

Supplementary Materials “C”:

Using Single Voxel Magnetic Resonance Spectroscopy Data Acquired at 1.5T to Classify Multivoxel Data at 3T: A Proof-of-concept Study

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4 Class

Legend of the next slides

Case ID (Grid Size)

Class. Balanced Error Rate (BER). Solid Tumor Index(STI)

MRI Patch

Nosological Image
Groundtruth

- Aggressive (agg)
- Meningioma (mm)
- Surrounding abnormal area
- Unaffected normal brain area

Nosological Image
Predicted

- Aggressive (agg)
- Meningioma (mm)
- Surrounding abnormal area
- Unaffected normal brain area

Area Under Curve
For Each Class
Nosological Image

Aggressive (agg)
overlaid spectra
(Red)

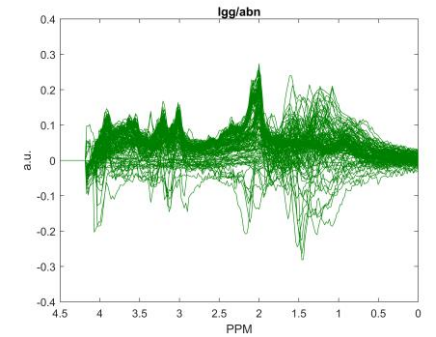
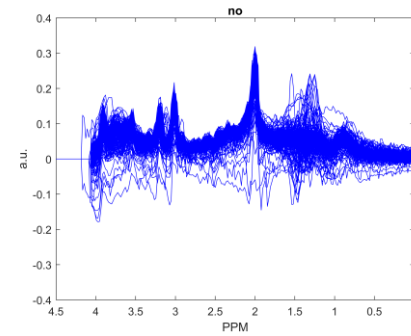
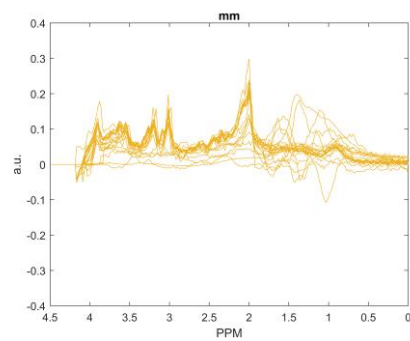
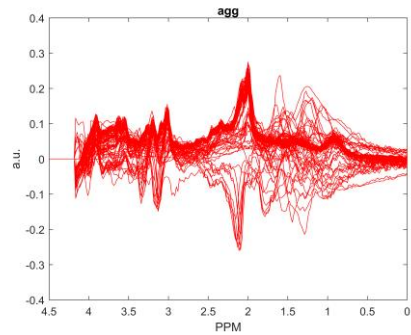
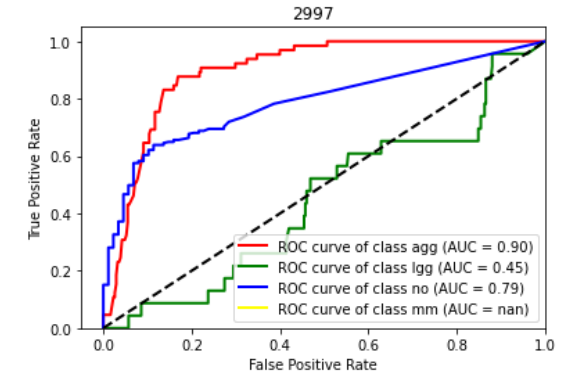
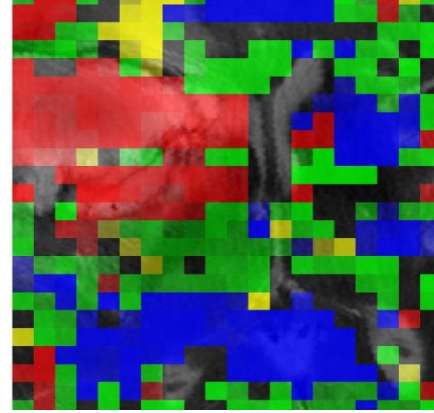
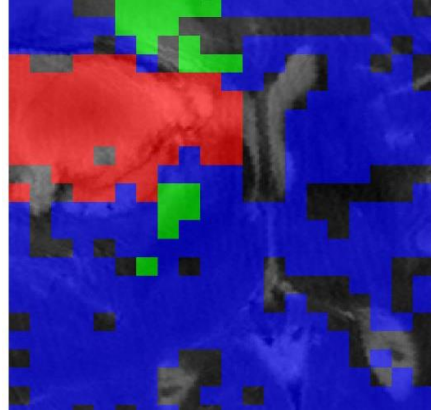
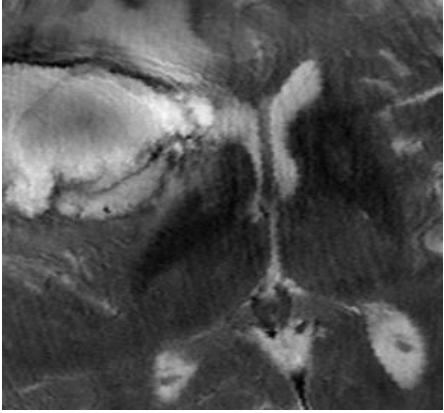
Meningioma (mm)
overlaid spectra
(Yellow)

Normal (no) overlaid
spectra
(Blue)

Low grade
glioma/abnormal
(lgg/abn) overlaid
spectra
(Green)

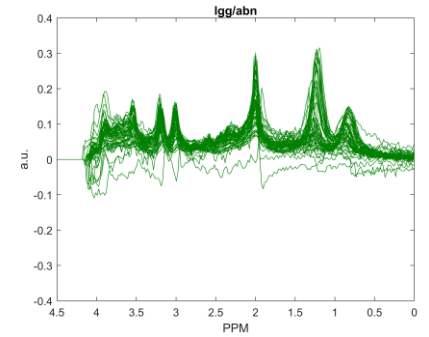
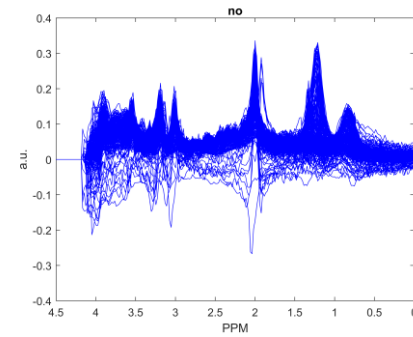
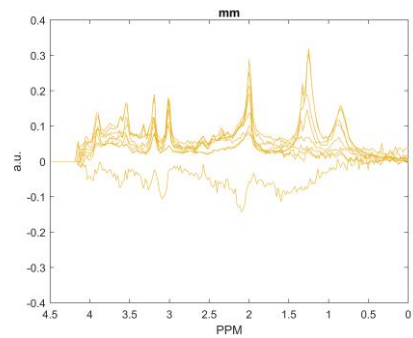
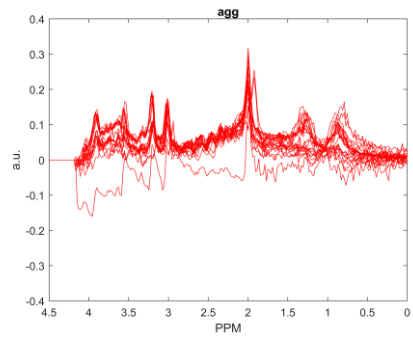
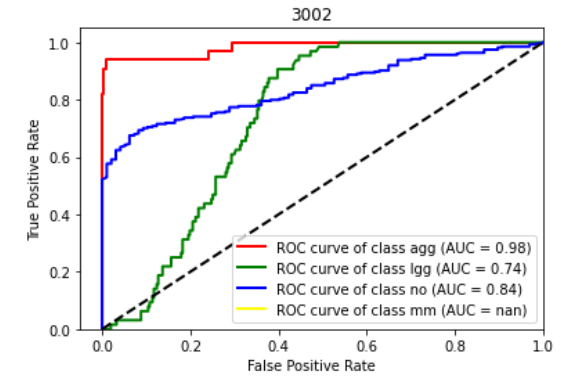
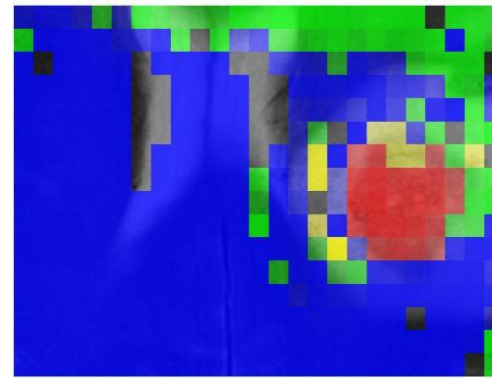
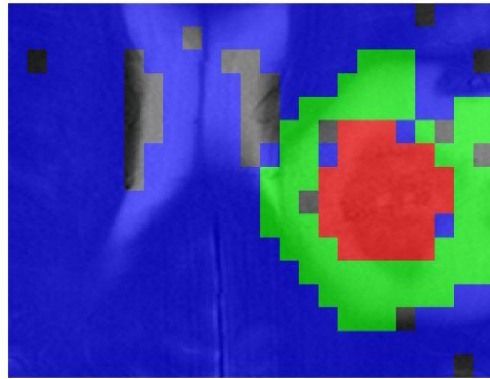
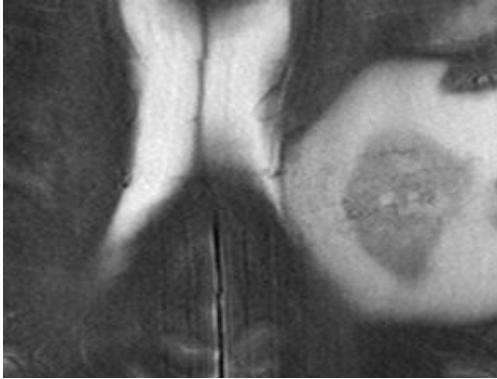
eT2997(20x24)

Glioblastoma. BER=0.47, STI=0.88



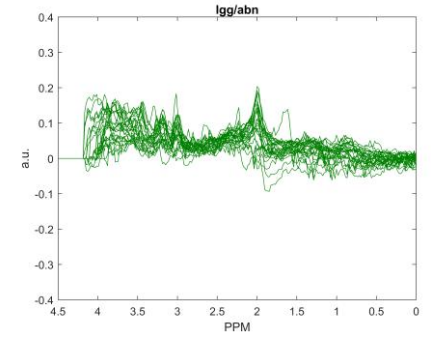
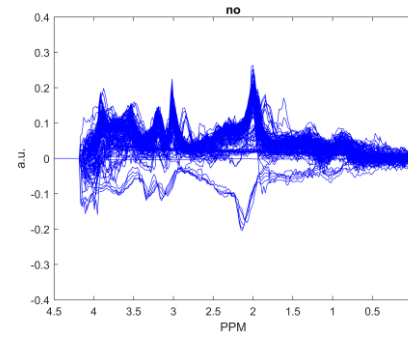
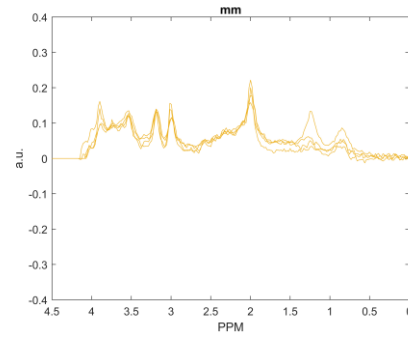
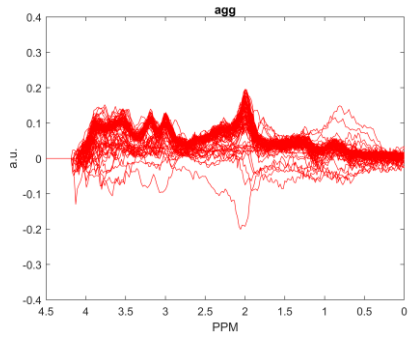
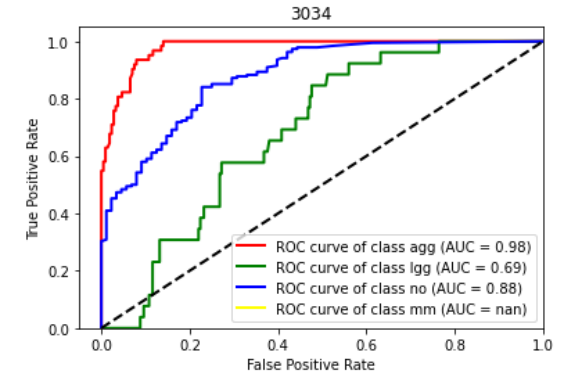
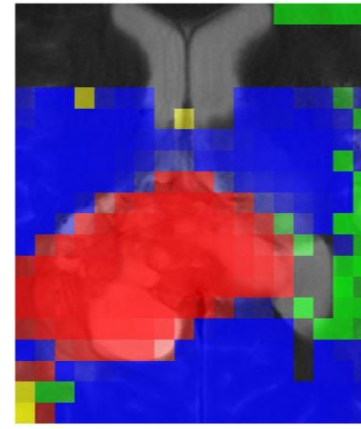
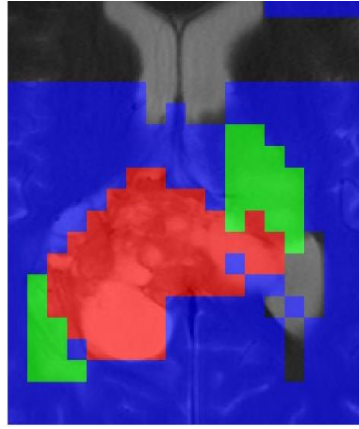
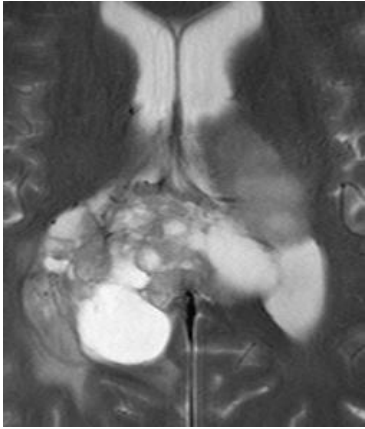
eT3002(25x16)

Glioblastoma. BER=0.39, STI=0.85



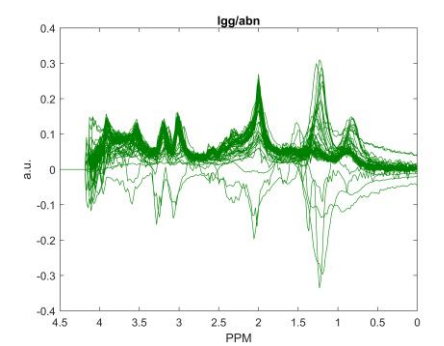
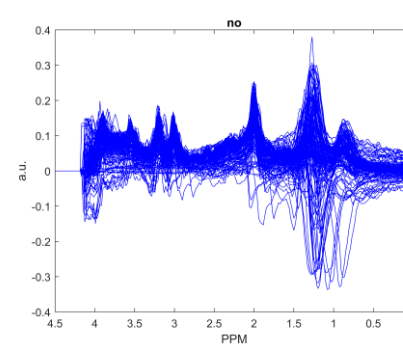
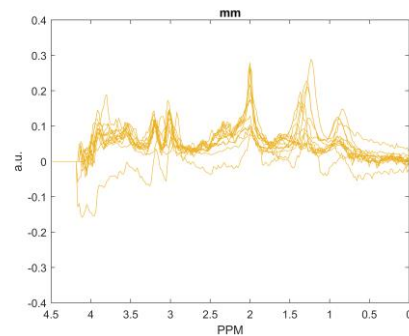
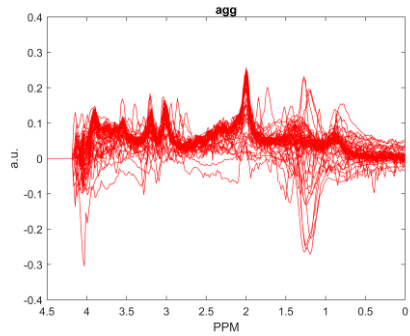
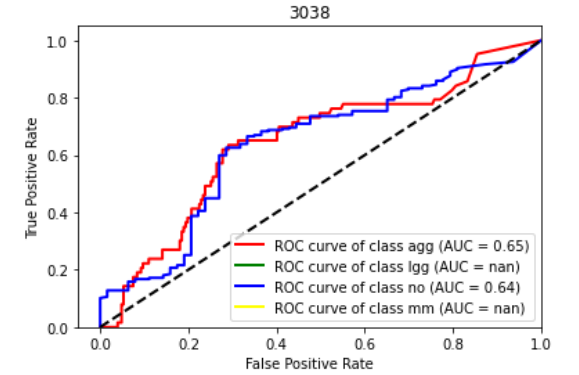
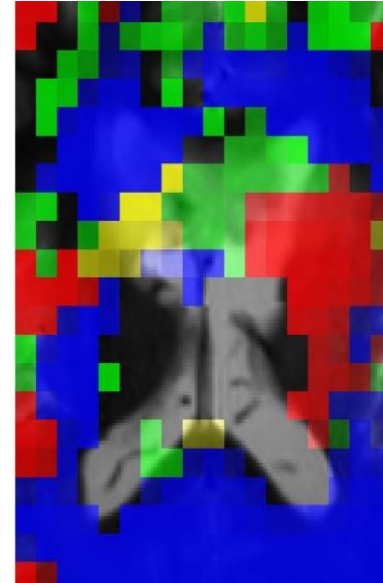
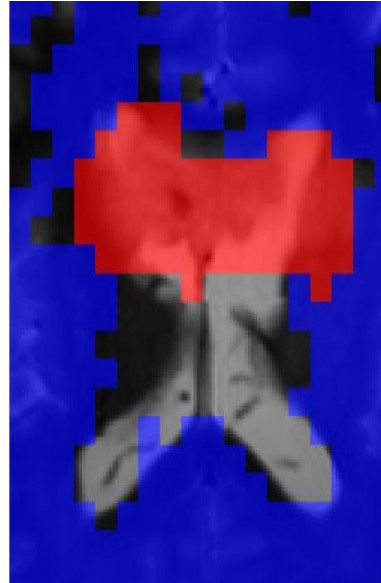
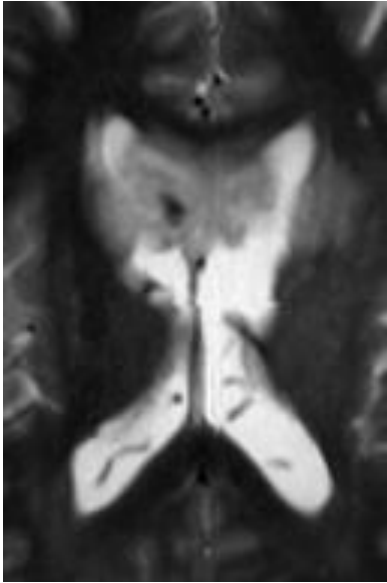
eT3034(18x20)

Glioblastoma. BER=0.38, STI=0.88



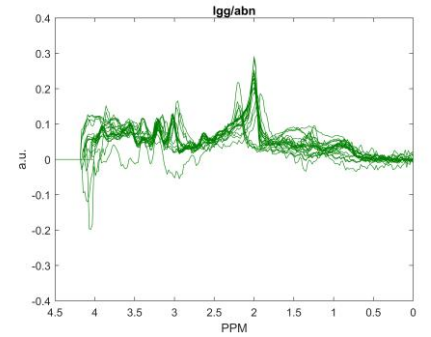
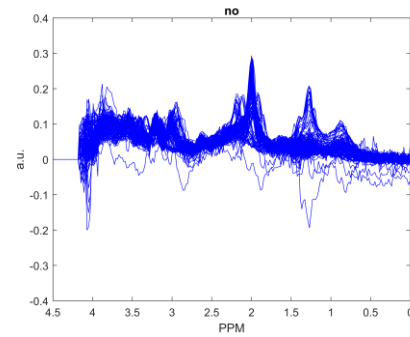
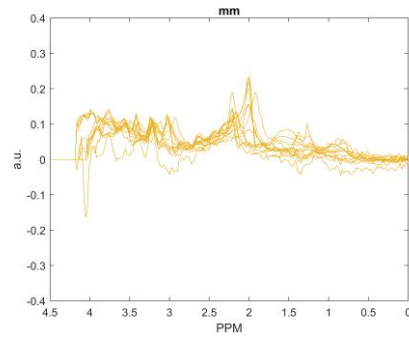
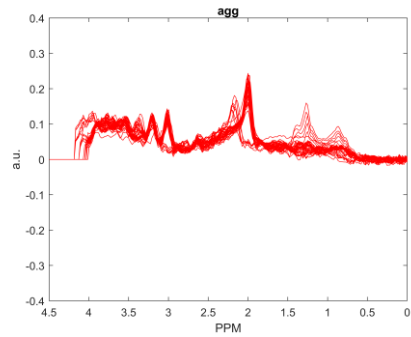
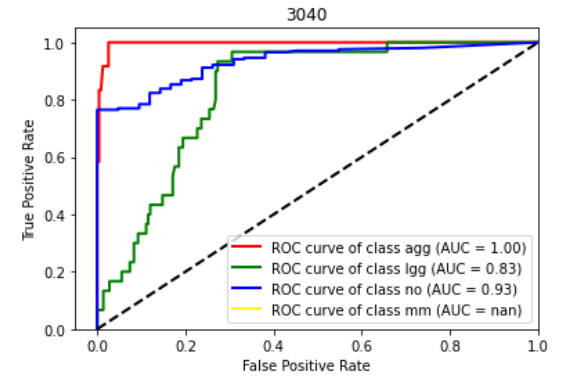
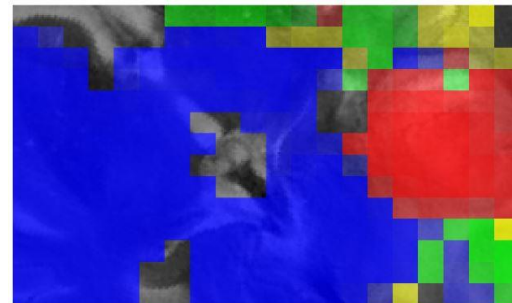
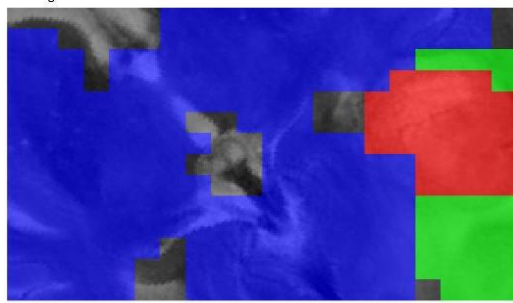
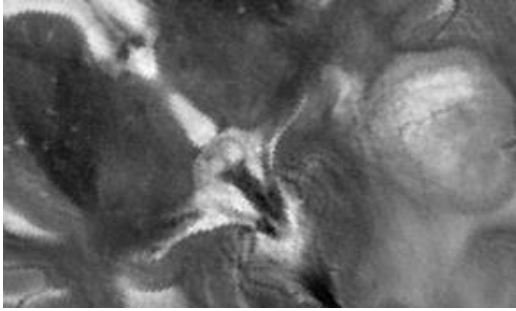
eT3038(18x21)

Glioblastoma. BER=0.56, STI=0.27



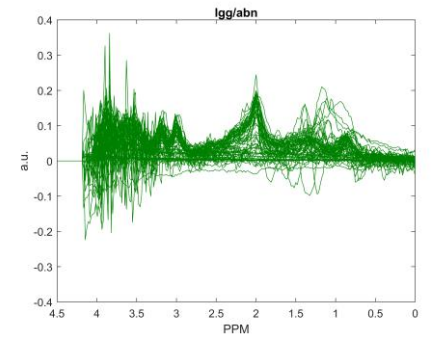
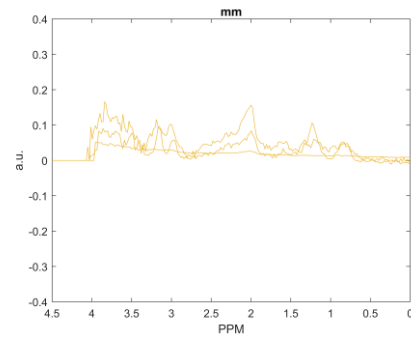
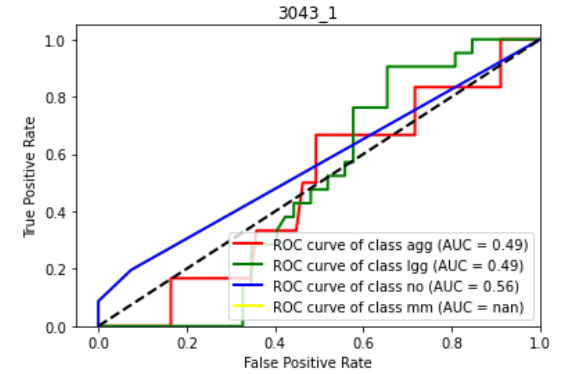
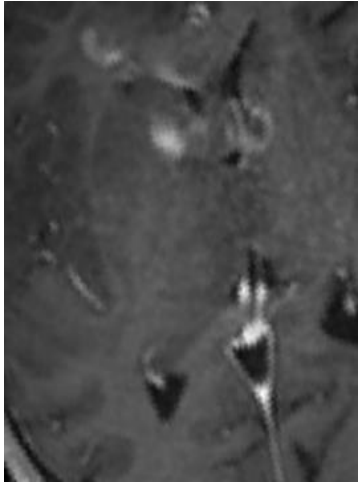
eT3040(20x14)

Glioblastoma. BER=0.33, STI=1.0



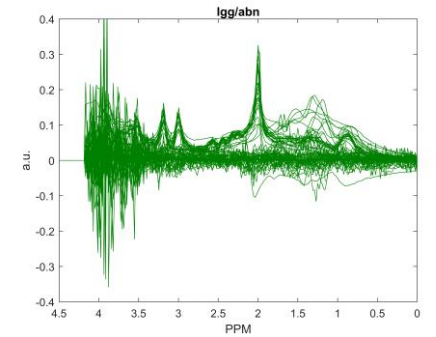
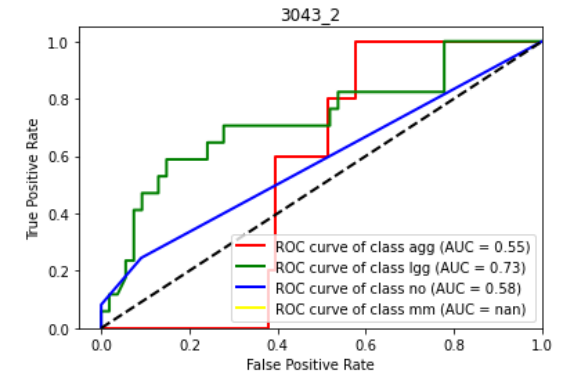
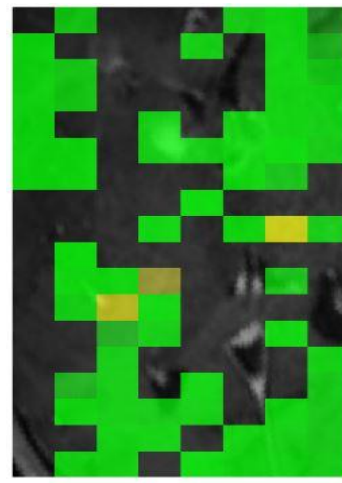
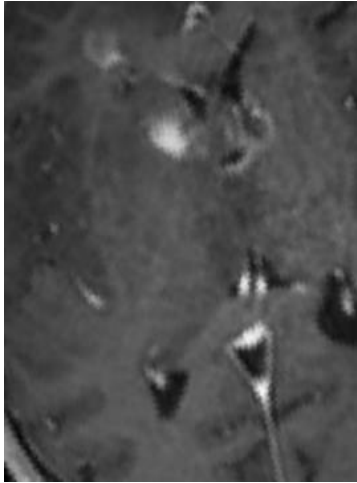
eT3043, S1(8x18)

Glioblastoma. BER=0.66, STI=0.5



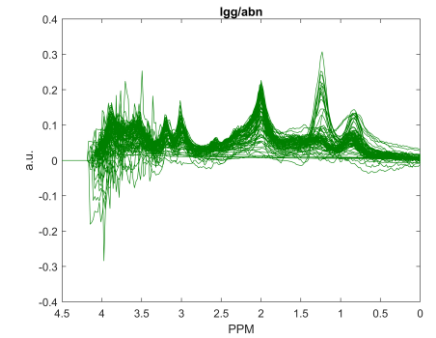
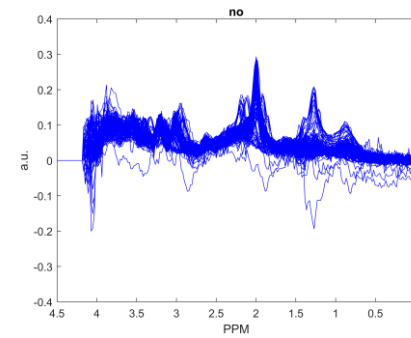
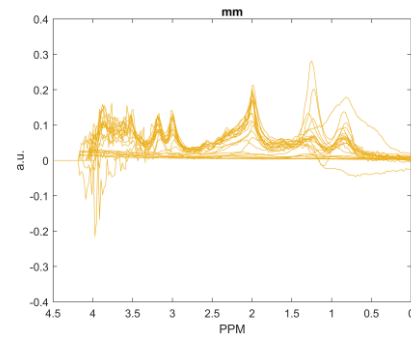
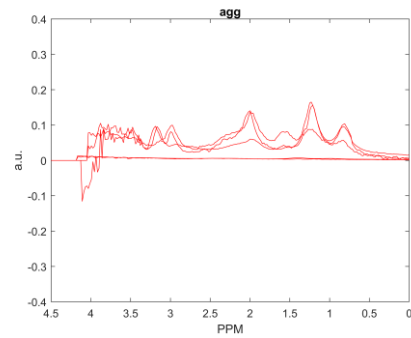
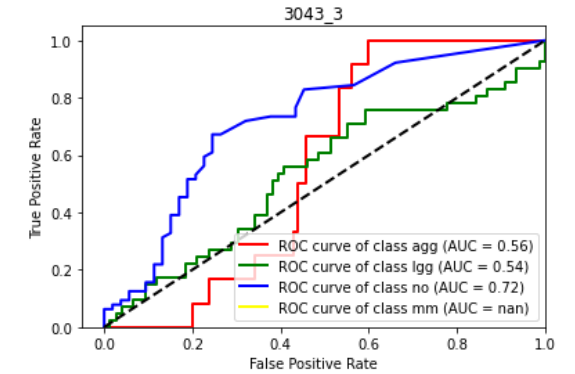
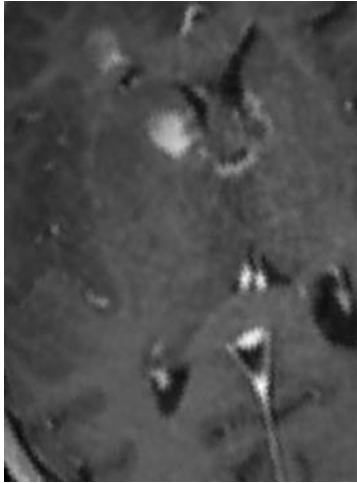
eT3043, S2(8x18)

Glioblastoma. BER=0.66, STI=0.5



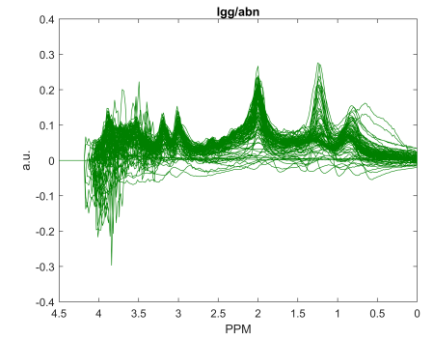
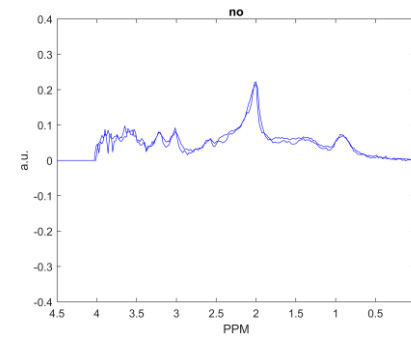
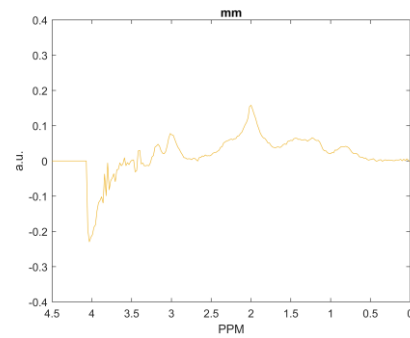
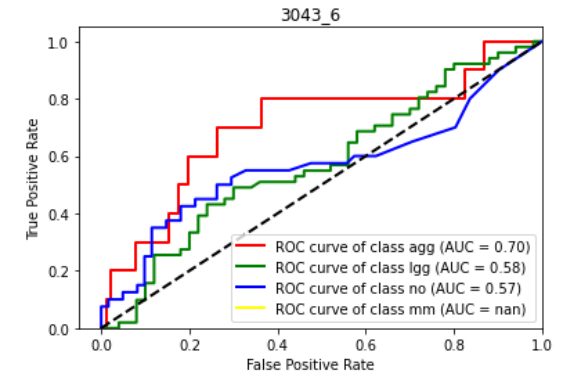
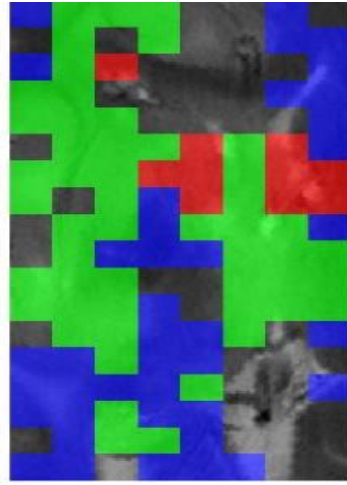
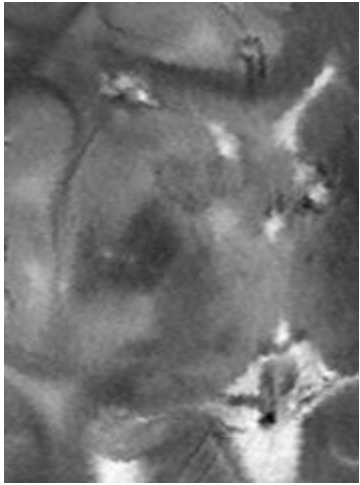
eT3043, S3(8x18)

Glioblastoma. BER=0.66, STI=0.5



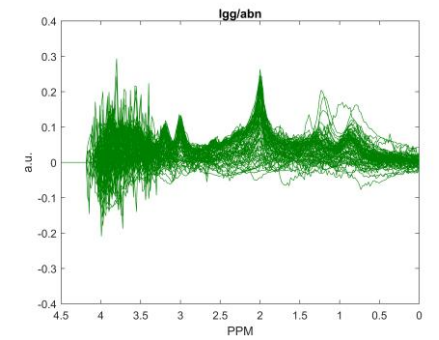
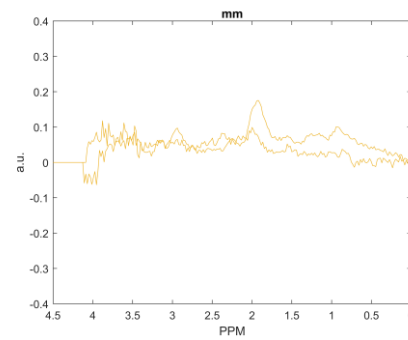
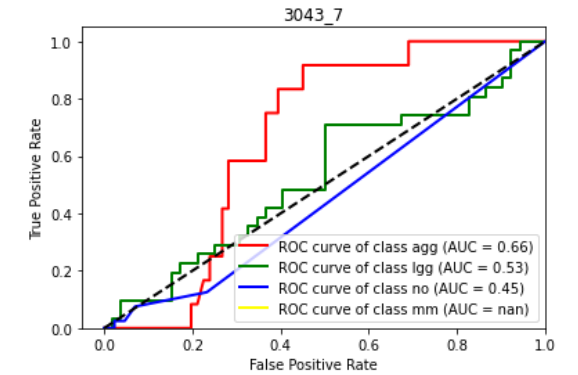
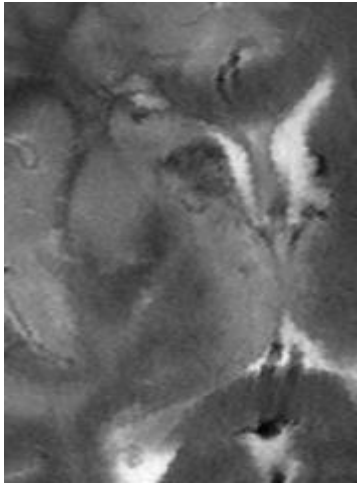
eT3043, S6(8x18)

Glioblastoma. BER=0.66, STI=0.5



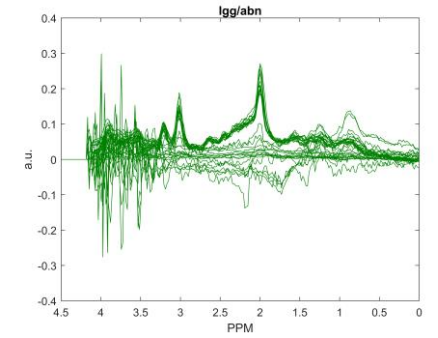
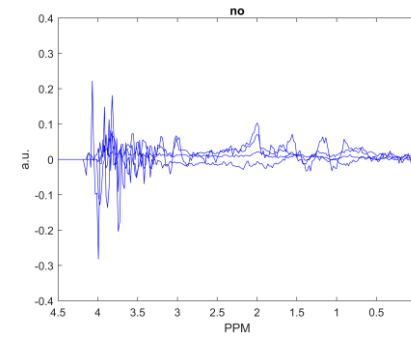
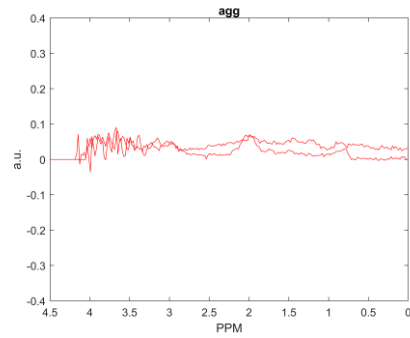
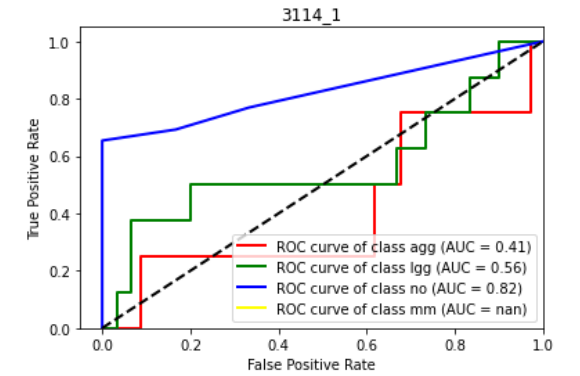
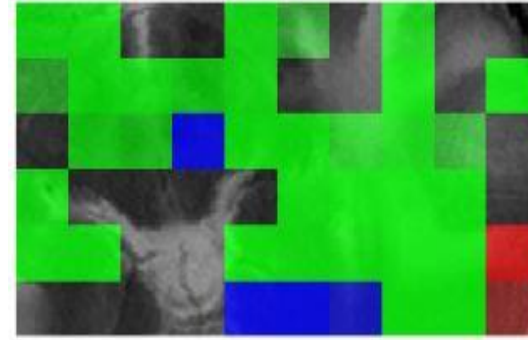
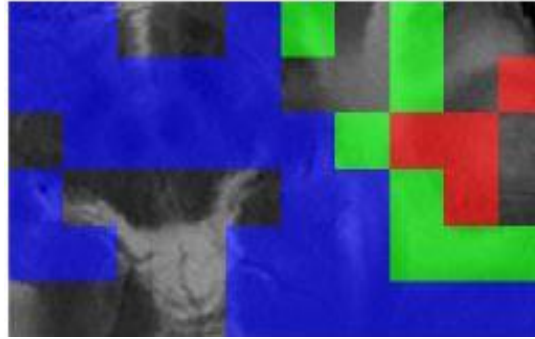
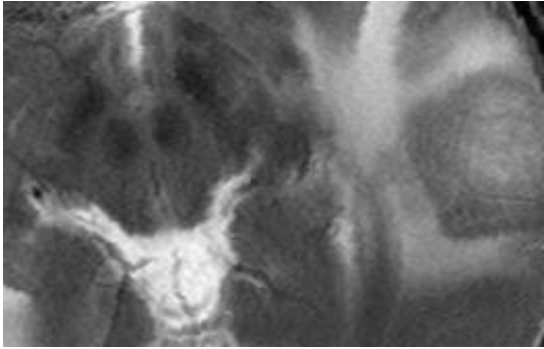
eT3043, S7(8x18)

Glioblastoma. BER=0.66, STI=0.5



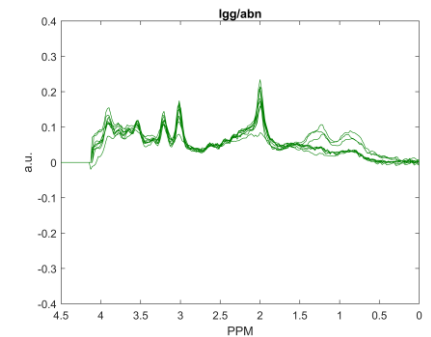
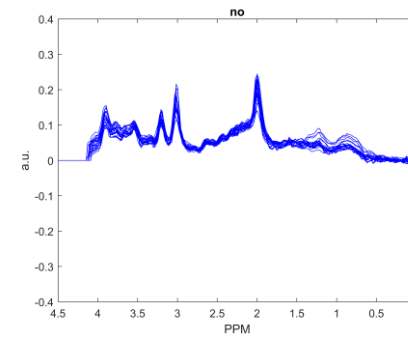
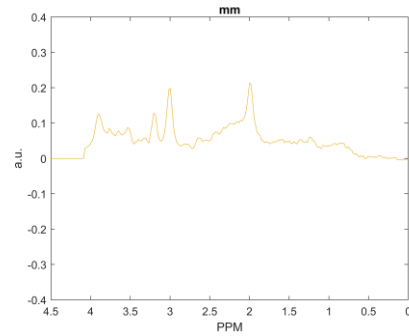
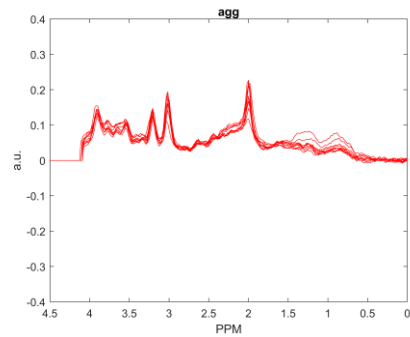
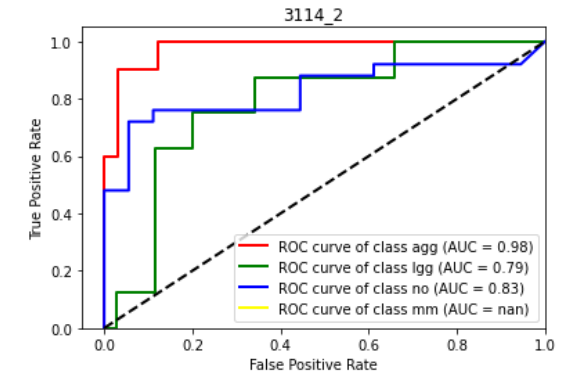
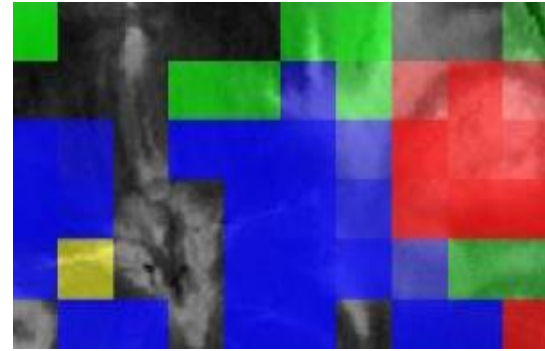
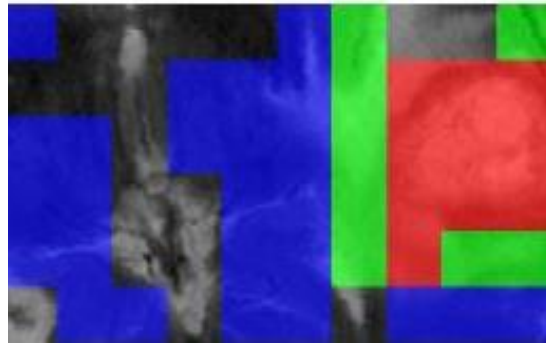
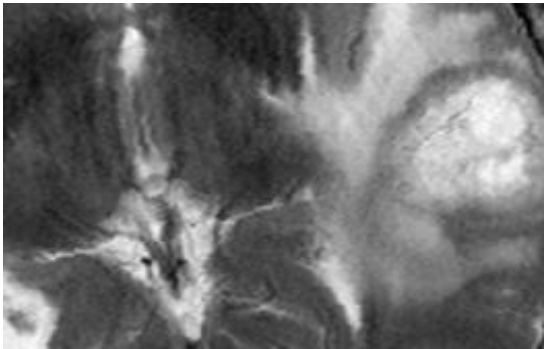
eT3114, S1(10x6)

Glioblastoma. BER=0.65, STI=0.87



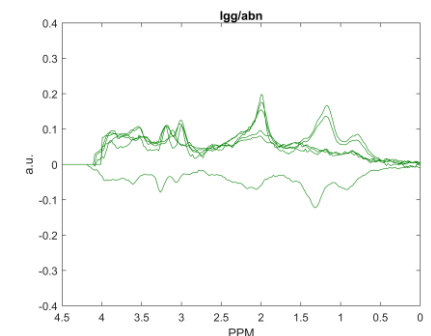
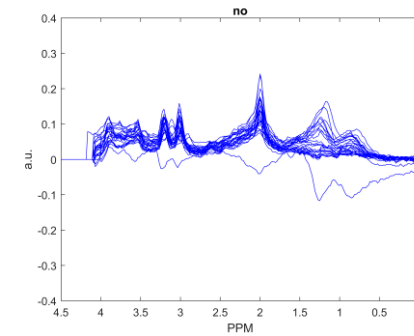
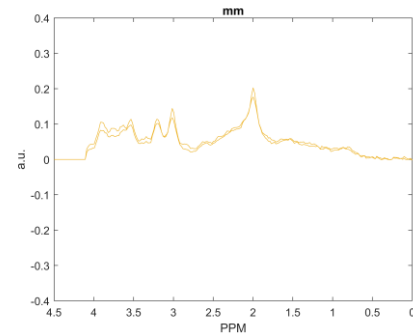
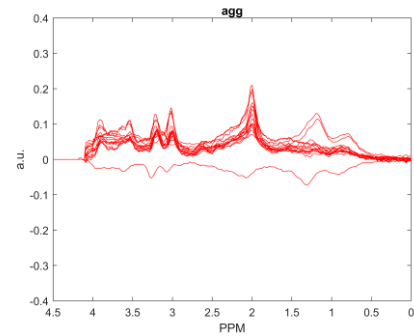
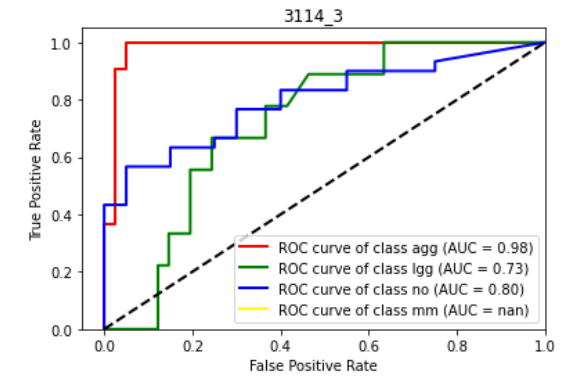
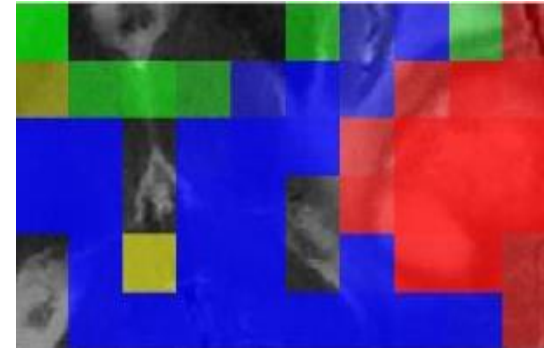
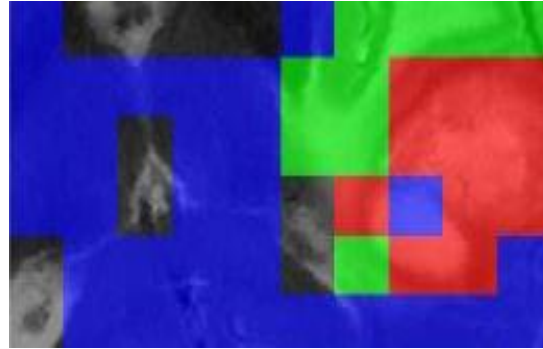
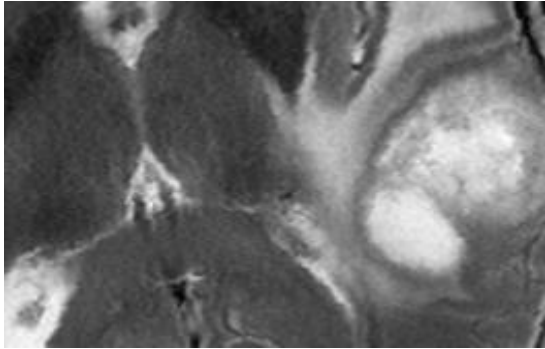
eT3114, S2(10x6)

Glioblastoma. BER=0.23, STI=0.87



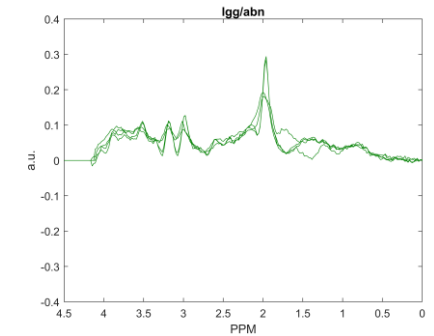
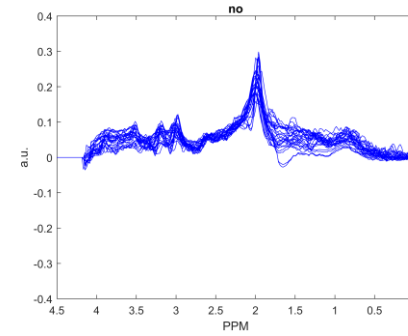
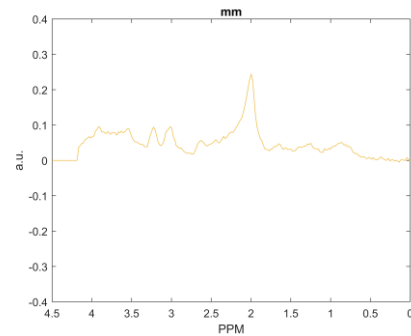
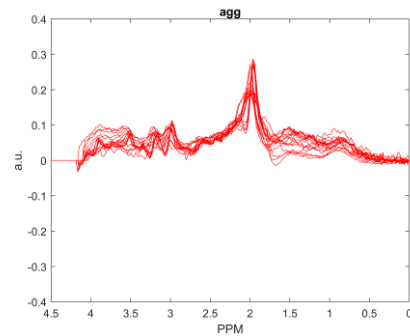
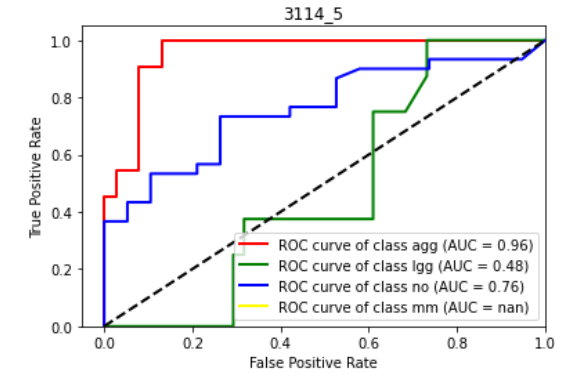
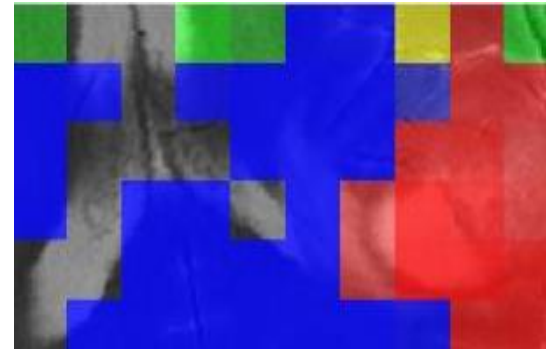
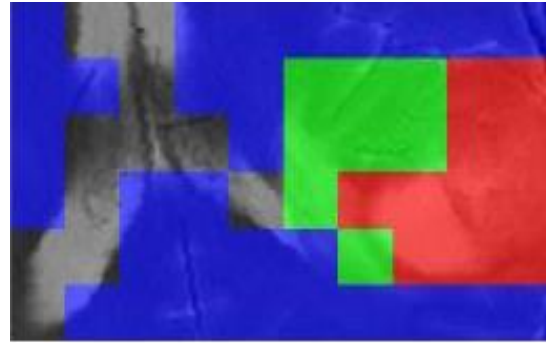
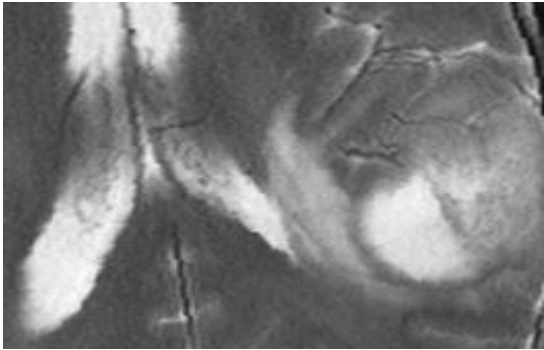
eT3114, S3(10x6)

Glioblastoma. BER=0.35, STI=0.87



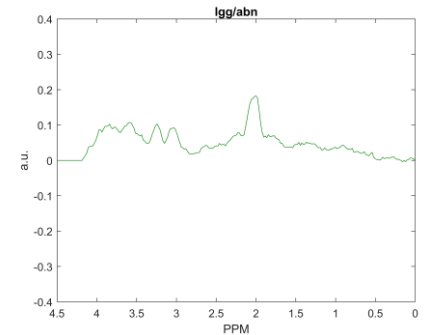
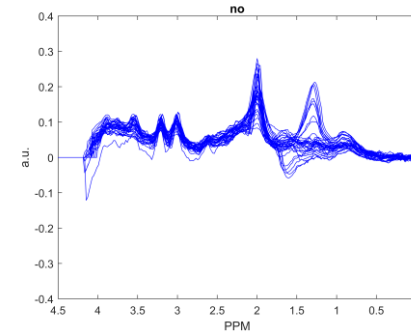
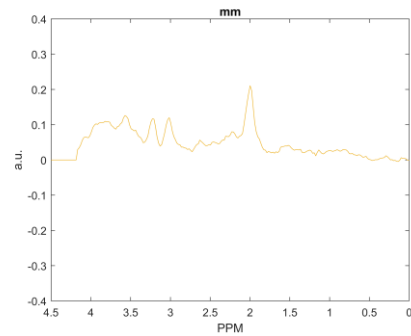
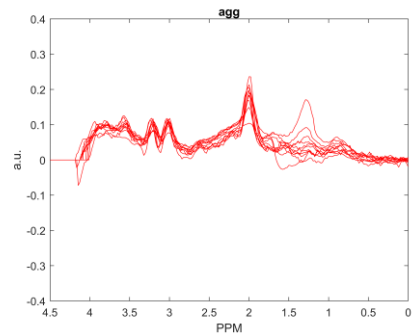
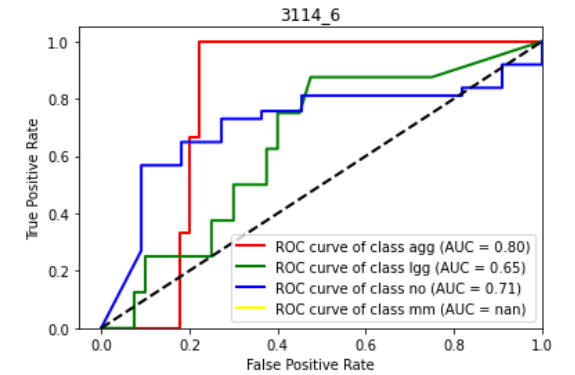
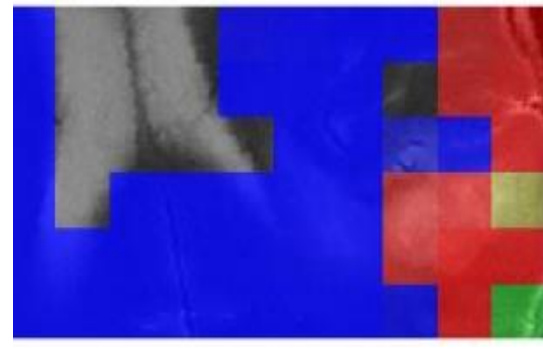
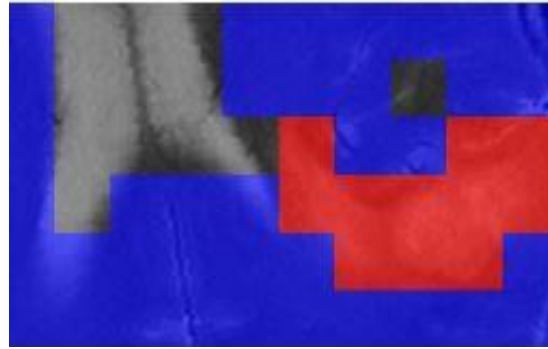
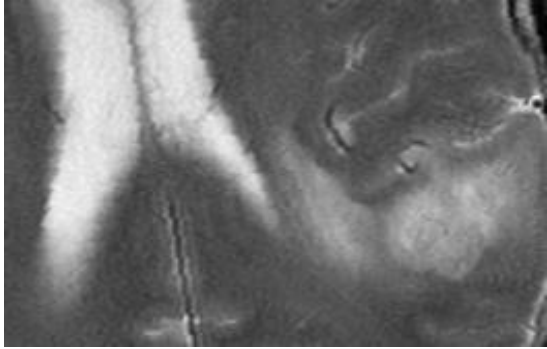
eT3114, S5(10x6)

Glioblastoma. BER=0.42, STI=0.87



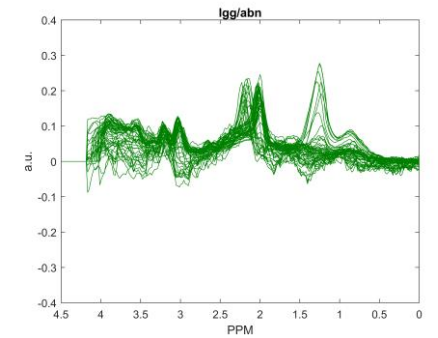
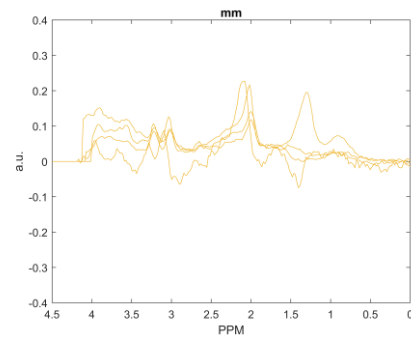
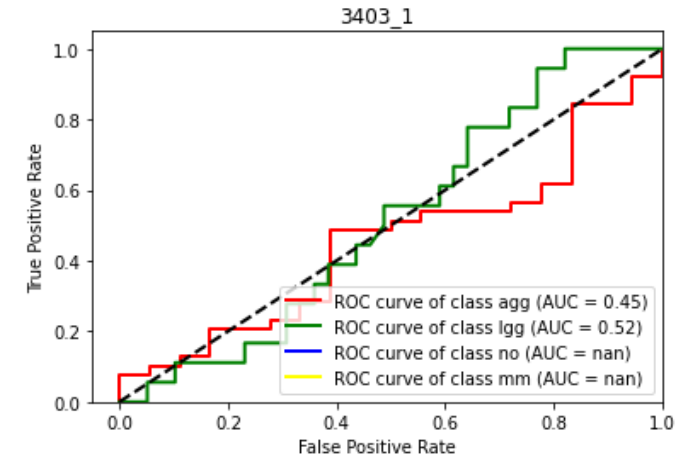
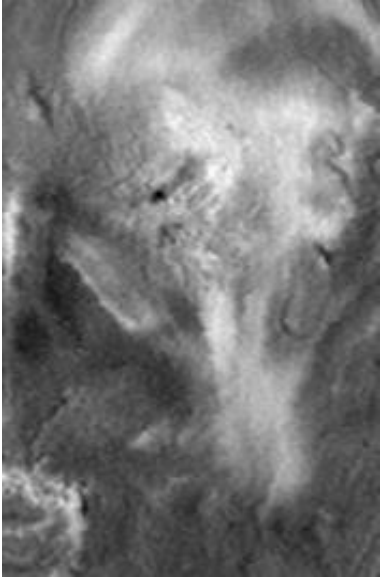
eT3114, S6(10x6)

Glioblastoma. BER=0.50, STI=0.87



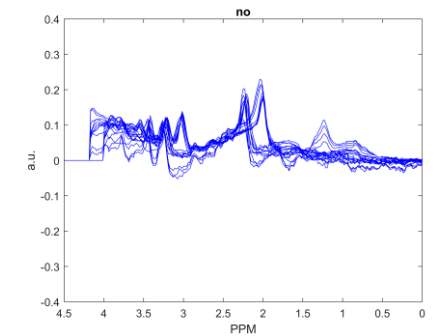
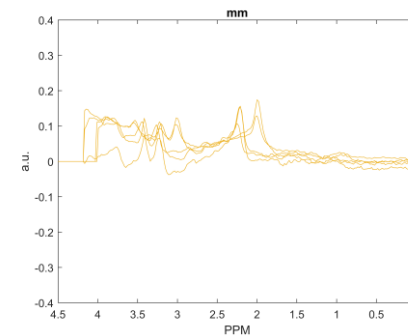
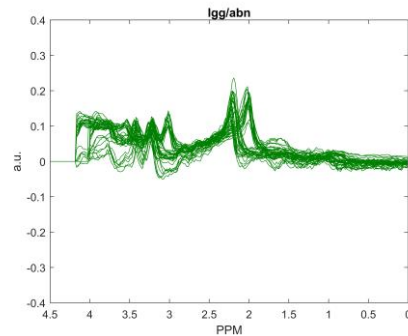
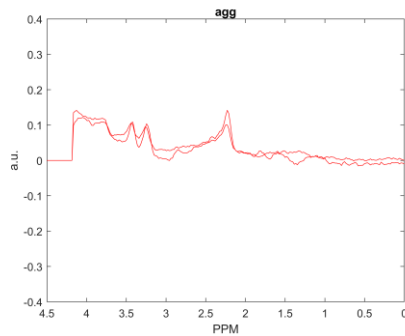
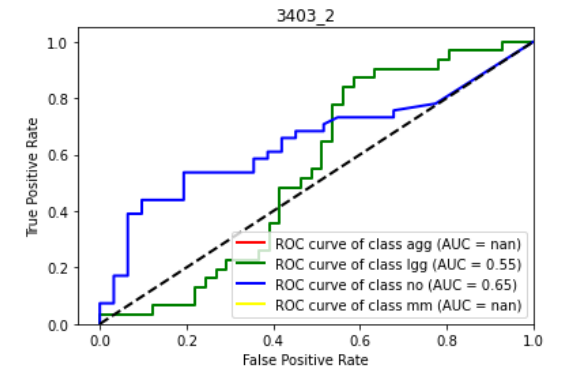
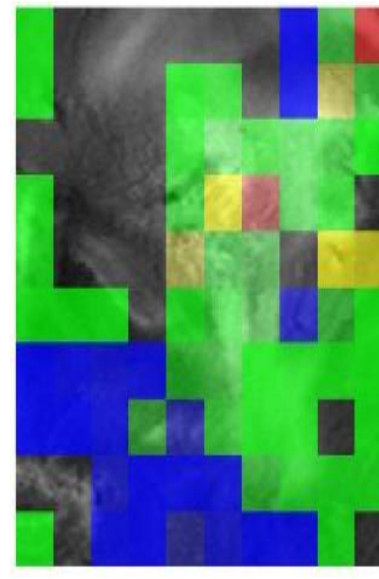
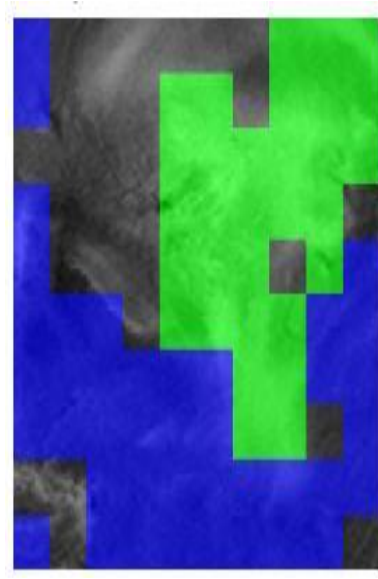
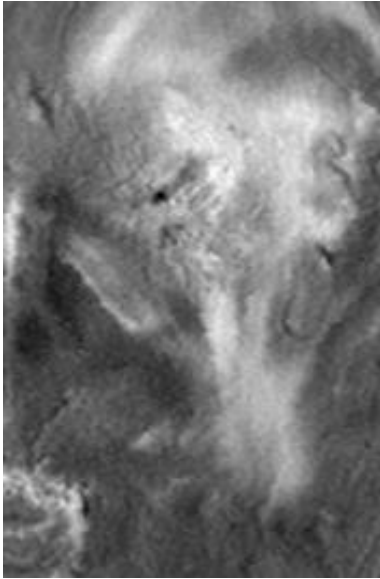
eT3403, S1(10x10)

Glioblastoma. BER=0.7, STI=0.2



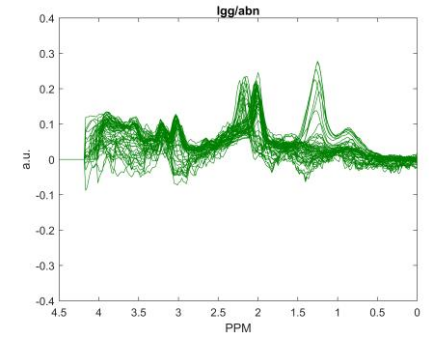
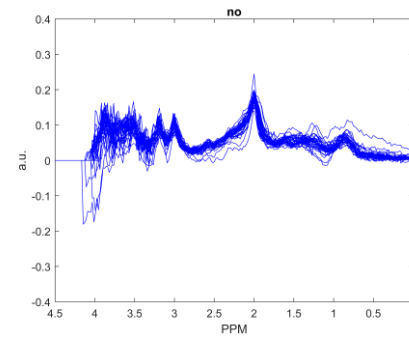
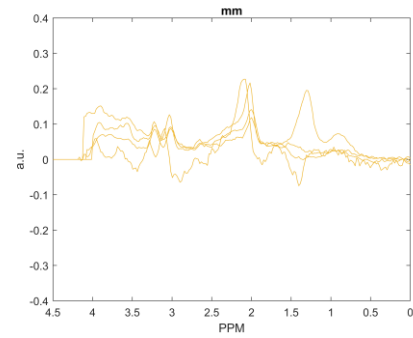
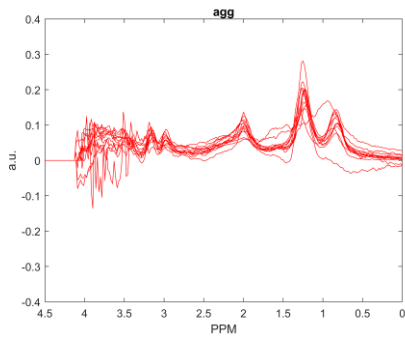
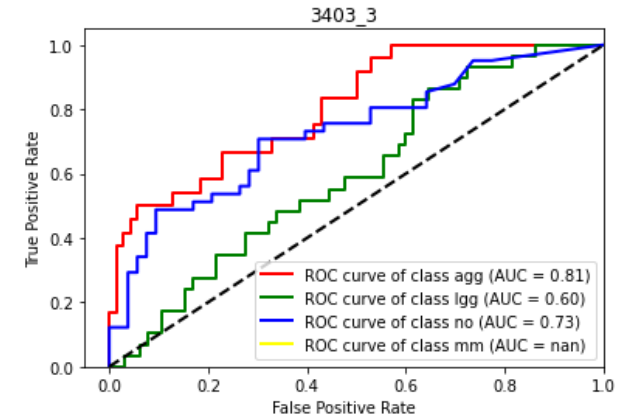
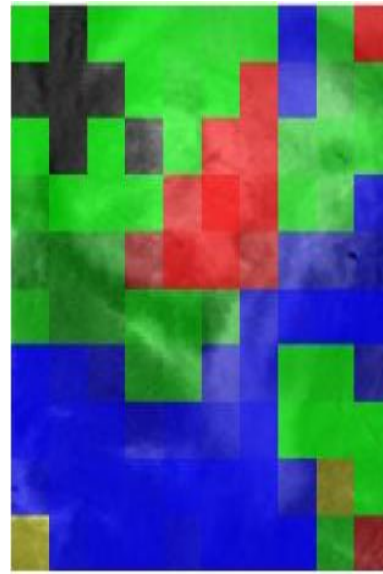
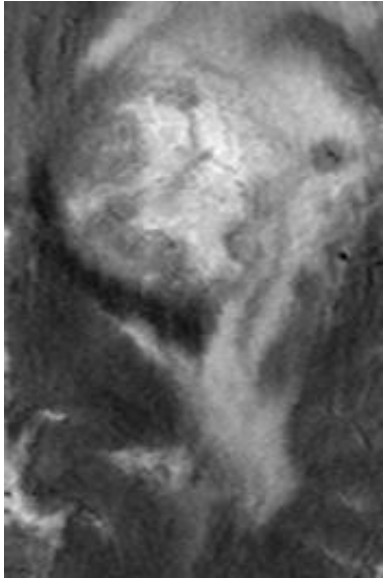
eT3403, S2(10x10)

Glioblastoma. BER=0.5, STI=0.7



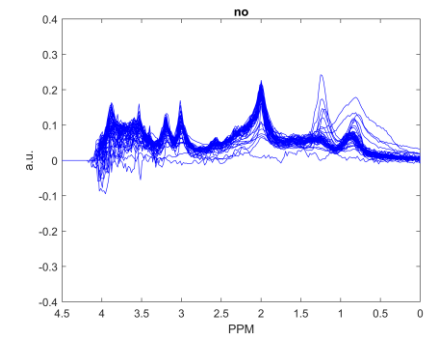
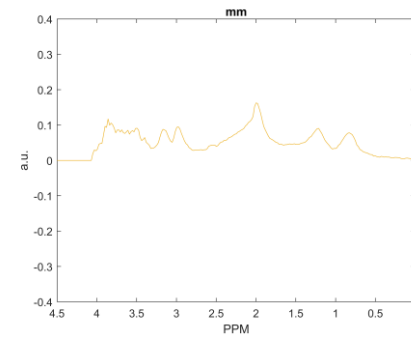
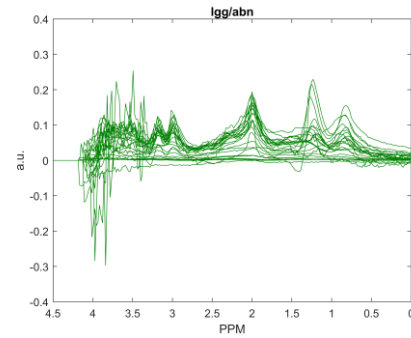
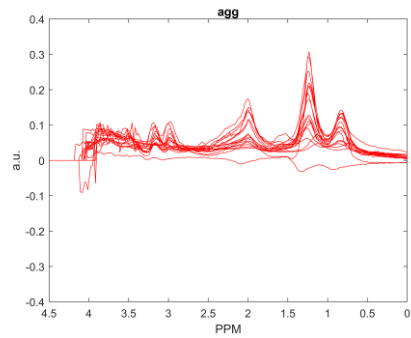
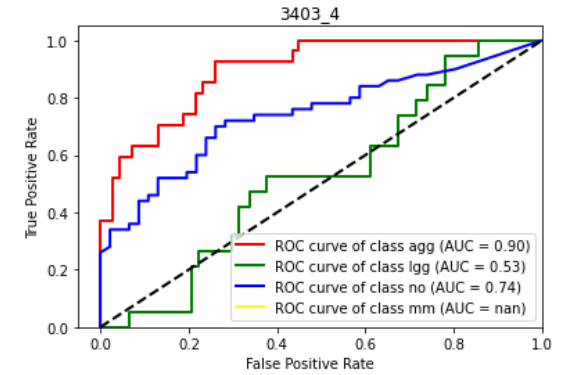
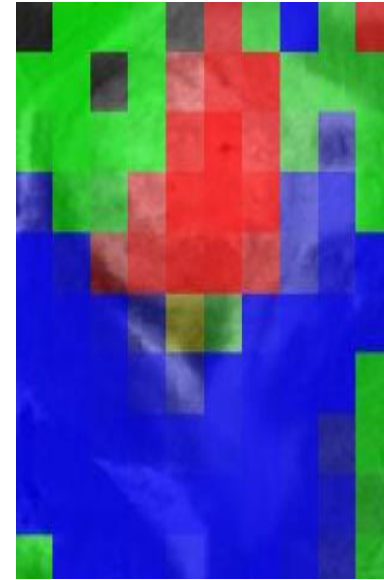
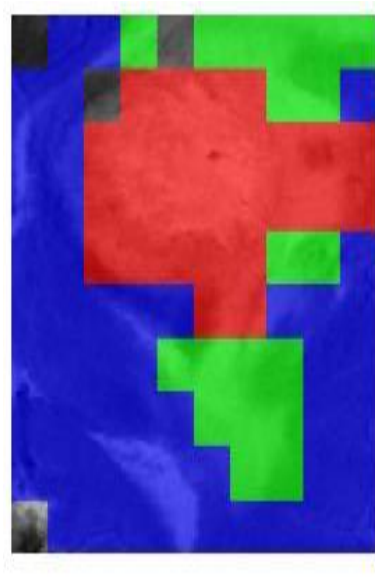
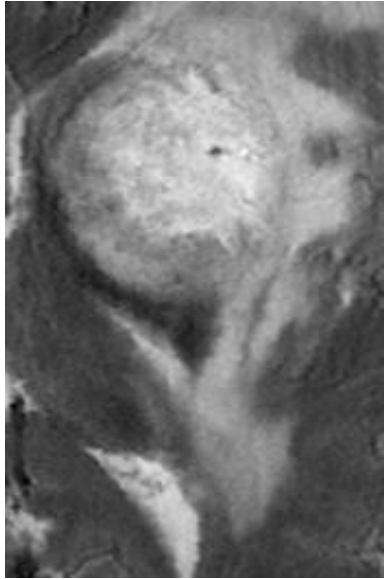
eT3403, S3(10x10)

Glioblastoma BER=0.3, STI=0.6



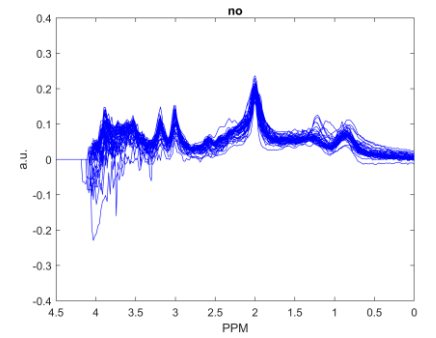
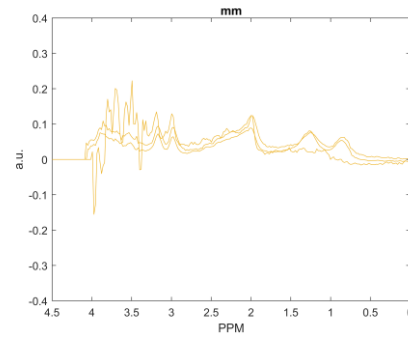
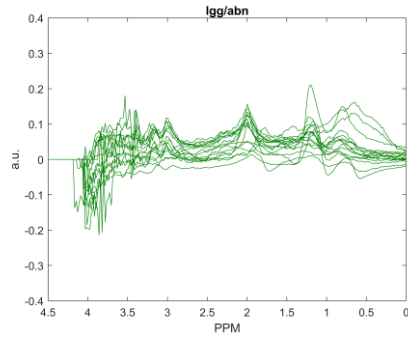
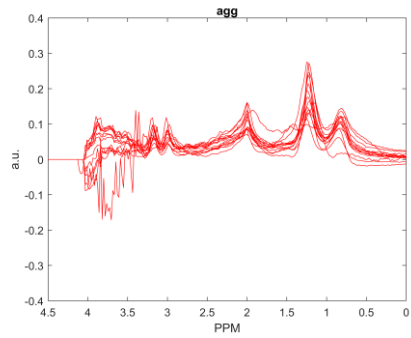
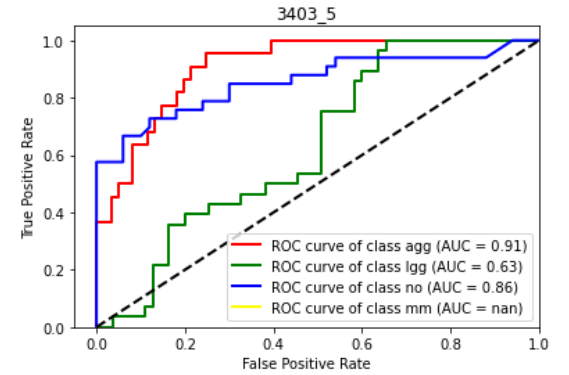
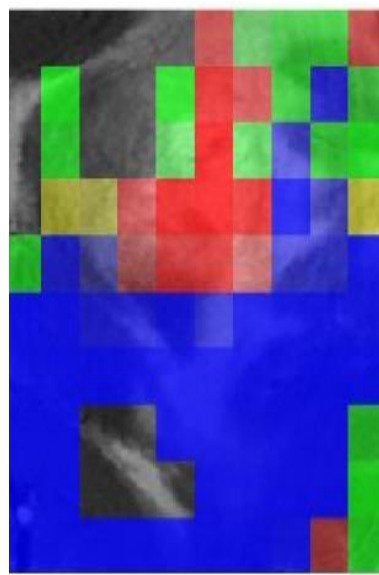
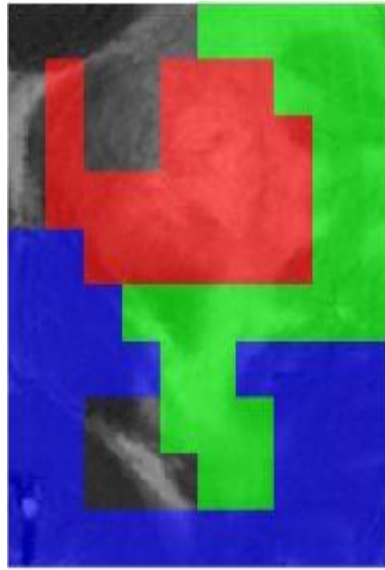
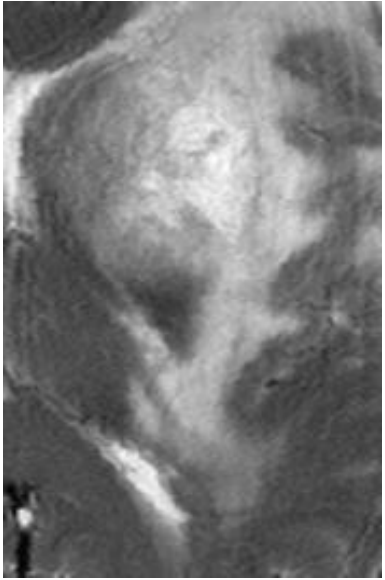
eT3403, S4(10x10)

Glioblastoma. BER=0.4, STI=0.65



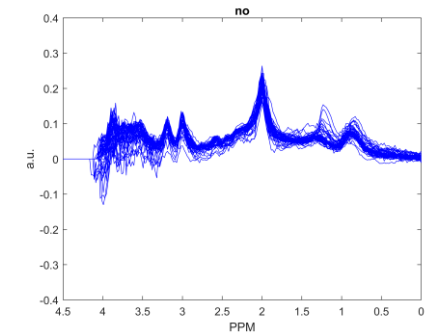
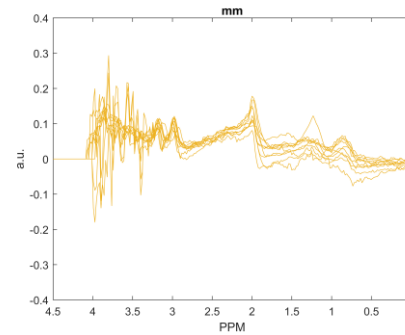
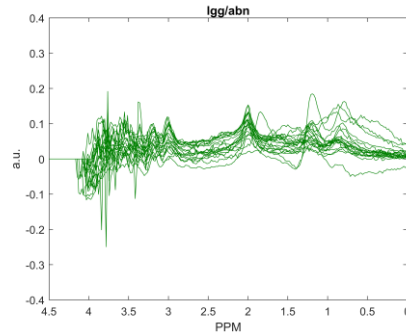
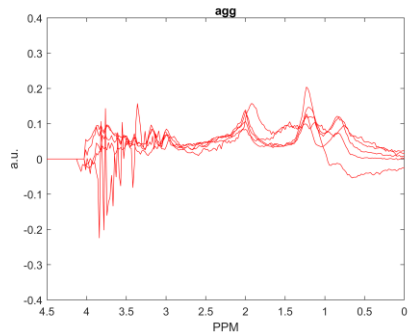
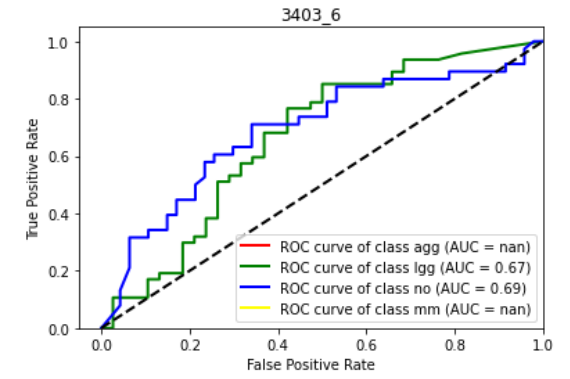
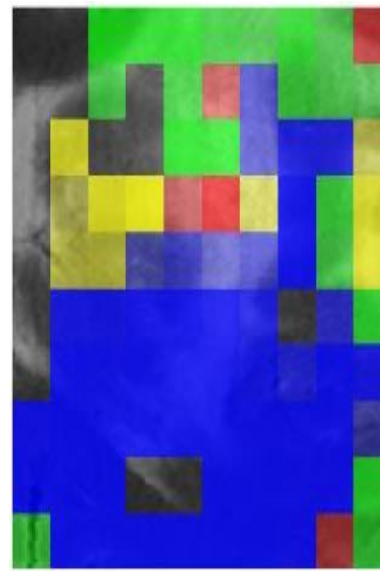
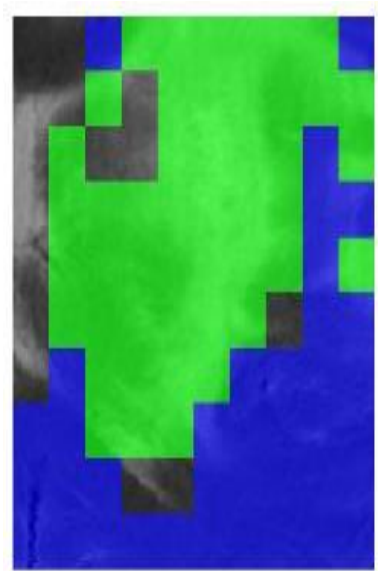
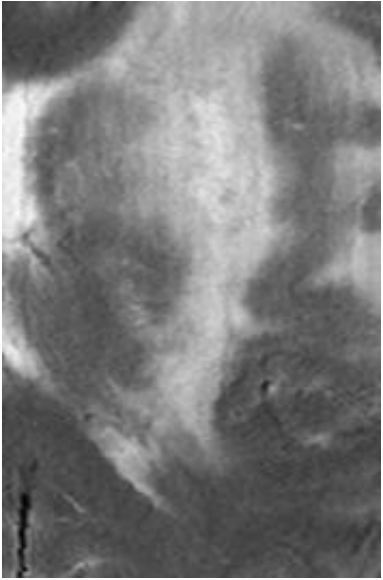
eT3403, S5(10x10)

Glioblastoma. BER=0.5, STI=0.4



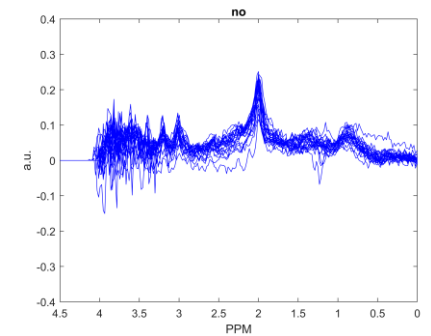
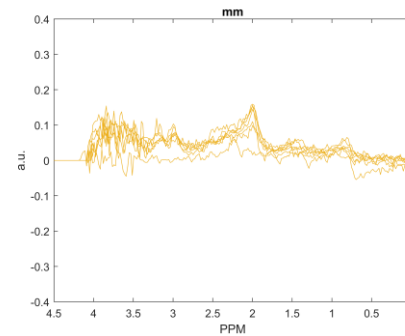
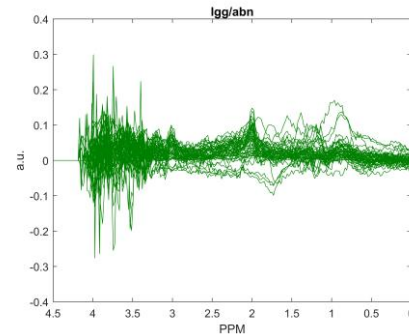
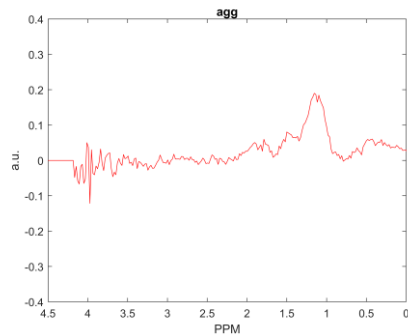
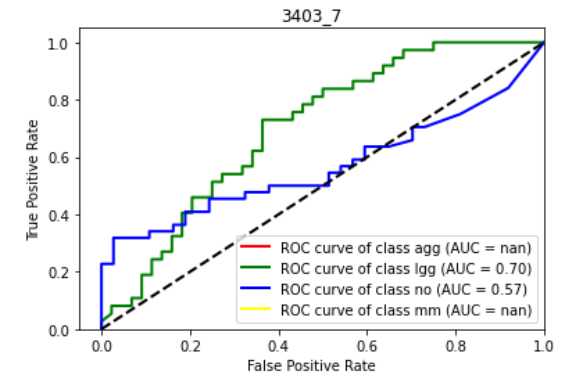
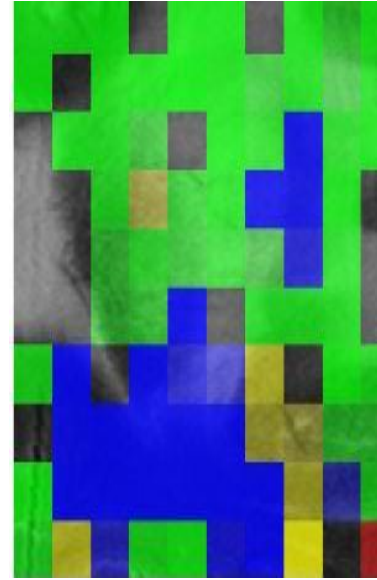
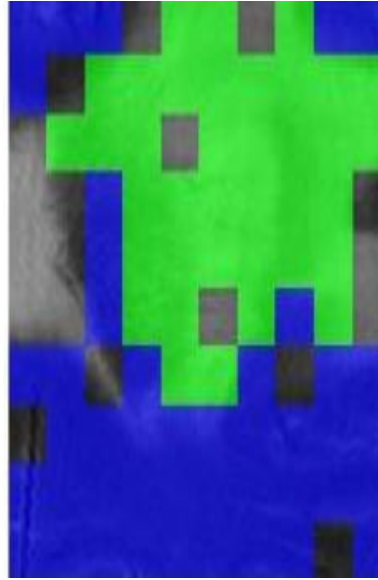
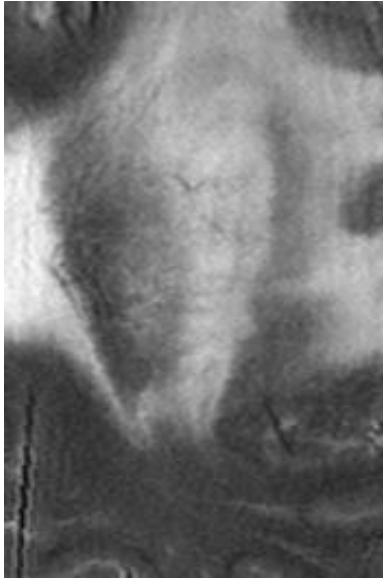
eT3403, S6(10x10)

Glioblastoma. BER=0.8, STI=0.2



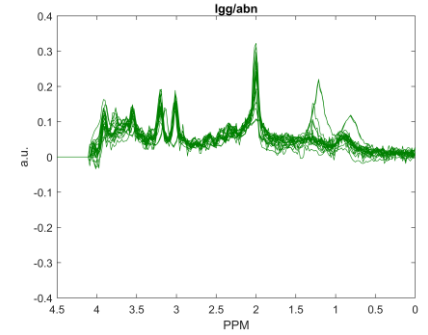
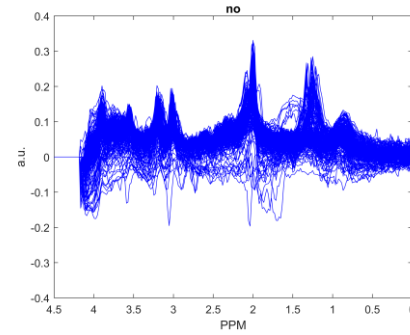
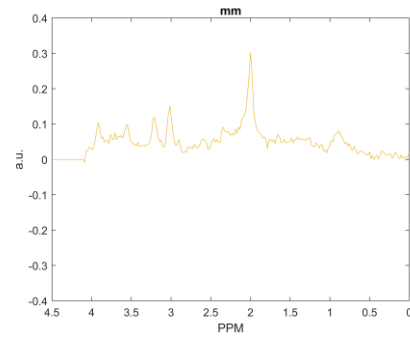
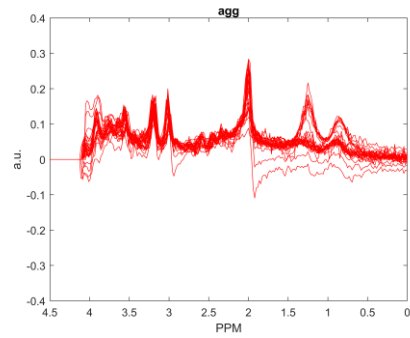
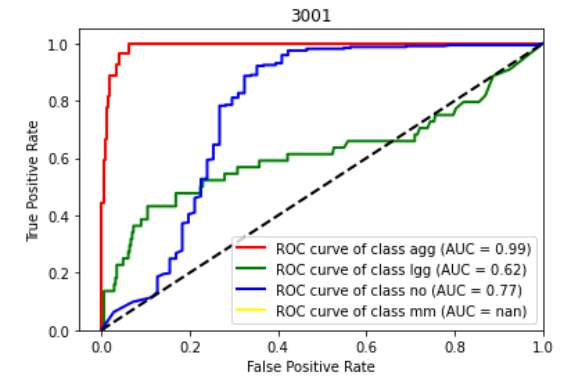
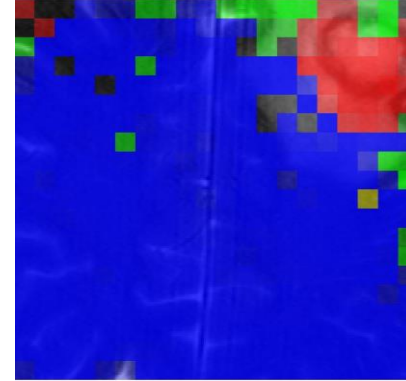
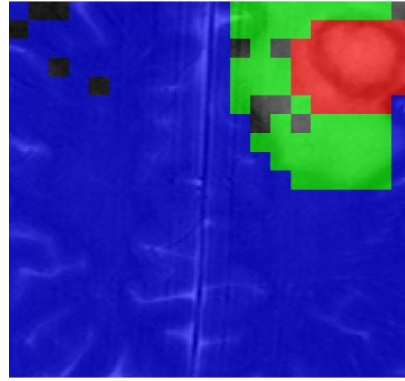
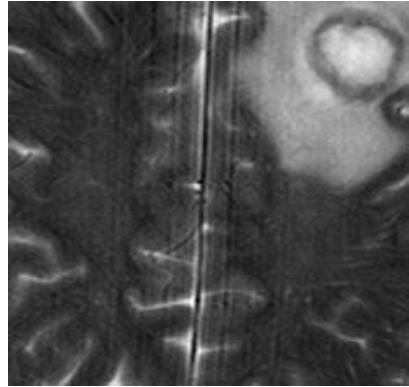
eT3403, S7(10x10)

Glioblastoma. BER=0.5, STI=0.6



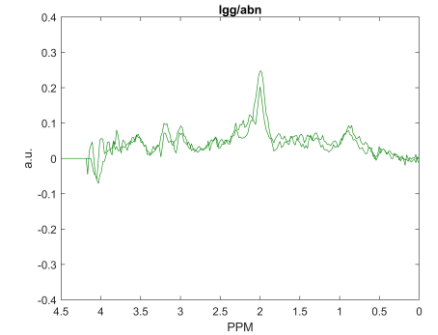
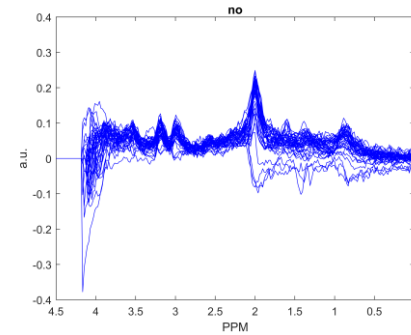
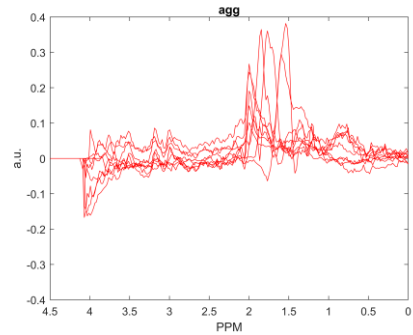
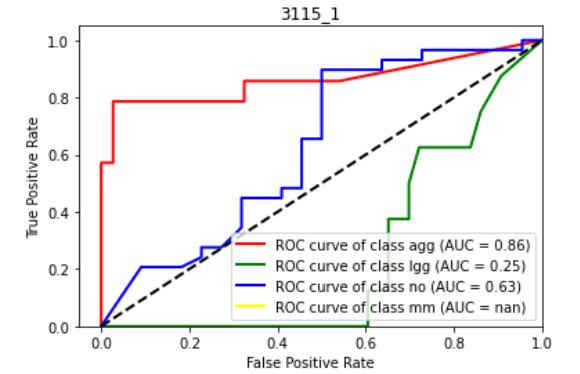
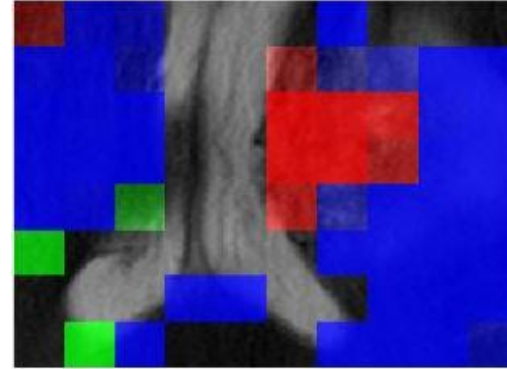
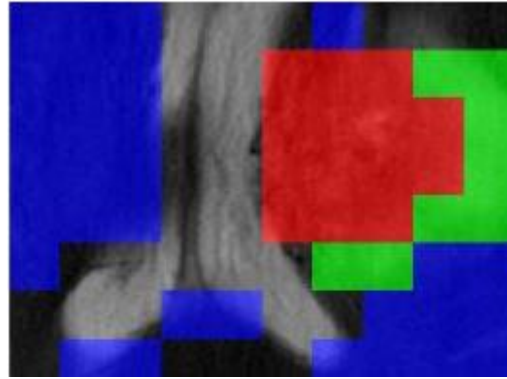
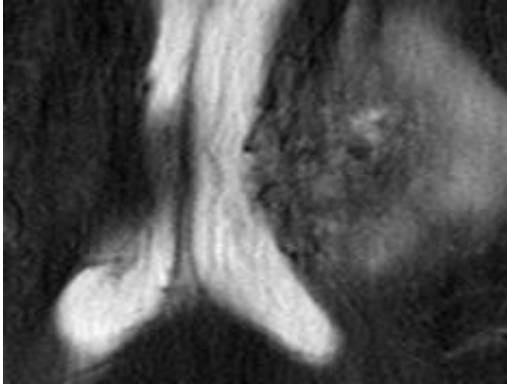
eT3001(20x20)

Metastasis. BER=0.31, STI=1.0



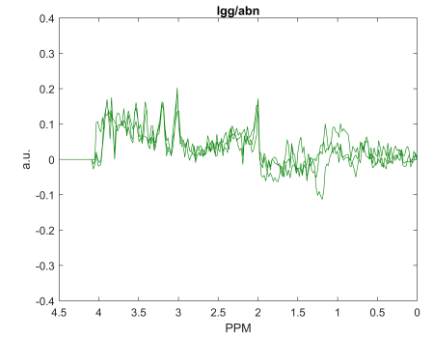
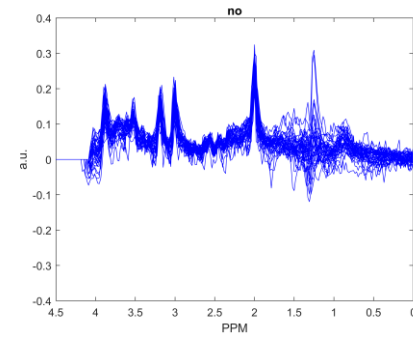
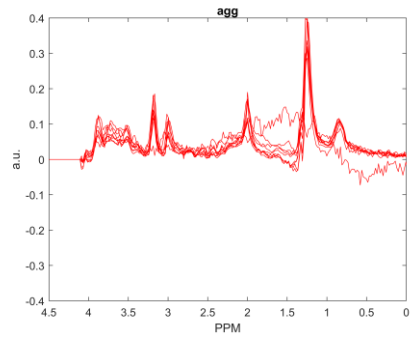
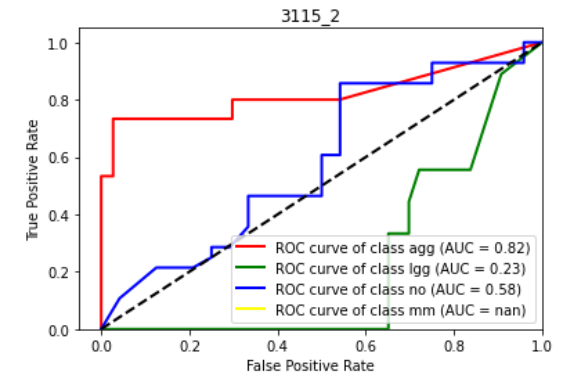
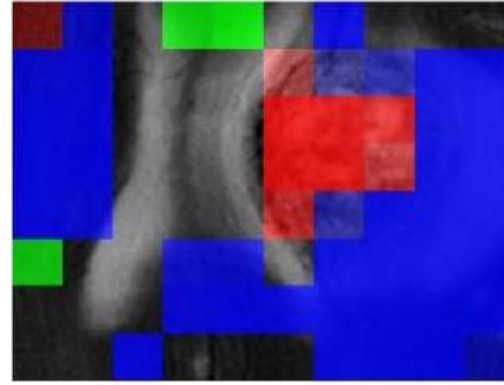
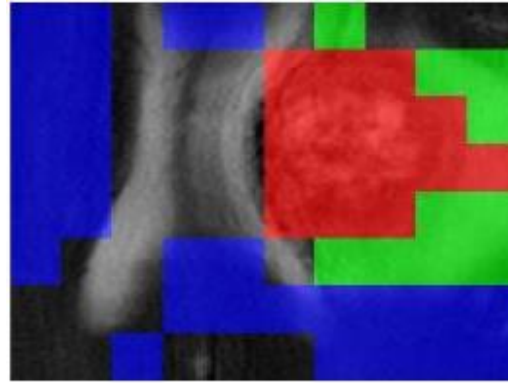
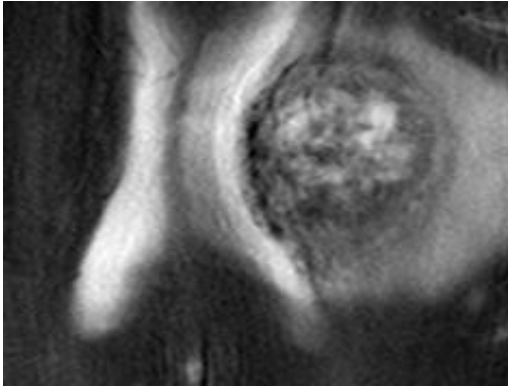
eT3115, S1(10x8)

Metastasis. BER=0.51, STI=0.75



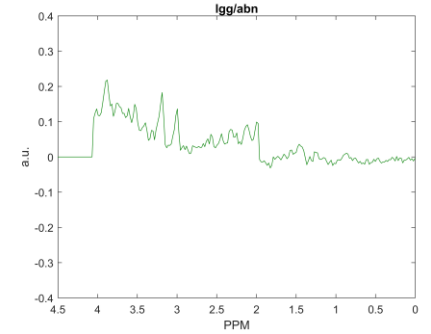
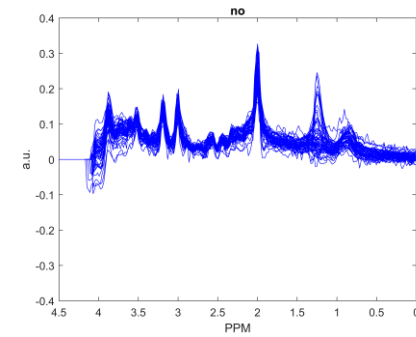
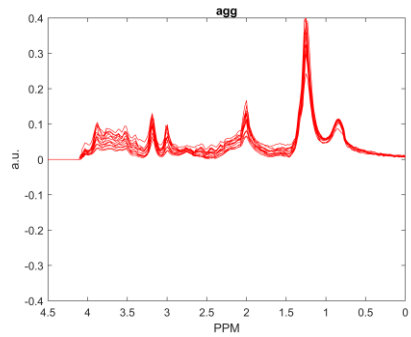
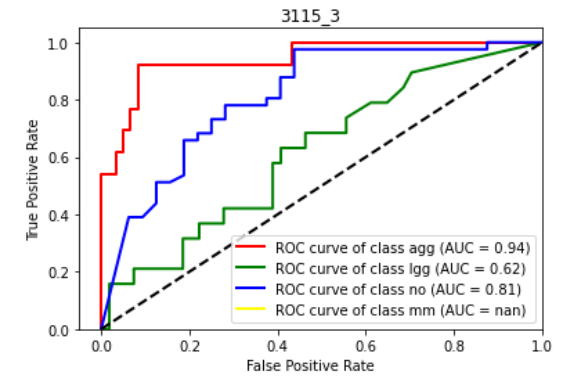
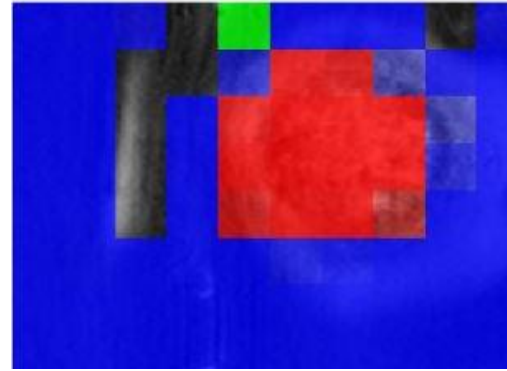
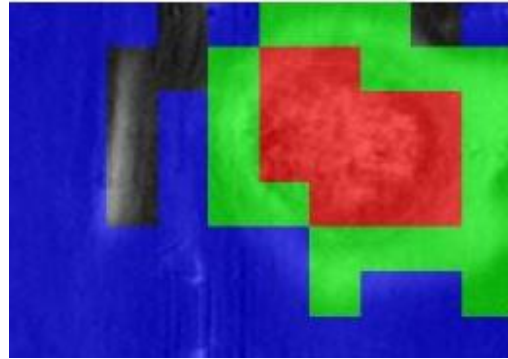
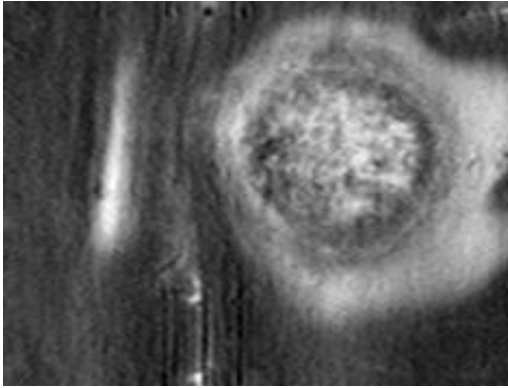
eT3115, S2(10x8)

Metastasis. BER=0.54, STI=0.75



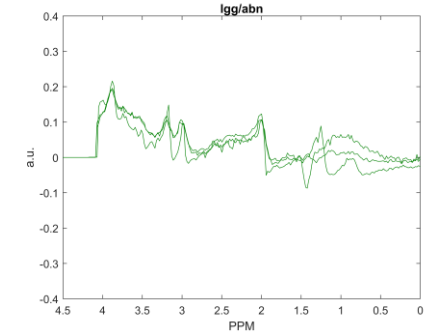
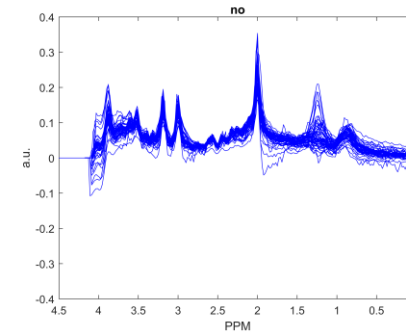
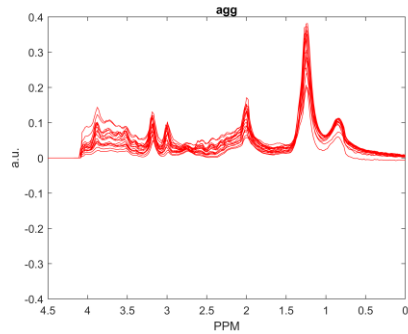
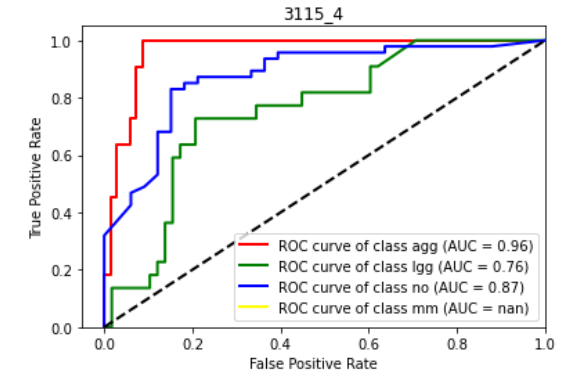
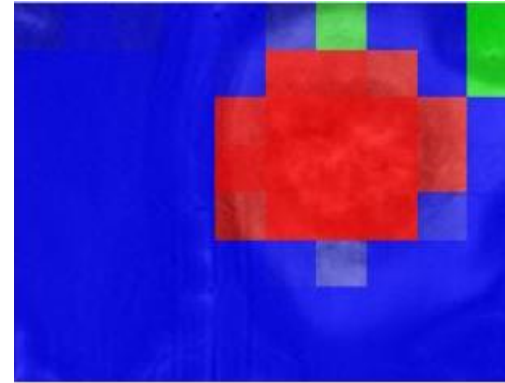
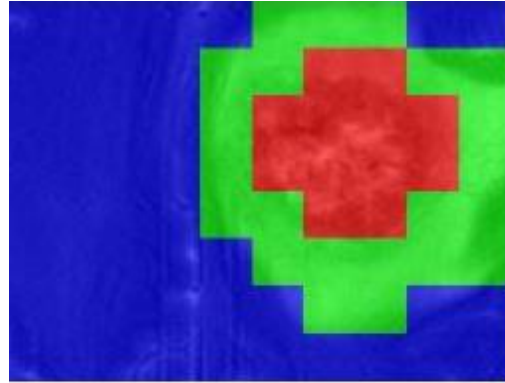
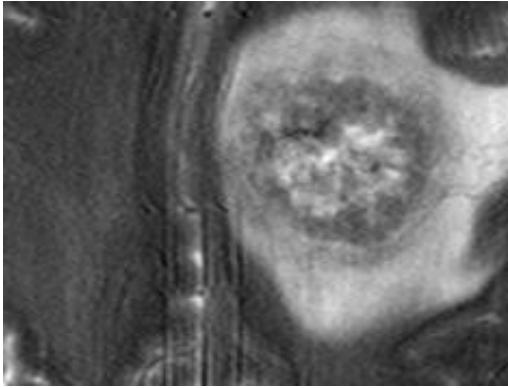
eT3115, S3(10x8)

Metastasis. BER=0.40, STI=0.75



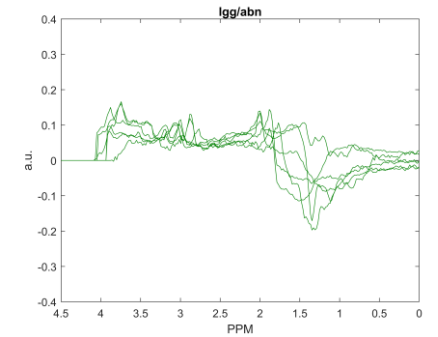
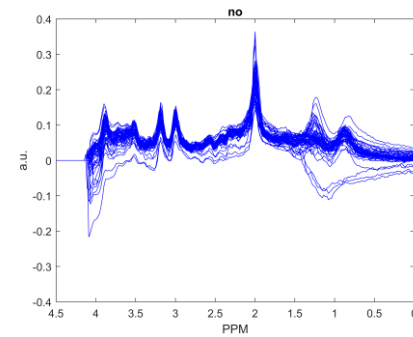
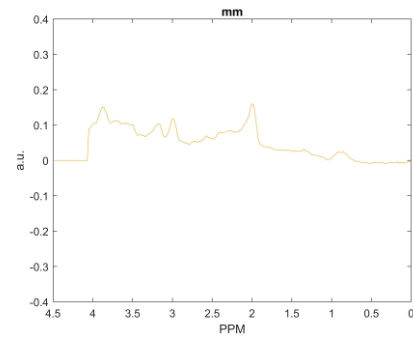
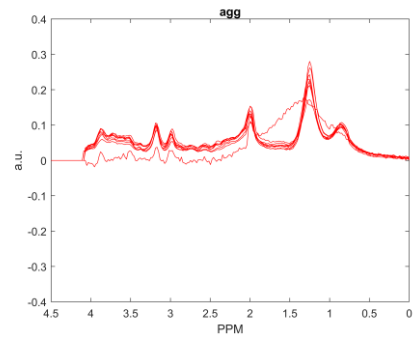
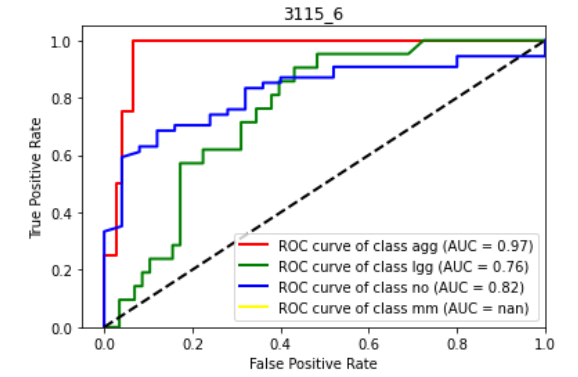
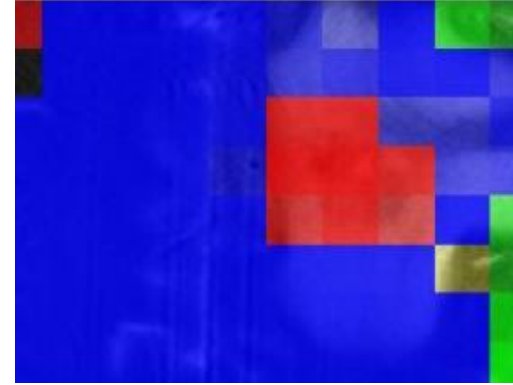
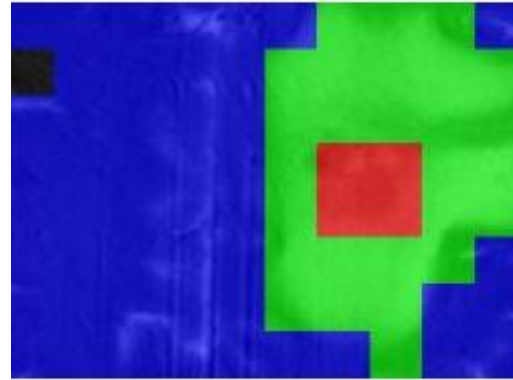
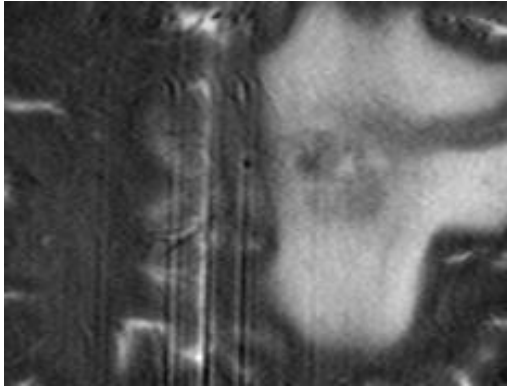
eT3115, S4(10x8)

Metastasis. BER=0.32, STI=0.75



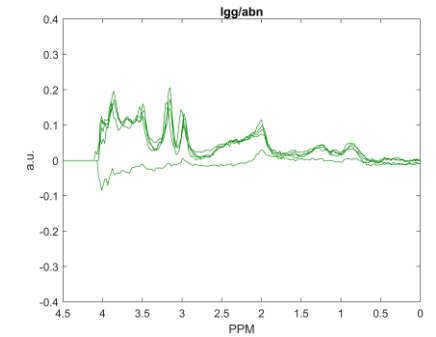
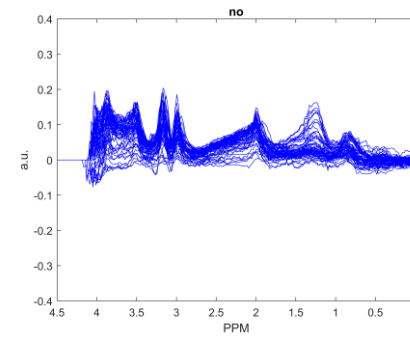
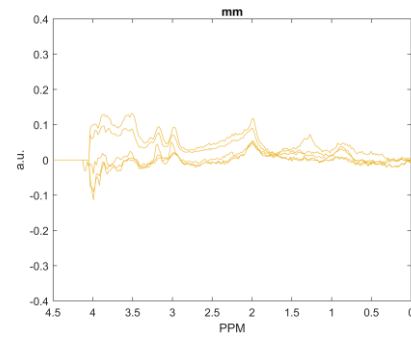
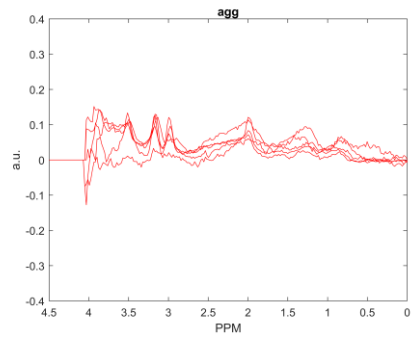
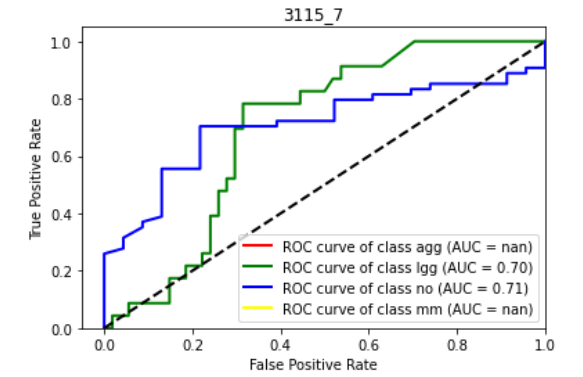
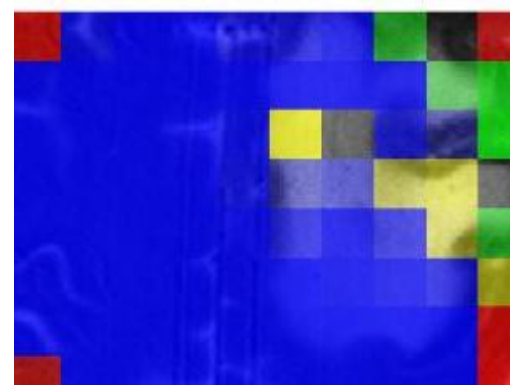
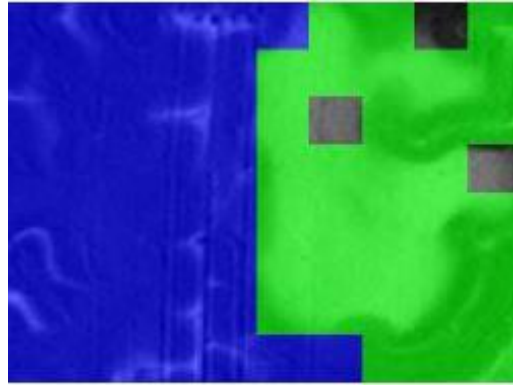
eT3115, S6(10x8)

Metastasis. BER=0.33, STI=0.75



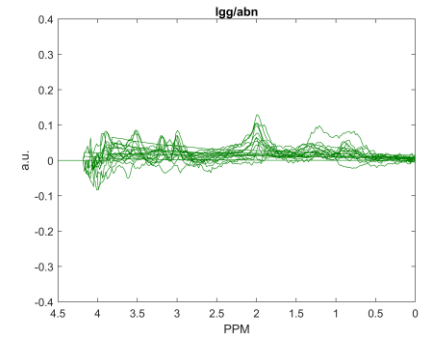
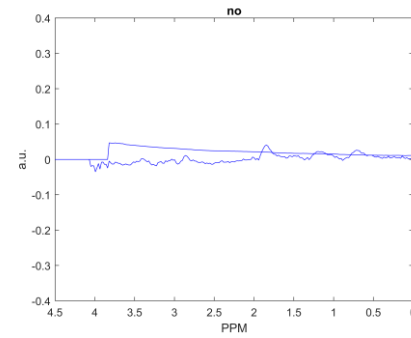
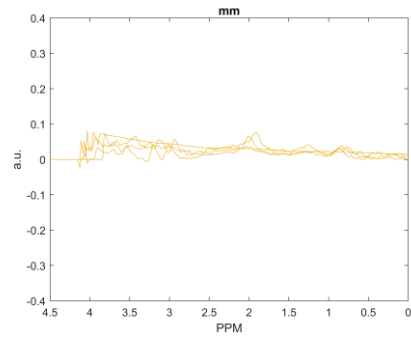
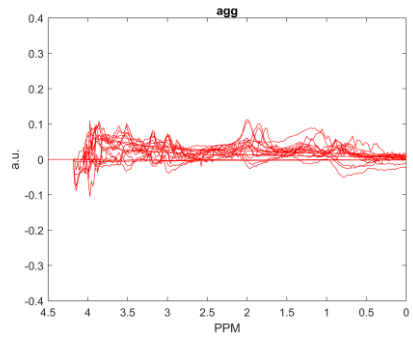
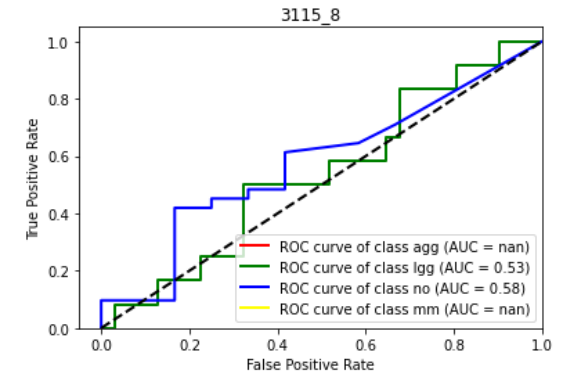
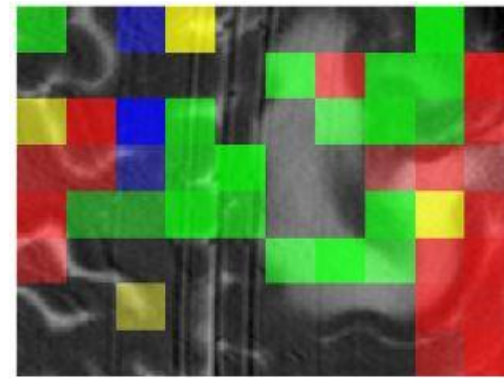
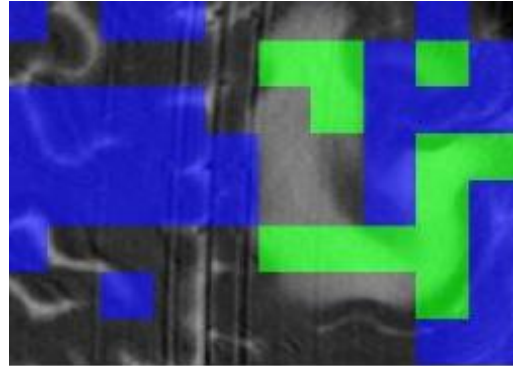
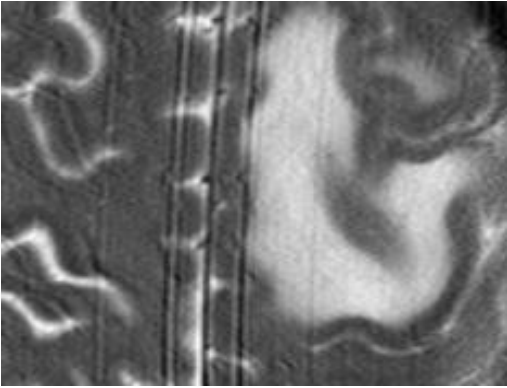
eT3115, S7(10x8)

Metastasis. BER=0.54, STI=0.75



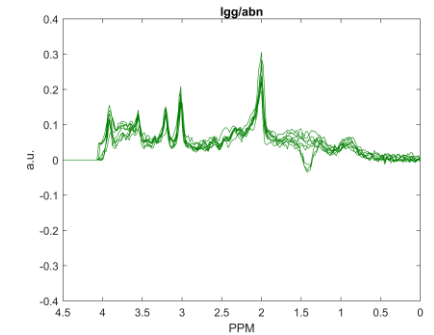
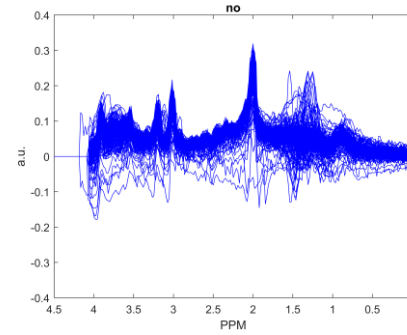
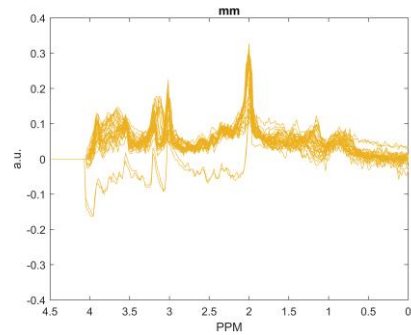
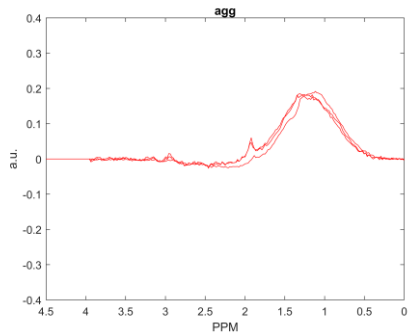
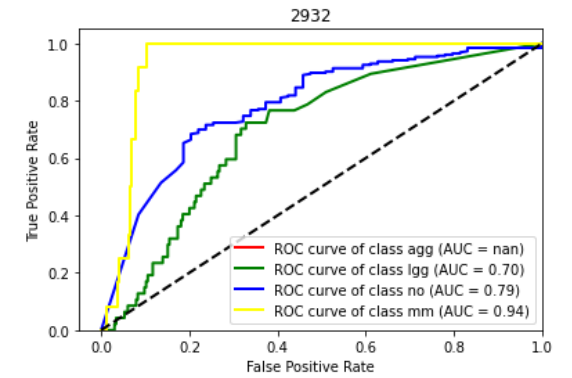
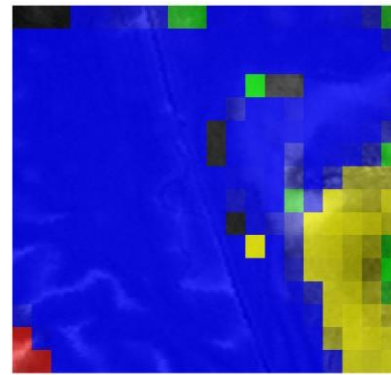
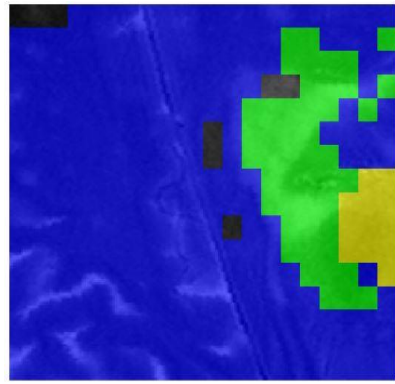
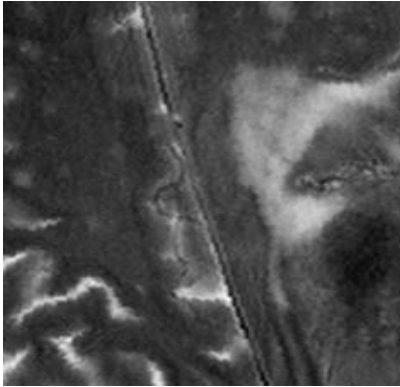
eT3115, S8(10x8)

Metastasis. BER=0.71, STI=0.75



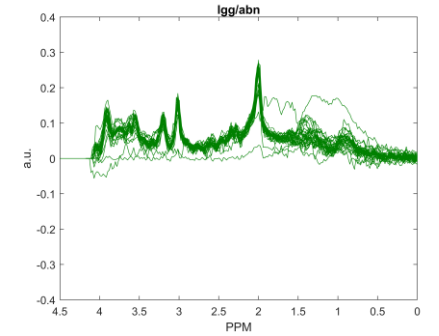
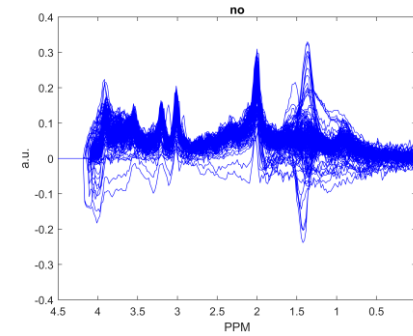
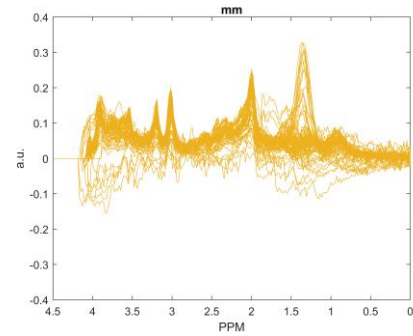
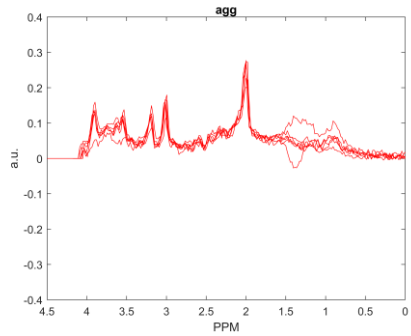
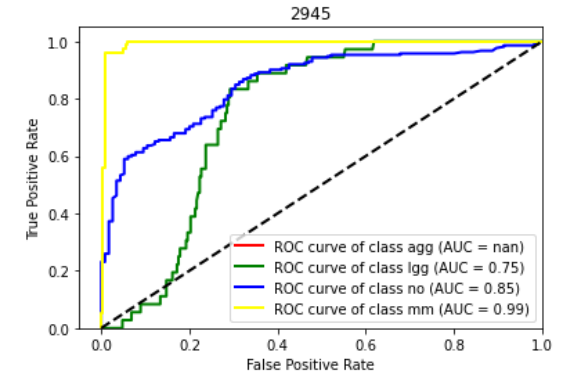
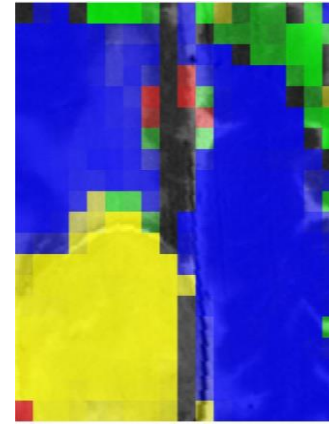
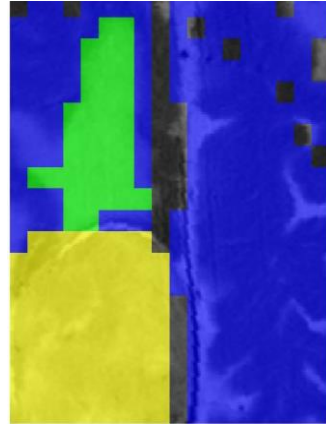
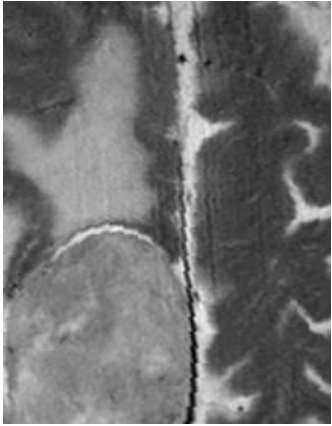
eT2932(20x16)

Atypical Meningioma. BER=0.24, STI=0.83



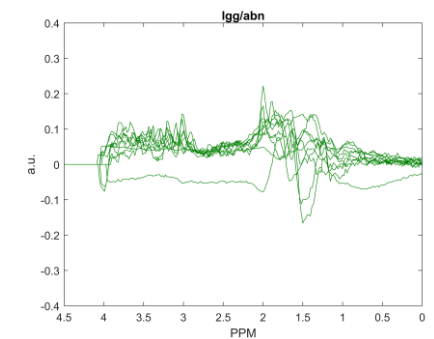
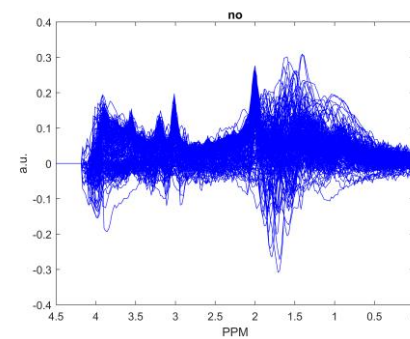
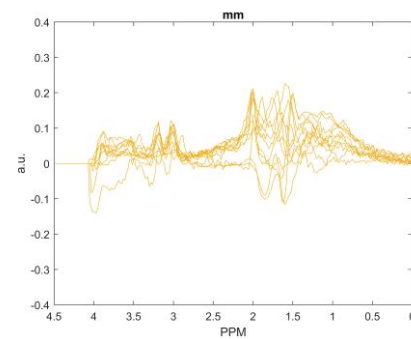
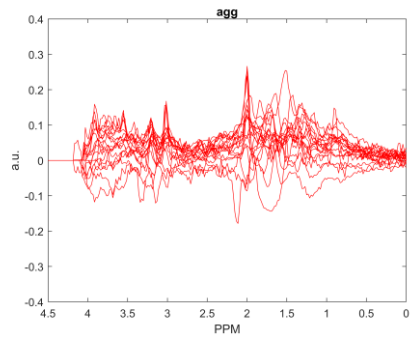
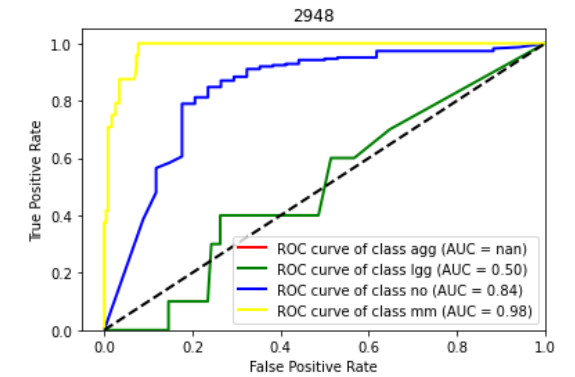
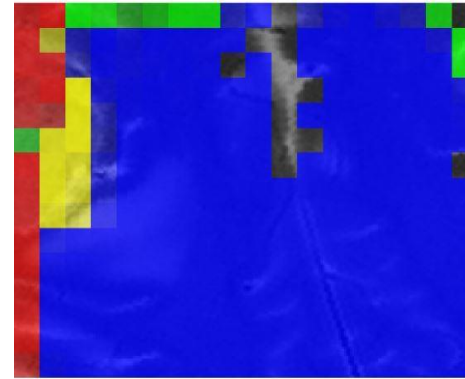
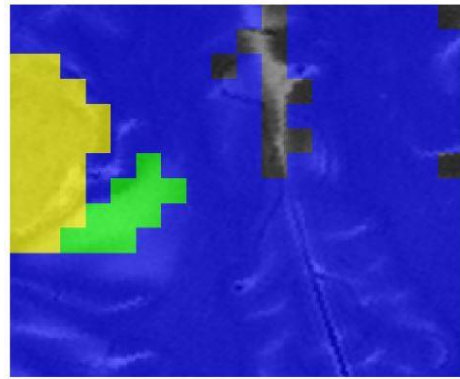
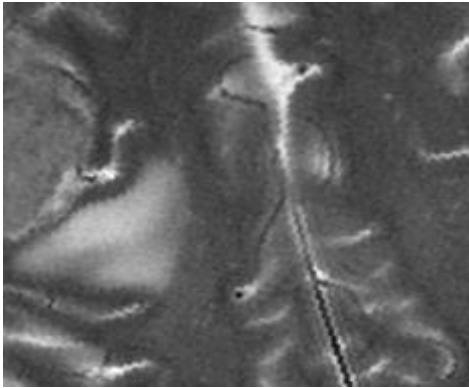
eT2945(18x20)

Meningioma. BER=0.39, STI=0.96



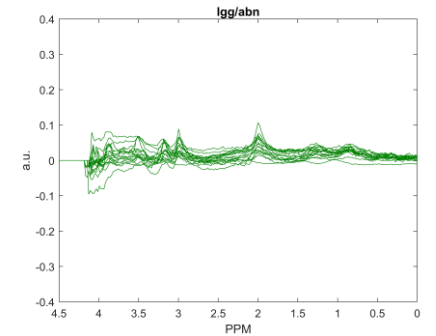
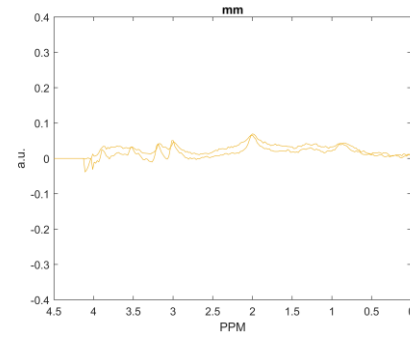
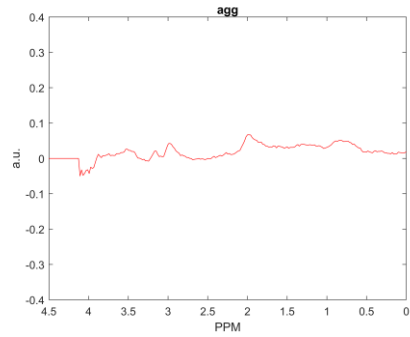
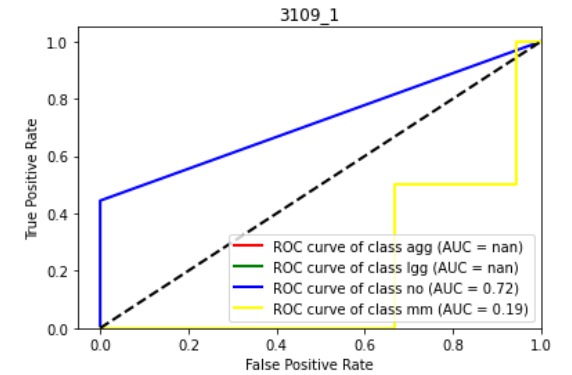
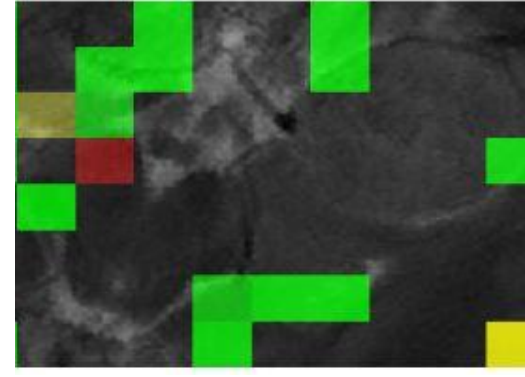
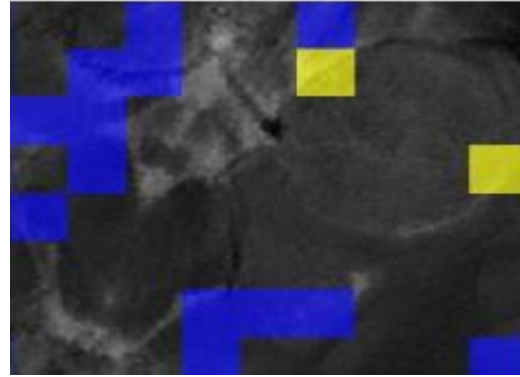
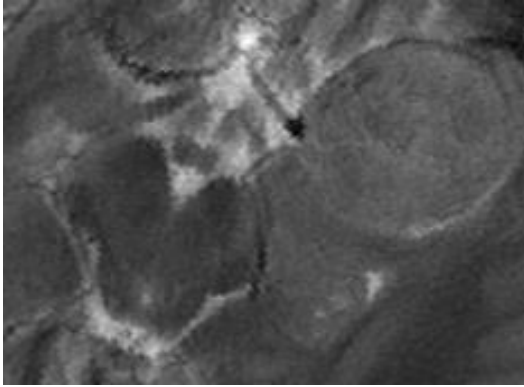
eT2948(18x15)

Meningioma. BER=0.55, STI=0.42



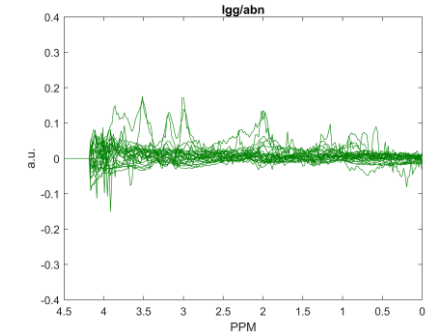
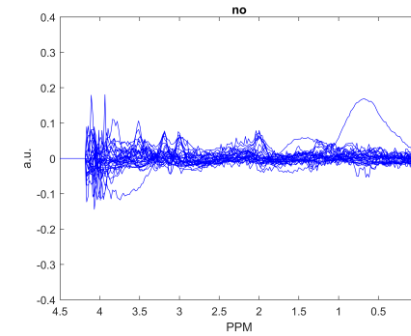
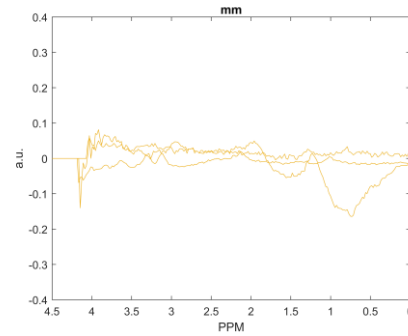
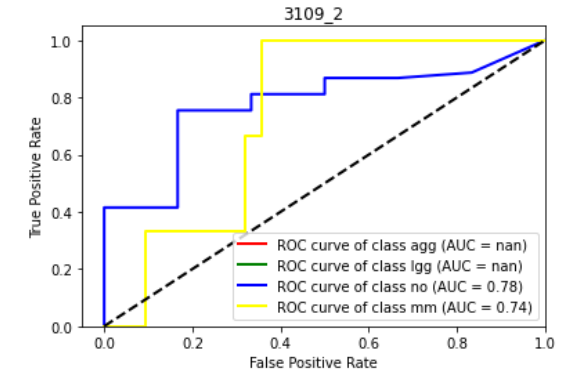
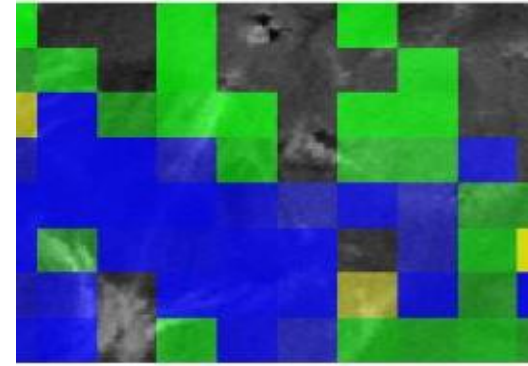
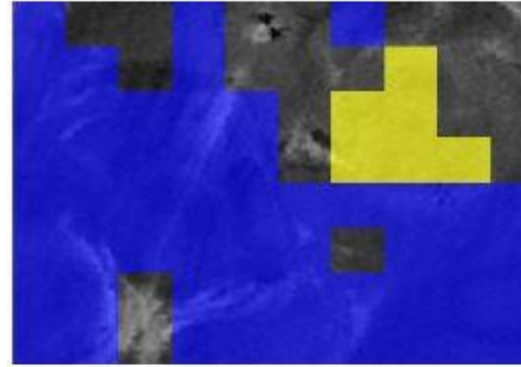
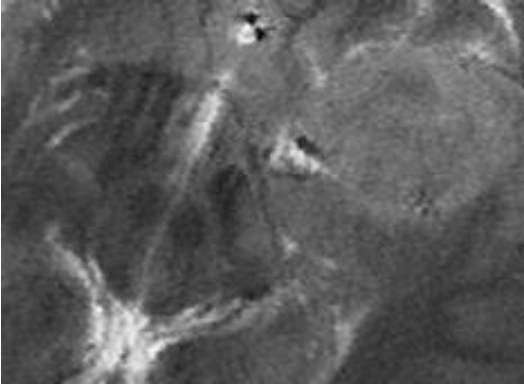
eT3109, S1(10x8)

Meningioma. BER=1.0, STI=0.0



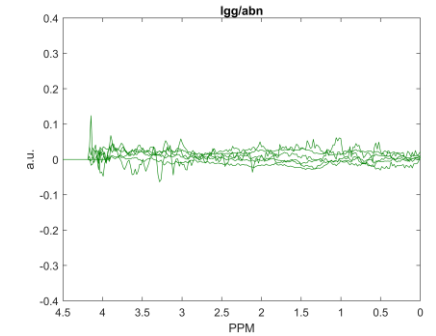
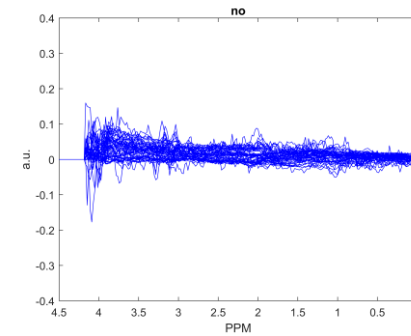
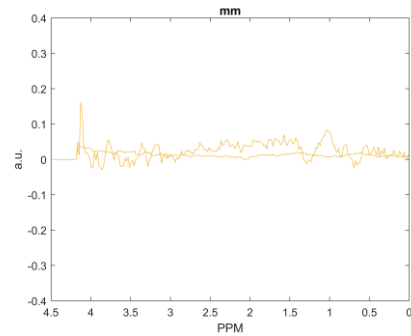
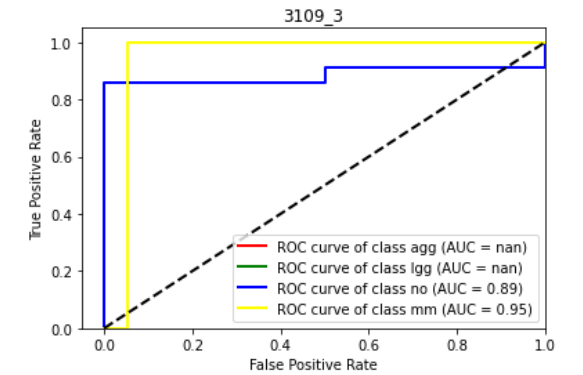
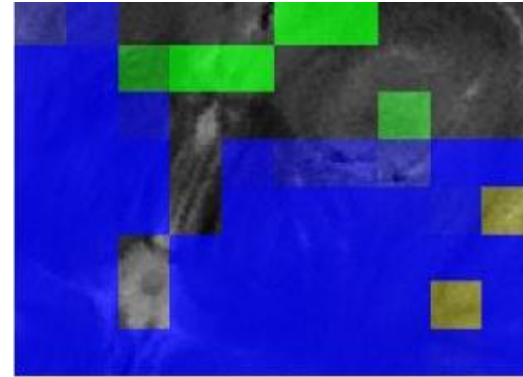
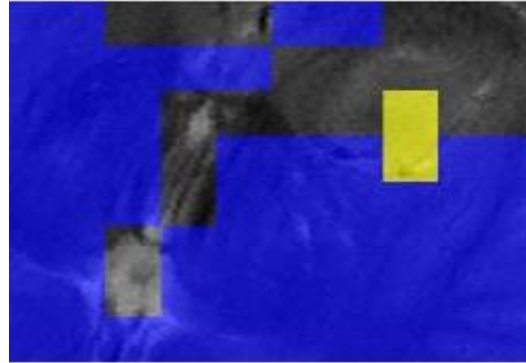
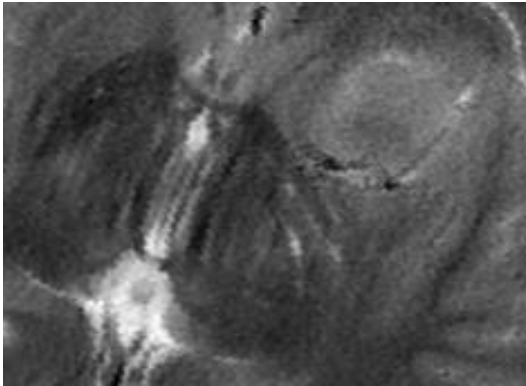
eT3109, S2(10x8)

Meningioma. BER=1.0, STI=0.0



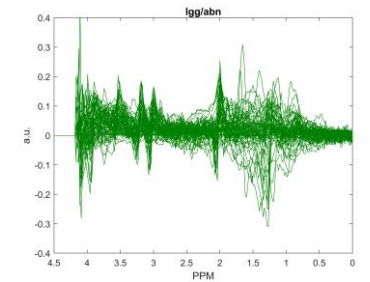
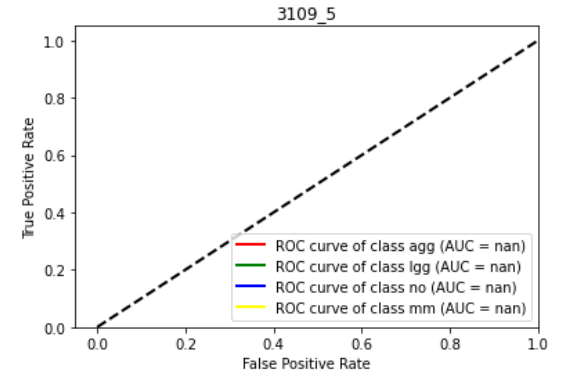
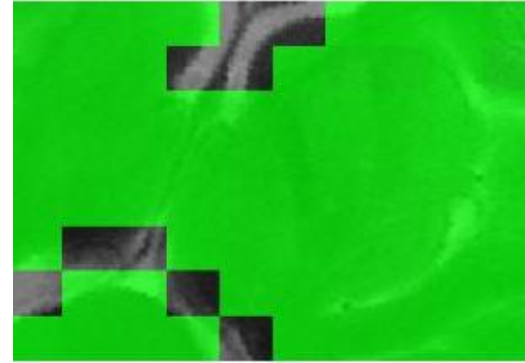
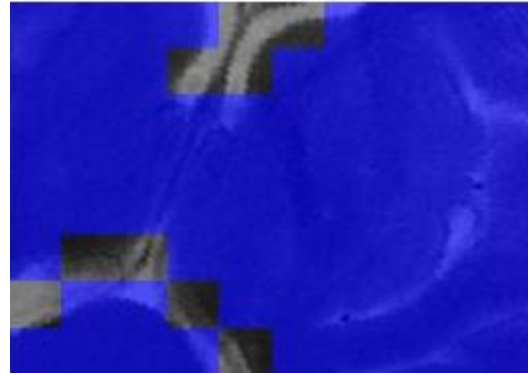
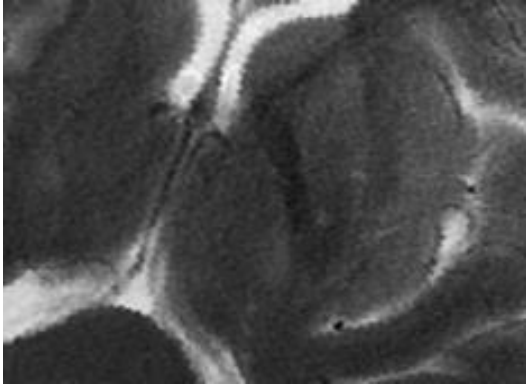
eT3109, S3(10x8)

