In [1]:
```
from matplotlib import image as mp_image
import matplotlib.pyplot as plt
import os
%matplotlib inline
```

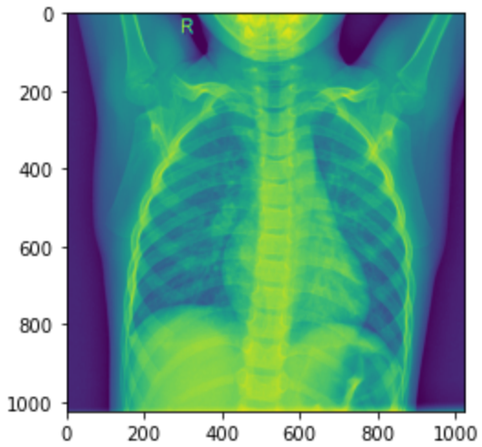
In [2]:
```
#third class
normal_images='XRays/Normal'
```

In [3]:
```
#Create a function to iterate through the images of each folder, check file type
#the size and the dimensions of each image also ensure that the file names are consistent,
#make sure there are no major irregularities or unwanted patterns
#to ensure correct learning from the upcoming model

def show_images(image_folder):
    fig = plt.figure()
    %matplotlib inline
    file_names = os.listdir(image_folder)
    print('this folder contains {} files'.format(len(file_names)))
    img_num = 0
    for file_name in file_names:
        file_path = os.path.join(image_folder, file_name)
        # Open the file using the matplotlib.image library
        image = mp_image.imread(file_path)
        # Add the image to the figure (which will have 1 row, a column for each filename, and a position based on its index in the file_names list)
        a=fig.add_subplot(1, len(file_names), file_names.index(file_name)+1)
        # Add the image to the plot
        image_plot = plt.imshow(image)
        # Add a caption with the file name
        a.set_title(file_name)
        # Show filenames
        print('file name: ',file_name)
        # Show image shape
        print('shape: ',image.shape)
        # Show images
        plt.show()
        # Show the plot
```

In [4]:
```
show_images(normal_images)
```

```
this folder contains 1341 files
file name:  NORMAL (1).png
shape:  (1024, 1024)
```



In [ ]:
```
#These images are also fairly clean, we see can that "R"
#marking throughout, on the top left of the images but we
#also noted that on the viral pneumonia images, again, the
#network won't know what type of x-ray machine it is, what
#type of text, what type of tissue we are showing with the
#arrows but it might recognize a pattern we unintentionally
#put there, again, I'm hoping that as the dataset grows there
#are sufficiently marked, unmarked and multiple angle images
#that this shouldn't matter but it definitely should be noted
#just in case that it is skewing the accuracy of the tests
#inadvertently, a way to further look into this is to take
#a peak into the deep layers of the network and see what
#features it is recognizing. Anyway, for our purposes, these
#images from folder to folder have been uniform in size,
#the second folder with the viral pneumonia images had
#mixed dimensions in the color channel, 3 and 1, and the
#images in this folder all apppear to be on dimension and I
#also did not see to much variation in the angle of the images
#all ventral or dorsal or you can say generally located in the
#chest area but no lateral views


#We will have to normalize the images before they are fed into
#the network.
```