

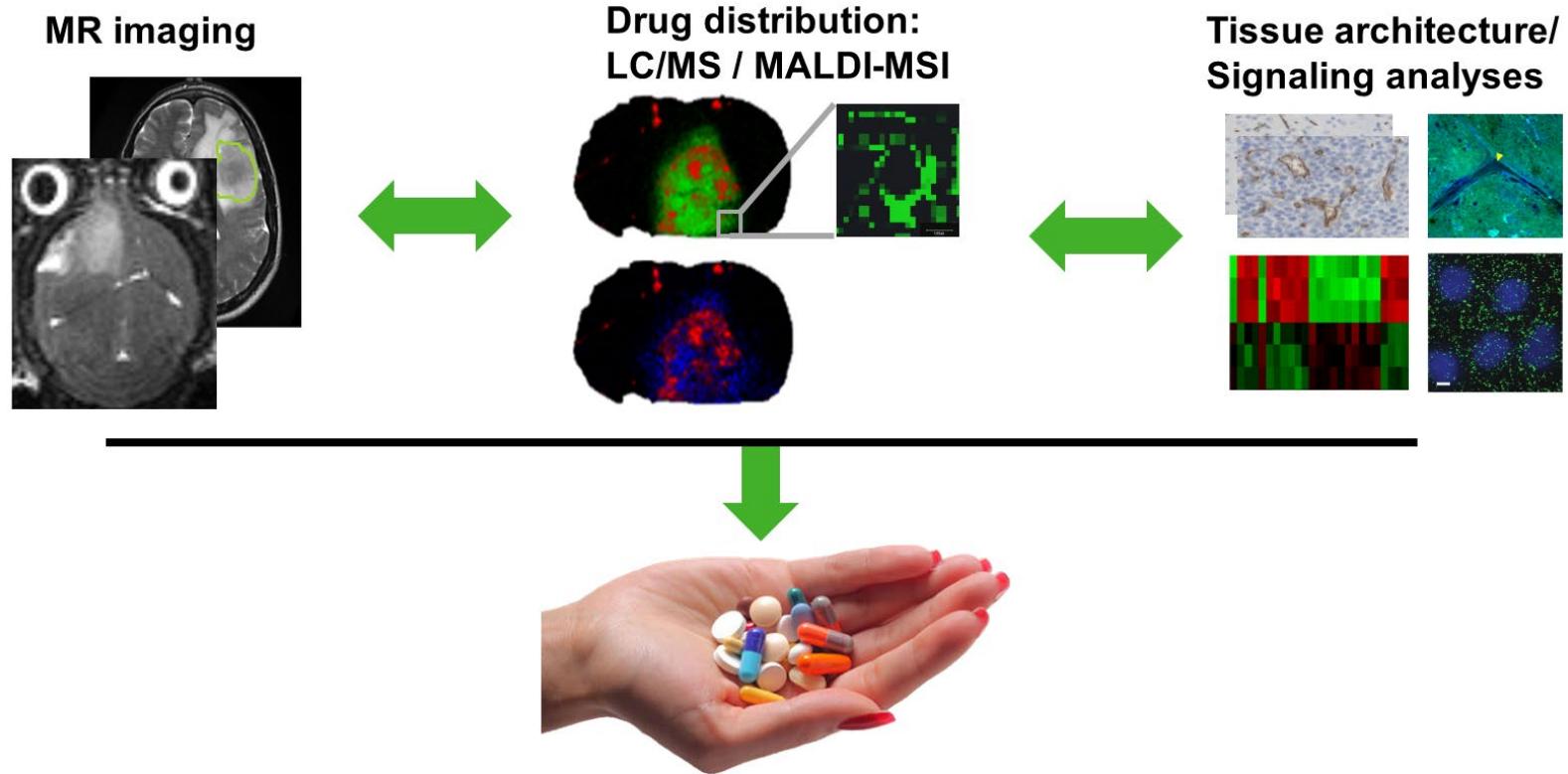


# Multi-modal analysis of distribution and efficacy of EGFR-targeted therapies in GBM

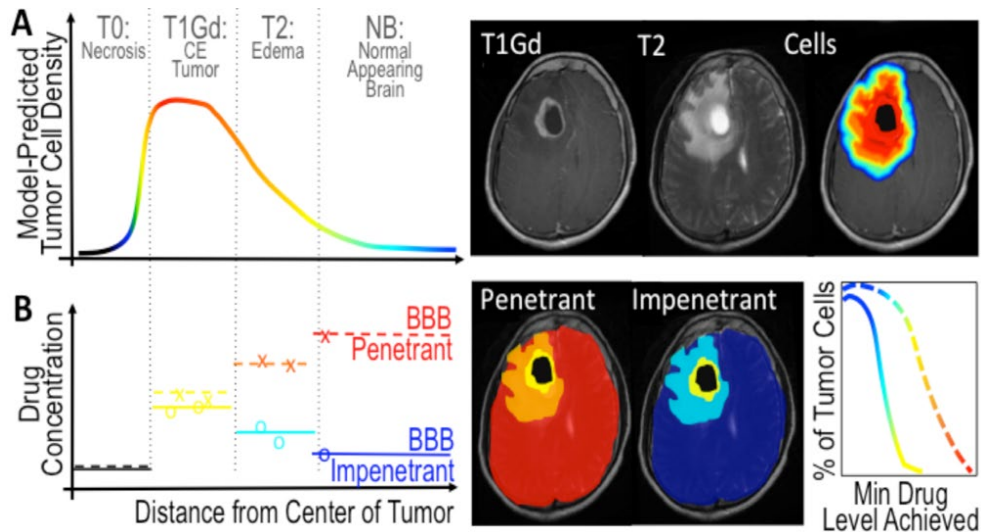


Jann N. Sarkaria  
MIT/Mayo Physical Sciences Center for Drug  
Distribution and Efficacy in Brain Tumors

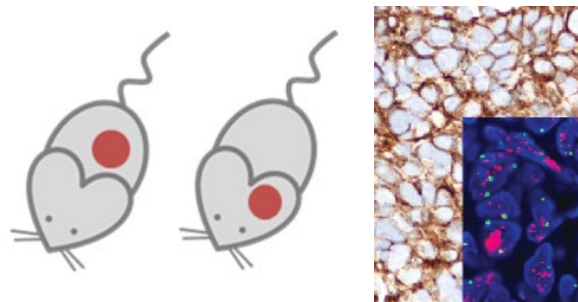
# MIT/Mayo Physical Sciences Center for Drug Distribution and Efficacy in Brain Tumors



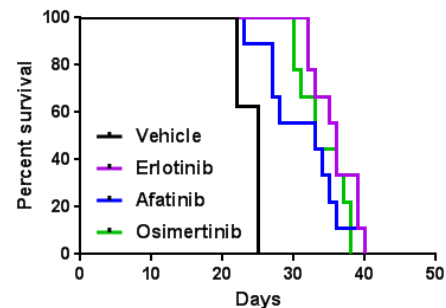
# Is sub-therapeutic exposure bad?



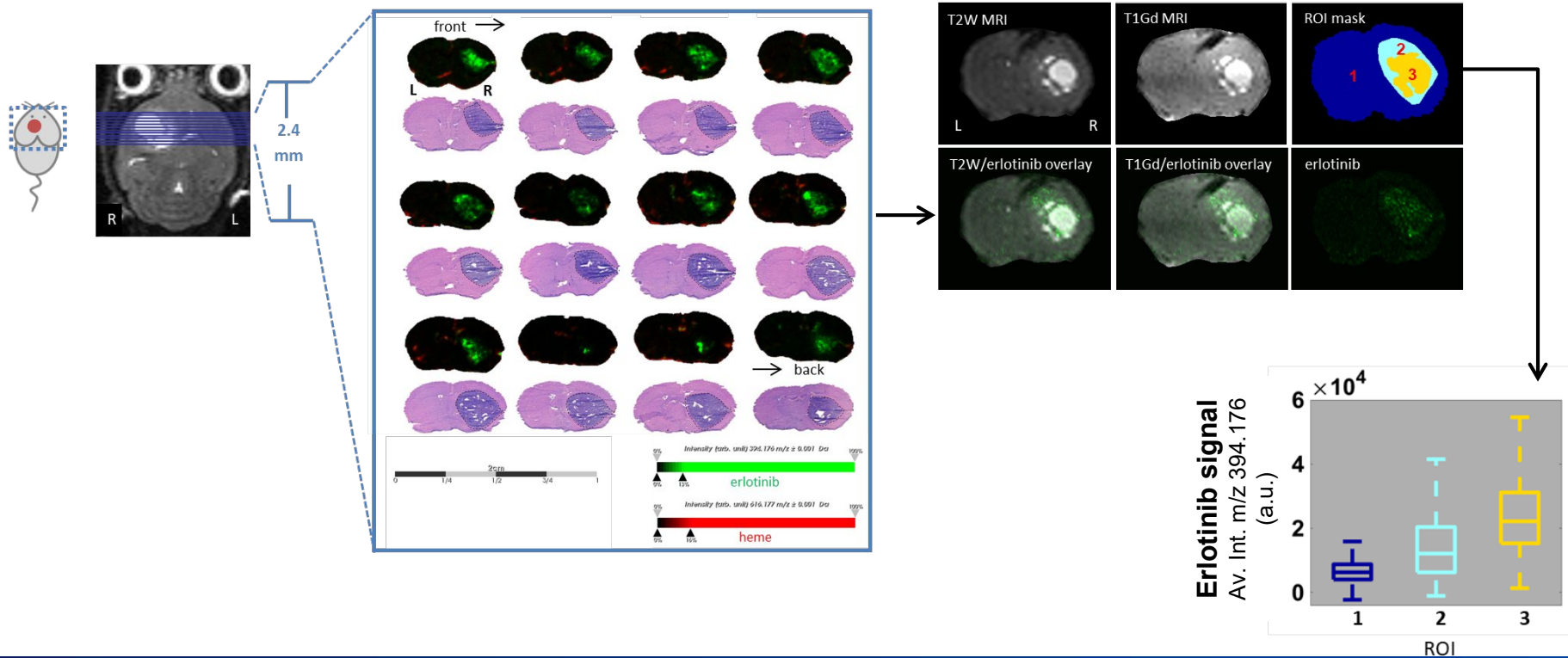
## Mayo PDXs – GBM6, 12, 39



## EGFR inhibitors



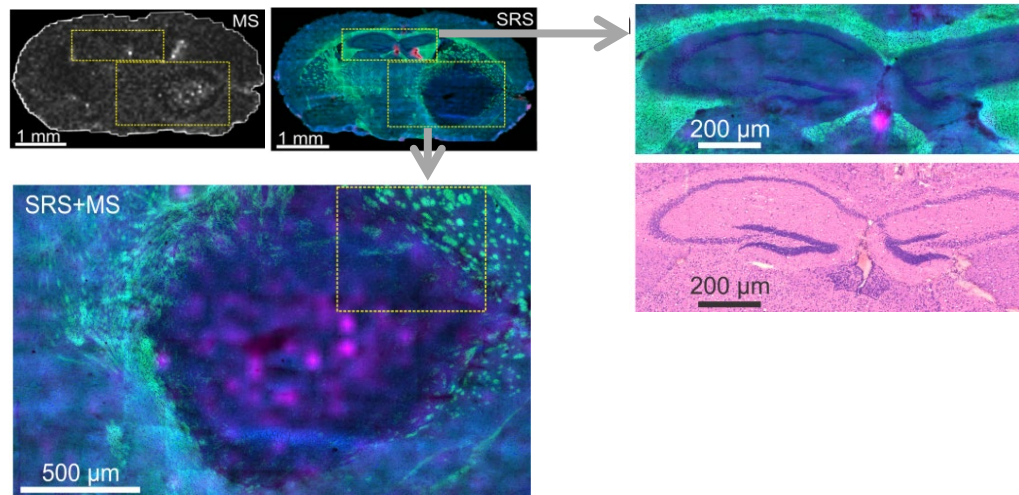
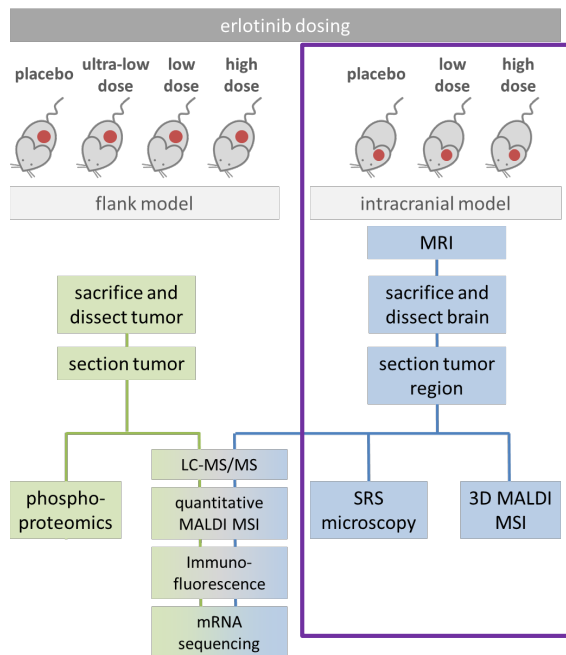
# MALDI-MSI/MRI description of erlotinib distribution: GBM12



Randall *et al.*, Nature Communications, 2018 in press

# Physico-chemical parameters that influence drug distribution

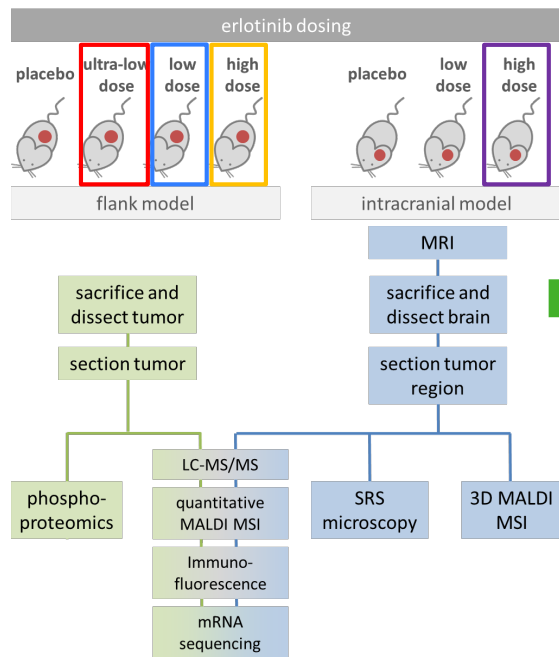
## MALDI-MSI and Stimulated Raman Scattering



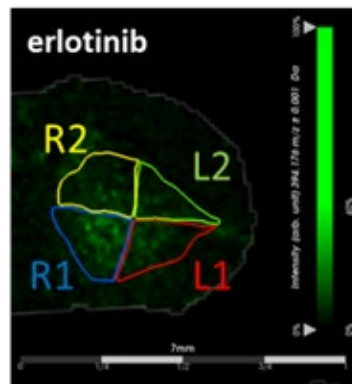
SRS: Protein – blue, lipid – green  
MALDI-MSI: Erlotinib – pink

# Impact of drug exposure on signalling

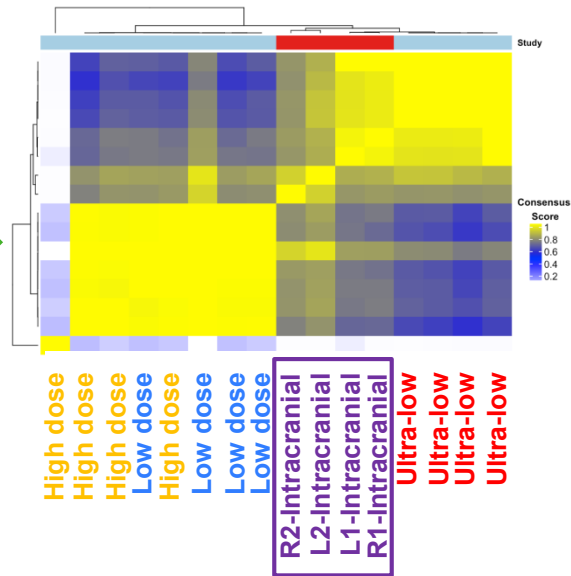
## RNAseq comparison of flank and intracranial tumors



### Laser Capture



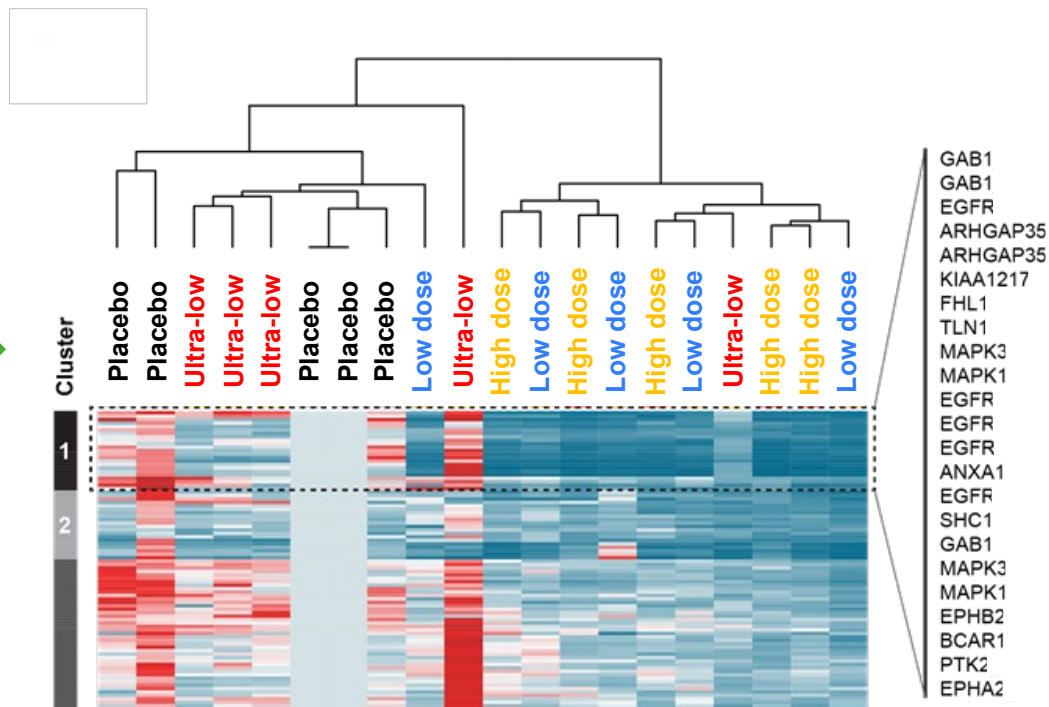
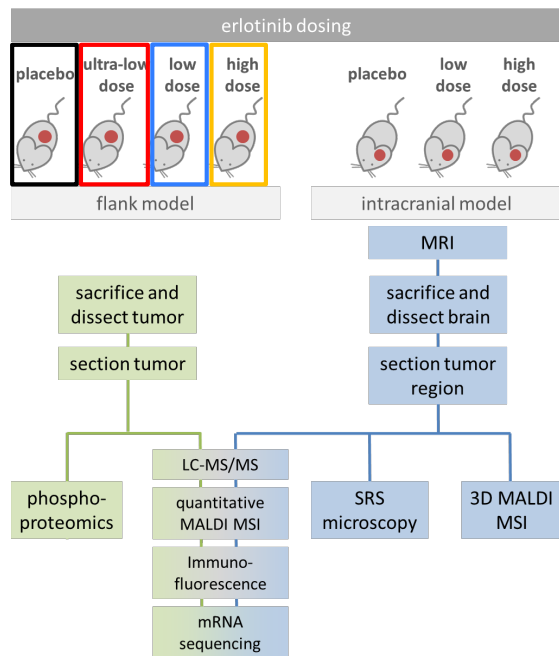
### RNAseq





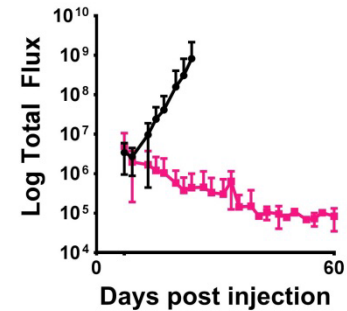
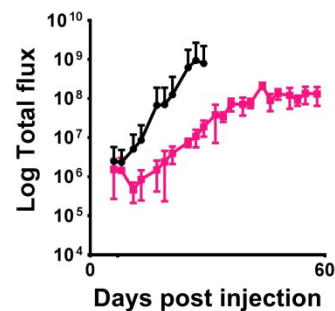
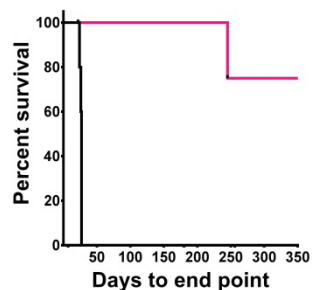
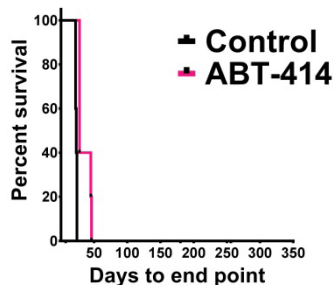
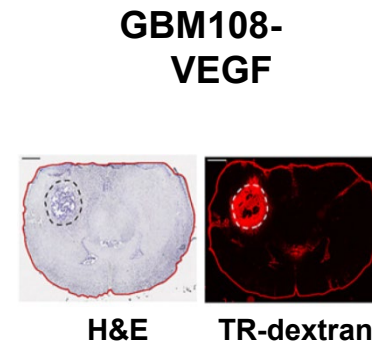
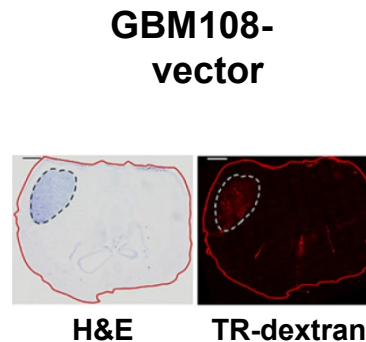
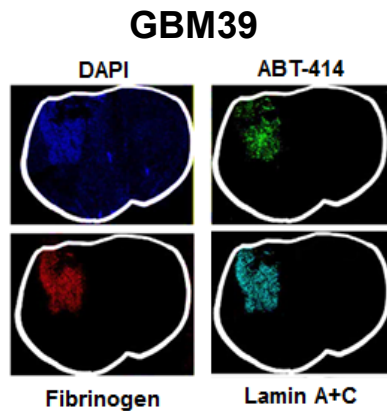
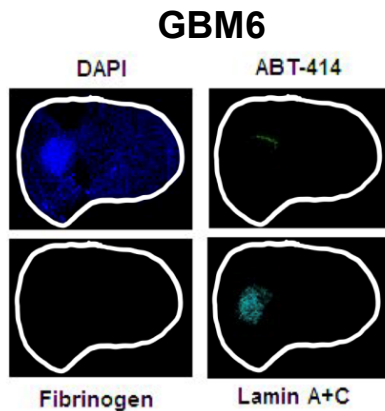
# Impact of sub-therapeutic drug exposure on signalling

