 'adipose', '1': 'background', '2': 'debris', '3': 'lymphocytes', '4': 'mucus', '5': 'smooth muscle', '6': 'normal colon mucosa', '7': 'cancer-associated stroma', '8': 'colorectal adenocarcinoma epithelium'}

```
In [29]:  test_images = data['test_images']
          print(test_images.shape)
```

```
(7180, 224, 224, 3)
```

```
In [46]:  test_labels = data['test_labels']
          print(test_labels.shape)
```
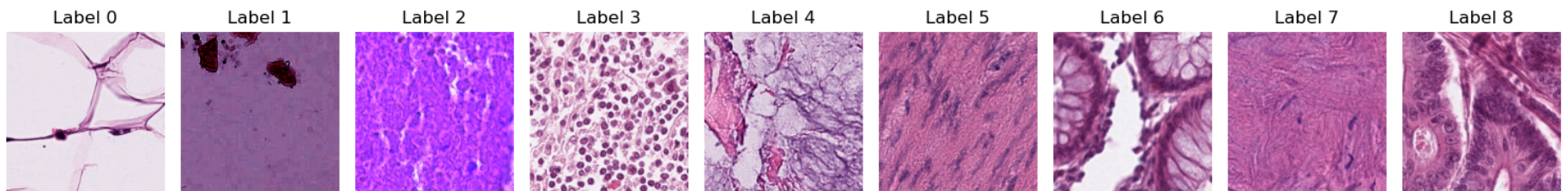
```
(7180, 1)
```

Collecting 1 image per class:

```python
test_images = data['test_images']
test_labels = data['test_labels']

unique_labels = np.unique(test_labels)
examples = {label: np.where(test_labels == label)[0][0] for label in unique_labels}
```

In [44]:
```python
plt.figure(figsize=(15, 4))
for i, (label, idx) in enumerate(examples.items()):
    plt.subplot(1, len(unique_labels), i + 1)
    plt.imshow(test_images[idx])
    plt.title(f"Label {label}")
    plt.axis("off")
plt.tight_layout()
plt.show()
```


In [ ]: