Supplementary Table. 1 Univariate logistic regression analysis of the computed tomography radiomics-based features

Feature	AUC	p-value
wavelet-LLH_glszm_SmallAreaEmphasis	0.812	<0.001
log-sigma-2-5-mm-3D_glcm_Imc1	0.785	<0.001
wavelet-LLH_glszm_SmallAreaHighGrayLevelEmphasis	0.776	<0.001
wavelet-HHL_gldm_LargeDependenceHighGrayLevelEmphasis	0.773	<0.001
wavelet-LLH_glrlm_ShortRunHighGrayLevelEmphasis	0.761	<0.001
log-sigma-1-5-mm-3D_glszm_ZoneEntropy	0.77	<0.001
wavelet-HHH_glrlm_LongRunLowGrayLevelEmphasis	0.757	<0.001
log-sigma-2-5-mm-3D_glrlm_RunEntropy	0.748	<0.001
wavelet-HHH_glrlm_LongRunEmphasis	0.745	<0.001
wavelet-HHH_glrlm_RunVariance	0.753	<0.001
log-sigma-4-5-mm-3D_glrlm_RunEntropy	0.742	<0.001
original_glrlm_RunEntropy	0.74	<0.001
squareroot_glrlm_RunEntropy	0.74	<0.001
logarithm_glrlm_RunEntropy	0.74	<0.001
wavelet-HHL_glrlm_LongRunHighGrayLevelEmphasis	0.732	<0.001
log-sigma-3-5-mm-3D_glrlm_RunEntropy	0.732	<0.001
wavelet-LLH_glszm_SmallAreaLowGrayLevelEmphasis	0.79	<0.001

wavelet-LLH_glrlm_ShortRunEmphasis	0.73	<0.001
log-sigma-1-5-mm-3D_glrlm_RunEntropy	0.763	<0.001
wavelet-HHH_glrlm_LongRunHighGrayLevelEmphasis	0.744	<0.001
log-sigma-1-5-mm-3D_glcm_Imc1	0.725	<0.001
wavelet-HLL_glrlm_LongRunEmphasis	0.736	<0.001
log-sigma-1-5-mm-3D_glcm_Imc2	0.749	<0.001
wavelet-HLL_glrlm_RunVariance	0.735	<0.001
wavelet-LLL_glrlm_RunEntropy	0.739	<0.001
wavelet-LLH_glrlm_RunEntropy	0.725	<0.001
wavelet-LLH_firstorder_Energy	0.727	<0.001
wavelet-LLH_firstorder_TotalEnergy	0.727	<0.001
wavelet-HHH_gldm_LargeDependenceLowGrayLevelEmphasis	0.741	<0.001
log-sigma-0-5-mm-3D_glrlm_LongRunEmphasis	0.745	<0.001
wavelet-LHL_glrlm_LongRunLowGrayLevelEmphasis	0.738	<0.001
log-sigma-1-5-mm-3D_glcm_ClusterProminence	0.718	<0.001
wavelet-HHL_glrlm_LongRunEmphasis	0.725	<0.001
wavelet-LLH_glrlm_RunLengthNonUniformityNormalized	0.713	<0.001
wavelet-LHH_gldm_LargeDependenceHighGrayLevelEmphasis	0.732	<0.001
wavelet-LLH_glrlm_RunPercentage	0.716	<0.001
wavelet-HLL_glrlm_LongRunLowGrayLevelEmphasis	0.725	<0.001

wavelet-LHL_glrlm_RunVariance	0.743	<0.001
wavelet-HHL_glrlm_ShortRunHighGrayLevelEmphasis	0.746	<0.001
wavelet-LHL_glrlm_LongRunEmphasis	0.743	<0.001
wavelet-HLH_glrlm_LongRunHighGrayLevelEmphasis	0.731	<0.001
wavelet-LLH_gldm_LargeDependenceEmphasis	0.708	<0.001
log-sigma-0-5-mm-3D_gldm_SmallDependenceHighGrayLevelEmphasis	0.749	<0.001
wavelet-HLH_glrlm_LongRunEmphasis	0.734	<0.001
wavelet-HHL_glrlm_RunVariance	0.724	<0.001
square_glrlm_RunEntropy	0.727	<0.001
exponential_glrlm_RunEntropy	0.727	<0.001
wavelet-HHH_glrlm_ShortRunHighGrayLevelEmphasis	0.724	<0.001
wavelet-HHH_glrlm_ShortRunEmphasis	0.724	<0.001
log-sigma-2-5-mm-3D_glcm_Imc2	0.744	<0.001
log-sigma-1-5-mm-3D_glrlm_LongRunHighGrayLevelEmphasis	0.756	<0.001
wavelet-HLH_glrlm_ShortRunHighGrayLevelEmphasis	0.718	<0.001
wavelet-LHH_glrlm_LongRunHighGrayLevelEmphasis	0.724	<0.001
wavelet-HLH_glrlm_LongRunLowGrayLevelEmphasis	0.734	<0.001
wavelet-HLL_glrlm_LongRunHighGrayLevelEmphasis	0.727	<0.001
log-sigma-0-5-mm-3D_glrlm_RunVariance	0.731	<0.001

wavelet-HLL_glrlm_RunEntropy	0.74	<0.001
wavelet-HHH_glrlm_ShortRunLowGrayLevelEmphasis	0.732	<0.001
log-sigma-0-5-mm-3D_gldm_SmallDependenceEmphasis	0.76	<0.001
wavelet-HHH_gldm_LargeDependenceEmphasis	0.73	<0.001
wavelet-HHH_glrlm_RunEntropy	0.734	<0.001
wavelet-HHL_gldm_LargeDependenceEmphasis	0.731	<0.001
wavelet-HHL_glrlm_RunEntropy	0.732	<0.001
wavelet-LHH_glrlm_LongRunEmphasis	0.718	<0.001
wavelet-HHH_glrlm_RunPercentage	0.73	<0.001
wavelet-HHL_glrlm_RunPercentage	0.73	<0.001
log-sigma-2-5-mm-3D_glrlm_ShortRunLowGrayLevelEmphasis	0.741	<0.001
wavelet-LHH_gldm_LargeDependenceEmphasis	0.732	<0.001
wavelet-LHH_glrlm_RunEntropy	0.734	<0.001
wavelet-HHL_glrlm_ShortRunEmphasis	0.722	<0.001
exponential_gldm_DependenceEntropy	0.716	<0.001
square_gldm_DependenceEntropy	0.716	<0.001
wavelet-LHL_glrlm_RunEntropy	0.737	<0.001
log-sigma-4-5-mm-3D_glrlm_RunLengthNonUniformityNormalized	0.755	<0.001
exponential_gldm_LargeDependenceEmphasis	0.72	<0.001
exponential_gldm_LargeDependenceLowGrayLevelEmphasis	0.72	<0.001

exponential_gldm_LargeDependenceHighGrayLevelEmphasis	0.72	<0.001
square_gldm_LargeDependenceHighGrayLevelEmphasis	0.72	<0.001
square_gldm_LargeDependenceEmphasis	0.72	<0.001
square_gldm_LargeDependenceLowGrayLevelEmphasis	0.72	<0.001
wavelet-LLH_gldm_LargeDependenceHighGrayLevelEmphasis	0.728	<0.001
wavelet-HHL_glrlm_LongRunLowGrayLevelEmphasis	0.718	<0.001
log-sigma-0-5-mm-3D_glrlm_LongRunHighGrayLevelEmphasis	0.724	<0.001
wavelet-HLH_glrlm_ShortRunEmphasis	0.718	<0.001
log-sigma-3-5-mm-3D_glszm_ZoneEntropy	0.711	<0.001
square_gldm_DependenceNonUniformityNormalized	0.718	<0.001
exponential_gldm_DependenceNonUniformityNormalized	0.718	<0.001
wavelet-HLH_glrlm_RunVariance	0.728	<0.001
wavelet-LHH_glrlm_RunPercentage	0.73	<0.001
wavelet-LHH_glrlm_LongRunLowGrayLevelEmphasis	0.73	<0.001
exponential_glrlm_RunPercentage	0.719	<0.001
square_glrlm_RunPercentage	0.719	<0.001
exponential_glrlm_ShortRunHighGrayLevelEmphasis	0.739	<0.001
square_glrlm_ShortRunLowGrayLevelEmphasis	0.739	<0.001
square_glrlm_ShortRunHighGrayLevelEmphasis	0.739	<0.001
square_glrlm_ShortRunEmphasis	0.739	<0.001

exponential_glrlm_ShortRunLowGrayLevelEmphasis	0.739	<0.001
exponential_glrlm_ShortRunEmphasis	0.739	<0.001
wavelet-LHH_glrlm_ShortRunEmphasis	0.718	<0.001
log-sigma-0-5-mm-3D_glrlm_RunEntropy	0.743	<0.001
wavelet-LHL_glrlm_LongRunHighGrayLevelEmphasis	0.724	<0.001
wavelet-LHH_glrlm_ShortRunHighGrayLevelEmphasis	0.717	<0.001
wavelet-HHL_gldm_SmallDependenceHighGrayLevelEmphasis	0.76	<0.001
wavelet-HHL_glrlm_RunLengthNonUniformityNormalized	0.73	<0.001
wavelet-LHH_glrlm_RunVariance	0.72	<0.001
log-sigma-3-5-mm-3D_glrlm_RunLengthNonUniformityNormalized	0.747	<0.001
wavelet-HHH_glrlm_RunLengthNonUniformityNormalized	0.728	<0.001
log-sigma-3-5-mm-3D_glrlm_ShortRunLowGrayLevelEmphasis	0.738	<0.001
original_shape_MinorAxisLength	0.731	<0.001
log-sigma-1-5-mm-3D_glrlm_GrayLevelNonUniformityNormalized	0.685	<0.001
log-sigma-1-5-mm-3D_glrlm_GrayLevelVariance	0.685	<0.001
log-sigma-2-5-mm-3D_glrlm_RunLengthNonUniformityNormalized	0.754	<0.001
square_glrlm_RunLengthNonUniformityNormalized	0.726	<0.001
exponential_glrlm_RunLengthNonUniformityNormalized	0.726	<0.001
wavelet-LLL_glrlm_RunLengthNonUniformityNormalized	0.738	<0.001
wavelet-HHH_gldm_LargeDependenceHighGrayLevelEmphasis	0.728	<0.001

wavelet-HLL_glrlm_ShortRunEmphasis	0.724	<0.001
original_shape_SurfaceVolumeRatio	0.72	<0.001
log-sigma-4-5-mm-3D_glrlm_ShortRunLowGrayLevelEmphasis	0.732	<0.001
log-sigma-2-5-mm-3D_glszm_ZoneEntropy	0.718	<0.001
original_shape_Maximum2DDiameterSlice	0.721	<0.001
wavelet-HLH_glrlm_RunEntropy	0.712	<0.001
log-sigma-4-5-mm-3D_glszm_ZoneEntropy	0.698	<0.001
log-sigma-3-5-mm-3D_glszm_LowGrayLevelZoneEmphasis	0.69	<0.001
log-sigma-3-5-mm-3D_glszm_HighGrayLevelZoneEmphasis	0.69	<0.001
log-sigma-1-5-mm-3D_glcm_SumEntropy	0.698	<0.001
wavelet-LHH_glrlm_ShortRunLowGrayLevelEmphasis	0.704	<0.001
log-sigma-1-5-mm-3D_glcm_ClusterTendency	0.706	<0.001
log-sigma-0-5-mm-3D_gldm_SmallDependenceLowGrayLevelEmphasis	0.749	<0.001
log-sigma-4-5-mm-3D_glrlm_ShortRunEmphasis	0.727	<0.001
log-sigma-1-5-mm-3D_glrlm_ShortRunLowGrayLevelEmphasis	0.731	<0.001
wavelet-HLL_glrlm_ShortRunLowGrayLevelEmphasis	0.718	<0.001
wavelet-LHH_gldm_LargeDependenceLowGrayLevelEmphasis	0.724	<0.001
log-sigma-0-5-mm-3D_glcm_MaximumProbability	0.684	<0.001
log-sigma-2-5-mm-3D_glrlm_LongRunHighGrayLevelEmphasis	0.743	<0.001

original_shape_Maximum2DDiameterColumn	0.744	<0.001
wavelet-LLH_firstorder_10Percentile	0.684	<0.001
wavelet-LHH_glrlm_RunLengthNonUniformityNormalized	0.724	<0.001
wavelet-LLL_glrlm_LongRunHighGrayLevelEmphasis	0.699	<0.001
log-sigma-4-5-mm-3D_glszm_LowGrayLevelZoneEmphasis	0.685	<0.001
log-sigma-4-5-mm-3D_glszm_HighGrayLevelZoneEmphasis	0.685	<0.001
log-sigma-1-5-mm-3D_firstorder_Entropy	0.696	<0.001
log-sigma-1-5-mm-3D_glcm_JointEntropy	0.691	<0.001
wavelet-HLH_glrlm_ShortRunLowGrayLevelEmphasis	0.702	<0.001
wavelet-HLH_glrlm_RunPercentage	0.701	<0.001
log-sigma-0-5-mm-3D_glcm_SumSquares	0.676	<0.001
wavelet-HLL_glrlm_RunPercentage	0.718	<0.001
wavelet-LHL_glrlm_ShortRunEmphasis	0.724	<0.001
log-sigma-0-5-mm-3D_glcm_JointEnergy	0.678	<0.001
log-sigma-0-5-mm-3D_glcm_JointEntropy	0.679	<0.001
log-sigma-1-5-mm-3D_glcm_SumSquares	0.702	<0.001
log-sigma-3-5-mm-3D_glrlm_ShortRunEmphasis	0.723	<0.001
log-sigma-0-5-mm-3D_firstorder_Uniformity	0.682	<0.001
log-sigma-0-5-mm-3D_gldm_GrayLevelVariance	0.682	<0.001
log-sigma-0-5-mm-3D_firstorder_Mean	0.678	<0.001

log-sigma-2-5-mm-3D_glrlm_ShortRunEmphasis	0.73	<0.001
log-sigma-0-5-mm-3D_glcm_ClusterTendency	0.715	<0.001
wavelet-HLL_gldm_LargeDependenceHighGrayLevelEmphasis	0.701	<0.001
log-sigma-1-5-mm-3D_glcm_MCC	0.719	<0.001
wavelet-HLH_glrlm_RunLengthNonUniformityNormalized	0.701	<0.001
original_glrlm_RunLengthNonUniformityNormalized	0.696	<0.001
squareroot_glrlm_RunLengthNonUniformityNormalized	0.696	<0.001
logarithm_glrlm_RunLengthNonUniformityNormalized	0.696	<0.001
wavelet-LLL_glrlm_ShortRunEmphasis	0.713	<0.001
log-sigma-1-5-mm-3D_glcm_JointEnergy	0.692	<0.001
wavelet-HLH_gldm_LargeDependenceHighGrayLevelEmphasis	0.682	<0.001
wavelet-LHH_glszm_SmallAreaEmphasis	0.702	<0.001
wavelet-LHL_glrlm_RunPercentage	0.718	<0.001
wavelet-HLL_gldm_LargeDependenceEmphasis	0.7	<0.001
log-sigma-1-5-mm-3D_glcm_Correlation	0.719	<0.001
wavelet-LHL_gldm_LargeDependenceEmphasis	0.721	<0.001
log-sigma-0-5-mm-3D_glcm_SumEntropy	0.714	<0.001
log-sigma-0-5-mm-3D_firstorder_Entropy	0.682	<0.001
log-sigma-1-5-mm-3D_firstorder_RootMeanSquared	0.679	<0.001
square_gldm_DependenceVariance	0.706	<0.001

exponential_gldm_DependenceVariance	0.706	<0.001
log-sigma-2-5-mm-3D_firstorder_TotalEnergy	0.728	<0.001
log-sigma-2-5-mm-3D_firstorder_Energy	0.728	<0.001
wavelet-LLL_glrlm_LongRunEmphasis	0.698	<0.001
log-sigma-4-5-mm-3D_gldm_LargeDependenceEmphasis	0.686	<0.001
wavelet-LHL_glrlm_ShortRunLowGrayLevelEmphasis	0.7	<0.001
wavelet-HHH_gldm_SmallDependenceLowGrayLevelEmphasis	0.739	<0.001
log-sigma-3-5-mm-3D_glcm_Imc1	0.694	<0.001
wavelet-HHL_gldm_DependenceVariance	0.684	<0.001
square_firstorder_Energy	0.688	<0.001
square_firstorder_TotalEnergy	0.688	<0.001
log-sigma-0-5-mm-3D_ngtdm_Contrast	0.64	<0.001
wavelet-HHL_gldm_SmallDependenceEmphasis	0.739	<0.001
log-sigma-4-5-mm-3D_glrlm_RunPercentage	0.688	<0.001
log-sigma-4-5-mm-3D_glcm_Imc1	0.687	<0.001
log-sigma-2-5-mm-3D_glrlm_GrayLevelNonUniformityNormalized	0.659	<0.001
log-sigma-2-5-mm-3D_glrlm_GrayLevelVariance	0.659	<0.001
exponential_glszm_ZonePercentage	0.73	<0.001
square_glszm_ZonePercentage	0.73	<0.001
wavelet-HLH_gldm_LargeDependenceEmphasis	0.688	<0.001

log-sigma-1-5-mm-3D_firstorder_Uniformity	0.696	<0.001
log-sigma-1-5-mm-3D_gldm_GrayLevelVariance	0.696	<0.001
wavelet-LLH_glrlm_ShortRunLowGrayLevelEmphasis	0.694	<0.001
wavelet-LLH_firstorder_MeanAbsoluteDeviation	0.679	<0.001
wavelet-LHH_firstorder_90Percentile	0.684	<0.001
log-sigma-1-5-mm-3D_glrlm_RunLengthNonUniformityNormalized	0.703	<0.001
log-sigma-1-5-mm-3D_glcm_DifferenceEntropy	0.672	<0.001
log-sigma-1-5-mm-3D_firstorder_Median	0.679	<0.001
log-sigma-0-5-mm-3D_glrlm_LongRunLowGrayLevelEmphasis	0.691	<0.001
log-sigma-1-5-mm-3D_firstorder_Mean	0.677	<0.001
wavelet-HHH_gldm_SmallDependenceEmphasis	0.737	<0.001
wavelet-LLH_glrlm_LongRunHighGrayLevelEmphasis	0.704	<0.001
wavelet-LLH_firstorder_RobustMeanAbsoluteDeviation	0.695	<0.001
log-sigma-2-5-mm-3D_glrlm_RunPercentage	0.684	<0.001
log-sigma-2-5-mm-3D_gldm_LargeDependenceEmphasis	0.679	<0.001
log-sigma-2-5-mm-3D_glcm_MCC	0.714	<0.001
log-sigma-4-5-mm-3D_glrlm_LongRunEmphasis	0.688	<0.001
log-sigma-4-5-mm-3D_firstorder_Range	0.685	<0.001
log-sigma-0-5-mm-3D_glszm_ZonePercentage	0.728	<0.001
log-sigma-3-5-mm-3D_firstorder_Energy	0.732	<0.001

log-sigma-3-5-mm-3D_firstorder_TotalEnergy	0.732	<0.001
wavelet-LHH_ngtdm_Coarseness	0.734	<0.001
wavelet-LHH_ngtdm_Strength	0.734	<0.001
wavelet-LLH_glrlm_LongRunEmphasis	0.67	<0.001
wavelet-LHL_ngtdm_Strength	0.734	<0.001
wavelet-LHL_gldm_LargeDependenceHighGrayLevelEmphasis	0.687	<0.001
wavelet-LHL_ngtdm_Coarseness	0.734	<0.001
log-sigma-2-5-mm-3D_glcm_Correlation	0.714	<0.001
wavelet-HLL_gldm_SmallDependenceEmphasis	0.716	<0.001
log-sigma-3-5-mm-3D_gldm_LargeDependenceEmphasis	0.668	<0.001
log-sigma-3-5-mm-3D_glrlm_RunPercentage	0.672	<0.001
log-sigma-4-5-mm-3D_glszm_SizeZoneNonUniformityNormalized	0.664	<0.001
wavelet-HLL_glrlm_RunLengthNonUniformityNormalized	0.7	<0.001
wavelet-HLL_gldm_SmallDependenceHighGrayLevelEmphasis	0.704	<0.001
wavelet-LLH_firstorder_InterquartileRange	0.699	<0.001
wavelet-LHH_firstorder_MeanAbsoluteDeviation	0.672	<0.001
wavelet-LLL_glrlm_RunPercentage	0.718	<0.001
log-sigma-0-5-mm-3D_glrlm_HighGrayLevelRunEmphasis	0.676	<0.001
log-sigma-0-5-mm-3D_glrlm_LowGrayLevelRunEmphasis	0.676	<0.001
wavelet-HLH_gldm_LargeDependenceLowGrayLevelEmphasis	0.691	<0.001

log-sigma-0-5-mm-3D_glrlm_ShortRunEmphasis	0.688	<0.001
wavelet-HHL_glrlm_ShortRunLowGrayLevelEmphasis	0.698	<0.001
original_glrlm_LongRunHighGrayLevelEmphasis	0.7	<0.001
squareroot_glrlm_LongRunHighGrayLevelEmphasis	0.7	<0.001
logarithm_glrlm_LongRunHighGrayLevelEmphasis	0.7	<0.001
wavelet-LLL_gldm_LargeDependenceEmphasis	0.708	<0.001
log-sigma-1-5-mm-3D_glrlm_HighGrayLevelRunEmphasis	0.68	<0.001
log-sigma-1-5-mm-3D_glrlm_LowGrayLevelRunEmphasis	0.68	<0.001
wavelet-HHH_gldm_SmallDependenceHighGrayLevelEmphasis	0.734	<0.001
wavelet-HLL_glrlm_LowGrayLevelRunEmphasis	0.668	<0.001
wavelet-HLL_glrlm_HighGrayLevelRunEmphasis	0.668	<0.001
log-sigma-2-5-mm-3D_glszm_SmallAreaHighGrayLevelEmphasis	0.685	<0.001
log-sigma-1-5-mm-3D_glcm_DifferenceVariance	0.672	<0.001
wavelet-HLH_gldm_SmallDependenceLowGrayLevelEmphasis	0.714	<0.001
log-sigma-0-5-mm-3D_ngtdm_Complexity	0.655	<0.001
log-sigma-1-5-mm-3D_glrlm_ShortRunEmphasis	0.684	<0.001
wavelet-HLL_gldm_SmallDependenceLowGrayLevelEmphasis	0.715	<0.001
wavelet-LHH_firstorder_RootMeanSquared	0.684	<0.001
wavelet-LHH_gldm_SmallDependenceEmphasis	0.711	<0.001
wavelet-LHL_glrlm_RunLengthNonUniformityNormalized	0.707	<0.001

wavelet-LHL_gldm_SmallDependenceHighGrayLevelEmphasis	0.708	<0.001
log-sigma-1-5-mm-3D_firstorder_TotalEnergy	0.704	0.001
log-sigma-1-5-mm-3D_firstorder_Energy	0.704	0.001
log-sigma-0-5-mm-3D_glcm_InverseVariance	0.643	0.001
log-sigma-0-5-mm-3D_glcm_Contrast	0.643	0.001
log-sigma-0-5-mm-3D_glcm_DifferenceAverage	0.643	0.001
log-sigma-0-5-mm-3D_glcm_Idn	0.643	0.001
log-sigma-0-5-mm-3D_glcm_Idm	0.643	0.001
log-sigma-0-5-mm-3D_glcm_Id	0.643	0.001
log-sigma-0-5-mm-3D_glcm_Idmn	0.643	0.001
exponential_glrlm_LongRunHighGrayLevelEmphasis	0.728	0.001
exponential_glrlm_LongRunEmphasis	0.728	0.001
exponential_glrlm_LongRunLowGrayLevelEmphasis	0.728	0.001
square_glrlm_LongRunLowGrayLevelEmphasis	0.728	0.001
square_glrlm_LongRunHighGrayLevelEmphasis	0.728	0.001
square_glrlm_LongRunEmphasis	0.728	0.001
wavelet-HLH_gldm_SmallDependenceEmphasis	0.716	0.001
wavelet-HLL_firstorder_Uniformity	0.69	0.001
wavelet-HLL_gldm_GrayLevelVariance	0.69	0.001
wavelet-HLH_ngtdm_Coarseness	0.736	0.001

wavelet-HLH_ngtdm_Strength	0.736	0.001
log-sigma-3-5-mm-3D_glszm_SizeZoneNonUniformityNormalized	0.688	0.001
wavelet-HLL_firstorder_Entropy	0.69	0.001
wavelet-LHL_gldm_SmallDependenceEmphasis	0.718	0.001
log-sigma-2-5-mm-3D_glrlm_LongRunEmphasis	0.683	0.001
squareroot_glrlm_LongRunEmphasis	0.698	0.001
original_glrlm_LongRunEmphasis	0.698	0.001
logarithm_glrlm_LongRunEmphasis	0.698	0.001
wavelet-LLH_ngtdm_Strength	0.728	0.001
wavelet-LHH_gldm_SmallDependenceLowGrayLevelEmphasis	0.708	0.001
wavelet-HHH_ngtdm_Coarseness	0.731	0.001
logarithm_glrlm_RunPercentage	0.699	0.001
squareroot_glrlm_RunPercentage	0.699	0.001
original_glrlm_RunPercentage	0.699	0.001
wavelet-HHH_ngtdm_Strength	0.731	0.001
log-sigma-4-5-mm-3D_firstorder_Energy	0.729	0.001
log-sigma-4-5-mm-3D_firstorder_TotalEnergy	0.729	0.001
wavelet-LLL_gldm_DependenceVariance	0.69	0.001
wavelet-LHH_gldm_SmallDependenceHighGrayLevelEmphasis	0.714	0.001
log-sigma-1-5-mm-	0.714	0.001

3D_gldm_LargeDependenceHighGrayLevelEmphasis		
wavelet-LLL_glrlm_ShortRunHighGrayLevelEmphasis	0.718	0.001
log-sigma-3-5-mm-3D_glrlm_LongRunEmphasis	0.673	0.001
wavelet-LLH_ngtdm_Coarseness	0.728	0.001
log-sigma-0-5-mm-3D_gldm_LargeDependenceHighGrayLevelEmphasis	0.695	0.001
log-sigma-4-5-mm-3D_glrlm_LongRunLowGrayLevelEmphasis	0.683	0.001
log-sigma-2-5-mm-3D_glszm_SmallAreaEmphasis	0.684	0.001
wavelet-LHH_firstorder_10Percentile	0.669	0.001
original_gldm_LargeDependenceEmphasis	0.694	0.001
logarithm_gldm_LargeDependenceEmphasis	0.694	0.001
squareroot_gldm_LargeDependenceEmphasis	0.694	0.001
log-sigma-1-5-mm-3D_glcm_MaximumProbability	0.695	0.001
log-sigma-1-5-mm-3D_gldm_SmallDependenceLowGrayLevelEmphasis	0.732	0.001
log-sigma-1-5-mm-3D_firstorder_10Percentile	0.662	0.001
log-sigma-3-5-mm-3D_glcm_Imc2	0.695	0.001
wavelet-HLH_gldm_SmallDependenceHighGrayLevelEmphasis	0.723	0.001
wavelet-LHL_gldm_SmallDependenceLowGrayLevelEmphasis	0.722	0.001
wavelet-LLH_gldm_SmallDependenceLowGrayLevelEmphasis	0.707	0.001
log-sigma-0-5-mm-3D_glcm_SumAverage	0.667	0.001

log-sigma-0-5-mm-3D_glcm_JointAverage	0.667	0.001
wavelet-LLH_glcm_Imc2	0.666	0.001
wavelet-HHL_gldm_SmallDependenceLowGrayLevelEmphasis	0.724	0.002
wavelet-LHH_firstorder_RobustMeanAbsoluteDeviation	0.664	0.002
original_firstorder_TotalEnergy	0.702	0.002
original_firstorder_Energy	0.702	0.002
wavelet-LLH_gldm_SmallDependenceEmphasis	0.691	0.002
wavelet-LLL_firstorder_Energy	0.704	0.002
wavelet-LLL_firstorder_TotalEnergy	0.704	0.002
log-sigma-0-5-mm-3D_glrlm_RunLengthNonUniformityNormalized	0.69	0.002
square_gldm_SmallDependenceLowGrayLevelEmphasis	0.734	0.002
square_gldm_SmallDependenceHighGrayLevelEmphasis	0.734	0.002
square_gldm_SmallDependenceEmphasis	0.734	0.002
exponential_gldm_SmallDependenceEmphasis	0.734	0.002
exponential_gldm_SmallDependenceHighGrayLevelEmphasis	0.734	0.002
exponential_gldm_SmallDependenceLowGrayLevelEmphasis	0.734	0.002
log-sigma-2-5-mm-3D_glcm_ClusterProminence	0.717	0.002
wavelet-HHL_ngtdm_Coarseness	0.732	0.002
wavelet-HLL_firstorder_Mean	0.658	0.002
wavelet-LHL_glszm_ZonePercentage	0.696	0.002

wavelet-HHL_ngtdm_Strength	0.732	0.002
wavelet-LLH_glrlm_RunVariance	0.663	0.002
wavelet-HLL_glrlm_GrayLevelNonUniformityNormalized	0.674	0.002
wavelet-HLL_glrlm_GrayLevelVariance	0.674	0.002
wavelet-HLL_glcm_SumSquares	0.693	0.002
log-sigma-2-5-mm-3D_glszm_LowGrayLevelZoneEmphasis	0.698	0.002
log-sigma-2-5-mm-3D_glszm_HighGrayLevelZoneEmphasis	0.698	0.002
log-sigma-0-5-mm-3D_glcm_Autocorrelation	0.665	0.002
wavelet-LLH_firstorder_Median	0.696	0.002
log-sigma-3-5-mm-3D_glrlm_LongRunHighGrayLevelEmphasis	0.702	0.002
log-sigma-2-5-mm-3D_gldm_SmallDependenceLowGrayLevelEmphasis	0.723	0.002
log-sigma-1-5-mm-3D_glrlm_RunVariance	0.677	0.002
log-sigma-0-5-mm-3D_gldm_HighGrayLevelEmphasis	0.675	0.002
log-sigma-0-5-mm-3D_gldm_LowGrayLevelEmphasis	0.675	0.002
exponential_firstorder_Kurtosis	0.618	0.002
wavelet-HLL_ngtdm_Strength	0.734	0.002
wavelet-HLL_glrlm_ShortRunHighGrayLevelEmphasis	0.664	0.002
wavelet-LHL_glszm_SmallAreaEmphasis	0.674	0.002
wavelet-LLH_gldm_SmallDependenceHighGrayLevelEmphasis	0.697	0.002

wavelet-HHL_glszm_SmallAreaLowGrayLevelEmphasis	0.634	0.002
log-sigma-1-5-mm-3D_glrlm_LongRunEmphasis	0.663	0.002
log-sigma-1-5-mm-3D_glrlm_RunPercentage	0.662	0.002
wavelet-LLL_gldm_SmallDependenceEmphasis	0.679	0.002
wavelet-HLL_glcm_MaximumProbability	0.67	0.002
log-sigma-1-5-mm-3D_glcm_InverseVariance	0.672	0.002
log-sigma-1-5-mm-3D_glcm_DifferenceAverage	0.672	0.002
log-sigma-1-5-mm-3D_glcm_Contrast	0.672	0.002
log-sigma-1-5-mm-3D_glcm_Idn	0.672	0.002
log-sigma-1-5-mm-3D_glcm_Id	0.672	0.002
log-sigma-1-5-mm-3D_glcm_Idm	0.672	0.002
log-sigma-1-5-mm-3D_glcm_Idmn	0.672	0.002
wavelet-HLL_ngtdm_Coarseness	0.732	0.002
log-sigma-4-5-mm-3D_firstorder_Maximum	0.672	0.002
log-sigma-0-5-mm-3D_glrlm_ShortRunLowGrayLevelEmphasis	0.673	0.002
wavelet-LHL_glrlm_ShortRunHighGrayLevelEmphasis	0.683	0.002
wavelet-LHL_glcm_MaximumProbability	0.694	0.002
log-sigma-0-5-mm-3D_glcm_ClusterProminence	0.69	0.002
wavelet-LHH_glszm_SmallAreaHighGrayLevelEmphasis	0.666	0.002
wavelet-LLL_glszm_ZonePercentage	0.666	0.002

log-sigma-3-5-mm-3D_gldm_SmallDependenceLowGrayLevelEmphasis	0.714	0.002
log-sigma-2-5-mm-3D_glrlm_RunVariance	0.682	0.002
log-sigma-4-5-mm-3D_gldm_SmallDependenceLowGrayLevelEmphasis	0.718	0.002
log-sigma-4-5-mm-3D_gldm_DependenceNonUniformityNormalized	0.662	0.002
wavelet-HHL_gldm_LargeDependenceLowGrayLevelEmphasis	0.683	0.002
wavelet-LHH_firstorder_InterquartileRange	0.656	0.002
log-sigma-2-5-mm-3D_firstorder_RootMeanSquared	0.667	0.002
wavelet-LLL_gldm_LargeDependenceHighGrayLevelEmphasis	0.7	0.002
log-sigma-3-5-mm-3D_glrlm_LongRunLowGrayLevelEmphasis	0.664	0.003
wavelet-HLL_ngtdm_Contrast	0.63	0.003
wavelet-LLL_gldm_DependenceNonUniformityNormalized	0.666	0.003
wavelet-LLH_glcm_Correlation	0.662	0.003
log-sigma-0-5-mm-3D_glrlm_RunPercentage	0.66	0.003
wavelet-HLH_firstorder_TotalEnergy	0.659	0.003
wavelet-HLH_firstorder_Energy	0.659	0.003
wavelet-HLL_glszm_ZonePercentage	0.71	0.003
wavelet-LHH_firstorder_Variance	0.686	0.003
exponential_glrlm_RunVariance	0.73	0.003
square_glrlm_RunVariance	0.73	0.003

wavelet-HHH_firstorder_10Percentile	0.633	0.003
logarithm_firstorder_Energy	0.706	0.003
logarithm_firstorder_TotalEnergy	0.706	0.003
wavelet-LLH_firstorder_Variance	0.612	0.003
log-sigma-4-5-mm-3D_glrlm_LongRunHighGrayLevelEmphasis	0.72	0.003
original_shape_LeastAxisLength	0.707	0.003
log-sigma-0-5-mm-3D_firstorder_10Percentile	0.626	0.003
squareroot_glrlm_RunVariance	0.693	0.003
original_glrlm_RunVariance	0.693	0.003
logarithm_glrlm_RunVariance	0.693	0.003
log-sigma-2-5-mm-3D_firstorder_Entropy	0.694	0.003
log-sigma-2-5-mm-3D_glcm_ClusterTendency	0.714	0.003
log-sigma-1-5-mm-3D_ngtdm_Complexity	0.671	0.003
wavelet-LHH_glszm_SmallAreaLowGrayLevelEmphasis	0.672	0.003
log-sigma-2-5-mm-3D_glcm_SumEntropy	0.696	0.003
log-sigma-1-5-mm-3D_gldm_LargeDependenceEmphasis	0.648	0.003
log-sigma-1-5-mm-3D_glcm_ClusterShade	0.679	0.003
wavelet-LLH_glszm_ZonePercentage	0.686	0.003
log-sigma-3-5-mm-3D_glrlm_GrayLevelNonUniformityNormalized	0.651	0.003
log-sigma-3-5-mm-3D_glrlm_GrayLevelVariance	0.651	0.003

log-sigma-1-5-mm-3D_firstorder_90Percentile	0.679	0.003
wavelet-LLL_gldm_SmallDependenceLowGrayLevelEmphasis	0.68	0.003
wavelet-HHH_firstorder_RootMeanSquared	0.634	0.003
log-sigma-0-5-mm-3D_firstorder_Median	0.625	0.003
wavelet-HLL_ngtdm_Busyness	0.72	0.003
wavelet-LLL_gldm_SmallDependenceHighGrayLevelEmphasis	0.699	0.003
log-sigma-2-5-mm-3D_glcm_ClusterShade	0.693	0.003
wavelet-HHH_firstorder_MeanAbsoluteDeviation	0.623	0.003
wavelet-HHL_glszm_ZonePercentage	0.722	0.004
original_ngtdm_Strength	0.622	0.004
logarithm_ngtdm_Strength	0.622	0.004
squareroot_ngtdm_Strength	0.622	0.004
wavelet-LHL_glszm_SmallAreaLowGrayLevelEmphasis	0.69	0.004
wavelet-HLL_gldm_DependenceEntropy	0.668	0.004
wavelet-HLL_glcm_JointEnergy	0.663	0.004
wavelet-HHH_firstorder_Variance	0.634	0.004
wavelet-LLH_glrlm_LongRunLowGrayLevelEmphasis	0.641	0.004
log-sigma-2-5-mm-3D_glcm_JointEntropy	0.692	0.004
wavelet-HLH_glszm_ZonePercentage	0.73	0.004
log-sigma-4-5-mm-3D_glrlm_RunVariance	0.695	0.004

original_gldm_LargeDependenceHighGrayLevelEmphasis	0.687	0.004
logarithm_gldm_LargeDependenceHighGrayLevelEmphasis	0.687	0.004
squareroot_gldm_LargeDependenceHighGrayLevelEmphasis	0.687	0.004
original_gldm_SmallDependenceEmphasis	0.629	0.004
logarithm_gldm_SmallDependenceEmphasis	0.629	0.004
squareroot_gldm_SmallDependenceEmphasis	0.629	0.004
log-sigma-0-5-mm-3D_glcm_DifferenceVariance	0.761	0.004
log-sigma-3-5-mm-3D_firstorder_Maximum	0.66	0.004
log-sigma-2-5-mm-3D_glcm_SumSquares	0.703	0.004
wavelet-HLL_glcm_JointAverage	0.688	0.004
wavelet-HLL_glcm_SumAverage	0.688	0.004
log-sigma-4-5-mm-3D_glszm_ZonePercentage	0.693	0.004
logarithm_glrlm_ShortRunHighGrayLevelEmphasis	0.686	0.004
squareroot_glrlm_ShortRunHighGrayLevelEmphasis	0.686	0.004
original_glrlm_ShortRunHighGrayLevelEmphasis	0.686	0.004
wavelet-HHH_firstorder_90Percentile	0.623	0.004
wavelet-HHH_gldm_DependenceVariance	0.672	0.004
log-sigma-2-5-mm-3D_glrlm_LongRunLowGrayLevelEmphasis	0.671	0.004
wavelet-LLH_firstorder_90Percentile	0.636	0.004
logarithm_gldm_SmallDependenceHighGrayLevelEmphasis	0.657	0.004

original_gldm_SmallDependenceHighGrayLevelEmphasis	0.657	0.004
squareroot_gldm_SmallDependenceHighGrayLevelEmphasis	0.657	0.004
log-sigma-4-5-mm-3D_gldm_SmallDependenceEmphasis	0.698	0.004
wavelet-HLL_glcm_JointEntropy	0.649	0.004
wavelet-HLL_gldm_LowGrayLevelEmphasis	0.681	0.004
wavelet-HLL_gldm_HighGrayLevelEmphasis	0.681	0.004
wavelet-HLL_glcm_Autocorrelation	0.691	0.004
wavelet-LLH_glcm_MCC	0.657	0.004
wavelet-LLL_glrlm_RunVariance	0.691	0.004
log-sigma-3-5-mm-3D_glrlm_RunVariance	0.68	0.004
original_gldm_DependenceNonUniformityNormalized	0.651	0.005
squareroot_gldm_DependenceNonUniformityNormalized	0.651	0.005
logarithm_gldm_DependenceNonUniformityNormalized	0.651	0.005
log-sigma-1-5-mm-3D_gldm_SmallDependenceEmphasis	0.697	0.005
wavelet-HHH_glszm_ZonePercentage	0.737	0.005
log-sigma-4-5-mm-3D_glcm_Imc2	0.681	0.005
wavelet-LLH_firstorder_RootMeanSquared	0.617	0.005
wavelet-LLH_glszm_SizeZoneNonUniformity	0.769	0.005
log-sigma-1-5-mm-3D_gldm_DependenceEntropy	0.658	0.005
log-sigma-0-5-mm-3D_glrlm_GrayLevelNonUniformityNormalized	0.679	0.005

log-sigma-0-5-mm-3D_glrlm_GrayLevelVariance	0.679	0.005
wavelet-LHL_glrlm_HighGrayLevelRunEmphasis	0.594	0.005
wavelet-LHL_glrlm_LowGrayLevelRunEmphasis	0.594	0.005
log-sigma-2-5-mm-3D_gldm_GrayLevelVariance	0.694	0.005
log-sigma-2-5-mm-3D_firstorder_Uniformity	0.694	0.005
wavelet-LHL_gldm_GrayLevelVariance	0.633	0.005
wavelet-LHL_firstorder_Uniformity	0.633	0.005
log-sigma-2-5-mm-3D_glcm_JointEnergy	0.695	0.005
wavelet-LLH_firstorder_Kurtosis	0.678	0.005
log-sigma-2-5-mm-3D_firstorder_90Percentile	0.684	0.005
log-sigma-0-5-mm-3D_gldm_DependenceVariance	0.631	0.006
wavelet-LHL_firstorder_Entropy	0.633	0.006
original_glszm_ZonePercentage	0.612	0.006
logarithm_glszm_ZonePercentage	0.612	0.006
squareroot_glszm_ZonePercentage	0.612	0.006
log-sigma-2-5-mm-3D_glszm_ZonePercentage	0.644	0.006
log-sigma-2-5-mm-3D_glcm_MaximumProbability	0.696	0.006
wavelet-HLH_firstorder_90Percentile	0.659	0.006
wavelet-HHH_firstorder_TotalEnergy	0.636	0.006
wavelet-HHH_firstorder_Energy	0.636	0.006

squareroot_gldm_DependenceVariance	0.66	0.006
logarithm_gldm_DependenceVariance	0.66	0.006
original_gldm_DependenceVariance	0.66	0.006
log-sigma-2-5-mm-3D_firstorder_Mean	0.669	0.006
wavelet-LLH_gldm_LargeDependenceLowGrayLevelEmphasis	0.638	0.006
original_firstorder_Kurtosis	0.596	0.006
log-sigma-3-5-mm-3D_gldm_SmallDependenceEmphasis	0.68	0.006
wavelet-LHH_glszm_GrayLevelNonUniformity	0.683	0.006
wavelet-LHL_firstorder_Mean	0.632	0.007
wavelet-LHL_firstorder_10Percentile	0.616	0.007
wavelet-LHL_glcm_SumSquares	0.647	0.007
squareroot_gldm_SmallDependenceLowGrayLevelEmphasis	0.611	0.007
original_gldm_SmallDependenceLowGrayLevelEmphasis	0.611	0.007
logarithm_gldm_SmallDependenceLowGrayLevelEmphasis	0.611	0.007
wavelet-HLH_firstorder_RootMeanSquared	0.652	0.007
wavelet-LHH_glszm_ZonePercentage	0.676	0.007
wavelet-HLL_glcm_ClusterTendency	0.658	0.007
log-sigma-1-5-mm-3D_glszm_ZonePercentage	0.671	0.007
squareroot_firstorder_TotalEnergy	0.717	0.007
squareroot_firstorder_Energy	0.717	0.007

wavelet-LHL_firstorder_Variance	0.616	0.007
log-sigma-0-5-mm-3D_glcm_DifferenceEntropy	0.74	0.007
log-sigma-1-5-mm-3D_glcm_JointAverage	0.695	0.007
log-sigma-1-5-mm-3D_glcm_SumAverage	0.695	0.007
wavelet-HLL_ngtdm_Complexity	0.6	0.007
wavelet-LLL_ngtdm_Strength	0.64	0.007
wavelet-LLH_firstorder_Mean	0.663	0.007
original_glrlm_ShortRunEmphasis	0.636	0.007
squareroot_glrlm_ShortRunEmphasis	0.636	0.007
logarithm_glrlm_ShortRunEmphasis	0.636	0.007
log-sigma-3-5-mm-3D_glszm_ZonePercentage	0.667	0.008
log-sigma-0-5-mm-3D_ngtdm_Coarseness	0.733	0.008
original_glszm_HighGrayLevelZoneEmphasis	0.612	0.008
logarithm_glszm_HighGrayLevelZoneEmphasis	0.612	0.008
squareroot_glszm_HighGrayLevelZoneEmphasis	0.612	0.008
logarithm_glszm_LowGrayLevelZoneEmphasis	0.612	0.008
squareroot_glszm_LowGrayLevelZoneEmphasis	0.612	0.008
original_glszm_LowGrayLevelZoneEmphasis	0.612	0.008
wavelet-HHH_firstorder_RobustMeanAbsoluteDeviation	0.612	0.008
log-sigma-2-5-mm-3D_firstorder_10Percentile	0.662	0.008

log-sigma-1-5-mm-3D_glszm_SizeZoneNonUniformityNormalized	0.683	0.008
wavelet-HLH_firstorder_MeanAbsoluteDeviation	0.651	0.008
wavelet-LHL_firstorder_RootMeanSquared	0.624	0.008
log-sigma-3-5-mm-3D_glcm_SumEntropy	0.677	0.008
original_shape_Maximum2DDiameterRow	0.691	0.008
wavelet-HHL_gldm_DependenceNonUniformityNormalized	0.648	0.008
log-sigma-2-5-mm-3D_gldm_LargeDependenceHighGrayLevelEmphasis	0.709	0.008
log-sigma-1-5-mm-3D_glcm_Autocorrelation	0.694	0.008
wavelet-HLL_glcm_ClusterShade	0.677	0.009
log-sigma-3-5-mm-3D_glcm_JointEntropy	0.672	0.009
log-sigma-0-5-mm-3D_ngtdm_Strength	0.733	0.009
wavelet-LHL_glszm_SmallAreaHighGrayLevelEmphasis	0.651	0.009
log-sigma-3-5-mm-3D_glcm_ClusterShade	0.671	0.009
wavelet-LHL_gldm_DependenceEntropy	0.635	0.009
wavelet-LHH_firstorder_TotalEnergy	0.616	0.009
wavelet-LHH_firstorder_Energy	0.616	0.009
original_glrlm_LongRunLowGrayLevelEmphasis	0.696	0.009
logarithm_glrlm_LongRunLowGrayLevelEmphasis	0.696	0.009
squareroot_glrlm_LongRunLowGrayLevelEmphasis	0.696	0.009

log-sigma-3-5-mm-3D_glcm_ClusterProminence	0.682	0.009
log-sigma-3-5-mm-3D_gldm_DependenceNonUniformityNormalized	0.634	0.009
log-sigma-3-5-mm-3D_glcm_ClusterTendency	0.684	0.010
wavelet-LHL_glcm_JointEntropy	0.659	0.010
wavelet-LHL_ngtdm_Contrast	0.579	0.010
wavelet-HLH_glcm_DifferenceEntropy	0.633	0.010
wavelet-HHH_firstorder_InterquartileRange	0.606	0.010
wavelet-HLL_glcm_SumEntropy	0.646	0.010
wavelet-LHL_glcm_JointEnergy	0.664	0.010
log-sigma-3-5-mm-3D_firstorder_Entropy	0.66	0.010
log-sigma-2-5-mm-3D_glszm_SizeZoneNonUniformityNormalized	0.652	0.010
log-sigma-3-5-mm-3D_glcm_SumSquares	0.682	0.010
wavelet-HLH_glcm_DifferenceVariance	0.627	0.010
wavelet-LHH_glszm_SizeZoneNonUniformity	0.737	0.011
original_shape_Maximum3DDiameter	0.704	0.011
wavelet-HLH_glcm_Imc1	0.634	0.011
log-sigma-0-5-mm-3D_glszm_SmallAreaHighGrayLevelEmphasis	0.653	0.011
wavelet-LHL_glcm_ClusterTendency	0.652	0.011
log-sigma-1-5-mm-3D_gldm_HighGrayLevelEmphasis	0.689	0.011
log-sigma-1-5-mm-3D_gldm_LowGrayLevelEmphasis	0.689	0.011

log-sigma-2-5-mm-3D_glcm_DifferenceEntropy	0.65	0.011
log-sigma-3-5-mm-3D_glcm_JointEnergy	0.669	0.011
log-sigma-4-5-mm-3D_ngtdm_Coarseness	0.726	0.011
wavelet-HLL_firstorder_TotalEnergy	0.724	0.011
wavelet-HLL_firstorder_Energy	0.724	0.011
wavelet-LLH_gldm_DependenceEntropy	0.638	0.011
wavelet-HLL_firstorder_10Percentile	0.601	0.011
wavelet-HLL_firstorder_Median	0.595	0.011
log-sigma-1-5-mm-3D_ngtdm_Contrast	0.677	0.011
log-sigma-2-5-mm-3D_glszm_SizeZoneNonUniformity	0.73	0.012
log-sigma-2-5-mm-3D_gldm_SmallDependenceEmphasis	0.653	0.012
log-sigma-4-5-mm-3D_gldm_DependenceVariance	0.658	0.012
log-sigma-3-5-mm-3D_glcm_MaximumProbability	0.672	0.012
log-sigma-2-5-mm-3D_firstorder_Maximum	0.621	0.012
wavelet-LLL_glrlm_LongRunLowGrayLevelEmphasis	0.693	0.012
log-sigma-0-5-mm-3D_glszm_SmallAreaEmphasis	0.638	0.013
log-sigma-1-5-mm-3D_gldm_DependenceNonUniformity	0.73	0.013
wavelet-LHL_glcm_JointAverage	0.637	0.014
wavelet-LHL_glcm_SumAverage	0.637	0.014
wavelet-LHL_glcm_Autocorrelation	0.629	0.014

log-sigma-2-5-mm-3D_ngtdm_Strength	0.664	0.014
wavelet-HLL_firstorder_RootMeanSquared	0.613	0.014
log-sigma-2-5-mm-3D_glrlm_LowGrayLevelRunEmphasis	0.649	0.014
log-sigma-2-5-mm-3D_glrlm_HighGrayLevelRunEmphasis	0.649	0.014
log-sigma-3-5-mm-3D_glcm_DifferenceEntropy	0.648	0.014
log-sigma-2-5-mm-3D_firstorder_Median	0.646	0.014
log-sigma-0-5-mm-3D_glcm_ClusterShade	0.65	0.015
log-sigma-2-5-mm-3D_glszm_GrayLevelNonUniformity	0.732	0.015
log-sigma-3-5-mm-3D_gldm_GrayLevelVariance	0.66	0.015
log-sigma-3-5-mm-3D_firstorder_Uniformity	0.66	0.015
wavelet-HLL_glszm_GrayLevelNonUniformity	0.639	0.016
wavelet-LHL_gldm_LowGrayLevelEmphasis	0.626	0.016
wavelet-LHL_gldm_HighGrayLevelEmphasis	0.626	0.016
wavelet-LHL_gldm_LargeDependenceLowGrayLevelEmphasis	0.641	0.016
wavelet-HLH_firstorder_10Percentile	0.626	0.016
log-sigma-4-5-mm-3D_glrlm_GrayLevelVariance	0.65	0.017
log-sigma-4-5-mm-3D_glrlm_GrayLevelNonUniformityNormalized	0.65	0.017
wavelet-LHL_ngtdm_Busyness	0.727	0.018
log-sigma-4-5-mm-3D_ngtdm_Strength	0.612	0.018
log-sigma-4-5-mm-	0.627	0.018

3D_gldm_LargeDependenceLowGrayLevelEmphasis		
log-sigma-3-5-mm-3D_firstorder_RootMeanSquared	0.642	0.019
wavelet-LHL_firstorder_Median	0.578	0.019
wavelet-LHL_glrlm_GrayLevelNonUniformityNormalized	0.644	0.021
wavelet-LHL_glrlm_GrayLevelVariance	0.644	0.021
log-sigma-2-5-mm-3D_gldm_DependenceNonUniformityNormalized	0.623	0.021
wavelet-HHL_firstorder_Variance	0.578	0.021
log-sigma-4-5-mm-3D_glcm_DifferenceEntropy	0.659	0.021
log-sigma-4-5-mm-3D_glcm_MaximumProbability	0.671	0.022
wavelet-LLL_glszm_LargeAreaHighGrayLevelEmphasis	0.726	0.022
log-sigma-3-5-mm-3D_firstorder_90Percentile	0.67	0.022
logarithm_firstorder_Kurtosis	0.562	0.022
wavelet-LLH_glcm_ClusterTendency	0.713	0.022
squareroot_glszm_ZoneEntropy	0.634	0.022
logarithm_glszm_ZoneEntropy	0.634	0.022
original_glszm_ZoneEntropy	0.634	0.022
wavelet-LHL_ngtdm_Complexity	0.531	0.022
log-sigma-2-5-mm-3D_glcm_DifferenceVariance	0.651	0.023
log-sigma-3-5-mm-3D_glcm_DifferenceVariance	0.649	0.023
wavelet-LLH_glszm_GrayLevelNonUniformity	0.699	0.023

wavelet-LLH_firstorder_Minimum	0.637	0.023
wavelet-LHL_firstorder_MeanAbsoluteDeviation	0.598	0.023
log-sigma-4-5-mm-3D_glcm_SumEntropy	0.676	0.023
log-sigma-0-5-mm-3D_firstorder_RootMeanSquared	0.602	0.023
log-sigma-4-5-mm-3D_glcm_JointEntropy	0.676	0.023
log-sigma-1-5-mm-3D_glszm_GrayLevelNonUniformity	0.705	0.023
wavelet-HLH_firstorder_RobustMeanAbsoluteDeviation	0.633	0.024
log-sigma-0-5-mm-3D_glszm_GrayLevelNonUniformity	0.62	0.024
exponential_firstorder_TotalEnergy	0.736	0.024
exponential_firstorder_Energy	0.736	0.024
log-sigma-4-5-mm-3D_glrlm_GrayLevelNonUniformity	0.724	0.024
wavelet-LLL_glszm_ZoneVariance	0.722	0.025
log-sigma-3-5-mm-3D_ngtdm_Strength	0.651	0.025
wavelet-HHH_glszm_HighGrayLevelZoneEmphasis	0.632	0.026
wavelet-HHH_glszm_LowGrayLevelZoneEmphasis	0.632	0.026
log-sigma-3-5-mm-3D_glcm_Idn	0.648	0.026
log-sigma-3-5-mm-3D_glcm_Id	0.648	0.026
log-sigma-3-5-mm-3D_glcm_Idm	0.648	0.026
log-sigma-3-5-mm-3D_glcm_DifferenceAverage	0.648	0.026
log-sigma-3-5-mm-3D_glcm_Contrast	0.648	0.026

log-sigma-3-5-mm-3D_glcm_InverseVariance	0.648	0.026
log-sigma-3-5-mm-3D_glcm_Idmn	0.648	0.026
wavelet-HLL_glcm_Idmn	0.57	0.026
wavelet-HLL_glcm_Id	0.57	0.026
wavelet-HLL_glcm_Idm	0.57	0.026
wavelet-HLL_glcm_Idn	0.57	0.026
wavelet-HLL_glcm_Contrast	0.57	0.026
wavelet-HLL_glcm_InverseVariance	0.57	0.026
wavelet-HLL_glcm_DifferenceAverage	0.57	0.026
wavelet-LLL_glrlm_GrayLevelNonUniformity	0.728	0.026
log-sigma-2-5-mm-3D_firstorder_Minimum	0.664	0.026
wavelet-LLL_glszm_LargeAreaEmphasis	0.714	0.027
log-sigma-1-5-mm-3D_ngtdm_Strength	0.716	0.027
log-sigma-3-5-mm-3D_gldm_DependenceVariance	0.673	0.027
original_glrlm_GrayLevelNonUniformity	0.724	0.027
squareroot_glrlm_GrayLevelNonUniformity	0.724	0.027
logarithm_glrlm_GrayLevelNonUniformity	0.724	0.027
log-sigma-0-5-mm-3D_gldm_LargeDependenceEmphasis	0.597	0.027
wavelet-LHL_glcm_SumEntropy	0.611	0.028
log-sigma-1-5-mm-3D_glrlm_LongRunLowGrayLevelEmphasis	0.615	0.028

wavelet-LHL_glcm_ClusterShade	0.617	0.029
log-sigma-0-5-mm-3D_firstorder_TotalEnergy	0.708	0.029
log-sigma-0-5-mm-3D_firstorder_Energy	0.708	0.029
log-sigma-2-5-mm-3D_gldm_DependenceNonUniformity	0.737	0.029
log-sigma-3-5-mm-3D_glrlm_GrayLevelNonUniformity	0.718	0.029
log-sigma-4-5-mm-3D_glcm_JointEnergy	0.671	0.030
log-sigma-2-5-mm-3D_glcm_Idn	0.651	0.030
log-sigma-2-5-mm-3D_glcm_Idm	0.651	0.030
log-sigma-2-5-mm-3D_glcm_Id	0.651	0.030
log-sigma-2-5-mm-3D_glcm_DifferenceAverage	0.651	0.030
log-sigma-2-5-mm-3D_glcm_Contrast	0.651	0.030
log-sigma-2-5-mm-3D_glcm_InverseVariance	0.651	0.030
log-sigma-2-5-mm-3D_glcm_Idmn	0.651	0.030
wavelet-LLL_glszm_ZoneEntropy	0.606	0.030
wavelet-HHL_firstorder_90Percentile	0.582	0.031
log-sigma-2-5-mm-3D_glszm_SmallAreaLowGrayLevelEmphasis	0.614	0.031
wavelet-HLH_firstorder_InterquartileRange	0.63	0.031
log-sigma-0-5-mm-3D_gldm_DependenceEntropy	0.615	0.031
log-sigma-4-5-mm-3D_glcm_SumSquares	0.674	0.031
log-sigma-2-5-mm-3D_glszm_GrayLevelNonUniformityNormalized	0.632	0.031