## Tyrosine phosphoproteomics



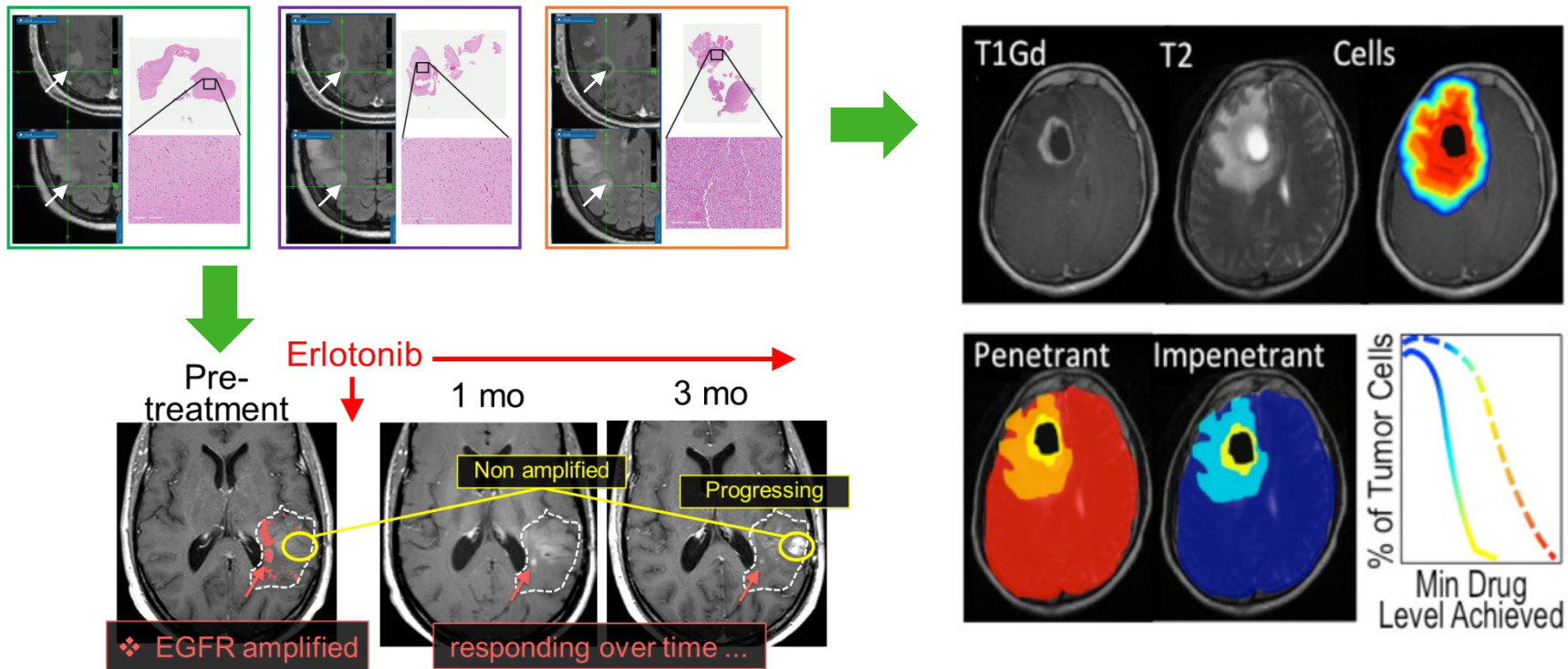
# Impact of brain penetration on efficacy of ADC

## Depatux-M (ABT-414)





# Radiomic predictors of genomics and drug distribution



# Acknowledgments

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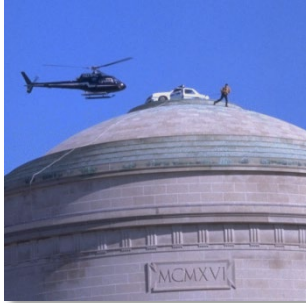
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