Meningioma. BER=1.0, STI=0.0



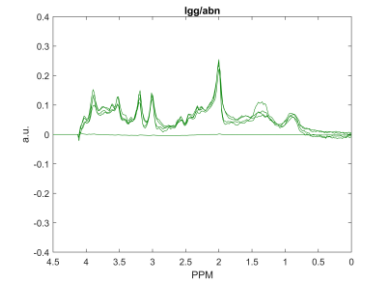
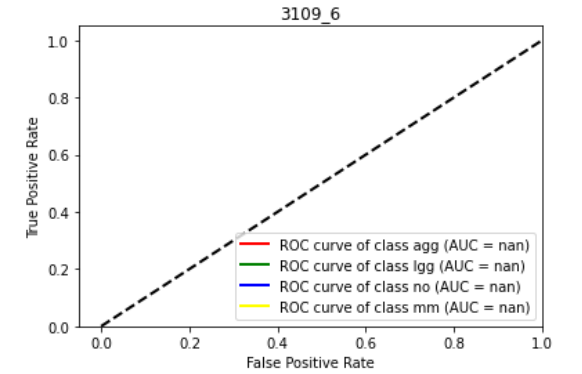
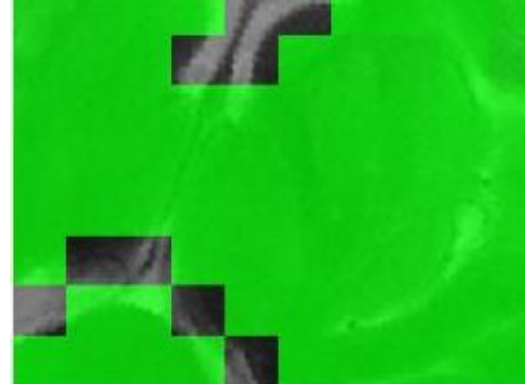
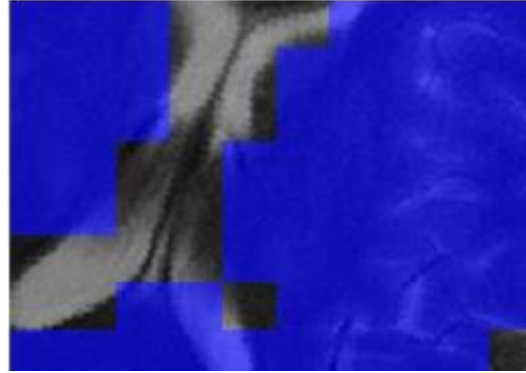
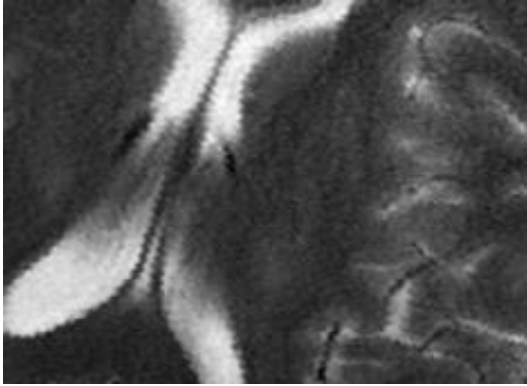
eT3109, S5(10x8)

Meningioma. BER=1.0, STI=0.0



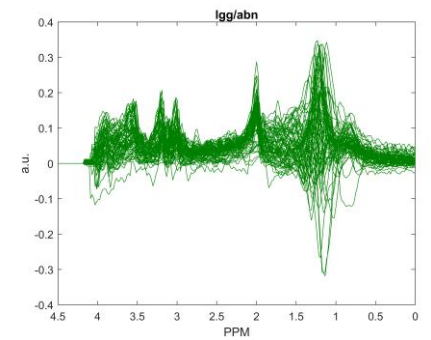
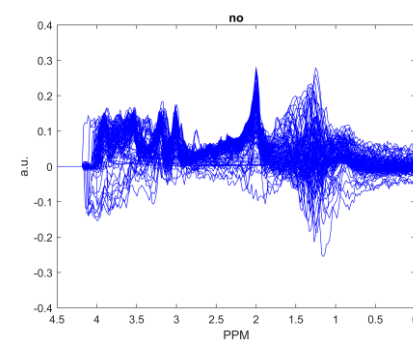
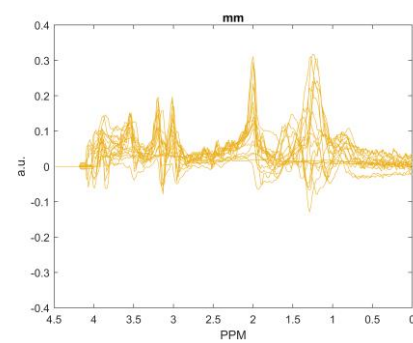
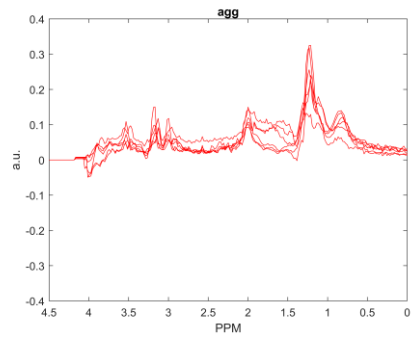
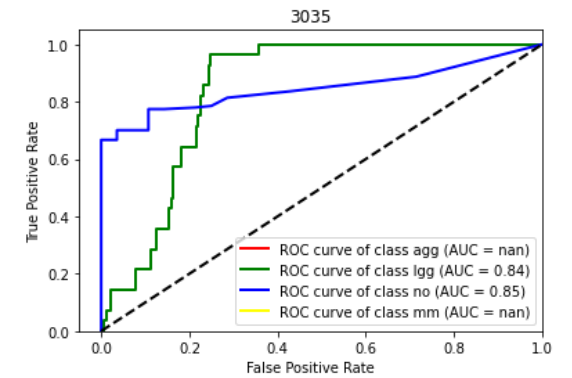
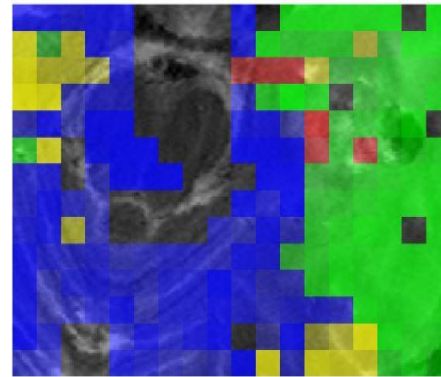
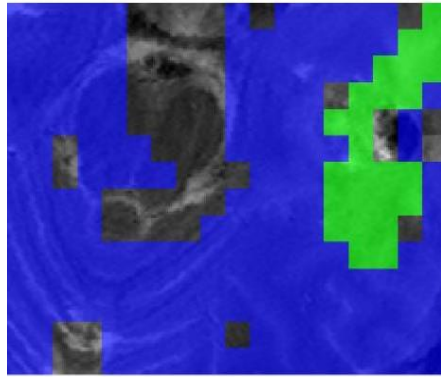
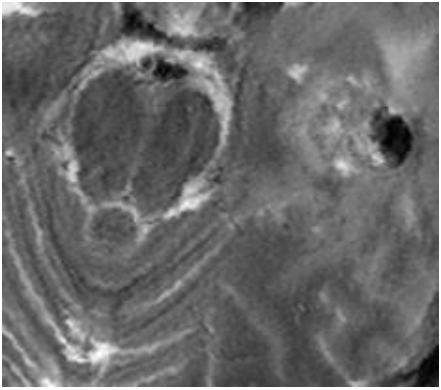
eT3109, S6(10x8)

Meningioma. BER=1.0, STI=0.0



eT3035(18x14)

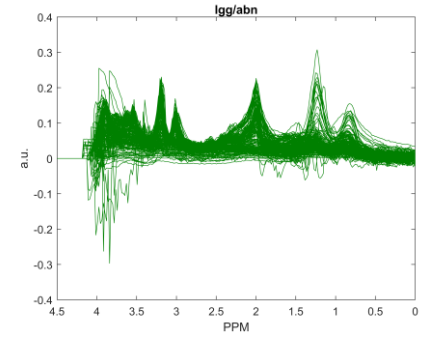
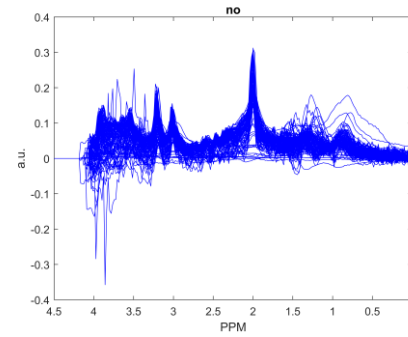
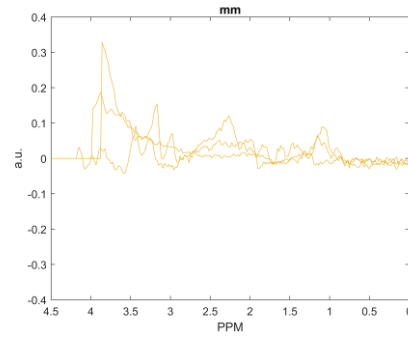
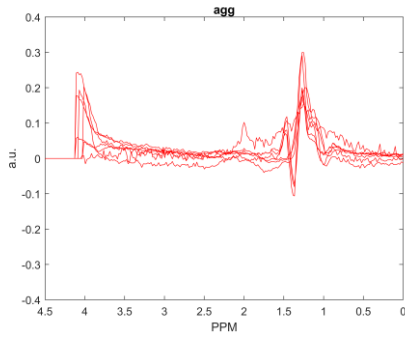
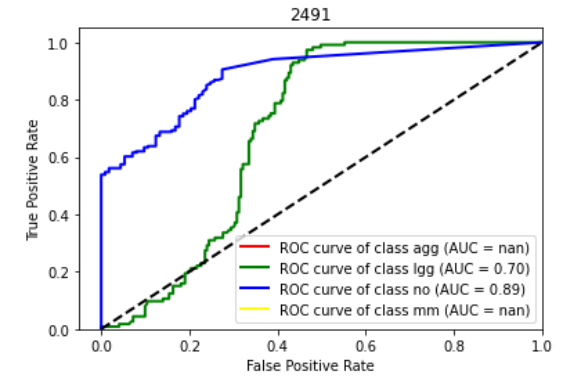
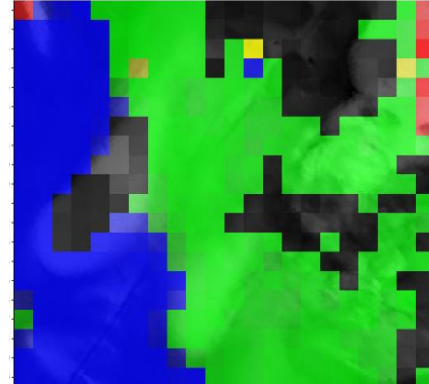
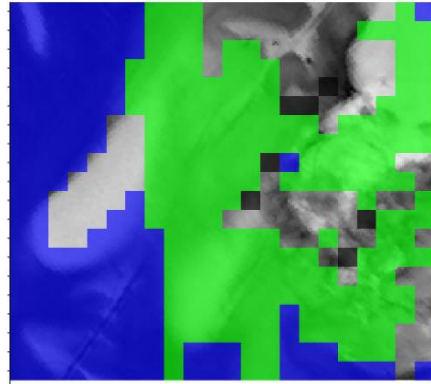
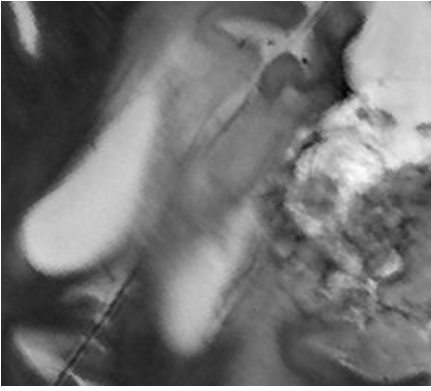
Diffuse Astrocytoma. BER=0.22, STI=1.0



Excluded Cases

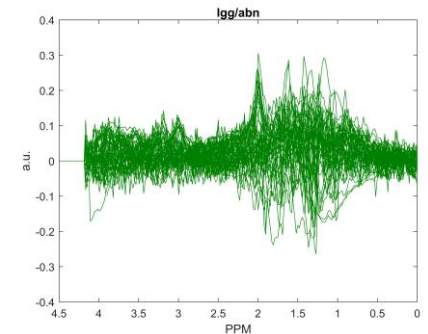
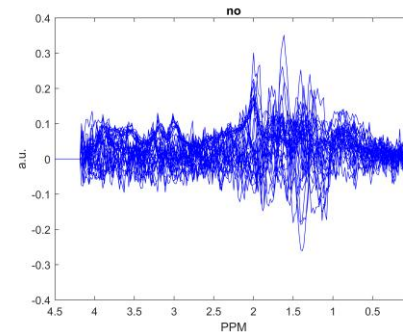
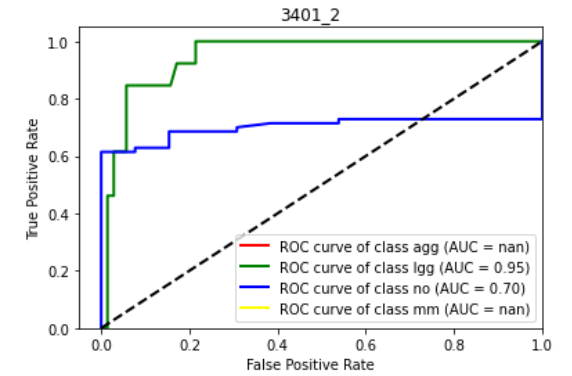
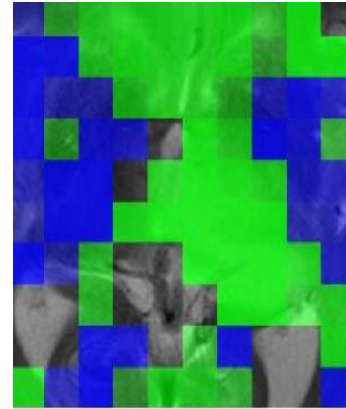
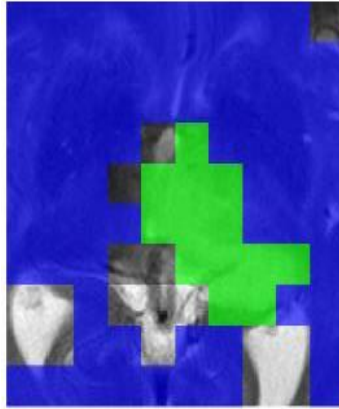
eT2491(22x20)

Anaplastic Oligodendroglioma. BER=0.27, STI=Excluded



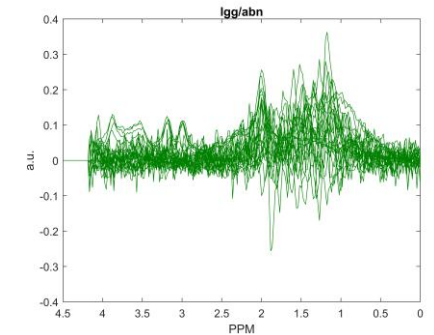
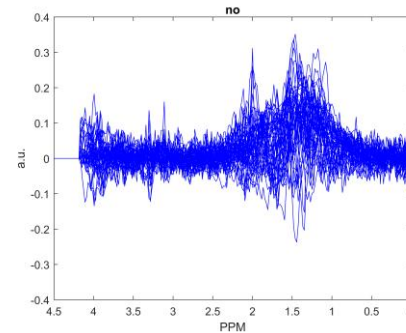
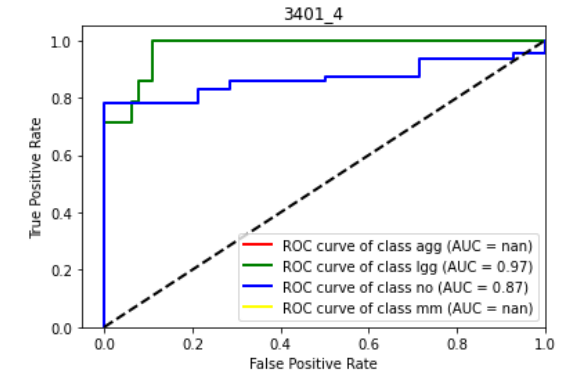
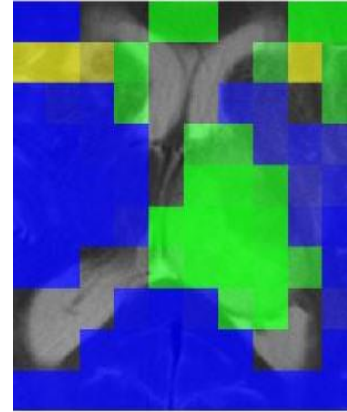
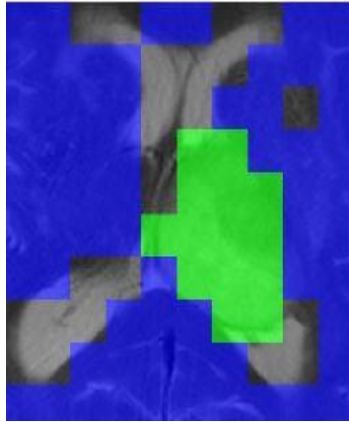
eT3401, S2(10x10)

Anaplastic Astrocytoma. BER=0.48, STI=Excluded



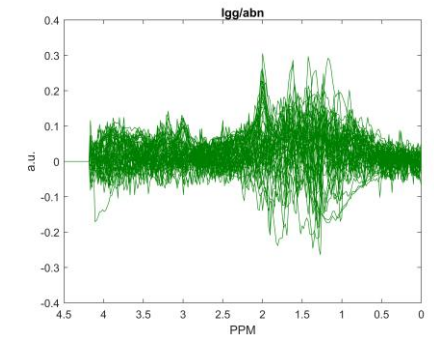
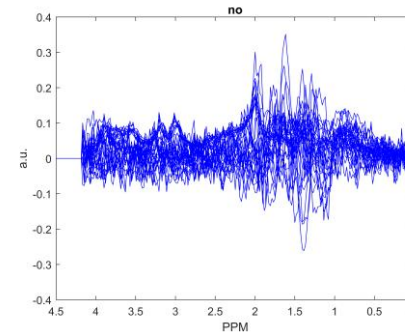
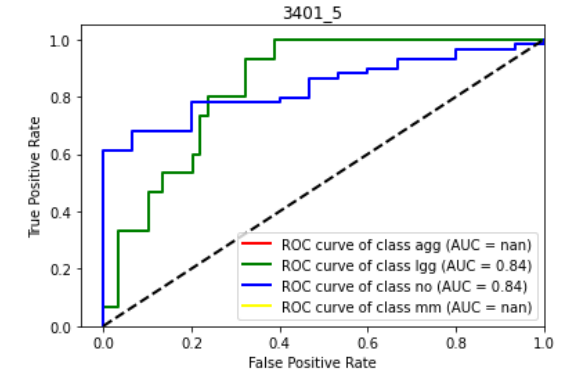
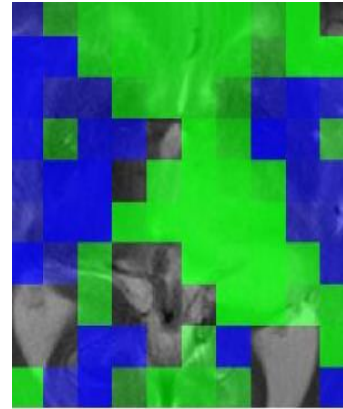
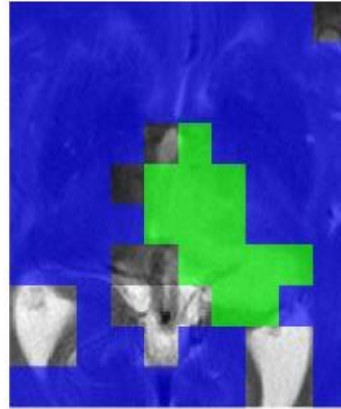
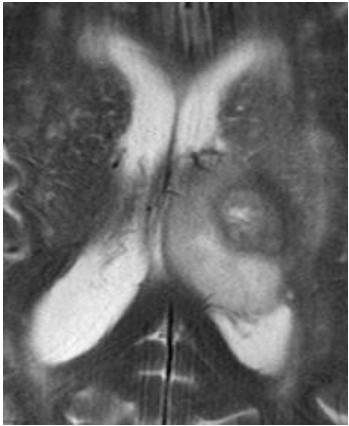
eT3401, S4(10x10)

Anaplastic Astrocytoma. BER=0.26, STI=Excluded



eT3401, S5(10x10)

Anaplastic Astrocytoma. BER=0.33, STI=Excluded



eT3401, S6(10x10)

Anaplastic Astrocytoma. BER=0.33, STI=Excluded