log-sigma-2-5-mm-3D_glszm_GrayLevelVariance	0.632	0.031
log-sigma-3-5-mm-3D_ngtdm_Complexity	0.651	0.031
log-sigma-4-5-mm-3D_glcm_ClusterTendency	0.675	0.032
wavelet-HHH_glrlm_GrayLevelNonUniformityNormalized	0.649	0.032
wavelet-HHH_glrlm_GrayLevelVariance	0.649	0.032
log-sigma-1-5-mm-3D_gldm_GrayLevelNonUniformity	0.728	0.034
log-sigma-3-5-mm-3D_glszm_SizeZoneNonUniformity	0.667	0.034
log-sigma-4-5-mm-3D_firstorder_Entropy	0.665	0.034
log-sigma-4-5-mm-3D_glcm_DifferenceVariance	0.659	0.034
original_glszm_SmallAreaLowGrayLevelEmphasis	0.598	0.035
squareroot_glszm_SmallAreaLowGrayLevelEmphasis	0.598	0.035
logarithm_glszm_SmallAreaLowGrayLevelEmphasis	0.598	0.035
log-sigma-2-5-mm-3D_ngtdm_Complexity	0.635	0.035
wavelet-HHL_firstorder_RootMeanSquared	0.58	0.036
wavelet-HLL_firstorder_Variance	0.609	0.036
wavelet-HHL_firstorder_TotalEnergy	0.702	0.036
wavelet-HHL_firstorder_Energy	0.702	0.036
log-sigma-1-5-mm-3D_gldm_SmallDependenceHighGrayLevelEmphasis	0.628	0.037
squareroot_firstorder_Minimum	0.579	0.037

wavelet-LLH_glszm_ZoneEntropy	0.611	0.037
log-sigma-4-5-mm-3D_glcm_Idmn	0.659	0.037
log-sigma-4-5-mm-3D_glcm_Id	0.659	0.037
log-sigma-4-5-mm-3D_glcm_Idm	0.659	0.037
log-sigma-4-5-mm-3D_glcm_Idn	0.659	0.037
log-sigma-4-5-mm-3D_glcm_InverseVariance	0.659	0.037
log-sigma-4-5-mm-3D_glcm_Contrast	0.659	0.037
log-sigma-4-5-mm-3D_glcm_DifferenceAverage	0.659	0.037
wavelet-LHH_glszm_ZoneEntropy	0.6	0.037
wavelet-LHL_glcm_ClusterProminence	0.628	0.037
wavelet-LHL_firstorder_Energy	0.69	0.038
wavelet-LHL_firstorder_TotalEnergy	0.69	0.038
wavelet-HHH_gldm_DependenceNonUniformityNormalized	0.652	0.038
wavelet-LLH_gldm_DependenceNonUniformity	0.742	0.038
log-sigma-3-5-mm-3D_gldm_LargeDependenceLowGrayLevelEmphasis	0.589	0.039
log-sigma-0-5-mm-3D_gldm_GrayLevelNonUniformity	0.737	0.039
exponential_firstorder_Minimum	0.591	0.039
wavelet-HLH_glrlm_GrayLevelVariance	0.69	0.039
wavelet-HLH_glrlm_GrayLevelNonUniformityNormalized	0.69	0.039

log-sigma-3-5-mm-3D_ngtdm_Coarseness	0.724	0.042
wavelet-HLL_gldm_GrayLevelNonUniformity	0.731	0.043
log-sigma-3-5-mm-3D_glszm_SmallAreaHighGrayLevelEmphasis	0.597	0.043
wavelet-LLL_glszm_GrayLevelVariance	0.595	0.043
wavelet-LLL_glszm_GrayLevelNonUniformityNormalized	0.595	0.043
wavelet-LLL_glrlm_ShortRunLowGrayLevelEmphasis	0.612	0.043
wavelet-LLH_glrlm_RunLengthNonUniformity	0.715	0.043
wavelet-LLH_glrlm_GrayLevelNonUniformity	0.729	0.043
wavelet-LHL_gldm_GrayLevelNonUniformity	0.731	0.044
wavelet-LHH_glrlm_RunLengthNonUniformity	0.731	0.044
wavelet-LLH_glcm_Autocorrelation	0.67	0.044
log-sigma-4-5-mm-3D_gldm_GrayLevelVariance	0.665	0.044
log-sigma-4-5-mm-3D_firstorder_Uniformity	0.665	0.044
exponential_firstorder_InterquartileRange	0.617	0.044
wavelet-HHL_gldm_GrayLevelNonUniformity	0.731	0.045
wavelet-LHH_gldm_GrayLevelNonUniformity	0.731	0.045
original_shape_MeshVolume	0.731	0.045
square_gldm_GrayLevelNonUniformity	0.731	0.045
exponential_gldm_GrayLevelNonUniformity	0.731	0.045
original_shape_VoxelVolume	0.731	0.045

wavelet-HHH_gldm_GrayLevelNonUniformity	0.731	0.045
wavelet-HLH_gldm_GrayLevelNonUniformity	0.731	0.045
wavelet-LHH_glrlm_GrayLevelNonUniformity	0.731	0.045
log-sigma-3-5-mm-3D_glszm_GrayLevelNonUniformityNormalized	0.597	0.045
log-sigma-3-5-mm-3D_glszm_GrayLevelVariance	0.597	0.045
log-sigma-2-5-mm-3D_glrlm_GrayLevelNonUniformity	0.718	0.046
wavelet-LHL_glszm_SizeZoneNonUniformity	0.642	0.046
wavelet-HHH_ngtdm_Busyness	0.737	0.046
original_glszm_LargeAreaHighGrayLevelEmphasis	0.724	0.046
squareroot_glszm_LargeAreaHighGrayLevelEmphasis	0.724	0.046
logarithm_glszm_LargeAreaHighGrayLevelEmphasis	0.724	0.046
wavelet-LHL_glrlm_RunLengthNonUniformity	0.732	0.046
wavelet-LLH_gldm_GrayLevelNonUniformity	0.732	0.046
wavelet-HHL_gldm_DependenceNonUniformity	0.739	0.046
wavelet-HLL_firstorder_MeanAbsoluteDeviation	0.582	0.047
wavelet-LHH_gldm_DependenceNonUniformity	0.736	0.047
wavelet-HHH_glrlm_GrayLevelNonUniformity	0.726	0.047
wavelet-HHL_glrlm_GrayLevelNonUniformity	0.726	0.047
log-sigma-2-5-mm-3D_gldm_GrayLevelNonUniformity	0.724	0.047
log-sigma-4-5-mm-	0.571	0.047

3D_gldm_SmallDependenceHighGrayLevelEmphasis		
log-sigma-3-5-mm-3D_ngtdm_Contrast	0.656	0.047
square_gldm_DependenceNonUniformity	0.745	0.047
exponential_gldm_DependenceNonUniformity	0.745	0.047
wavelet-HLH_gldm_DependenceNonUniformity	0.74	0.047
wavelet-LHL_glrlm_GrayLevelNonUniformity	0.73	0.047
wavelet-HLH_ngtdm_Busyness	0.734	0.047
wavelet-HLH_glrlm_GrayLevelNonUniformity	0.735	0.048
log-sigma-2-5-mm-3D_ngtdm_Contrast	0.661	0.048
wavelet-HHH_glrlm_RunLengthNonUniformity	0.731	0.049
wavelet-LHH_ngtdm_Busyness	0.734	0.049
log-sigma-3-5-mm-3D_glcm_MCC	0.617	0.049
log-sigma-4-5-mm-3D_ngtdm_Complexity	0.646	0.049
wavelet-HHH_gldm_DependenceNonUniformity	0.737	0.050
wavelet-HHL_glrlm_RunLengthNonUniformity	0.736	0.050
log-sigma-3-5-mm-3D_gldm_DependenceNonUniformity	0.739	0.050

A total of 782 radiomic features presented significant differences between the programmed death ligand 1 immunohistochemical positive and negative groups

with a *p*-value of <0.05.

AUC, area under the curve.